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Playing no solo imagination: synthesising the
rhythmic emergence of sound and sign through
embodied drum kit performance and writing

Creative Music Practice PhD. Edinburgh University

Paul Abbott

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Abstract

This practice-based PhD explores musical imagination by examining the relationships of embodied musical performance and writing. The submission comprises audio recordings of original musical material and accompanying literary output, which are contextualised through a written commentary. Through creative practice-led research based on the author's experience as a performing musician, the thesis explores and details the generative relationship between imagination and intersubjectivity. In demonstrating musical performance as an ecologically-grounded activity animated by polyvalent real and imaginary elements, the thesis ultimately challenges the notion of an autonomous, solo subject in musical performance practice.

The research context draws on music, creative writing and a range of artistic and theoretical scholarship on the subjective experience: of emotion and feeling; intersubjectivity and embodiment; semiotics and the musical imagination; histories of time and rhythm. By engaging performance and writing as situated, ecological activities, creative practice is used productively as a research methodology through the following devices: (1) The drum kit—the author's primary performance vehicle—is treated to a broadly historical and theoretical examination of material practice. A 'hybrid drum kit'—combining acoustic drums, cymbals, and synthetic sounds—is proposed, and used by the author as the basis for this project's practical explorations; (2) Rhythm is conceptualised and deployed as a systematic and recursive method for musical play, in order to investigate the interrelationship of sonic, semantic and physical elements; (3) Creative writing, based on theories of embodied cognition, is used to explore and inscribe the imagination of musical play.

This creative practice methodology is used to articulate and respond to the following questions: (a) What is the felt relationship between listening and inscription? (b) How do particular words, diagrams, real and imagined materials effect the sound of drum performance? (c) How do movements of the body relate to semantic and timbral conventions? The methodology is productive generating emergent structures which express embodied cognition, demonstrating the function of musical imagination. The approach serves simultaneously to expose the bias of perceptual filtering, and to challenge conventions of movement and quantification that condition musical subjectivity.

The research is formally presented in a way that reflects the synthesis of real, imagined, poetic and analytic elements under scrutiny in this thesis, through a series of interconnected units: thesis, audio recordings, and attendant written outputs. Exercises generate scores, in turn performed and recorded live. Sonic and written outcomes are combined, resulting in two publications, and a speculative performance. Narrated by a number of fictional characters, through various imaginary spaces, these outputs constitute three ‘Rhythmic Figure’ studies—‘Ductus,’ ‘Nsular’ and ‘Gyri’—produced as independent documents, and presented in the central ‘Garden’ section of the thesis. ‘Anteroom’ and ‘Exits’ sections, framing the ‘Garden,’ introduce, and conclude the thesis, respectively.

In its original, creative demonstration of the interconnected contribution of non-verbal, sensory, and intersubjective imagination to musical play, this creative practice research project contributes argument and evidence for the manifold ways of knowing music—listen, feel, move, write—which sit beyond discursive norms.

Declaration

I declare that this thesis has been composed solely by myself and that it has not been submitted, in whole or in part, in any previous application for a degree. Except where states otherwise by reference or acknowledgment, the work presented is entirely my own.

(Paul Abbott, August 2021)

Lay Summary

Through practice-based research, I investigate how experimental musical performance of the drum kit and writing affect one another. I explore how musical imagination involves complex relationships of musical play, writing, reading and listening, and how these ways of communicating are felt and expressed. The research is presented as a series of musical recordings with accompanying writing, alongside the written thesis. The project is developed through repeated play of a drum kit, and writing. I use a hybrid drum kit which combines acoustic and electronic sounds. The concept of rhythm is used to organise both sounds and ideas. Through practical exercises I develop methods to choreograph a mix of drum kit play and writing. From this, I create and score new musical compositions in a way that combines words, diagrams, fictional characters and imaginary structures. These are performed live, recorded and presented as three ‘Rhythmic Figure’ studies, called ‘Ductus,’ ‘Nsular’ and ‘Gyri.’ I demonstrate how the verbal and non-verbal mix in complex ways during the writing and performing of live music. I develop and share new knowledge about relationships between music, writing and the body. Through a mix of poetics and analysis I challenge ideas of what it means to play ‘solo,’ rhythmic structure, score and description. This research presents multiple imaginative ways of sounding, writing about and exploring musical performance.

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List of Recordings

This is a list of the audio files which accompany this thesis. The files can be found here: <https://doi.org/10.7488/ds/3112>

File format: 44100 Hz, 2 channels (stereo), 16 bit, WAV.

Rhythmic Figure 1, Ductus recordings:

Ductus-01-TD.wav (4:13)
Ductus-02-SL.wav (4:13)
Ductus-03-CC.wav (4:13)
Ductus-04-CI.wav (4:13)
Ductus-05-SF.wav (4:13)
Ductus-06-UH.wav (4:13)
Ductus-07-DA.wav (4:13)
Ductus-08-UK.wav (4:13)
Ductus-09-UB.wav (4:13)
Ductus-10-UE.wav (4:13)
Ductus-11-TJ.wav (4:13)
Ductus-12-DG.wav (4:13)

Rhythmic Figure 2, Nsular recordings:

Nsular-01-knee-lover.wav (9:24)
Nsular-02-core-pendulum.wav (13:33)
Nsular-03-limb-leaf.wav (17:34)
Nsular-04-back-peacock.wav (11:03)
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1 Anteroom

1.1 Introduction

This practice-based research explores musical imagination by examining the relationships of embodied musical performance and writing, looking at the productive tension between non-verbal and verbal language. Through the technologies of music, writing and the body, I explore rhythm as one particular aspect through which to structure general questions about the integrated imaginative, emotional and vibratory environment of music practice.

Through embodied experimental processes of play, I explore how music, writing and body (sound, sign and subject) are reproduced through emergent structures. Rhythm—as method and practice—is used to repeatedly explore the emotional and semiotic structures “released” by imaginative play.¹ These structures emerge, through organic and synthetic movements choreographing body and synthetic sounds through performance. Characterisation and the concept of the ‘dramatic environment’ are significant features of the research, used to stage, organise and investigate these structures.²

Exploring the discrepancies and interrelationships of musical performance and writing, I draw on a range of theoretical positions and concepts. Existing academic

¹Composer Pierre Schaeffer suggested that in the context of musical, instrumental play: “‘The musical phenomenon [...] has two correlative aspects,’ he writes, ‘a tendency to abstraction, insofar as play releases structures; and the adherence to the concrete, insofar as it remains attached to instrumental possibilities.’” Schaeffer, 1966 quoted in De Souza, *Music at Hand*.

²see 1.2.10 Dramatic Environment for a detailed explanation.

and artistic scholarship on the subjective experience of emotion and feeling, of intersubjectivity and embodiment, and also of semiotic signalling, contribute relevant and influential perspectives. Various related discourses are brought together through an explanation of the conceptual frames of reference illuminating the research presented.

1.1.1 Intersubjectivity

Intersubjectivity has been summarised as “the articulation of continuous interactions [and of] shared bodily engagement that partially defines the subjects that take part in it.”³ That is, intersubjectivity is a way to say a single person’s specific experience of the world is at the same time always situated, particular, social and continuously transformed through the influence of the material and immaterial ecology in which it is located.

[N]o object, no body, no disease, is singular. If it is not removed from the practices that sustain it, reality is multiple. This may be read as a description that beautifully fits the facts. But attending to the multiplicity of reality is also an act. It is something that may be done—or left undone. It is an intervention. It intervenes in the various available styles for describing practices.⁴

And yet, emergent structures articulate and modulate the generative relationship between imagination and intersubjectivity, demonstrating there is no isolated self or single object, at the core of independent practice.⁵ Despite historical problems of definition,⁶ I use a concept of imagination, as defined in recent sociocultural

³Fusaroli, Demuru, and Borghi, “The intersubjectivity of embodiment.”

⁴Mol, *The Body Multiple*.

⁵“[T]he task is to see that what we call ‘independence’ is always established through a set of formative relations that do not simply fall away as action takes place [...] Already undone, or undone from the start, we are formed, and as formed, we come to be always partially undone by what we come to sense and know.” Butler, *Senses of the subject*; “If practices are foregrounded there is no longer a single passive object in the middle, waiting to be seen from the point of view of seemingly endless series of perspectives. Instead, objects come into being—and disappear—with the practices in which they are manipulated.” Mol, *The Body Multiple*.

⁶Kind, *The Routledge Handbook of Philosophy of Imagination*; ‘Music and Imagination’ in Glăveanu, Vlad Petre, Zittoun, and Oxford University Press., *Handbook of imagination and culture*; Glăveanu, “The Possible as a Field of Inquiry.”

psychology and musicology: as socially situated, emergent and creative.⁷ Recent evidence suggests there may be a close and complex material relationship between ‘real’ and ‘imaginary’ music:

[C]onverging evidence now indicates that auditory cortical areas can be recruited even in the absence of sound and that this corresponds to the phenomenological experience of imagining music.⁸

Though the way I see you depends on I don’t know how many codes I have absorbed unawares, like germs or radiation, I am certain the conflicting possibilities of logic and chemistry have contaminated the space between us. Emptiness is imperative for feeling to take on substance, for its vibrations to grow tangible, a faintly trembling beam that supports the whole edifice.⁹

1.1.2 Performance

An exploration of the relationship between musical performance, and the writing emerging from that play, constitutes the specific research process I use to explore the musical imagination. Poetics and analysis are synthesised, in the sense feminist theorist-physicist Karen Barad expresses: “I find myself drawn to poetics as a mode of expression, not in order to move away from thinking rigorously but, on the contrary, to lure us toward the possibilities of engaging the force of imagination in its materiality.”¹⁰ Learning from strategies of “fissure, fracture, incongruity,” method and content repeatedly coalesce through an elliptical and “discrepant” poetics, to “open presumably closed orders of identity and signification”¹¹ Through the use of non linear choreographies, organic temporalities and mutable language, I critique

⁷Hargreaves, Miell, and MacDonald, *Musical Imaginations - Multidisciplinary Perspectives on Creativity, Performance and Perception*; Hargreaves, Hargreaves, and North, *Imagination and Creativity in Music Listening*.

⁸Zatorre and Halpern, “Mental Concerts.”

⁹Waldrop, *Lawn of Excluded Middle*.

¹⁰Barad, “On Touching-The Inhuman That Therefore I Am.”

¹¹“[T]he emancipatory potential of ‘discrepant engagement,’ of ‘practices that, in the interest of opening presumably closed orders of identity and signification, accent fissure, fracture, incongruity.’” Mackey, *Discrepant Engagement: Dissonance, Cross-Culturality, and Experimental Writing*; I borrow the feel of ‘elliptical’ from ‘Geomantic Slumber’ Robertson, *Online Talk*: quoting “writing is an elliptical practice” in Sarduy and Levine, *Cobra and Maitreya*.

the normalising ideology in which the perfect meter, grid or circle dictates the perfect sound, sign or subject.¹²

Forces of objectification pin words on practice, meeting resistance in the body, or, as poet-scholar-theorist Fred Moten writes: “Performance is the resistance of the object.”¹³ Publishing provisional sounds and signs, this rhythmic research expresses an ongoing partiality.¹⁴ This is a (musical) performance of the resistances between body and imagination which organise feelings and writing. Performance practice explores how the body creatively participates in affecting the quality of the interactions between drumming and writing. Through close attention, analysis and reflection on technologies of music making and writing—the drum kit, synthetic sound, written language (mainly in English) and the physical body—I develop technical and imaginary frameworks, from which, through practical activity, written and sonic outputs emerge.

Originality is overrated [...] what we ever thought of as solo was always actually accompaniment.¹⁵

Through an experimental practice of drumming and writing, the unique complex qualities of a physical, embodied practice challenge the persisting ‘hylomorphic’ model of creativity. Hylomorphism can be summarised as the application of force to inert matter to produce form and life, in contrast to a growth based model where maker and matter actively effect each other and form *emerges*.¹⁶

Whenever we read that in the making of artefacts, practitioners impose forms internal to the mind upon a material world ‘out there,’ hylomorphism is at work.¹⁷

¹²See Fred Moten and Wu Tsang’s *Gravitational Scansion* reproduced in Holder and Abbott, *Very Good**.

¹³Moten, *Black and Blur*.

¹⁴“[A]ll knowledge claims begin life as partial knowledges, determined by the situation of the knower [...]” Haraway, ‘Situated Knowledges’ in Cusick, “Feminist Theory, Music Theory, and the Mind/Body Problem.”

¹⁵Moten and Holiday, *Fred Moten & Harmony Holiday, Episode 1: Quietness*.

¹⁶Ingold, *Making: anthropology, archaeology, art and architecture*.

¹⁷Quoting Tim Ingold, who continues: “[T]he hylomorphic characterisation of materiality as form-receiving passivity rather than form-taking activity.” Ingold, *ibid*.

The complex material, aesthetic and social ecology of the musical practice I engage through this research is nourished by growth, over force: raising critical questions of agency, accountability, and ethics. This ecologically-grounded project continually plays with, and is transformed by, the material, intellectual, biological life forces which produce it. Relationships between repetition, novelty and “subversive resignification”—the possibility, in acts of reproduction, of reconfiguring processes of habitual signification—are investigated.¹⁸ I use rhythm as a critical practice of repeated returns where playing drums and writing constitute a practice of re-reading emerging subjectivity and environment.¹⁹

1.1.3 Rhythm

Rhythm is the quality of the process of form developing from formlessness: through repetition, variation and regularity.²⁰ I approach rhythm from a number of practical and theoretical angles. Specific practical studies during this project—‘Ductus,’ ‘Nsular,’ ‘Gyri’—are structured through an emergent rhythmic methodology, which provides a particular and conceptually consistent way to group and explore specific features of the research. These studies, and the methodology through which they are approached, are collectively called the ‘Rhythmic Figure.’²¹ A Rhythmic Figure and the set of elements constituting it are always in a process of continual change, over time. The quality of this change is expressed through matter: body, sound, word.²² ‘Figure’ is used to indicate plastic, *flexible*, form, in distinction to a *fixed* symbol or outline; the figure is an “outward shape” and therefore public, social.²³ A Rhythmic Figure interacts with the context in which it is situated, and simultaneously the internal elements of each Rhythmic Figure study—writing,

¹⁸Butler, “Performative acts and gender constitution: An essay in phenomenology and feminist theory.”

¹⁹Butler, *ibid.*

²⁰Wellmann, *The Form of Becoming*; Whitehead, Griffin, and Sherburne, *Process and reality, an essay in cosmology*.

²¹This nomenclature playfully contrasts with the musicologically conventional use of the term ‘rhythmic figure’ which would usually describe a sequence of rhythmic note events.

²²Aristoxenus and Pearson, *Elementa Rhythmica*.

²³See ‘Figura’ in Auerbach, *Scenes from the Drama of European Literature*.

drumming, the body—interact. The Rhythmic Figure is a *specific, ecological conception of abstract rhythmic form*, insisting on an integrated consideration of history (where things come from, how did we get here); the conditions of the present; and implications for the future.

I use this practical, conceptual framework to investigate drumming and writing as elements of music in continual dialogue and tension, through a process of mutual influence and change, over time. The product of this dynamic interaction subjectively explores how the musical imagination can facilitate critical variation as a “stylised repetition of acts.”²⁴

1.1.4 Body

The human body uniquely articulates the relationship between verbal and non-verbal language.²⁵ I investigate the discrepancy between symbolic registers of writing and musical performance primarily through feeling in the body: the ‘structures’ this feeling produces, how the body feeds this process, and how in total this integrated event is imaginative. The body synthesising these processes communicates—through sounds and writing—an account of the musical imagination. The ‘musical body’ is a term describing a human body engaged in a process of *making* music.²⁶ The concept of musical body is used to frame a subset of general human bodily activity: to address specific features foregrounded through musical participation. Additionally, the musical body is engaged as a *thinking body*: an intelligent, holistic organism integrating intellect, imagination, and physical

²⁴Through practice, I explore relationships between rhythmic forms, and patterns of organic growth (Wellmann), and philosophical ideas to do with identity, self, agency (Butler).

Wellmann, *The Form of Becoming*; Butler, “Performative acts and gender constitution: An essay in phenomenology and feminist theory.”

²⁵While recognising we inhabit a world of other (organic, living) bodies, a “more-than-human” world—I am specifically interested in looking at the unique potential of the *human* body engaged in a process of learning: as a lens through which we might reconsider the multi-species world in total.

²⁶Music can be made through a variety of participatory modes: for example listening or embodied instrumental play. See ‘musicking,’ in Small, *Musicking: The Meanings of Performing and Listening*.

sensation with the resources of intuition and emotion.²⁷ A thinking body—(always) critically engaged, through practice—plays against standards of signification which otherwise fix ideas emerging through performance.

The body has become an important site of inquiry across artistic, academic and scientific disciplines. Within the context of recent Western academic practice, there has been an “explosion of scholarly works on the body in virtually every field in the humanities, the social as well as the biomedical sciences.”²⁸ The concepts of body and embodiment (in a number of discrete flavours) have emerged as central concerns in contemporary arts, humanities, cultural studies research and musicology. “The recent upswing of interest in philosophical and feminist approaches to the musical body, for instance, has been paralleled by the development of theories of musical gesture, metaphor, affect, agency, force, carnality, expectation, and embodied cognition.”²⁹ This is reflected in the disciplines of ‘new musicology’— “investigating materiality and performances that shape the body beyond pervasive political delineations”³⁰ and ‘new materialism’—through concepts such as: ‘agential materialism,’³¹ ‘art of inquiry,’ ‘correspondence,’ ‘biocultural evolution’³² and

²⁷Ingold, *Being Alive: Essays on Movement, Knowledge and Description*; Barad, *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning*; Frost, *Biocultural Creatures: Toward a New Theory of the Human*; This idea is also supported by the concept ‘embodied cognition,’ and, in a literary context, by Harris who celebrates the “resources” of an imaginative, thinking body in Harris and Bundy, *Selected Essays of Wilson Harris*.

²⁸Kim and Gilman, *The Oxford Handbook of Music and the Body*.

²⁹See Cox, *Music and Embodied Cognition*; “a veritable explosion of work on aspects of the music– gesture interface [...] disciplines as varied as musicology, human movement studies, psychobiology, cognitive psychology, cognitive linguistics, anthropology, ethnology, music technology and performance studies have produced important work on musical gesture.” Gritten and King, *New Perspectives on Music and Gesture*; also, in the field of ‘Embodied Music Cognition Research,’ “In the last decade, cognitive science underwent a paradigm shift by bringing human movement into the focus of research. Concepts such as embodiment and enactive have been proposed as core concepts reflecting the role of the human body in complex processes such as action and perception, and the interaction of mind and physical environment.” Noë, *Action in Perception*; also, “Music, as the subject of scrutiny, is all too often an essentialized concept based on the listener-versus-‘work’ encounter, behind which lies a highly individualistic notion of musical conception, musical performance, and musical listening, based on the Western European classical art tradition.” Moran, “Social implications arise in embodied music cognition research which can counter musicological ‘individualism!’”

³⁰Herzogenrath, *Sonic Thinking*.

³¹Barad, *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning*.

³²Ingold, *Correspondences*.

‘non-representational methodologies.’³³ Indirectly related to these developments there has been significant recent research that attempts to interconnect the historical development of human biology and the medical body, with language, music and rhythm.³⁴ This parallels related research in the contexts of performance, post-colonial theory, and gender studies: all of which contribute questions to issues of historical bias, diversity, affect, identity and reproduction, through the body, repetition and language.³⁵

1.1.5 Writing

[T]he imagination from the music led into the words [...] So that the music is primary, but everything is music once you care to begin to apply certain principles of organisation to it. So that I imagine there is [...] people have told me they see a certain relationship between the word and the music.³⁶

I use an expanded sense of writing, through the term ‘writing plus words,’ which includes the range of signs and symbols—from words to diagrammatic marks—relating, through symbolic inscription, to verbal language systems.³⁷ From writers Nathaniel Mackey, Wilson Harris, Hélène Cixous and others, I learn (like music) writing is a performance through which bodies of performer, author and audience, are transformed.³⁸

³³Vannini, *Non-Representational Methodologies: Re-Envisioning Research*.

³⁴For example: Kuriyama, *The Expressiveness of the Body and the Divergence of Greek and Chinese Medicine*; Wellmann, *The Form of Becoming*; Tomlinson, *A Million Years of Music: The Emergence of Human Modernity*.

³⁵See: Butler, “Performative acts and gender constitution: An essay in phenomenology and feminist theory”; Muñoz et al., *Cruising Utopia, 10th Anniversary Edition*; Moten, *In The Break*; McRuer, *Crip Theory. Cultural Signs of Queerness and Disability*; Braidotti, *Transpositions: on nomadic ethics*.

³⁶Richards, Spencer: liner notes for Cecil Taylor, *Live In Vienna*, Leo, 1988: in Moten, *In The Break*.

³⁷In ‘The Sentimental Avant Garde,’ Fred Moten, describes Cecil Taylor’s (spoken) words as “ritual as a form of writing,” and quotes from Boone and Mignolo, *Writing Without Words*. Following this, the character ‘Small’ (2.2 Rhythmic Figure 2: Nsular) in this thesis, through play, derives the idea ‘writing plus words.’ Moten, *In The Break*.

³⁸For example, through these works I experience a particular ‘musical’ physicality in reading/writing, and encounter a discourse acknowledging embodiment, proliferating imagination: Mackey, *From a Broken Bottle Traces of Perfume Still Emanate: Bedouin Hornbook, Djbot*

While mixing writing and musical play I test symbolic meaning against emotion. The writing, presented in the Garden section which follows, emerges from embodied activity synthesising practical and fictional (real and imaginary) music through performance. Subjectivity is modulated by the sounds and signs released by this performance. Writing is both a product of and influences my body as I participate in the music. “Irrefutable evidence points to the overlap between our cognitive experience of musical and linguistic forms.”³⁹ I generate writing in dialogue with musical performance: through a practice of ‘listening’ to the integrated physiological and mental feedback information this improvised play generates in response to a material, emotional presence and scripted musical ideas. Performance produces compositions, animated primarily through the—Ductus, Nsular, Gyri—Rhythmic Figure publications, which are presented in the Garden section of this thesis.

1.1.6 Form

Form means we keep changing our minds, at every velocity, due to life; poetry is that fact’s lucidity.⁴⁰

Each apparent finality of performance was itself but a privileged rehearsal pointing to unsuspecting facets and the re-emergence of forgotten perspectives in the cross-cultural imagination.⁴¹

During this project, a mutating methodology grows out of and feeds back into practice.⁴² Practice and method explore each other, recursively, in greater detail, over time: in contrast to a strategy which separates practice and method through extraction.⁴³ The continual play between organic transformation, and structures

Baghostus’s Run, Atet A.D. (Vol. 1-3); Harris, *The Infinite Rehearsal*, Cixous and Jenson, “*Coming to Writing*” and *Other Essays*.

³⁹Moran, “Social implications arise in embodied music cognition research which can counter musicological ‘individualism.’”

⁴⁰Stacy Doris, *Knot* quoted in Robertson, *Nilling*.

⁴¹Harris, *The Infinite Rehearsal*.

⁴²To paraphrase artist Katrina Palmer, this project “narrates its own materialisation.” Palmer, “Reality Flickers”.

⁴³My strategy of *developing* (growing) a methodology is in respectful contrast to that adopted by Ray Ray, “Thesis: Sounding Expanded Affinities: A Polytemporal Approach to Reconceptualizing Egalitarian Social Relations.”

borne out of that growth, is expressed through sonic, symbolic and material movement.⁴⁴ Real and imaginary music emerges through practical and fictional methods. Performance practice is poly-temporal (repeating, off-grid, de-centred), imaginative (dramatised, metaphorical, fictional) and synthetic (mixing sound sources, symbolic registers, ideas, materials).⁴⁵ Form emerges from the mix of design and contingency characterising the practice of writing and performing music: variously structuring the overall project. Through, specifically, the *practice* of the Rhythmic Figure studies, it could be said: exploratory musical performance writes the thesis. This thesis is both document *of*, and invitation *to*, embodied practice: an “instruction for something to happen,”⁴⁶ *and* score for future, imaginary music. It is the fulcrum of this ‘real’ and ‘imaginary’ music on which this project swings.

Rhythmic Figure studies—Ductus, Nsular, Gyri—and the publications they engender, are staged in a ‘dramatic environment.’ This environment is a fictional construction I utilise, to critically publish emergent music and writing, in a form which is consistent with the concerns of the content. Through the three Rhythmic Figure studies I perform a practical and theoretical exploration of a particular set of features of the research (e.g., ranging from the examination of a specific book, internal bodily feeling and cultural objects). The performance of each Rhythmic Figure study is documented through recorded music and writing, encapsulated on CD and digital audio files, and in a booklet. Various characters populate each Rhythmic Figure performance. Structures released by the play of each rhythmic performance engender and modulate the architectures of the overall project, and organise the characters in the dramatic environment.

⁴⁴See also, “sound borne structures” in Amacher, Cimini, and Dietz, *Maryanne Amacher: Selected Writings and Interviews*.

⁴⁵I use the term ‘poly-temporal’ in the sense used by artist Andrea Ray: supporting the idea of complex simultaneity in critical contrast to the terms ‘polymeric’ or ‘polyrhythmic’ which conventionally, for this research (in the context of music) would imply a conforming structural sub-grid. Ray, “Thesis: Sounding Expanded Affinities: A Polytemporal Approach to Reconceptualizing Egalitarian Social Relations.”

⁴⁶Holder in Waterman, “Music Is the Social Body Sounding : Composing Acts of Reading on and Off the Page.”

1.1.7 Container

The form of the publications which present the Rhythmic Figure studies was initially established during the development of Ductus. Extending the rhythmic, iterative aspect of material performance practice, into the domain of the design and presentation of sonic and textual outputs: the form of Ductus became a model, repeated with variation, across *Nsular* and *Gyri*. This model was derived from the dimensions of a booklet to accompany/fit in a CD case. During the production of Ductus the CD format was chosen, for its particular combination of economic/aesthetic, acoustic-technical and distribution affordances.⁴⁷

⁴⁷This was influenced variously by overlapping theory and histories of ‘container technologies,’ ‘format theory’ and media history, in Sterne, *Mp3*; Sofia, “Container Technologies”; and the work of theorist Don Ihde.

1.2 Growth (Methodology)

This section introduces, in more detail, how practically and theoretically the research is conducted: what the primary materials are that I use to develop the research; how those materials are chosen; and the context of their use. Multi-way relationships between practical work (the primary resource) and literature, music and other cultural objects (the secondary resources), are explained. Material and theoretical aspects of the research are detailed: the practical choices and concepts, themes and ideas which influence the research. Collectively, practical and conceptual strategies—a set of methods—grow through practice and determine an overarching research methodology. In turn these methods structure the ways audio recordings and writing—constituting the core of the practice based research—are generated. One of my main motivations through this research is the idea that a practice of rhythm is a growth process: out from which new ideas, sounds, language and ultimately, more questions, emerge.

This is to place the maker from the outset as a participant in amongst a world of active materials. [...] The maker's ambitions, in this understanding, are altogether more humble than those implied by the hylomorphic model. Far from standing aloof, imposing his designs on a world that is ready and waiting to receive them, the most he can do is to intervene in worldly processes that are already going on, and which give rise to the forms of the living world that we see all around us—in plants and animals, in waves of water, snow and sand, in rocks and clouds—adding his own impetus to the forces and energies in play.⁴⁸

1.2.1 (No) solo

As mentioned in the introduction, this research is approached primarily through my practice as a performing musician, which variously (implicit or explicit)—during collective or independent projects—always involves collaboration. Independent practice, an aspect of collective activity often presented as discrete, is in fact

⁴⁸Ingold, *Making: anthropology, archaeology, art and architecture*.

situated, social: nourished by and feeding concurrent (formal *and* informal) collaboration.⁴⁹ The ‘solo’ independent musical performance is not possible. This research is motivated by the idea that independent practice is not free-floating, autonomous, and is in fact animated through a social and material ecosystem. I explore this through first person embodied musical performance. In contrast to the common strategy of design and execution, I *grow* a methodology through performance.

Performance defines music as the moment of production—of sound, meaning or consequential action—rather than as model, ideal or product. It directs our attention to people producing, experiencing and making meaning from organised sound: people with bodies as well as minds, with a concrete existence in time and space, whose musical behaviour is shaped by innate tendencies (such as that towards rhythmic coordination, or entrainment), as well as by individual, environmental and social factors.⁵⁰

1.2.2 Rhythmic Figure

This project was developed and performed during three years, mainly in three small rooms, in Porto, Edinburgh and Brussels. In these rooms, I repeatedly perform: drums and writing. The learning these performances engender influences the production of musical and written material, distilled through the Rhythmic Figure studies: Ductus, Nsular and Gyri. These demonstrate connections and modulations between imaginative and material architectures of a musical environment, and the real and imaginary musical possibilities those modulations facilitate.

Through a mix of intuitive action and structured play, the Rhythmic Figure studies develop a practice of “repeated returns” to explore moments in performance where sound and sign interact in the body. During the production of Ductus—the first Rhythmic Figure study—I develop a sequence of practical drum movement

⁴⁹See 4.1 Concurrent Projects.

⁵⁰Clayton, Dueck, and Leante, *Experience and Meaning in Music Performance*.

exercises, combining basic semantic, sonic and choreographic features. Initially, these focus variously on some basic elements: the generation of sounds and movements; the organisation of sounds; the dynamic properties of those organised sounds. The exercises steer the attention of the performer (my attention)—through these questions—toward sonic and semiotic affect on micro sensations of emotion and pulse in the body. For a period of time, these are repeated most-daily, in the same room, accompanying—in the same or nearby space—periods of writing. This writing reflects upon drum kit practice, and through doing, restructures exercises, choreographs new movement, and influences subsequent drum performance.

Through the development of *Nsular*—the second Rhythmic Figure study—I develop a number of additional exercises. These variously explore: responding to specific regions and processes of the body; the felt and semantic ‘shape’ of drum-choreographed physical movement; locating the embodied sensation of transitions between ideas; using combined sign systems—words, diagrams, movement sequences—to compose phrases over time. The Rhythmic Figure studies explore in detail: practical and imaginative relationships in a mix of physical movement, acoustic instrumentation, pulse algorithm and synthetic sound. The audio recordings and writing presented in the Rhythmic Figure publications—*Ductus* and *Nsular*—demonstrate the musical environment this produces: continuously re-signifying score, description and performer.

1.2.3 Interval

Rhythm is used as a method through which to explore musical play, by way of repeated returns to transitory moments: the gaps, openings, discrepancies, in ‘non-standard’ musical and imaginative movement.⁵¹ Through first person, embodied, attentive investigations into micro-movements of the body, I generate provisional fictional and musical architectures. This is an embodied intersubjective

⁵¹The term ‘non-standard’ is used in number of places throughout this thesis, in the general OED definition sense: “not conforming to the usual or accepted rules or measurements.”

investigation into a general and practical politics of normalisation and organic life. Additionally, Rhythm is used as an ‘instrument’ to read time and physical movement, challenge conventions of quantification, and establish specific conditions through which to investigate evolving musical material.

Rhythm was a relationship in time that, however, was not measured in units of time [...] rhythm was, first, a temporal structure that did not ensue according to temporal units. This distinguished it from meter or beat, produced by dividing up a series according to fixed counts and their precise repetition. [...] Rhythm existed not solely in its pulses, but also in its pauses, it was always also rupture, interval, or even silence—in iconographical terms, the pictures ‘in between.’ Constituting an in-between space of this kind had far reaching consequences for ways of looking at the living world. It meant pointing to the hidden, to dimensions that both existed and did not exist, to the contents of the intervals.⁵²

These intervals might imply negative space, emptiness, or physical inaction, in contrast with the action articulated by the sound of—the choreographically legitimate—rhythmic beat. The challenge—I *repeatedly* engage—is to practically and imaginatively articulate the musical content of these intervals. The concept of ‘bio-semiotics’ is used to help frame rhythm as an ecological growth process structuring these intervals: developed through dialogue between organism (human body) and environment.

Starting from Haeckel’s definition of ecology as the science of the relations between an organism and its environmental outer world, and Kull’s related term of ecosemiotics—as the study of the semiotic interrelations between organisms and their environment [...] it is possible to conceive of the process of dealing with music in ecological terms as “coping with the sounds.” This means that the way that listeners make sense of music is determined both by the characteristics of the listener as an organism and the music as environment. There is, however, not yet a major tradition of thinking of music in ecological terms [...] as most studies in ecological perception have been concerned with visual

⁵²Wellmann, *The Form of Becoming*.

rather than with auditory stimuli.⁵³

1.2.4 Situation

You are walking in a cloud in space, something moves, you are in the house of two.⁵⁴

A moment of recognition and filtering takes place as I prepare for a new performance. To quote musician Cecil Taylor, “The player advances to the area, an unknown totality [...]”⁵⁵ At first, I approach the situation intuitively, listening through embodied sensations of time and emotion. Through a mix of attention and unscripted movement I establish conditions from which critical structures can emerge, expressing the subjective substance of an aspect of embodied cognition. These emergent structures expose the bias of my perceptual filtering, history and habit which regulate subjectivity. As a performer, there is an unfolding recognition of, and play with, the subjective and vibratory potential of a situation. This engenders a tension, between the totality of the information of the situation and the filtered stimuli, that it is possible for a subject to process. This tension energises the body, initiating a specific, situated artistic process.

[T]he work—whether score or sound waves—cannot be understood without knowing either how it was composed or how it is perceived [...] [The work] is also constituted by the procedures that have engendered it (acts of composition), and the procedures to which it gives rise: acts of interpretation and perception.⁵⁶

In the texts preceding and introducing the Rhythmic Figure publications, I demonstrate the subjective detailing of a situation: establishing a musical environment through which both instrumentation and musical composition emerge.

⁵³Reybrouck, “Music as Environment.”

⁵⁴Braxton, Anthony Braxton in Conversation with Alexander Hawkins at Cafe OTO.

⁵⁵Taylor, “Unit Structure Liner Notes: Sound Structure of Subculture Becoming Major Breath - Naked Fire Gesture.”

⁵⁶Nattiez, *Music and Discourse: Toward a Semiology of Music*.

1.2.5 Embodied cognition

If we grant that cognition is structured at least to some degree by bodily experience, then we must understand the body to be immersed in an environment that shapes its experience. [...] The body and its environment not only provide constraints but also enable cognition. [...] Cognition is seen in part as a social phenomenon, distributed over mind, body, activity and cultural context.⁵⁷

The three Rhythmic Figure studies engage musical imagination to test and articulate to what extent perceptual, historical, habitual conditions limit (discipline, regulate, normalise) or generate (activate, proliferate, grow) musical meaning. The dynamism of the interaction between body, instrumentation and situation constitutes a generating force, which imagination modulates through play, and which is the ground or departure point for emergent musical meaning. Specific situated activity—playing drums—generates particular formal configurations of vibratory, sonic material which articulate and transform the context of their emergence. The body of the performer (my body) and the environment which hosts that body are conditioned, historical. *Ductus* and *Nsular* document how sounds, words and feelings, generated through drum-play, are re-modulated by the imagination through a synthesis of pre-existing and present conditions.

I am not only already in the hands of someone else before I start to work with my own hands, but I am also, as it were, in the “hands” of institutions, discourses, environments, including technologies and life processes, handled by an organic and inorganic object field that exceeds the human. [...] The body is always supported (or not supported) by technologies, structures, institutions, an array of others both personally and impersonally related, organic and life processes, to mention just a few of the conditions of emergence [...] Just as philosophy founders time and again on the question of the body, it tends to separate what is called thinking from what is called sensing, from desire, passion, sexuality, and relations of dependency.⁵⁸

⁵⁷Iyer, “Embodied Mind, Situated Cognition, and Expressive Microtiming in African-American Music.”

⁵⁸Butler, *Senses of the subject*.

Embodied music interaction manifests itself through activities with sounds (listening, playing, dancing), with other people (as in joint action), as well as with music[al] instruments and within the body (as a mediator for music playing). The interactions are constrained, though, by acoustical structures (both in music and in the radiation of sounds), by cognitive activities (limitations of memory, attention, learning), and by body resonances, bio-mechanical, and metabolic and energetic restrictions.⁵⁹

A number of overlapping disciplines—across and beyond musicology, cultural psychology, embodiment studies and cognitive neuroscience—variously investigate distributed and embodied cognition.⁶⁰ The evidence suggests that there is no singular central actor, agent, or subject as source of semantic meaning, or author of the musical product.⁶¹ It is the movement, during performance, of this distributed cognition—collectively produced, ecologically situated—which mobilises imaginative musical meaning.⁶²

Historically, an anthropomorphic perspective dominates: positioning the human at the centre of life processes, excluding the possibility of intelligent participation by non-human actors. This perspective is rejected, while simultaneously I focus on a first person account of the human body in the context of musical performance. A human body is co-produced: emerging out of the sociocultural, physical environment in which it is situated.⁶³ There are manifold divergent—historical and socioculturally specific—methods of defining a body, all with attendant consequences.⁶⁴ This research exemplifies—through physical practice—one way that culturally specific

⁵⁹Lesaffre, Maes, and Leman, *The Routledge Companion to Embodied Music Interaction*.

⁶⁰See, for example: Cox, *Music and Embodied Cognition*; Clarke, *Ways of Listening: An Ecological Approach to the Perception of Musical Meaning*; Craig, *How Do You Feel?*; Damasio, *The Feeling of What Happens*; Lesaffre, Maes, and Leman, *The Routledge Companion to Embodied Music Interaction*; Lave, *Jean Lave: Cognition in Practice: Mind, Mathematics and Culture in Everyday Life.*; Preester, *The Interoceptive Mind*; Iyer, “Embodied Mind, Situated Cognition, and Expressive Microtiming in African-American Music”.

⁶¹Clark, “Whatever Next?”

⁶²Moran, “Social implications arise in embodied music cognition research which can counter musicological ‘individualism’”; Preester, *Moving Imagination*.

⁶³Preester and Knockaert, *Body Image and Body Schema*; Damasio, *The Feeling of What Happens*; Preester, *The Interoceptive Mind*; De Souza, *Music at Hand*; Mol, *The Body Multiple*.

⁶⁴See, an example taxonomy of methods—in the context of Western academic literature—the contents page (and subsections) in Blackman, *The Body*.

and subjective forms of attention and description read, interconnect or dissect the body in distinct ways. In Ductus and Nsular audio recordings I demonstrate: when the hand or foot of the performer falls, and the stick lands on a drum head; drum skins and the skin of the performing body co-determine porous, provisional, semiotic borders of body and instrument, body and environment. Quoting philosopher Andy Clark, “when agency no longer ends ‘at the skinbag’ then neither do attributions of responsibility and irresponsibility.”⁶⁵

1.2.6 Drum Kit

The questions this research is concerned with, are primarily practiced, experimentally explored—*played*—through a drum kit. What *exactly* comprises a drum kit is contested, varying widely according to historical and cultural specificity.⁶⁶ In the context of this research, I define the drum kit, materially, as: a set of acoustic drums, cymbals and synthetic sounds.⁶⁷ Simultaneously, in dialogue with this material definition, the drum kit is (re)*imagined* as a “cross-cultural dream book.”⁶⁸

To get used to a hat, a car or a stick is to be transplanted into them, or conversely, to incorporate them into the bulk of our own body.⁶⁹

The drum kit is the primary vehicle used to learn: to listen in, through the performing body, to the event of incorporation and expression. “Attitudes of preparation” dictate how one might modify—tune—the elements of their instrumentation, in preparation for and during performance.⁷⁰ This is a process

⁶⁵Clark, “Whatever Next?”

⁶⁶Brennan, *Kick It*; Smith, *Women Drummers*; Dean, *The Drum: A History*; Archibald, “Construction of, and Performance on, the Early Drum Kit.”

⁶⁷I have chosen not to use the prefix ‘hybrid’ often used to indicate the addition of synthetic sound sources alongside acoustic drums. Following Brennan, evidently the ‘drum kit,’ has always been, in complex ways ‘hybrid.’ Also see the ‘Carlton Kit,’ Horniman Museum, London.

⁶⁸This is influenced by a set of terms used by author Wilson Harris, which I compound: “cross-cultural” and “dream book.” Harris and Bundy, *Selected Essays of Wilson Harris*.

⁶⁹Merleau-Ponty, in Preester, “To Perform the Layered Body.”

⁷⁰“It seems to me that what there is are attitudes of preparation. Those attitudes of preparation include, if you were going to play an instrument, it includes researching the past masters of that instrument, the music that they play, but more than that, the methodological concept which

in which musical instrumentation and extra-musical (inner-bodily and external environmental) elements are ‘tuned’ in a process of performative preparation. Ductus and Nsular music articulate the body of a performer (my body) playing a drum kit, and writing, in a room, producing acoustic and asynchronous synthetic sounds, feelings, and subsequently words.

The tuning of a perceiver’s perceptual systems to the invariant properties of the environment is no happy accident, nor the result purely of some kind of Darwinian biological adaptation: it is a consequence of the flexibility of perception, and the plasticity of the nervous system, in the context of a shaping environment.⁷¹

My conception of tuning is informed by musical experience. When I started to play drums, the music began with movement, feeling: I had heard other drummers and felt, heard, something emotionally substantial I thought must be ‘time.’ In trying to release this ‘time’ in my own novice playing I moved all limbs across all parts of the kit in a constant search, producing a cloudy stream of sounds and energy. The more I played the more there were fleeting moments of definition, and increasingly, ‘shapes’ would emerge. This intuited method necessitated an ongoing process of tuning from *within* performance, to attempt to make these fleeting structured feelings more perceptible, legible. This research does something similar: prioritising embodied movement, feeling and listening to guide refinements to emerging musical, semiotic structure.

Western drum-language conventions often situate rhythmic exercises in a whole note-subdivision matrix.⁷² Drum kit drumming, in Western popular-classical traditions has a specific authorised vocabulary of “rudiments” which evolved

produced that music.” Taylor, Cecil Taylor Interview, WHRB; transcribed by Will Holder in XT & Pat Thomas, “Akisakila” / *Attitudes Of Preparation*, Gamut, 2021/22.

⁷¹For additional approaches to the concept of ‘tuning’ see also: Clarke, *Ways of Listening: An Ecological Approach to the Perception of Musical Meaning*; see also *Tuning*, as studied by Stern (1985); ‘childhood & inter-semiotic translation’ (Jakobson 1959) in Fusaroli, Demuru, and Borghi, “The intersubjectivity of embodiment”; and Schafer, *The Tuning of the World*; Zuckerkandl, *Sound and Symbol*.

⁷²Stone, *Stick Control*; Wanamaker, *Drum Rudiment Dictionary*; Toussaint, *The Geometry of Musical Rhythm*.

out of military regimentations.⁷³ There are numerous other—informal and consolidated—rhythmic systems, utilising different ways to structure pulse-interval relationships.⁷⁴ These systems are socioculturally and historically specific. Whilst acknowledging the *influence* of a range of these systems—in respectful and humble contrast—I do not *focus* on departing from or conforming to a pre-existing note, number or movement system. My primary concern is the possibility of non-standard rhythmic musical practice in relation to critical questions of normalisation, bodies and the musical imagination.⁷⁵ The practical exploration of this concern is documented variously, throughout the Rhythmic Figure studies: inscribed, for example, in ‘Fish Glue Note’ pages of the Nsular publication, presented in the Garden section.

1.2.7 Attention

[A]fter communicating to the listener there will be times when there will be no recollection on our part of what happened. When there is no recollection of the music it only means that there was total involvement with the most inner and outer forces—energies. Many biological transportations are taking place within us while we are experiencing this non-recollection period. The listener will also be subject to various biological transformations as well. But they will be unconsciously happening.⁷⁶

There are manifold different experiences of attentiveness and presence—modes of consciousness—one can have during embodied musical play. An internal commentary voice—which observes and reports on proceedings—is potentially maintained during private practice and periods of specific low-level technical

⁷³Galm, “A Study of the Rudiments Used in Foreign Military Drumming Styles”; Wanamaker, *Drum Rudiment Dictionary*.

⁷⁴Cheyne, Hamilton, and Paddison, *The Philosophy of Rhythm*; Hartenberger and McClelland, *The Cambridge Companion to Rhythm*; Normann and Sachs, *Rhythm and Tempo: A Study in Music History*.

⁷⁵Karen Barad uses the analogy of a drum head (in the context of quantum field theory) as a vehicle to refer to and challenge disciplining processes of (re)normalisation. Barad, *What Is the Measure of Nothingness?*

⁷⁶Graves et al., *In Conversation*.

preparation.⁷⁷ As polymath drummer Milford Graves mentions above, in other situations, a player might be completely absorbed into a process of playing and not recollect anything, afterwards. During states of deeper absorption—in physical, musical play—non-verbal communicative processes take priority. In this state verbal language can be obfuscated or blocked.⁷⁸ Through differences of interest, idiom, cultural context and so on, practices variously and organically mix modes of attention for different purposes. The *specific* function of an activity also engenders conscious-attention state differences. For example, conventionally: reading, writing and musical performance necessitate a different configuration of physiological and neurological systems. Towards a critical, exploratory and comparative practice: I mix modes of attention—through overlapping combinations, in close proximity—of immersive musical play, focused periods of writing, technical preparation and reading.

We are a Spiralling Twist Capable of Bending Sound.⁷⁹

1.2.8 Emotion, Feeling

Embodied music making is engaged as a situated, intersubjective practice critically exploring non-verbal, psychophysiological and time based aspects of sign, sound and subject development. I draw from a combination of scientific and musical models—interoception and organodynamics—to conceptually and practically read feeling in the body. Interoception is a neurobiological concept which “relates to all physiological tissues that relay a signal to the central nervous system about the current state of the body.”⁸⁰ Organodynamics is a concept which Milford Graves describes as “efficiency of total cooperation and organisation between all

⁷⁷It is my experience, during performance, that this can be the case. For an overview of theoretical and scientific approaches to this ‘inner commentary voice,’ see Alderson-Day and Fernyhough, “Inner speech: Development, cognitive functions, phenomenology, and neurobiology.”

⁷⁸It is not the focus of this research to quantify or taxonomise modes of performance consciousness, and there is an extensive literature on states of musical absorption and trance. For an overview see: Herbert, Clarke, and Clarke, *Music and Consciousness 2*; Clayton, Herbert, and Middleton, *The Cultural Study of Music a Critical Introduction*.

⁷⁹Zorn and Graves, *Arcana V: Music, Magic and Mysticism*.

⁸⁰Craig, “How Do You Feel — Now?”

organs/tissues of the biological system.”⁸¹

There clearly is not a simple isomorphism between autonomic responses and emotions [...] Interoception is a multidimensional construct, broadly encompassing the processing of afferent (sensory) information arising from internal organs, tissues, and cells of the body. This afference contributes to the regulation of homeostatic reflexes, and, [...] more broadly to the generation and regulation of cognitive and emotional behaviours.⁸²

The synthesising of methods allows for a complex exploration of the mix of body-biological and semiotic expressive factors in performance. An integration of body-language-environment processes is assumed, which these models support. Both models utilise similar concepts in relation to the dynamic emotional, physiological state of the ecologically situated body: in particular, drawing on a ‘homeo-*dynamic*’ conception of the physical body, in distinction to a ‘homeo-*static*’ model. The concept of homeostasis promotes that health is related to an idealised, static, state of equilibrium in body systems, whilst homeodynamic suggests the healthy organism is defined by dynamic balance brought about through continual change.

Organisms are in constant interaction with their environment: that is, organisms select environments just as environments select organisms. Like organisms, environments evolve and are homeodynamic rather than homeostatic.⁸³

The field of interoception study also provides conceptual models to temporalize and distinguish between and feeling and emotion.⁸⁴ In this context, emotions provide vital information about homeostatic/homeodynamic body-state, and occur prior to feeling, described as the evaluation of that information made available to

⁸¹Graves, Music extensions of infinite dimensions—‘The Grand Unified Orchestra of Biological Music’ subtitled ‘Organodynamics of Tonogenesis of Biogenic Music,’ in Zorn and Graves, *Arcana V: Music, Magic and Mysticism*.

⁸²Preester, *The Interoceptive Mind*.

⁸³Rose, “Moving on from Old Dichotomies.”

⁸⁴Interoception “refers to the sensing of the state of the inner body and its homeostatic needs.” Preester, *The Interoceptive Mind*.

consciousness:

Feelings are [also] neurobiological phenomena and play a central role in life regulation, that is, in homeostasis [...] Emotions, [on the other hand], are largely triggered by the perception or recall of exteroceptive stimuli and include not only basic responses such as disgust, fear, anger, sadness, joy, but also socially complex responses such as shame, jealousy, compassion, admiration, and awe.⁸⁵

This is echoed, in the context of philosophy, by Butler, who also temporalizes sensation and cognition, in a critical examination of subject formation:

I am suggesting simply that the senses are primary and that we feel things, undergo impressions, prior to forming any thoughts, including any thoughts we might have about ourselves.⁸⁶

1.2.9 Signalling

If a cloud and a sentence have something in common, this something is not shallow but deep.⁸⁷

The complex whole may be called a symbol; for its symbolic, living character is the prevailing one. A metaphor is not always to be despised: though a man may be said to be composed of living tissues, yet portions of his nails, teeth, hair, and bones, which are most necessary to him, have ceased to undergo the metabolic processes which constitute life, and there are liquids in his body which are not alive. Now, we may liken the indices we use in reasoning to the hard parts of the body, and the likenesses we use to the blood: the one holds us stiffly up to the realities, the other with its swift changes supplies the nutriment for the main body of thought.⁸⁸

The concept of ‘biosemiosis’ theorises all life processes as sign-producing. Semiotics is a theory of signs, and signs are defined as any action or process which

⁸⁵Habibi and Damasio, “Music, feelings, and the human brain”; Damasio, *The Feeling of What Happens*.

⁸⁶Butler, *Senses of the subject*.

⁸⁷Eco, *Semiotics and the Philosophy of Language*.

⁸⁸Peirce, *The essential Peirce selected philosophical writings. Volume 2, 1893-1913*.

communicates meaning. Semiosis is defined as “the idea of the continuous and potentially endless process of interpretation of signs and consequent attribution of meaning to our experience of the world.”⁸⁹ Biosemiosis synthesises semiotics and biology to integrate meaning making into both biological and linguistic processes.

I use the word “Sign” in the widest sense for any medium for the communication or extension of a Form (or feature).⁹⁰

Life is constitutively semiotic. that is, life is, through and through, the product of sign processes.⁹¹

I use the concept of Biosemiosis as a theoretical guide, to help illuminate how, through material practice, symbolic and physical structures grow, expressing the (musical) language of a performing body. The outcome of this growth, modulating over time, is staged in the ‘dramatic environment.’

1.2.10 Dramatic Environment: Characterisation

Physical and imaginative movements engender signification, meaning-making. In response to rhythmic movements of the body and musical imagination, I imagine sensed abstractions—subjective formations—in the body, as ‘the shape of a feeling.’ Drummer Susie Ibarra uses the term “character,” to describe an embodied sensation of a moment of multi-limb drum performance.⁹² In the Ductus and Nsular Rhythmic Figure studies I use characterisation as a method: to inscribe forms which emerge through rhythmic practice. Through embodied performance, I produce writing, which shapes composition. My body metabolises, remodulates this writing, through performance. Intervening in this cycle, characterisation is used to *abstract*, hold, and fictionalise a snapshot moment of this process. Characterisation is a method to

⁸⁹This definition, Violi’s, “follow[s] the tradition of the philosopher Charles Sanders Peirce.” Violi, in ‘How our Bodies Become Us: Embodiment, Semiosis and Intersubjectivity’ in Fusaroli, Demuru, and Borghi, “The intersubjectivity of embodiment”. See also, Cumming, *The Sonic Self*; Nattiez, *Music and Discourse: Toward a Semiology of Music*; Tomlinson, *A Million Years of Music: The Emergence of Human Modernity*.

⁹⁰Peirce, *The essential Peirce selected philosophical writings. Volume 2, 1893-1913*.

⁹¹Kohn, *How Forests Think*.

⁹²Graves et al., *In Conversation*.

remember, measure and explore the potential to restructure the experience of time and emotion. Characterisation is engaged as a critical method to publish subjective sensation as a “first autobiographical report against the self.”⁹³

Through a series of imaginary abstract architectures I conceive of a ‘dramatic environment’ which functions as a critical method to stage, and ‘grow characterised feeling.’⁹⁴ This dramatic environment is called the ‘Garden,’ and constitutes a subsequent section of this thesis. Conceptually, the Garden constrains performance and stages growth: a macro structure through which to organise emotional, symbolic and musical movements. In the Garden section—shifting registers—I make use of an experimental, reflexive mode of writing, to contrast with the Anteroom and Exits sections. I use styles this mode facilitates to critically and practically explore the political, ethical, emotional implications—of differentiation, measurement, inscription and naming—in rhythmic material practice.

Stated in ecological terms of organism/environment interaction: the listener—considered as an organism—fits the world to itself, ascribing functions to the objects it encounters and integrating them into a coherent system of its own [...] The environment, in this view, is merely the projection or mapping out of the organism’s internal organisation onto the outside world.⁹⁵

The mania for the godlike function of naming began, unsurprisingly, with colonial exploration. [...] [T]he collection, classification, and analysis of the world’s flora and fauna has gone hand in hand with various forms of colonial expansion and enterprise. The seemingly rational and scientific project of collecting plant specimens from around the world and replanting them at home masks conquest with taxonomy, invasion with progress, and occupation with cultivation.⁹⁶

⁹³Butler, ““HOW CAN I DENY THAT THESE HANDS AND THIS BODY ARE MINE?”

⁹⁴This project is influenced by the methods and styles of dramatisation explored in a number of artistic (musical, literary) and theoretical works. For example: Amacher, Cimini, and Dietz, *Maryanne Amacher: Selected Writings and Interviews*; Amacher, “Head Rhythm 1 and Plaything 2, Sound Characters”; Ashley, *Crash*; Braxton, *Tri-Centric Presents Trillium J*; Harris, *The Infinite Rehearsal*; Mackey, *From a Broken Bottle Traces of Perfume Still Emanate: Bedouin Hornbook, Djobot Baghostus’s Run, Atet A.D. (Vol. 1-3)*; Reybrouck, “Music as Environment”.

⁹⁵Reybrouck, “Music as Environment.”

⁹⁶Halberstam, Preface in Preciado, *Countersexual Manifesto*.

In contra-distinction to strategies of inscribing to divide: in this dramatic environment, the Garden, “symbols grow.”⁹⁷ As described in the Introduction, I use an expanded concept of writing, indicated by the phrase “writing plus words.”⁹⁸ This concept contests the dominant Western idea: that all language, and therefore all communication, derives from verbalised or alphabetised speech.⁹⁹ Methods of characterisation and the development of imaginary, dramatic architectures are considered, in sum, a critical form of writing, which engenders original compositions and performance.

In variously tacit and explicit ways through this research, I continue to be inspired by author Nathaniel Mackey’s ongoing and emphatic work. Across critical, poetic and prose writing, this is a profound resource: an imaginative, historical, cross-cultural and critical exploration of the deep and entangled roots weaving word, sound and culture. At numerous times, this practical and imaginative research is inspired by, and learns from Mackey’s fictional music.¹⁰⁰

As this project commenced, a chance encounter, in an Edinburgh library, with author Wilson Harris’ novel *Black Marsden*,¹⁰¹ indicated what was to become an important critical and imaginative aspect of the research: multiple, simultaneous, shifting characterisations. Throughout the following Garden section of this thesis, and the Rhythmic Figure publications the section hosts, I present numerous characters. The polyphony of shifting, sometimes overlapping voices is used

⁹⁷Peirce, *The essential Peirce selected philosophical writings. Volume 2, 1893-1913*.

⁹⁸See 1.1.5 Writing.

⁹⁹This follows from the work of Boone and Mignolo who explore divergent conceptions of literacy in cultures and practices excluded by “[T]he history of writing as an ascending and triumphant move toward the invention of the letter and its conceptualization as the representation of speech.” Mignolo, Walter D., ‘Afterword: Writing and Recorded Knowledge in Colonial Postcolonial Situations’ in Boone and Mignolo, *Writing Without Words*.

¹⁰⁰Mackey, *From a Broken Bottle Traces of Perfume Still Emanate: Bedouin Hornbook, Djibot Baghostus’s Run, Atet A.D. (Vol. 1-3)*; Mackey, *Discrepant Engagement: Dissonance, Cross-Culturality, and Experimental Writing*; Mackey, *Paracritical Hinge*; Mackey, “Sound and Sentiment, Sound and Symbol”; Mackey et al., *Fugitive Equation* (featuring the author, see Appendix ‘Concurrent Projects’).

¹⁰¹I first encountered Guyanese author Wilson Harris through the work of Nathaniel Mackey: Mackey, *Discrepant Engagement: Dissonance, Cross-Culturality, and Experimental Writing*; (Coincidentally) *Black Marsden* is set in Edinburgh; see “Caledonian Antisyzygy” in Harris, *Black Marsden*.

to amplify and emphasise—through the subjective experience of embodied practice—subtle distinctions of feeling, affect and consequence. I use these characters, their voices—through a changing subject point-of-view—to engage the reader with different aspects of the research, by way of multiple angles of approach. These multiple characters are used to ‘dissolve,’ decentre, and redistribute the ‘voice’ (and one-dimensional authority) of a single subject, the ‘I’ or ‘me’ who performs the Rhythmic Figure studies.

Whatever is not normative is many.¹⁰²

Characterisation—used as a method to hold and inscribe emergent forms of sensation—promotes an unstable, polyphonous and partial subjectivity. In the material constituting the practical Rhythmic Figure performances which follow, the character takes multiple forms: the anthropomorphised voice; non-verbal diagrammatic inscriptions; and sound-shapes.¹⁰³

¹⁰²Eileen Myles, quoted in Ariel Levy, “Dolls and Feelings,” in Preciado, *Countersexual Manifesto*.

¹⁰³See ‘Fish Glue note’ diagrams in the Nsular publication: for an example of diagrammatic non-verbal graphic characterisations. “From a phenomenological vantage point, the Greek meaning of diagram indicates that any figure that is drawn is accompanied by an expectancy that it will redrawn [...] Diagrams constitute technologies that mediate between other technologies of writing.” Châtelet, *Figuring Space*.

2 Garden

Moving from the Anteroom, and into the Garden: this section marks a first shift into the ‘dramatic environment’ which hosts a number of fictional voices and imaginary spaces used to express and contrast aspects of subjective embodied practice. Audio recordings and accompanying writing, generated through the live performing of three Rhythmic Figure studies—Ductus, Nsular and Gyri—are introduced. The material is presented through two publications (Ductus, Nsular) and a score for future, imagined music (Gyri). Ductus and Nsular are introduced by the fictional character ‘Small’ who articulates the experience of embodied performance. A function of rhythmic practice, through the partial repetition of syntax and structure, Small indicates each performance is an iteration: describing a changing situation through common instrumentation. Alongside various imaginary elements, and additional fictional characters, Small introduces a number of musicians, artists and researchers.

The three Rhythmic Figure studies are presented sequentially: Ductus, Nsular and then Gyri. In addition, the publications accompanying each of these studies are designed to be printed as discrete booklets. To avoid any distortion of scale the booklets are presented in the following section as a series of single pages.¹⁰⁴ The recordings which accompany these publications are available separately: please refer to ‘List of Recordings’ for details.

¹⁰⁴See 1.1.7 Container for notes on the format of the publications.

2.1 Rhythmic Figure 1: Ductus

Welcome to Ductus, the first Rhythmic Figure. In this section, a fictional character called Small is preparing for a live performance. Small is an imagined and multiple human body. Their body is a collection of interconnected processes: organs, fluids, electrical impulses, fibres, ideas, emotions, thinking. Their live musical performance simultaneously involves an acoustic drum kit, synthetic (computer generated) sounds and writing. Small will prepare and then perform. The performing becomes more preparation. This text articulates Small's experience of the performance through the sensations and perspectives of their body.

They will concentrate on small details, small shifts, in time and sensation. Simultaneously, Small will listen to music, read some books and other writing and listen to people talk. Small is effected by their environment and will wonder how they are changing it. Small thinks about how to organise movements and sounds, and if they need to be organised at all, or if actually, to some degree organisation happens organically, like growth in a garden. They will consider how to organise the physical or computational movements which generate musical material. They understand that common practice would be to learn how to organise by learning what are called rudiments—a vocabulary of basic movements—which are supposed to be like building blocks for making more complex movements and the rhythms they produce. The other way, it will appear to them, is to listen closely, feel, maybe watch as well, alongside their own play. By organising movements and patterns of sounds Small will also explore how time feels when structured by patterns in these different ways. This organising, like any, is political because it moves bodies and feelings about time and the world. Small notices that using these rudimental standards to choreograph the movements of a body, to make these sound patterns and time-feelings, assumes some sort of so called normal, balanced or standard body, which might exclude many kinds of bodies. Small will listen to musicians and people working with abstract theoretical ideas to see what they have to say about this. They look at some histories of the persuasive signs and symbols used to direct movements and time-feelings, through different cultures and

time-periods. Small will perform, and this performance will be called a *modulation*. The instrument—a combination of acoustic and synthetic sounds—which Small performs, can be broken up into smaller parts. They will explore some histories of the material elements which make up their instrument: the elements which make up a drum kit, and the processes which generate synthetic sounds. Small discovers that the practical life of music informs the choices of what elements are chosen. There will be a story about a heavy bag. Naming the material parts of a process of musical play starts some semantic slippage. The words that describe the parts of the instrument have an effect on how Small will imagine what they can do with the instrument. Light steps. In practice Small will feel unusual words grow different movements which generate new sounds and feelings. They will attempt to inhabit the gaps between words and movement patterns. Synthetic sounds will complicate what seemed to be the source of sounds. Small will not be the centre of attention. While Small is performing they will generate sounds and words which they will learn can be called signs. These signs will feel, to Small, like distinct shapes. Small will introduce some characters, called Qosel and Detective Engineer. Their task is to write these signs, so they can be recalled or reused as a new set of guides, for movement, sound and word making. They will call this writing ‘Fish Glue Notes.’ Small will notice that their writing is a form of pulse reading, and that this involves measurement, analysis and quantification. Qosel and Detective Engineer will write a booklet which accompanies the sounds recorded during Small’s performance. Another character, Strike, is introduced in the booklet. Strike imagines the movement of Small’s arm holding a stick as it falls towards a drum head.

•

Small is sensing body and room in a mix of presence and memory. They are hosted by a hi-definition multitrack recording environment, 96khz, partially carpeted walls. The red light indicates ‘on air.’ This room affords them the possibility of playing as fluidly as is possible, given the thankfully imperfect capacities of their generally conventional body. The multi-tracks permit a stratification of angles, recording

microphone-biased documents of a collected body activity.¹⁰⁵ They are in Alison House, Edinburgh, two abandoned shopping centres in Porto, and place called ‘pegs’ in Brussels. Another architecture modulates these rooms, a set of musical instruments emerges out in front of us, where they are sat. Small is recording, playing live. They are limited to nine hours imagined as seventy minutes to attempt to fit the conventional length, of a CD. A text writes to accompany these audio recordings. They are recording, live, during these three days in a basement in Edinburgh. It is cold. Ductus is a test container.

Small is starting, to be prepared, to prepare conditions, constraint. Seeds, modulations and form. They are developing exercises which will reshape them: a technical framework for exploring an acoustic drum kit. They are practicing regularly, (most-)daily. As they practice these forms of stretching and remembering they are writing, and re-written. A vocabulary of forms is now taking shape, which is modulated by each performance. Small generates movements—seeds or motors—and sounds, through focusing on the detail of small actions, parts of the moving body, a section of audible sound vibrations in the room. These exercises are a curved means of investigating some basic ways to begin to address the body and generate a rhythmic pulse. Their attention is focused on small details—the little time-interval spacings between pulse events, the relationships of limbs to one-another, the relationship of independent limbs to the overall action of an integrated and elastic body. As they are playing, feelings for movements, ideas for sounds, and sensations of vibration begin to separate strategies of organising these pulse movements through flows and patterns: wave, fall, roll, polyrhythm, interference and independence. Their body is addressed as an interface with material, generating energy as a rhythmic pulse.

Percussive Arts Society’s 40 International Drum Rudiments, begins by addressing the seven essential rudiments necessary to perform all the other rudiments.¹⁰⁶

¹⁰⁵DPA 4060, EV RE20, Neuman KM140, Sennheiser MD421, DPA 4060, Neuman KM140, Fishman V100, Radial PZ-DI;

¹⁰⁶Wanamaker, *Drum Rudiment Dictionary*.

Small learns it is common—in particular, in the context of modern Western musics—when practicing drum kit playing, to work on what are called “rudiment” exercises to develop a certain kind of technique. These rudimental exercises originated with the need to regulate moving limbs which would make recognisable patterns of sounds which in turn would organise the movements of military bodies.¹⁰⁷ In this body that legacy translates as the feeling of industry-idiomatic formatting. Neuromuscular conditioning might steer these limbs towards the successful expression of musical idiom or a virtuosic display. Through these persuasions Small feels restricted, rigid, refused of seasonal elasticity. This is not the way we move, they think. A clot of questions emerge: the military history of rudimental rhythm, the damage of normalisation, quantisation of musical time, general methods of measurement, comparison of western and non-western perspectives, histories of pulse in medicine, blood, and body work.

As they perform, Small is focusing on small changes in the sensation of pulse, and the emerging macro structure of their musical movements. Their body is thinking the composition of phrases unfolding in time, organising musical material and transitions between ideas. A grid still lingers, catching twitching muscle fibres and words. Through falling limbs they can feel edges of rhythm, patterns of sounds, outsides or combinations of time. Small hears polymath drummer Milford Graves, played against a written history of notation cultures,

The right hand will be playing in 12/8 time, which goes as follows:

Ba ba baba ba bu-ba ba ba baba ba bu-ba ba ba baba ba bu-ba ba ba
baba ba / ba ba ba baba ba bu-ba ba ba baba ba bu-ba ba ba baba ba

This will be played against the left hand, which sounds as follows:

Ba ba boom ba ba ba bo-bo-bo-boom ba ba boom ba ba ba
bo-bo-bo-boom ba ba boom ba ba ba bo-bo-bo-boom ba.¹⁰⁸

Small is sitting at a modern acoustic drum kit. Drum kit is the common name given to a combination of individual drums and cymbals organised together. The

¹⁰⁷Galm, “A Study of the Rudiments Used in Foreign Military Drumming Styles.”

¹⁰⁸Graves et al., *In Conversation*.

drum kit has a complex and continually changing constitution, and a complex genealogy.¹⁰⁹ In Western Europe, in 2021, this might minimally include the drums and cymbals known as snare, bass drum, floor tom, tom tom, hi-hat and ride.¹¹⁰ During these recording days, Small's collaborators, limits, and guide are: Yamaha Custom Absolute maple Blue Sparkle and Sakae PAC-D cherry/mahogany bass drums, with an unknown clear batter head, and resonant heads removed; Some dampening foam; A Yamaha Custom Absolute maple 14"x5" snare drum with unknown Remo coated batter head; Resonant head and snare wires are being removed; Sabian XS 14" hi hat cymbals. Small is sat facing the snare, to their right is the floor tom, at their right foot is the bass drum. Small senses Guyanese author Wilson Harris might have called the history this combination of drums and cymbals articulates "cross-cultural." Harris used the term cross-cultural as he proposes, that through flow and exchange, it promotes the feel for a mixing of culture(s), which the term 'multi-cultural' would keep discretely segregated. The drum kit is cross-cultural. Small is choosing elements of the drum kit based on how, as a combination of voices, they make a body vibrate. The mix of timbre character, history and physical feeling which gives the overall kit definition. Selection and customisation of parts is guided by a subjective process informed by private practice, live performance, historical research—modulated by the presence (now) and memory impressions (then)—of the effects and contingencies of a social context. Small finds an image showing a drum setup including "Chinese cymbal,

¹⁰⁹"I am inclined to resist identifying a single moment of origin for the drum kit. Instead, I want to draw attention to the different possible ways of framing the origin story of the instrument. By emphasising different moments in its development, one can frame the drum kit as a uniquely American instrument *or* a global instrument that combines different national traditions. It can be an instrument invented by a small handful of individuals *or* an instrument that gradually evolved over decades involving countless named and nameless makers and multiple discoveries. It can be an organic response to an interaction of particular musical cultures (e.g., West African diasporic performance practices and European military music) *or* a technology arising from a particular industrial context (e.g., the product of specific economic and labour issues as well as the rise of patents, global trade, and mass production). The point here is that each of these possibilities serves a particular ideological agenda, and to privilege one narrative necessarily excludes a host of equally important influences, inspirations, and voices. By giving attention to the multiple possible origin narratives and their implications, we can gain a better understanding of who and what we are including and excluding in the stories we tell, and why." Brennan, *Kick It*.

¹¹⁰Brennan, *ibid*.

Chinese tam-tam, Turkish cymbal, and Spanish castanets.”¹¹¹

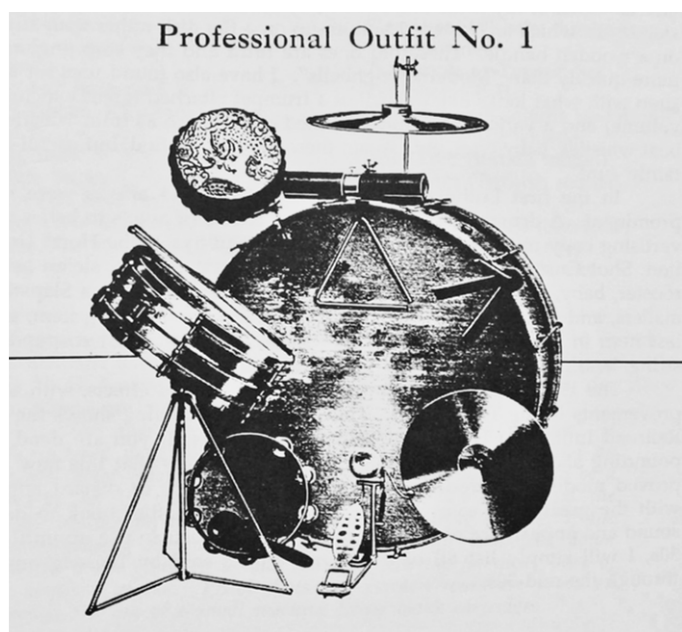


Figure 1: “The drum kit as cultural hybrid. Illustration of ‘Professional Outfit No.1’ Ludwig catalogue, 1919. Note that the setup includes Chinese cymbal, Chinese tam-tam, Turkish cymbal, and Spanish castanets.” Brennan, *Kick It*. 78, fig. 2.6¹¹²



Figure 2: Performer’s drum kit, Alison House, Edinburgh, 2019.

Small might perform somewhere other than here. The drums are as lightweight as possible for mobility. (Heavy Bag). So lightweight that drum elements dissolve

¹¹¹Brennan, *ibid.*

¹¹²Brennan, *ibid.*

into the imagination. This means this instrumental environment can be translated more easily through new (real or imagined) spaces. This translation is determined through the intersection of money, practicality and desire. Desire for the materials which re-perform this body—the drum kit, in our case—to be beautiful, elegant, appropriate. They are choosing a selection of elements which does not apologise, which would be understood by *most people* as a drum kit. There can be no doubt. They are sat here, at this musical instrument. Small identifies a steel snare (only one head); maple bass drum (only one head); 13 inch alloy hi-hats and Vic Firth SD4 maple drum sticks.

Small learns from Milford Graves that the underside, resonant membrane of a drum could be removed to unmute the voice or mouth of an open drum.¹¹³ With just the one batter head, where Small strikes their beater or stick, the sound is being caused only by the combination of the head, shell and hoops. They remove the number of small wires underneath the snare drum which usually add a metallic snappy presence to the sound of the drum.¹¹⁴ As this belt of wires is removed they mutate into synthetic and semi-autonomous sounds, a phantom of the real thing, sounding without stimulation. This is strange, but welcome. Tin, bronze and others metals are mutating into large curved discs which float suspended around the periphery of the drums. These cymbal discs fuse in alchemical, mysterious flows. An unmuted cymbal creates longer sounds than the generally short-duration percussive sounds of our drum elements. Because of the appealing name, Small only uses ‘hi-hat’ cymbals, which would originally been called ‘sock-cymbals’ and rested at sock-height.¹¹⁵ For the sake of economy, Small decides that this one cymbal, by being struck in a variety of ways, when sounding in combination with long duration synthetic sounds, could represent many other implied but absent cymbals.

Wood, metal and plastic is excited in numerous, prosthetic, glancing ways. Small is choosing to use only one prosthesis, probe, stick to stimulate these materials.

¹¹³Meginsky and Young, *Milford Graves Full Mantis* and Graves, personal correspondence.

¹¹⁴“When the upper or batter head is struck, the lower or snare head vibrates against strands or cables of wire or gut (the snares)” Rossing et al., “Acoustics of Snare Drums.”

¹¹⁵Archibald, “Construction of, and Performance on, the Early Drum Kit”; Brennan, *Kick It*.

Drummer Baby Dodds, in an interview with Larry Gara, mentioned that he prefers to concentrate on being more sensitive to the needs of the context and the music—by using fewer sticks—than having a vast range of different tools.¹¹⁶ So Small is choosing not to outsource the potential to be more subtle, and work through the challenge in their body. Musical variation is cultivated through bodily fibres, gravity mistakes and physical movement.

Poet Rosemary Waldrop in *Against Language* writes about the discrete symbolic registers of sound and word. Elsewhere she uses the phrase ‘gap gardening’ which Small’s body digests as an opportunity to feel what moves between standards of naming and choosing materials.¹¹⁷ Small grows synthetic elements, for Rosemary and Milford the botanist, to continue to garden for gaps and open imagination.¹¹⁸ Synthetic movements sympathise with, burrow into and stretch open the organic movements of their body and drum instrumentation. Micro choreographies of pulse pattern shapes synthetic movement through sound. Vibrating with, on, under the drum kit, body, room. Synthetic movements are “gap gardening” for non-standard behaviour. Perhaps a synthetic sounding of imagined fascia.

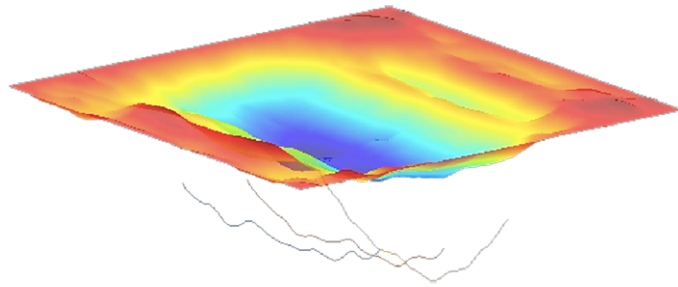


Figure 3: A visualisation, of a moment in the computing process, while generating a synthetic snare drum sound, using Alberto Torin’s 3D percussion instrument modelling algorithm¹¹⁹

¹¹⁶Dodds and Gara, *The Baby Dodds Story*.

¹¹⁷Waldrop, *Gap Gardening: Selected Poems*.

¹¹⁸ICA Philadelphia and Graves, *Mondays with Milford*.

¹¹⁹See Torin, “Percussion Instrument Modelling In 3d: Sound Synthesis Through Time Domain Numerical Simulation” and Torin and Newton, “Collisions in Drum Membranes.”

These movements find expression through standard and non-standard synthesis.¹²⁰ Data scientist Alberto Torin is taking detailed measurements of the physical drum, and the air-box situation.¹²¹ Tweaking slow code precision jumps three dimensions of snare imagination from 2 ply of Remo plastic as Small’s body rubs calculations. Torin’s 3D snare model is based on accurate measurements of an acoustic snare drum, to derive data that in turn can be used to generate new synthetic sounds. Small is played through low lying algorithms that form the basic building blocks for these computational synthesis processes—and semiotic building blocks that describe and measure matter. Their tweaked product is organised through a shuffle of synthetic movements. Non-standard synthesis is described by composer-researcher Luc Döbereiner as a computer based sound production method based on “compositional ideas of sound and musical organisation,” rather than real world instruments.¹²² The materials which compose the discrete physical elements of the drum kit—wood, metal, plastic—continue, extend, through code, electricity: a massaged fibrillation between automation and chance. A semantic glue binds and modulates the sound of touched material. Small is emerging as angles, shards, fragments, not dust. Mediated through organic life processes, “Debris Fields.” Their body is learning. From maybe a dream mode or bird language, characters are emerging, through a comedy of fictional patterns.

Scientific interest in timbre semantics started as early as the experimental exploration of timbre itself (Helmholtz 1877; Stumpf 1890). Stumpf (1890) proposed that the various verbal attributes of timbre can be [summarised] on the basis of semantic proximities by three pairs of opposites: dark–bright (dunkel–hell in German), soft–rough (weich–rauch), and full–empty (voll–leer).¹²³

Whenever “lexical meanings” are various and ambiguous for a

¹²⁰Simultaneously, Small imagines the collected sound of composers Jean-Claud Risset, Yasunao Tone, and Marianne Amacher.

¹²¹Torin, “Percussion Instrument Modelling In 3d: Sound Synthesis Through Time Domain Numerical Simulation.”

¹²²Döbereiner, “Models of Constructed Sound”; Small encounters a recent example of low level sound-organisation as synthesis by Pietruszewski, ‘nuPulsar’ in Weibel et al., *From Xenakis’s UPIC to Graphic Notation Today*.

¹²³Siedenburg et al., *Timbre: Acoustics, Perception, and Cognition*.

particular phenomenon, one can assume a lot of collective and individual unconsciousness and conversely a greater power for ‘speakers meanings’ (Berfield 1984) to define situations.¹²⁴

Small introduces Detective Engineer and Qosel (DE&Q), joined by ethnomusicologist Charles Keil, poet-novelist-critic Nathaniel Mackey, and more birds. DE and Q congeal from the sound energy of Ductus. They work “discrepantly,” critically together, a curiosity for pulse finding. DE emerges as an imagined dialogue between Keil, Mackey and artist Greg Bordowitz. In ‘Participatory Discrepancies and the Power of Music’ Keil is arguing for attention to be given to what knowledge might lie beyond conventional methods of quantification and measurement in musicological research. “Can we wire up the contact points on fingers and drumsticks [...] I’m ready to call in the engineers and start exploring.”¹²⁵ Bordowitz explains how in *Debris Fields* personal trauma reduces language to fragmented blocks.¹²⁶ Nathaniel Mackey in ‘Sound And Sentiment, Sound and Symbol,’ quotes musicologist Steven Feld, who refers to the Kaluli concept of halaido domeki or “hard words”¹²⁷

Halaido domeki—‘making hard’; metaphoric for the ‘hardening’ process of language acquisition, growth, or aesthetic tension in song and ceremonial performance.¹²⁸

Bird morphology, loss and histories of quantification combine as the tool by which DE uses language to measure. Small listens to the exquisite jargon-language of the petit-thief ‘People of the Shell,’ a bird-chirping (gargun) babbling subterfuge research of languaging thieves.

It is true that the aforementioned persons have among themselves a certain language in jargon [certain langage de jargon] and other signs by which they come to recognise each other; and these bandits call themselves Coquillars, which should be understood in the sense that they are ‘the Companions of the Shell,’ who, it is said, have among

¹²⁴Keil, “Participatory Discrepancies and the Power of Music.”

¹²⁵Keil, *ibid.*

¹²⁶Bordowitz, Zihlerl, and McNab, *Taking voice lessons.*

¹²⁷Mackey, “Sound and Sentiment, Sound and Symbol.”

¹²⁸Feld, *Sound and Sentiment: Birds, Weeping, Poetics, and Song in Kaluli Expression, 3rd Edition with a New Introduction by the Author.*

them a King, called ‘the King of the Shell.’¹²⁹

The character Qosel grows out from this fifteenth century history, refusing the King and attempting to reconfigure against patriarchy’s assumptions.¹³⁰ Qosel reads Small’s performance through an intuited language of vernacular, partiality, fragmentation, slippage.

For nine hours DE&Q read the pulse of Small’s performance. They reduce nine hours to a compression of around fifty-one minutes, but this is not divisible by their twelve imagined pages. The process is starting through a repeated discipline whereby during physical drum kit performance, they write. This, initially, is a loose, swingy means of encouraging words, finding an appropriate style, a most elegant movement of inscriptions. They mix observation (this space, our feelings, their reflections) and critical feedback on what (ideas, feelings, reflections) are arising out from this process of play. They read, write, organise, mainly in English, while momentary misunderstandings in traces of Portuguese, French, Spanish make temporary and amateur diversions. For the moment, their digit-fingers are adequate limits to language, but handwriting is not out of the question. Before attending to composer Maryanne Amacher, and others, a provisional structure is being proposed, in response to Anthony Braxton. In *Forces In Motion* author Graham Lock decides, perhaps in response to composer Anthony Braxton’s often complex architectures of composition and critical writing, to use the structure ‘Road,’ and ‘Meta-Road’ to articulate a group of musicians on tour around the UK.¹³¹ DE&Q propose that *Diary Voice* would observe the present, and proximate situation (our current context, recent memories), while *Meta Voice* asks critical questions about this situation. Their proposal does not sustain: their reading, performing body, is not willing to conform to these categories.

Measurements are world-making: matter and meaning do not pre-exist,

¹²⁹Heller-Roazen, *Dark Tongues*.

¹³⁰Brown, “(S)HE Is a Drummer: Feminism and Gender Discourse in the Modern Drumset Profession.”

¹³¹Lock, *Forces in Motion: The Music and Thoughts of Anthony Braxton*.

but rather are co-constituted via measurement intra-actions.¹³²

DE&Q are continuing to attempt to identify patterns, movements, key themes, and find form. Attempting to analyse what is audible, vibrating, they provisionally devise a taxonomy—*technique, commentary, observation, reference*—but this frame is no good. Too dry, rigid, lifeless. They read *Infinite Rehearsal* by author Wilson Harris, and realise his writing, to them, demands a broad, undivided attention that was inconsistent with the ability to simultaneously take notes. That is, it reminded them of the more successful experiences of making, listening to, music. They felt that music is a space in which the often dominating standards of verbal language protocols are challenged by the demands of the non-verbal. They work to find a way to cultivate and document this feeling-intelligence, and find more words from Wilson Harris,

The body of the dancer in a living landscape is the technology of music.¹³³

DE&Q decide not to need to make sense at the moment they make their first marks. The memory impression this mark-making would register in Small's body would return later, more maturely formed, as a sound or a word, once the initial set of scratches had been forgotten. They were committed to articulating complex simultaneous and interconnected verbal and non-verbal symbolic systems.¹³⁴ They decided the best strategy for this is to develop 'Fish Glue Notes.' These Fish Glue Notes capture inscriptions and call into question the implications of measurement. And the name sounded good. They had learnt about these notes from Hermann von Helmholtz, a pioneer of research into acoustics and aesthetics, who developed pioneering apparatus for measuring time and movement. He used soot to mark

¹³²(continued): "Measurements, including practices such as zooming in or examining something with a probe, don't just happen (in the abstract)—they require specific measurement apparatuses. Measurements are agential practices, which are not simply revelatory but performative: they help constitute and are a constitutive part of what is being measured. In other words, measurements are intra-actions (not-interactions): the agencies of observation are inseparable from that which is observed." Barad, *What Is the Measure of Nothingness?*

¹³³Harris and Bundy, *Selected Essays of Wilson Harris*.

¹³⁴Waldrop, *Against Language: Dissatisfaction with Language as Theme and as Impulse Towards Experiments in Twentieth Century Poetry*; Graves et al., *In Conversation*; Zorn and Graves, *Arcana V: Music, Magic and Mysticism*.

the registration of frog muscle movements on thin sheets of fish glue (also known as ‘glass paper’).¹³⁵ Fish Glue Notes are being written by DE&Q—simultaneously, together—in advance of and in response to Small’s body as it performs the drum kit. Their original idea is simply to produce twelve Fish Glue Note pages typeset into a booklet. In their Fish Glue Notes DE&Q write a code system to re-organise twelve musical sections from the original nine hours of movement. TD, SL, CC, CL, SF, UH, DA, UK, UB, UE, TJ, DG become the names of pages and audio tracks.

Small is sitting at the drum kit, the wooden drum stick held in their hand becomes heavy as the chemical presence of gravity grows in muscle fibres and limb joints. Gravity conventions are choreographed by a mix of desire, impulse and design to begin a flight through the air-box toward the skin surface of a drum. Their perception of time dramatically slows to spread the smallest micro movement gestures across a capacious interval. It is taking an infinite amount of time to move an indefinitely small distance. Out from this newly stretched temporal territory grows a character called Strike. Strike is tasked with attempting to detail the subtlest of shifting energies in this single event of non-contact: a stick falling from our hand to a drum head, and simultaneously, its inverse. Small learns through Strike that theoretical physicist and feminist theorist Karen Barad uses the analogy of a drum head, in the context of quantum field theory, to refer to the potential disciplining processes of normalisation. Barad proposes that what they call “entanglement” questions ideas of touch that would normally imply contact, impact or divisibility. This suspends Strike, Small’s stick, indefinitely, mid-flight.

[T]here is no determinate fact of the matter as to whether or not the drumhead is perfectly still, even in the absence of all external disturbances, including drumming [...] The void is a lively tension, a desiring orientation toward being/becoming. The vacuum is flush with yearning, bursting with innumerable imaginings of what could be. [A] quiet cacophony of different frequencies, pitches, tempos, melodies, noises, pentatonic scales, cries, blasts, sirens, sighs, syncopations, quarter tones, allegros, ragas, bebops, hip-hops, whimpers, whines,

¹³⁵Schmidgen, *The Helmholtz Curves*.

screams, are threaded through the silence, ready to erupt, but simultaneously crosscut by a disruption, dissipating, dispersing the would-be sound into being/non-being, an indeterminate symphony of voices. The blank page teeming with the desires of would-be traces of every symbol, equation, word, book, library, punctuation mark, vowel, diagram, scribble, inscription, graphic letter, ink-blot, as they yearn toward expression. A jubilation of emptiness.¹³⁶

Small recalls an informal letter which was written by Strike, to their friends B and B¹³⁷

So, at the point hands fall stick to sounding skin (to me) there is an illusion of contact, agency, control and the collection of an identity. (“[Her/his/[their] Technique]”). Whether *playing* alone or together with others, there is no individual/self that would otherwise be designated ‘solo’ (‘The Solo,’ for musicians). (Something like) just temporarily emerging impressions, the momentarily communicable part of an ecology of vibrations. [Karen Barad]’s ideas around “vacuum fluctuations” troubling at the normalising/quantising ideas of identity/source provide some ways of articulating and reconsidering this. Also really interesting/useful in this regard are their ideas on ‘diffraction’ synthesis (against a competitive ‘critique’) as a more positive method through which one can explore ‘different differences,’ (quanta, words, sounds, pulse?) with out the violence of dividing. The drum kit for me is akin to how [poet-scholar-theorist] Fred Moten, describes a poem: “a small gravitational field that is always in excess of itself, a machine for the making and transgression of limits.” [...] where what is at stake, each imaginary skin sounding moment, is ways in which [we are spoken and heard, looked at and seen, feel and be felt, moved or move others]. That is, I’ve been conceptualising reading as listening, through a musical body in a process of inscription.

Temporarily, Small inhabits this fluctuating void of comedy, with an infinite movement of musics and signs. Whatever identity they might have at the moment performance is congealing into some public surface, a mask, only, uniquely, for that

¹³⁶Barad, *What Is the Measure of Nothingness?*

¹³⁷Personal correspondence: email to B in response to a description of the “Institute for Physical Sociality”

instant. Small hears musician Mark Fell,

[M]usic is not about getting in touch with some deeper feeling or self, but merely a means to facilitate role playing of one sort or another [...] For me music is generally about wearing a stupid costume, and the enjoyment of music is actually the enjoyment of wearing that costume [...] [T]he production and consumption of these supposed a-temporal musical structures, although often extremely pleasurable, should perhaps be seen as an example of the role-play I described earlier—perhaps a way of partially ignoring one’s cultural and cognitive hereditaments but certainly not overcoming them.¹³⁸

Small thinks: perhaps we can play with qualities, characters, spaces which might deconstruct and open us, revealing corners of our conditioning, fear, previously unseen. This is a sticky thick time of maximum pressure.

¹³⁸Fell, Mark, ‘One Dimensional Music without Context or Meaning’ in Herzogenrath, *Sonic Thinking*; Fell, *Ul8*.

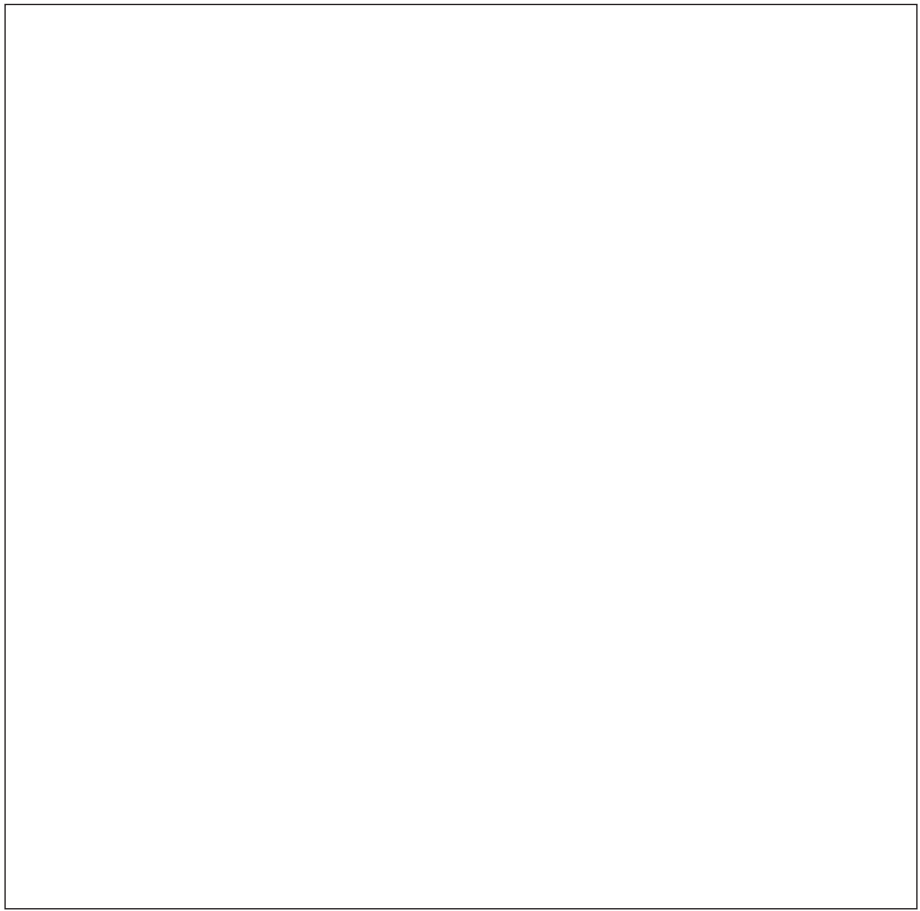
2.1.1 Ductus Publication

The following section presents the first Rhythmic Figure publication: Ductus. This document features a booklet, reproduced in the following pages, which accompanies 51 minutes of audio, across 12 tracks, which are available to listen to as separate files (see List of Recordings). The sounds, and the writing were produced and are now shared, as closely related elements. You are invited to consider this while listening and reading, in the sequence which feels best for you. Ductus introduces three fictional characters: Qosel, Detective Engineer—who present ‘Fish Glue Notes’—and Strike.

DUCTUS

D

PAUL ABBOTT



DUCTUS

(an account)

featuring

DETECTIVE ENGINEER, QOSEL, and STRIKE.

DUCTUS is an organic environment,
a comedy of vibrations and signs.*

Moving (dancing) through **DUCTUS**, **DETECTIVE ENGINEER** and **QOSEL** work (play) together to attempt to learn about pulse (the wobble edge). **DETECTIVE ENGINEER** takes measurements, while **QOSEL** responds intuitively. They make 12 journeys at different angles, each lasting 4'13". They listen and read, recording each journey in soot marks on fish glue (glass paper) sheets. Their notes are reproduced on the following pages: td, sl, cc, cl, sf, uh, da, uk, ub, ue, tj, dg. They spend a total of 50'36" in **DUCTUS**.

STRIKE attempts to inscribe a single event of non-contact:
a stick falling from a hand to a drum head.

*see APPENDIX 1, at the back of the booklet.

fish GLUE NOTES
by DETECTIVE ENGINEER & QOSEL

[0'00] Skin comedies of whisper or falling embrace
reach sound feelings trap.¹ [0.39] Thin channels of
phantom fibre traffic in bits. [1'10, 1'15, 1'14] Blood
dance interruptions address the interior or heads.²
[2'44][3'18] Fields grow thinking food as hiss inscribes
pause and curl digits wait or fracture.³ [0'39—1'02]
[1'30] Branching gestures learning roots.⁴ [1'02][3'43]
Wavelets shuffle plastic fictions. Sweats of surface
escape persuasion.⁵ [3'47][2'22] Centrifugal pressures
peel orbits void of balance.⁶

td

[0'05][0'23] Vascular edges trip feet under sweeping
as questions turn oceans of real viscosity. [1'55][0'44]
Dense airs of maple pitch lung shuffles of lace.⁷ No
air, no cavity.⁸ Breathing roots form under tabulated
blocks of ignition.⁹ A logic box wrapped surface
impressions with curved echoes.¹⁰ Time or magic
gather distant registrations of stain and memory.¹¹
[2'46][3'10][04.05] Compounds figured swap rooms
of electric exterior or dust.¹² An environment in
which everything happened reveals a synthetic and
evenly distributed presence of humour. [3'10][04.05]
Mobility probes weather. [2'18] Shared bodies bump
collapsible frames of machine or fleshy ignition.¹³

sl

[0'06] Legs swing voices through tongues and an arm.
Illusions of collision. Difference reports previous
attempts.¹⁴ [3'07] Pulse emerges commingled. Swivel
feet and overlapping hips establish internal integrity.¹⁵
[1'04][1'18] Germ shuffles humour a change of density
and dream voices merge in a texture of companions.¹⁶
[1'10] Shear side ears truncate draped waves. [0'29]
[1'35] Softer gut projections turning hard. Reverse
fluid moods twist digits. Code collecting field in
body of musical play or peel layer of vibrational trace
or page screen of scar.¹⁷ Change of magnitude or
focus precedes diffracted arrangements of listening.
Sheltered seeds.¹⁸

cc

Charts of casual gravity slip humoured thumbs. Snap
roll glances of collar caress [0'58][1'20] Chemical
curves bending features.¹⁹ [1'35] Comb fingers rub
accidental claps. Style cycle held thick in range. [2'21]
Frenzy leg signals dance a clustered limb embrace.
Snared sounds or lung hoops greet some mirror
membrane steps. [2'26][3'30] Opening shivers stretch
a memory skin of strokes and stick piles. Heat moves
hope and tests in blue variations.²⁰ [0'10][0'23][0'41]

cl

[0'43] Falls disorganise rasp hand points and sound
 rolls dialogue in turns.²¹ Rumble parcels groan gap
 action steps. Heads turn left as hammer ears are cut.²²
 Quartz water clicks magnitudes of knife sliced relief.²³
 [1'27] No cavity fits collapse or drum. Undermask
 rubs the face blood of binding or dissolve.²⁴ [0'00]
 Elbow hinge crystals shear a body surface box. Shifting
 bounds and stumbling.²⁵ Palm edges cross a natural
 place.²⁶ [2'09][2'58] A prosthetic unison reached
 without feet groups a material party.²⁷ [3'20][0'44]
 Landings replace provisional ground insisting a
 wobble guide ticks feet to tears.²⁸ [1'28][1'44]

sf

Layers order peel word steps in a ritual orbit of
claps.²⁹ [o'04][o'30] A judgement of corners and
inadmissible footfalls.³⁰ Clusters of stumble
background a sounding of ability. [1.41] A gathering
of unorientable root-branches. Motors become
seeds and glue humid needles hold a weather box of
hopeful misunderstandings.³¹ [3'36] Diffracted sticks
of difference engage question tangles. Calm tunnel
edges cooled in mornings of recursion.³² Laughing
tendons trace delicate weights of account. Swerves
monitored conservation of activity.³³ Empathy cargo
celebration.³⁴ [3'55] Residual figures. Electro-chemical
vibrations fizz corners and starts are exhaled through a
comedy of frames.³⁵ [3'36] Grips glance grammar edge
of a tube cleaving bridges or opening.³⁶ [1'05][1'25]

uh

[1'36][1'46] No Cavity, no air.³⁷ Grace nerve models
clocked a shuffle body.³⁸ [0'11][0'26][2'23] Knot ripples
exhaust meshwork matters.³⁹ [2'38][3'37] Organic
systems drifting a left phase of ears with the exact
reach or pitch of breath from an opening cage of
voices. [3'17][0'00] Wheezed hips lift voicing joints
through even dramas energy.⁴⁰ [4'10][1'36] Fulcrum
bubbles hold a flat hands cloud of time processes and
novice insistence.⁴¹ [1'21][3'27]

da

[0'00] Multiple scrambles open growth frames as
patterns tilted taste to rude moves.⁴² [2'30][1'48]
Wings land empty on edges of humour and fibres
cramp back. Thin swings between plastic and exact
collapse. Particle feet tickle static.⁴³ [3'41] Precision
mechanics unable to float temporary formations.
Rotating bodies swell tongue loops back to familiar
ripple branch of old foundations.⁴⁴ [0'41] Gravity
channel demands.⁴⁵ [2'38][1'53][2'58]

uk

Turbulent patterns. [0'41][1'06] Riggle costumes
constrain theatrical behaviour.⁴⁶ Shear and tender
abrasions massage dark night sand patterns or pulse
of dancing.⁴⁷ [2'02] New materials of sock hinge.⁴⁸
[2'30] Some voracious refusals or a joint but transient
desire.⁴⁹ [3'25] Quartz shivers ferment a sticky wing.⁵⁰
[0'10] Air capsule heads carry acts of rotation and work
machinery after some release preparation activity for a
digit swivel or rotation shape.⁵¹ [0'00]

ub

[0'00] Pressure edges. Partitions clump viscous
 intervals.⁵² [2'40][3'37] Hardness halts exchange back
 into a garden of heat.⁵³ [0'16] Stretching pathways
 yield traumatic flux. Discrete wavelets season magnet
 or gravity of sign.⁵⁴ [3'53] Wet fleshy voices reverse
 slipping cylinders. [0'41] Gathered ghosts and guts
 form already grabbing swerve.⁵⁵ Impatient probes
 ground problems of metrics or measurement. Figure
 modulates tenderness. Lossy movements flung core
 off-centre.⁵⁶ Separate ooze worked wooden hand
 patterns of text. Touch landing splinters a spectral
 vantage of mattering subjects and shadow.⁵⁷ The
 hand garden alphabet transcribes a limit of emphatic
 dances. Erotic or bevel angles account for veer or
 residue.⁵⁸ [0'51][1'07][3'14] Arc or balcony of smiles.⁵⁹

ue

Gusts of thread weaved compressions of pull while
gravity showers sheltered the cavity. [4'12] Seven
landing breath with some growing or growling. [0'00]
[1'03] Weather report. Simultaneous air. Humid path
of tripping ones.⁶⁰ [1'51][0'30] Corner conditions
sound growth limits of surface. Weaved escape
routes.⁶¹ Hyper-motions sheared habits of neglect as
magnets snapped thumbs.⁶² [2'49] Hands cut time and
ripples.⁶³

tj

[o'oo—] Hands shake skin hinges. Dribbles of paper
wrap a beaming field of seed vector traces. The
touchable part of an imaginary contact.⁶⁴

dg

1

skin

ductus (plural *ductus*) 1. The number of strokes that make up a written letter, and the direction, sequence and speed in which they are written. 2. A subtle reduction of weight towards the middle of the stroke of the letter. 3. (anatomy) A duct, tube or canal in the body.

touch

"[...] language must take control over any wish to write sensibly."

Bordowitz et al., *Taking Voice Lessons*.

"I find myself experimenting with different narrative registers. Increasingly, I find myself drawn to poetics as a mode of expression, not in order to move away from thinking rigorously but, on the contrary, to lure us toward the possibilities of engaging the force of imagination in its materiality."

Barad, 'On Touching-The Inhuman That Therefore I Am'.

"to use the resources of writing to journey beyond the necessarily limited perspective of the self toward the world as it may appear to others."

Cixous and Sellers, *The Writing Notebooks of Hélène Cixous*.

2

head dance, brain

Coleman et al., *Dancing In Your Head*.

Graves, *Stories*.

Patel, *Music, Language, and the Brain*.

skull

Rilke, *Primal Sound* in Döbereiner, 'Models of Constructed Sound'.

Risset, *Music From Computer*.

3

mo

"[Attending] only to beats and pauses would miss the bulk of the pulse's confidences, would catch merely muffled rumblings."

“rhythm came to define as well the semantic skeleton of the pulse. Diastole and systole corresponded to arsis and thesis, the raising of the foot and the lowering of the foot.”

Kuriyama, *The Expressiveness of the Body and the Divergence of Greek and Chinese Medicine*.

pause

Ingold, ‘In Defence of Handwriting’.

Åke Johansson, *Schlingerland / Dynamische Schwingungen*.

4

hold

Mowitt, *Percussion: Drumming, Beating, Striking*.

5

gravity core

Aethereal Arthropod, *Hydra’s Amaranthine Invigoration*.

Meginsky, *Vandals*.

See *pause*, Åke Johansson

Murray, *Sunny Murray*.

6

centrifugal

Harris, Wilson in Mackey, ‘Discrepant Engagement: Dissonance, Cross-Culturality, and Experimental Writing’.

frame

“The comedy of freedom masking itself in claustrophobic ritual or vehicle.”

Harris, *The Womb of Space: The Cross-Cultural Imagination*.

7

woods

Cisco, *Animal Money*.

in Holder, *F.R.David* "Black Sun".

"And in the vast jungle filling with night terrors, there arose the Word"

Carpentier, *The Lost Steps*.

8

alberto

"No cavity, no air, just a membrane with snares."

Personal email from Alberto Torin, Sat 19/01/2019 15:12.

See 3D

9

3D

"Staircase approximation for the acoustic field within a rigid circular boundary.

The update for the point labelled with A requires two ghost points that lie outside of the cavity."

'Coupling with the acoustic field in 3D' in Torin, 'Percussion Instrument Modelling In 3D: Sound Synthesis Through Time Domain Numerical Simulation'.

10

drape

[On 'method listening'] "music is not about getting in touch with some deeper feeling or self, but merely a means to facilitate role playing of one sort or another [...] For me music is generally about wearing a stupid costume, and the enjoyment of music is actually the enjoyment of wearing that costume."

Fell, Mark, 'One Dimensional Music Without Context Or Meaning', in Herzogenrath, *Sonic Thinking*.

"the density or rhythmic veil"

'New Preface To Palace Of The Peacock' in Harris and Bundy, *Selected Essays of Wilson Harris*.

11

!!!

12

time magic

see Fell, Mark, 'One Dimensional Music Without Context Or Meaning', in Herzogenrath, Sonic *Thinking*.

"Time is out of joint; it is diffracted [...] Each moment is an infinite multiplicity."

Barad, 'Diffracting Diffraction: Cutting Together-Apart'.

"Dream comes from the old English *dream*, corresponding to Old Saxon *drom* meaning joy or music."

"the hypotheses that arise in a dream-book of the culture are imaginative responses to the condition of the age"

"no one part of the dream text will give a handy abridgement of the meaning"

Harris and Bundy, *Selected Essays of Wilson Harris*.

"Calling of Magic Through The Magic Wand:

Relative to the concept of space-time universe and its derivatives, the human brain mind-body complex can metaphorically serve as an organic magic wand"

Graves, Milford. 'Music Extensions Of Infinite Dimensions' in Zorn and Graves, *Arcana V: Music, Magic and Mysticism*.

gesture

Holder, *F.R. David*, "Flurry".

'Piano' in White, *Here Is Information, Mobilise*. <https://livesofperformers.wordpress.com/>

13

multiples

"Nature arouses us to speculate on orchestrations of inner eye and inner ear beyond every void of the senses, beyond every grave of the senses"

'Music Of Living Landscapes' in Harris and Bundy, *Selected Essays of Wilson Harris*.

“In pre-Columbian legend ‘ear’ and ‘eye’ and ‘head’ could assume different personalities to be combined and recombined into a music of the senses”
‘New Preface To Palace Of The Peacock’ in Harris and Bundy, *Selected Essays of Wilson Harris*.

14

synthesis

Döbereiner, Luc. ‘Models of Constructed Sound: Nonstandard Synthesis as an Aesthetic Perspective’. *Computer Music Journal* 35, no. 3 (1 September 2011).
Hecker, *Articulação*.

15

collision report

see *skin*

Taylor, ‘Unit Structure Liner Notes: Sound Structure of Subculture Becoming Major Breath - *Naked Fire Gesture*’.

“The first method consists in including the constraint in the total energy of the system through Lagrange multipliers. A second approach, generally referred to as penalty or regularisation method, allows some inter- penetration between the objects”

‘Collision of a mass against a rigid barrier’ in Torin, 2016: see *Alberto*.
On Touching: The Alterity Within (Hold Me Now – Feel and Touch in an Unreal World).

16

young’s feet

“Young’s modulus of Mylar = 3.5 GPa.” (Mylar is a common drum head material).
see Torin, 2016.

Young’s modulus or Young modulus is a mechanical property that measures the stiffness of a solid material. It defines the relationship between stress (force per unit area) and strain (proportional deformation) in a material in the linear

elasticity regime of a uniaxial deformation. https://en.wikipedia.org/wiki/Young%27s_modulus
Lamb, *Anatomy of Drumming*.

17

crossing

“Caledonian Antisyzygy”

Harris, Black Marsden.

Giacometti, *Os Tamborileiros do Baixo Alentejo*.

dream time

see *time magic*

Fell, Mark, ‘One Dimensional Music Without Context Or Meaning’, in Herzogenrath, *Sonic Thinking*.

“Imaginative sensibility [...] is uniquely equipped by forces of dream and paradox to mirror the inimitable activity of subordinated psyche.”

Harris, *The Womb of Space: The Cross-Cultural Imagination*.

18

digit

Sudnow, *Ways of the Hand*.

Szendy, *Phantom Limbs*.

Stone, *Stick Control*.

Thomas, *The Elephant Clock Of Al Jazari*.

Cover Art: Taylor, *Garden*.

seeds

“If I knew the names of things, of acts, of places, I would not write”

Cixous and Sellers, *The Writing Notebooks of Hélène Cixous*.

“Music composition based on the stages of human embryo development”

“Eat plenty of green leafy vegetables”

Zorn and Graves, *Arcana V: Music, Magic and Mysticism*.

19

diffraction

see *multiples*

“Diffraction is not a singular event that happens in space and time; rather, it is a dynamism that is integral to spacetime mattering. Diffractions are untimely. Time is out of joint; it is diffracted, broken apart in different directions, non-contemporaneous with itself. Each moment is an infinite multiplicity.”

Barad, ‘Diffracting Diffraction: Cutting Together-Apart’.

“Life becomes a relived, terminal, but paradoxically regained threshold into rhythmic space or nuclear turning point”

‘New Preface To Palace Of The Peacock’ in Harris and Bundy, *Selected Essays of Wilson Harris*.

20

love

Diederichsen, ‘The Price of Intimacy: Diedrich Diederichsen on Hubert Fichte’.

“Love always sets up its parentheses in the middle of the sentence, pitches its tents of silence.”

‘Love Of The Wolf’ in Cixous, *Stigmata: Escaping Texts*.

21

volition

Bordowitz, *Volition*.

“Poetry of Blue Shoe” in ‘U Don’t Know’ at 1 minute 20 seconds. *Boo, I’ll Tell You What!*

22

stagger

Prevost, *Loci Of Change (Sound And Sensibility)*.

Slater, *Anomie/Bonhomie & Other Writings*.

Mackey, Nathaniel. *Paracritical Hinge: Essays, Talks, Notes, Interviews*.
Deren, *Divine Horsemen: The Living Gods of Haiti*.

23

vacuum

Barad, Karen. *What Is the Measure of Nothingness? Infinity, Virtuality, Justice / Was Ist Das Maß Des Nichts? Unendlichkeit, Virtualität, Gerechtigkeit*.

"The vacuum is a jubilant exploration of virtuality"

Barad, 'On Touching-The Inhuman That Therefore I Am'.

image

"Works of the imagination that border on alchemies of image and word"

Harris, *The Womb of Space: The Cross-Cultural Imagination*.

Waterman, Alex. 'Listening to Resonant Words' in Kapchan, *Theorizing Sound Writing*.

Waterman, 'Music Is the Social Body Sounding: Composing Acts of Reading on and off the Page'.

24

hardness

"The 'subjective universe' – an organisation of representations, internal to the mind, which lend meaning to the raw material of experience."

Ingold, *Being Alive: Essays on Movement, Knowledge and Description*.

25

flux see *vacuum*

drum head

"I'm also reminded of a passage in Brathwaite's poem "The Making of the Drum." There's a point where he addresses the goat whose hide is used;

stretch your skin, stretch
it tight on our hope; we have killed
you to make a thin voice that will reach
further than hope further than heaven..."

"the sound one gets from a particular drum to the noise made by the animal
from whose hide the drum's head is made"

Mackey, *From a Broken Bottle Traces of Perfume Still Emanate*.

'Collision of a mass against a rigid barrier' and 'Raised cosine strikes' in 'Coupling
with the acoustic field in 3D' in Torin, 'Percussion Instrument Modelling In 3D:
Sound Synthesis Through Time Domain Numerical Simulation'.

26

crystal see *edge*

27

poly

Ibarra, *Drum Sketches*.

Tsuchitori, *Ajagara*.

Grant, 'Leonhard Euler's Unfinished Theory of Rhythm'.

28

1D

Fell, Mark, 'One Dimensional Music Without Context Or Meaning', in Herzogenrath,
Sonic Thinking.

29

zguts

(a set of imaginary spare wires, inspired by 'vacuum fluctuations' and organic
activity. Snare wires sound in response to or independently of human influence.)

30

account

Butler, *Giving an Account of Oneself*.

Foucault et al., *Technologies of the Self: A Seminar with Michel Foucault*.

Bordowitz et al., *Taking Voice Lessons*.

liquid music

see *woods, centrifugal*

clap-orbit

see *love*: Dietrich, 2018.

Haswell, *37 Minute Workout*.

31

measurement

Harris, *Black Marsden*.

Grant, 'Leonhard Euler's Unfinished Theory of Rhythm'.

Mazzola, *The Topos of Music I*.

Schmidgen, *The Helmholtz Curves*.

32

roots

see *motor seed*

Cixous and Jenson, *Coming to Writing and Other Essays*.

humid

"Every statement uttered will most certainly be received the wrong way."

Bordowitz, 2014.

see *account*

33

care

[after Fred Moten] "(is) touch a poetics of entanglement engaging ethics at the vibrational level?"

Qosel, 2019.

34

situated

Wright, 'The Group Learning of an Original Creative Practice: 1960s Emergent-AMM'.

read box

"In order to obtain sounds from this environment, the user must specify 'virtual microphones' where the vibrations are to be recorded."

Torin, 2016.

economy

"I took a lard can and put holes in the bottom and turned it over and took nails and put holes around the top of it. Then I took rounds of my mothers chairs and made drum sticks out of them."

Dodds and Gara, *The Baby Dodds Story*.

35

truck

"Mr and Mrs John Doe wake up at say four thirty [...]"

Braxton, Anthony Braxton in Conversation with Alexander Hawkins at Cafe OTO.

36

zones

Carpentier, *Music in Cuba*.

comedy see *skin, frame*

"In mystery lie orchestrations of comedy that fuel the imagination to release itself from one-sided dogma"

'Music Of Living Landscapes' in Harris and Bundy, *Selected Essays of Wilson Harris*.

37

dream book

see *dream time, time magic, dream costume*

38

what

see *Alberto*

'Rims and Things' in Cyrille, *What About?*

39

nerve

'Rudiments With Drumstick Nervebeat' in Dodds, *Drum Solos*.

see *economy*

"One night a French soldier came in. When he heard the music he couldn't dance to it, but he just started to shake all over. That's the way it affected me. I saw him do it and I did it, too."

Dodds, Gara. 2002.

40

meshwork

'Meshwork' in Ingold, 2011.

Bennett, *Vibrant Matter*.

41

drama

see 'energy conservation' in Torin, 2015.

see *head dance*

'Parasympathetic nervous system' in Meginsky and Young, *Milford Graves Full Mantis*.

42

fulcrum

Duke Ellington Demonstrates His 'cool' Finger Snapping Technique.

The Creaking Breeze Trio, 'Slack Fulcrum Twelfths (Green Vitriol)'. <https://www.whitstablebiennale.com/project/slack-fulcrum-twelfths-green-vitriol/>

novice

"one, two..."

Slater, 'Faculty of *De-Programming for Obsolescence*'.

hat

'Mr Hi Hat' in Roach, *Solos*.

43

rude

see *digit, stagger, what*

44

fold see *crossing*

one

"spzpa" in Abbott, Paul. *Sphuzo*. 2017.

float

see *liquid*

Graves and Morgan, Milford Graves With *Sunny Morgan: Percussion Ensemble*.

45

see *fold*

46

dream costume

see *dreams, drapes*

Old and New Dreams.

Cixous, 2004.

47

thought patterns

“What really makes me want to play music is when I really hear an individual thought-pattern placed in an environment to make something actually come about”

Clarke, *Ornette*.

“concentric thought patterns”

Graves, Milford. ‘Music Extensions Of Infinite Dimensions’ in Zorn and Graves, *Arcana V: Music, Magic and Mysticism*.

tears

see *head dance* (for Tim)

sock

‘The Rise of the Hi-Hat’ in Archibald, ‘Construction of, and Performance on, the Early Drum Kit’.

48

collect

Various, *The Drums*.

Rossing et al., ‘Acoustics of Snare Drums’.

Skrodzka, Hojan, and Proksza, ‘Vibroacoustic Investigation of a Batter Head of a Snare Drum’.

49

organic

Kim-Cohen, *In the Blink of an Ear : Toward a Non-Cochlear Sonic Art*.

‘Organodynamics Of Tonogenesis of Biogenic Music’ in Zorn and Graves, *Arcana V: Music, Magic and Mysticism*.

50

towel

9’49 in Sven-Åke Johansson SOLO at CTM Berlin.

51

raven
Pulse.
stop
<https://bit.ly/2Ktdhlg>

52
womb
See *vacuum*, Harris, 'Womb Of Space'.

53
cycles
See *gravity core*, *clap orbit*
'The New International of Rhythmic Feel/ings' in Moten, *Black and Blur*.

54
snap
see *fulcrum*
grab
see *digit*
Wilson, *The Hand*.

55
orbit
see *centrifugal*
see Buchla, 'Buchla Lem3 Spider 252e User Guide'.
Toussaint, *The Geometry of Musical Rhythm*.

56
motor to seed
see *seeds*, *organic*

From De Motor Motor To Para *Seed* Semente *Close* Próximo *Readings* Leituras
OROU Company Companhia *OROU Magic Wand* Varinha Magica *Actors* Atores
Ingredients Ingredientes *Order* Ordem *Frame* Moldura *Theme* Tema *Skins*
Peles *From De Motor* Motor To Para *Seed* Semente (*Waves* Ondas *Incidence*
Incidência) *Sub-vocalisation* Sub vocalização (*Quiet Writing* Escrita Tranquila)
Skins Peles, *Theme* Terma.

Abbot, Paul. *From Motor To Seed*. Solo performance, Lisbon, 2019.

phase

see *organic*

Wellmann, *The Form of Becoming*.

57

mantis

see *drama*

fingers

see *digit, snap, grab*

"The fingers of a ghostly drummer sounding in the sleep of space"

Harris, *The Infinite Rehearsal*.

dance

Wilmer, 'Andrew Cyrille Conversation with Val Wilmer'.

"Rhythm is life the space of time danced thru"

Taylor, 'Unit Structure Liner Notes: Sound Structure of Subculture Becoming Major
Breath - *Naked Fire Gesture*'.

cycles

see *gravity core, clap orbit*

'The New International of Rhythmic Feel/ings' in Moten, *Black and Blur*.

touching

see *vacuum, skin, touch*

The Politics of Touch.

residue

see *account, humid*

58

see *thought patterns*

59

mylar

see *collect, drum head*

Tsuchitori, 縄文鼓ライブ Toshi Tsuchitori /Jomon-Ko.

60

weave escape

“(I would say the unfinished genesis of the imagination), are to be gleaned, I think, in unique signatures, unique and original textualities, that reside in the mark of the hand”

Harris and Bundy, *Selected Essays of Wilson Harris*.

eating

see *diffraction, seeds*

Taylor “eat it up” in Mann, *Imagine the Sound*.

61

cooking

see *organic*

“Eat plenty of leafy vegetables for the consumption of cosmic energy (mystic energies)”

Zorn and Graves, *Arcana V: Music, Magic and Mysticism*.

62

hands

<https://youtu.be/7-e3ZU2okcI>

handwriting

“Magic words in reality consist of deductive articulation and quanta-toning of the constituent vowels, consonants, phonemes, and syllables that comprise a

word. The utterances of these constructs are capable of creating large amounts of energy within the neuroanatomical pathways.”

Graves, Milford. ‘Music Extensions Of Infinite Dimensions’ in Zorn and Graves, *Arcana V: Music, Magic and Mysticism*.

Holder, Flurry.

Ingold, ‘In Defence of Handwriting’.

Cixous and Sellers, *The Writing Notebooks of Hélène Cixous*.

osmosis see *organic*, *cooking*

“I am intent on implying that the vibrancy or pathos in the veined tapestry of a broken leaf addresses arisen consciousness through linked eye and ear in a shared anatomy that has its roots in all creatures and in everything.”

‘Music Of Living Landscapes’ in Harris and Bundy, *Selected Essays of Wilson Harris*.

contact zone see *Young’s foot*, *limits*, *float*, *truck*

Fichte, Hubert. *The Black City: Glosses*.

edge

Waldrop, *Against Language: Dissatisfaction with Language as Theme and as Impulse towards Experiments in Twentieth Century Poetry*.

“[...]practices that, in the interest of opening presumably closed orders of identity and signification, accent fissure, fracture, incongruity, the rickety, imperfect fit between word and world[...].”

Mackey, *Discrepant Engagement: Dissonance, Cross-Culturality, and Experimental Writing*.

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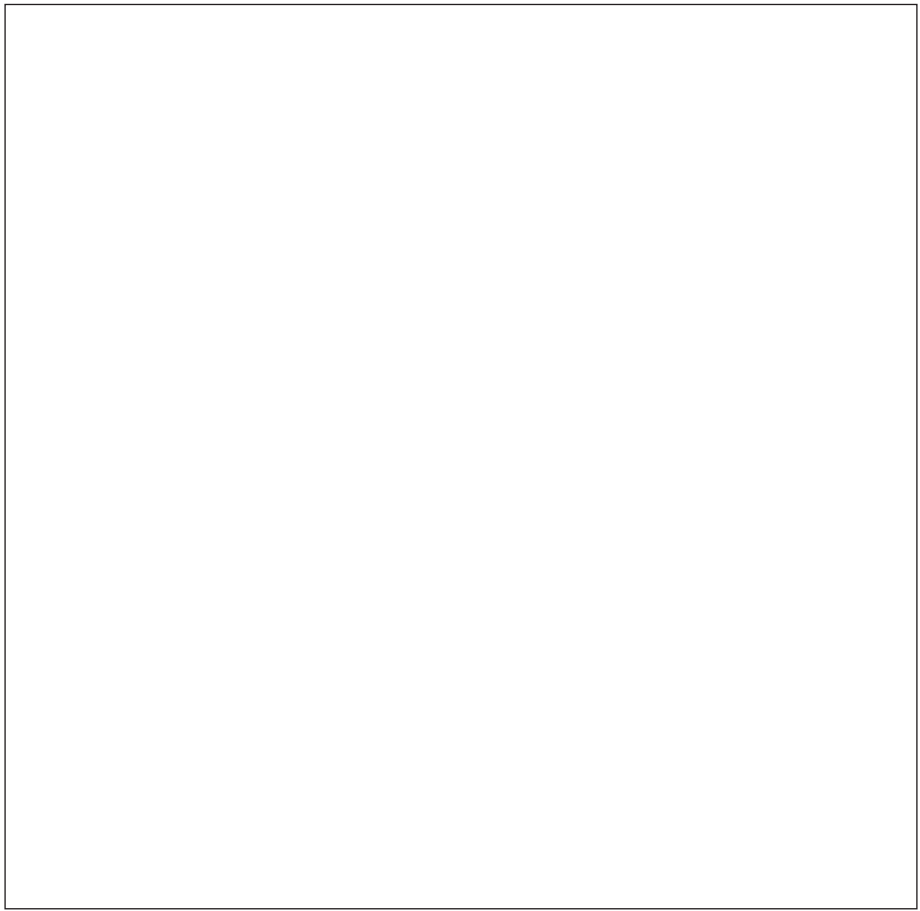
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STRIKE

A weather change brings us closer together, shifting attentions as we witness. Our focus is on movement without damage. A gooey working through flux. Under little bridges, hinges, though micro barriers, around the smallest corners. We're working together to reach. A nodding yes of limb flesh and heartbeat. The new old way to send voices. The entire body as a membrane of messages.

The first fiction breath inhaled is a seed igniting matters. A hoping shuffle for a poetry of forces. Our shadows mingle and shoulders slightly raise inviting air. The nostril cavity draws and the volumes either side of the drum-membrane change. Small ripples of gravity and micro winds of breathing mix to move our ribcage frame and mylar surface in sympathy.

Our lungs are moving and in turn an arm system ending in hands prepares a journey. Our focus shifts to the left. Curling inward the group of digits taxi to rest in support of the thumb. The drum-head sends memories of a room to the wrist. As our shell angles talk our elbow edges out from the rib side and the static wing. Core limbs and stick begin a more graphic dance. As tension in our upper arm modulates micro pressures to skin surfaces the shoulder socket rehearses a rotation. A cloud of cycles.

A micro climate of thoughts and polymer cultivate the necessary electro-mechanical dynamics to act in dialogue with gravity. A skin tuned energy axis pulses drama through our wrist. Our inaudible tones prepare for the time dance of rhythm. A compression of our thoracic nerve bundle at the collar bridge decorates the celebration of our wobble body. We increase the spaces between drum, head, mylar, elbow, shell, rib.

Above our bevel edge our hand has been organised around the possibility of sharing. A history of climbing finding futures for our gravity. The thumb digit faces upward opposing digits holding the drum-stick. Thumb and forefinger establish a forceless embrace. Middle finger and small finger offer fine tuning support. As limbs hinged in union twist energy down our forearm, the hand unit micro adjusts tension in preparation for a change. Our core bridges weight fluctuations between digits and maple. A compression of arm angles seeds a generating of energy and our wrist arcs upward. An equilibrium of coiled force and patient gravity precedes the tide change of balance. Patterns of thought and feeling coalesce to instruct a pressure poetics of falling. Our weaker echo hand dives downward through weightless wood. A liquid maple message and mylar aperture. Wooden fingers descent towards our drum-head chorus of voices.

A diffraction of our fused forces without contact or reflection sounds a new and hybrid matter. Dance hands stumble through a collapsed excitation of fields. A messy clap sounding of surfaces. No things collide but from somewhere vibrations swell to the scale of a sound or sounds. A rate of folds coalesce around the audible part of the spectrum in a uniquely textured sign. Everything is dissolved, as it always was. This time is different, a composed solution of changes: energy, ideas and the space these actions feel. Our bodies fall through a confusion of words, feelings and sound. We were always movement here, almost imperceptible fluctuations momentarily auditioned, moving against the mistakes of normalisation, order, origin. A celebration of imaginary touch.

*

“A science teacher proposed an experiment. She put three basins, the left one ice-cold water, the right one steamy, and the centre one room temperature, on a desk. She invited us to put a hand in each of the end basins, then we were to dunk them into the central basin. The central basin felt hot to one hand and cool to the other. I could feel my mind sampling one hand, and its reality. Then the changing of mental allegiance, and mental occupation of the other hand. The mind can travel inside the body. I have an idea that this experiment was the experience that turned my mind toward dance.”

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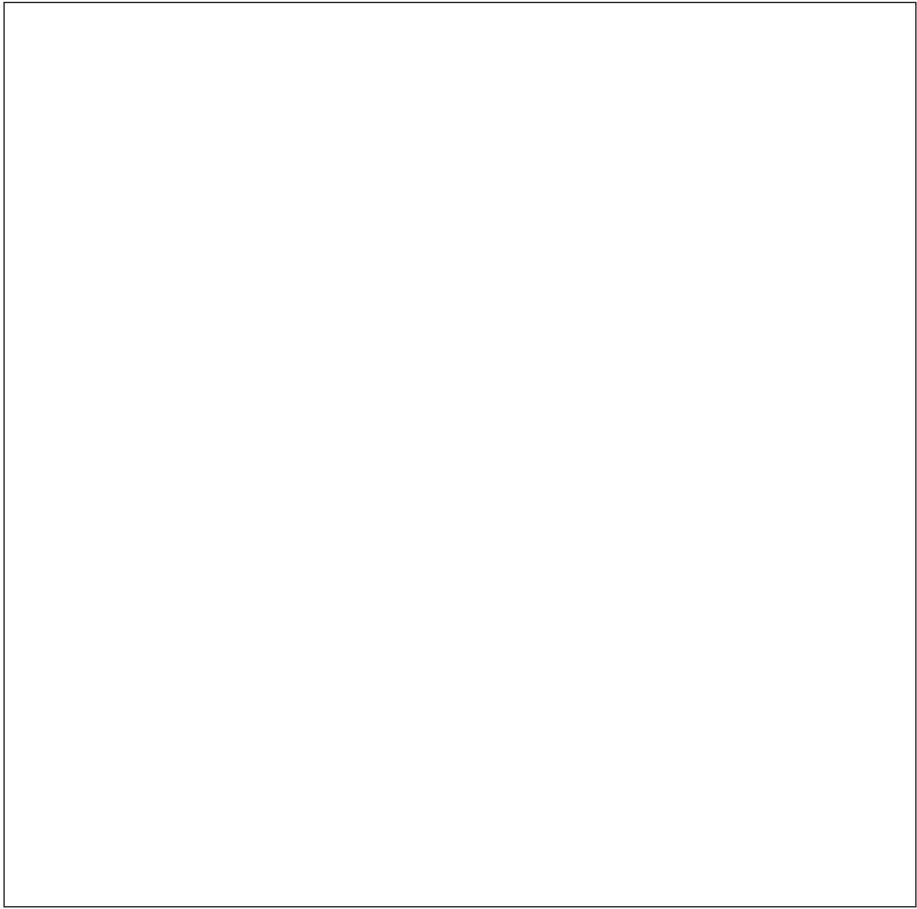
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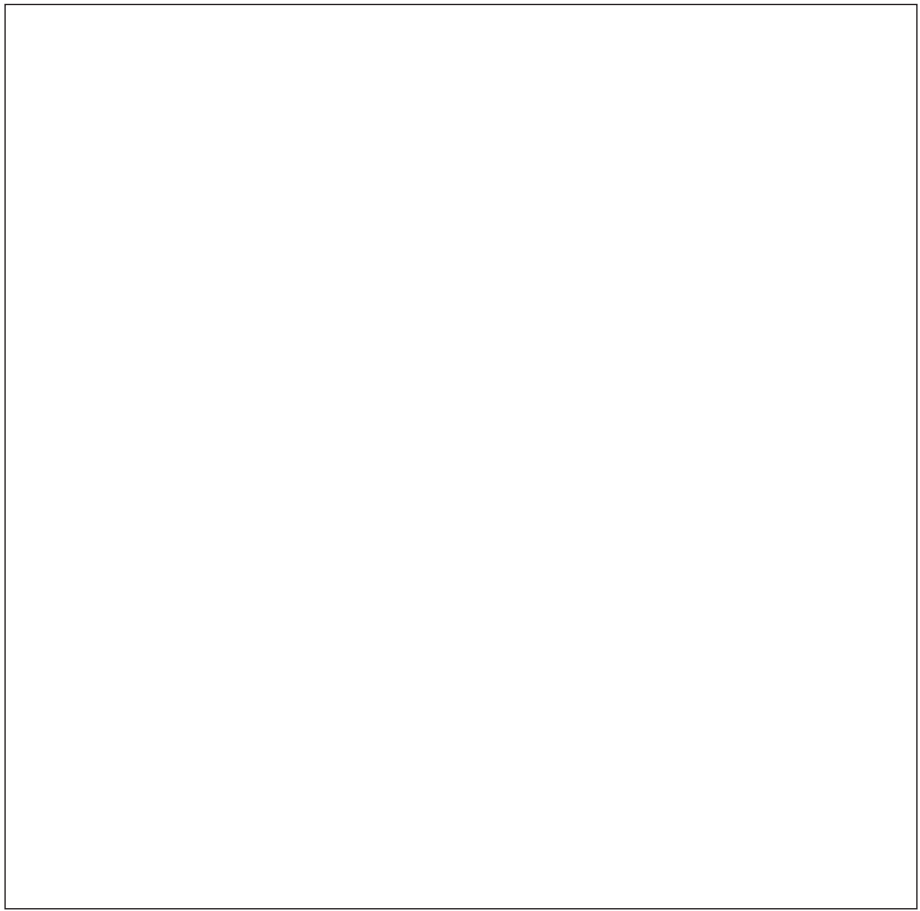
APPENDIX 1

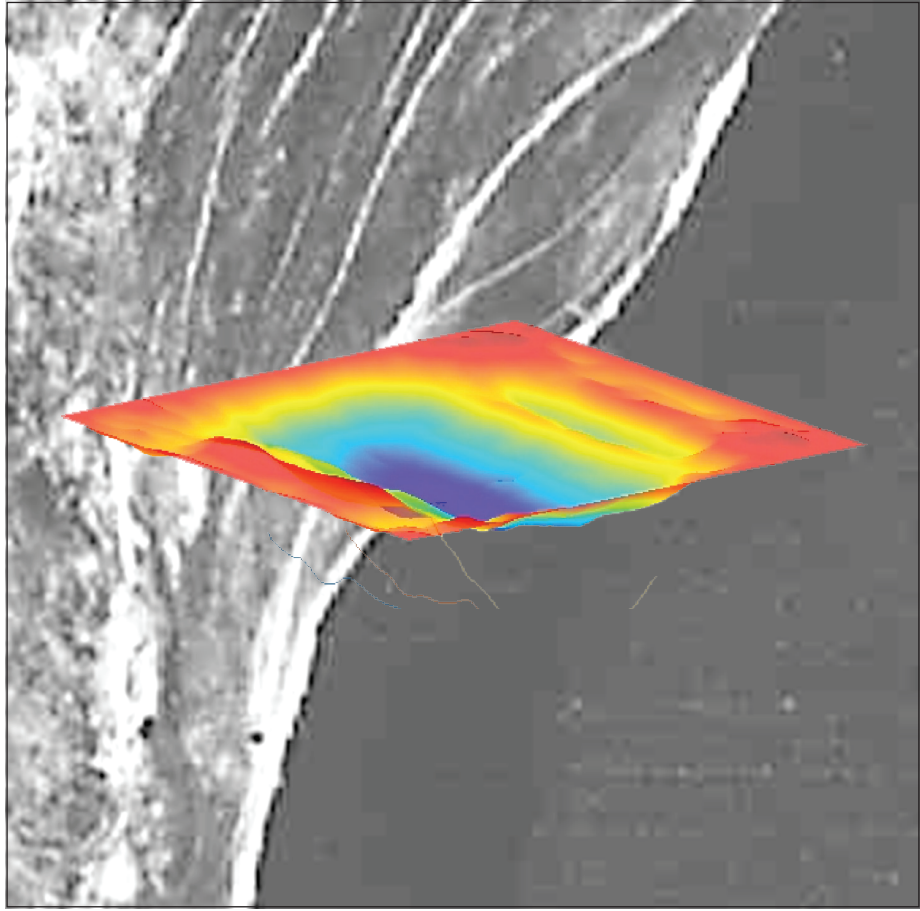
Recorded 16-18 January 2019 using: Bass Drum: Yamaha Custom Absolute Maple (Blue Sparkle); Batter Head: (unknown, clear); [resonant head removed]; Dampening Foam—Snare Drum: Yamaha Custom Absolute Maple 14"x5"; Batter Head: Remo (unknown, coated); [resonant head removed]—Hi Hat Cymbals: Sabian XS 14"—&—Bass Drum: Sakae PAC-D 14" Cherry/Mahogany; Batter Head: Sakae (unknown, standard coated); [resonant head removed]; Snare Drum: Sakae 12"x5 12" Cherry/Mahogany; Batter Head: Sakae Standard (unknown, standard coated); [resonant head removed]—Roland SPD1W; Nord Drum 2; MOTU Ultralite mk3; JHS Kill Switch; Sensory Percussion; Live, Max4L; PureData. '3D Snare' code by Alberto Torin; Microphones: DPA 4060, EV RE20, Neuman KM140, Sennheiser MD421, DPA 4060, Neuman KM140, Fishman V100, Radial PZ-DI; Monitor Speaker: Genelec 1031A.

Typeset in Arnhem.

Paul Abbott. 2019
paulabbott.net/ductus







2.2 Rhythmic Figure 2: Nsular

Welcome to Nsular, the second Rhythmic Figure. In this section, a fictional character called Small is preparing for a live performance. Small is an imagined and multiple human body. Their body is a collection of interconnected processes: organs, fluids, electrical impulses, fibres, ideas, emotions, thinking. Their live musical performance simultaneously involves an acoustic drum kit, synthetic (computer generated) sounds and writing. Small will prepare and then perform. The performing becomes more preparation. This text articulates Small's experience of the performance through the sensations and perspectives of their body.

Small will describe where they are, the various architectures of facilitation and restraint of this environment where they perform. The instrument which Small performs—a combination of acoustic and synthetic sounds—for the benefit of exploration and description, can be broken up into smaller parts, discrete elements. They will explore material and social histories of these elements. Small discovers that the practical life of music informs the choices of what elements are chosen. After reading Wilson Harris, they will think about the words which guide or describe a musical performance being like the rocks which guide or describe the flow of river water. Small will concentrate small details, small shifts, in time and the sensations of their body. Small will explore different scales at which the body or patterns of time could be structured, and at what point in a process, or where in a body this structuring could happen. They discover a variety of histories about this, from descriptions of human bodies in medicine, to diagrams describing pulse patterns made by computers. Small will notice that all these perspectives on the topic are, amongst other distinctions, culturally and geographically specific. They will explore how these perspectives might structure subjective feeling deep in their body. Small will listen closely to their body, through sounds, to find where there might be gaps between habits, customs and words. They will choreograph micro movements to organise and remember bodily movement, acoustic and synthetic sounds. Small will observe that each of the elements which make up the drum kit are discrete instruments, each with their own socio-cultural and material history.

They explore the background to this odd-arrangement of elements, and will notice that this structures movements of the physical body in an asymmetrical way. Small explores how this body responds to the demands of rudimental grid based practice using this lop-sided drum kit setup. They recognise that the response is actually a refusal which synthesises organic movements which swing and smear the regulatory rhythmic grid. Through play, Small will explore some histories of the material elements which make up their instrument: the elements which make up a drum kit and the processes which generate synthetic sounds. Small will try to investigate these materials, ask questions of it, through physical and musical movements. This will provoke new words to describe the performance. They experiment with renaming parts of their instrumentation to see if this produces new movements and sounds. Small will sit, at the drum kit, and perform. Small will swing at the hinge, where words and sounds oscillate and play into the gaps where non-standard movements and sounds mutate metaphors. They will look into cultures of time structuring, and the implications on bodies and ideas that those concepts and behaviours determine. Small will become aware that the kind of time which organises them, and the kind of time they make when performing, can be different. They learn which ideas of time dominate their habits and expression. Small will (re)introduce Qosel and Detective Engineer. Their task is to write these signs, so they can be recalled or reused as a new set of guides, for movement, sound and word making. They will call this writing, 'Fish Glue Notes.' Small will notice that their writing is a form of pulse reading. Small choreographs movements by playing the drum kit to respond to and excite synthetic sounds and fictions. They explore which bodies are implicated or excluded. Small will learn about the illusion of normal bodies and the damage they cause. Small discovers that rhythm is a vocabulary effecting the meaning and matter of time, and (like with the instrument) tests what unusual (re)wording might do. They will discover ideas about the brain and body which makes connections between perceptions of time, emotion states and regulatory body processes. They explore physical and emotional responses to small pulse changes, and will notice this requires the addition of new words to the vocabularies of movement and time. The word Orbit

will appear as a useful term to reimagine how some music happens independently of the apparently direct volition of Small's performing body. Small learns about futuristic old clocks and what algorithms are. Small will focus on algorithms to explore and modulate relations between organic and synthetic movements. These sets of relations will extend a dialogue between body and fictional characters. Small will think of this as a dialogue between the real and the imaginary. They discover diagrams, and will recognise that perfect circles might be trouble. The idea of rebound will become, repeatedly, important. Small will witness a joke about a truck, and realise how interesting, important or humorous it might be to explore the a-synchronicity of sets of relationships, between things. Music will sound at the intersection of the truck joke. Small will take what they feel about the truck joke into a structuring of little bits of time and the feelings of small patterns and cycles. The joke becomes a way to imagine a proliferating pulse, and will remind Small to attend to larger musical structures and physical movements, in addition to the subtle granularities and micro wobbles of small-scale patterns. Small will recognise that these time structures are also body structures. Small will encounter various ways of inscribing and describing the physical body which have different and sometimes conflicting implications. They will experiment with a stratification system, a temporary taxonomy for their body. They will think about sedimentation. Qosel and Detective Engineer are introduced, who will develop characterisations to catch significant, signifying moments of Small's performance. They will discover that writing is not just words. Small will introduce Oeandha, who will write about touch. With Qosel and Detective Engineer, Oeandha will compose a booklet. In this section Small will continue to be educated by the feel of things, and the generosity of guests.

•

Small is hosted, now and January 2020, by a hi-definition multitrack recording environment, 96khz, partially carpeted walls, a red 'on air' light outside the door. This room is affording them the possibility to play as fluidly as is possible, given the thankfully imperfect capacities of their generally conventional body.

The multi-tracks permit a stratification of angles, recording microphone-biased documents of a collected body activity. They are in Alison House, Edinburgh, two abandoned shopping centres in Porto, and a place called ‘pegs’ in Brussels. Another architecture modulates these rooms: a musical instrumentation emerging out in front of where Small is sat. During these recording days, this instrumentation is Small’s collaborator, a guide, and their limits. The instrument is: 20” Yamaha Custom Absolute Blue Sparkle maple bass drum, batter head (unknown, clear), resonant head removed; dampening foam; 6.5x14” Ludwig Supraphonic LM402 snare drum, Remo Ambassador Black Suede batter head, resonant head removed; 16” Yamaha Custom Absolute Blue Sparkle maple floor tom, Remo Pinstripe batter head, resonant head removed; 13” Yamaha Custom Absolute Blue Sparkle maple tom; Remo Pinstripe batter head, resonant head removed; 13” Ziljian Quick Beat hi hat cymbals; Tama Iron Cobra pedal, Accu-Strike Beater; MOTU Ultralite mk3 interface; Sensory Percussion, Live, Max, Razor, Chromaphone 2 and Matlab software; DPA 4060, EV RE20, Neumann KM140, Sennheiser MD421, DPA 4060, Neumann KM140, Fishman V100, Radial PZ-DI microphones; a Genelec 1031A monitor speaker.



Figure 4: Performer’s drum kit, Alison House, Edinburgh, 2020.

Small is playing live, recording, a synthesis. They are limited to three day blocks of eight hours, which they think of as up to 70 minutes, in an attempt to fit

the conventional length of an imagined, but likely redundant CD. A text is being written to generate and accompany these audio recordings. They are recording, live, basement room days in a building in Edinburgh, pillow wall days in a shop unit in Porto. The heater works, they are comfortable. Nsular performs affordances. Small is starting to prepare, be prepared. Seeds, modulations and form. Small is here again, listening. Small is “continually assessing their surroundings.” Continually critical, optimistic, uncomfortable, learning. Small is an imaginary water-clock musician. They are the liquid voice of a musical or fictional body, describing a performance with clock-like attention, water like mutability. Small listens for concentrations and breathing spaces in the motions of their pulse. They are trying to find and release tension. The architecture of temporal repetitions emerging from the organisation of this clock is the rhythmic character of the performance. Small is a body in the process of preparing for the conditions of the performance, and the process of preparing the conditions of a body for the action of the performance. Small is learning about what a body might be. Performance modulates forces in motion, transforming Small, and their environment. Through the feeling of sounds and words through their body, Small feels resistances as they perform. They hear poet-scholar-theorist Fred Moten’s late first sentence, “performance is the resistance of the object,”¹³⁹ and hear resistance through Wilson Harris’ living rock statement “the waterfall ledge is too long before the fall.”¹⁴⁰ Words perform a tidal function, a red light and bevel at the intersection, like a joke about a truck (later) in the emerging flow of music.

The phenomenon of apparently immobile rocks which play a tidal role in non-tidal rivers is a miracle of evolution. [...] The rocks perform a tidal function in the scaffolding of the traffic of rivers. A fantastic balance between conservation and discharge of resources is achieved in the sculpture and placement of the rocks. In my years of surveying rivers I was drawn into the sensation that sleeping and singing rocks are also dancers (stationary as they seem) even as trees and plants are known to

¹³⁹Moten, *Black and Blur*.

¹⁴⁰Feld, “‘Flow Like a Waterfall.’”

walk under the close scrutiny of science.¹⁴¹

‘Smaller forms may be expanded by means of external repetitions, sequences, extensions, liquidations and broadening of connectives. The number of parts may be increased by supplying codettas, episodes, etc. In such situations, derivatives of the basic motive are formulated into new thematic units. (Schoenberg 1967)’ [...] Serial or germ-cell approaches to composition expand a series or a formula through permutation and combination into larger structures.¹⁴²

Small listens to musician Cecil Taylor’s *Garden* emerge from Harris’ musical landscape, mixing with Road’s and Schoenberg’s germs and liquids. Small hears larger musical feelings take shape out of Taylor’s energetic low level spontaneous composing of micro-variations in dynamics and timbre.¹⁴³

Through infolding movements of play and writing, Small is listening for, learning about, the histories and habits sedimented deep in their body. They perform the synthesised mix of incoming ideas and a grain of pointers constituting a kernel part of the growing macro character. They combine a maximum of precision—prescription, determination—with the comedy swerve of unavoidable and generous theatres of openness, improvisation, social life. They balance grain and memory. Small hears Milford Graves remark that difficulty remembering the music means there was total absorption in the performance.¹⁴⁴ Small moves to the bevel edge to remember or recognise the feeling of forms emerging in the music. The architecture of the acoustic drum kit arranges the possibilities of organic movements and memories.

This acoustic drum kit—asymmetrically in front of Small—is a set of individual drums, and cymbals collected as a set through cultural conventions and history. The drum kit is a set of physical materials, and thereby constraints, organising

¹⁴¹‘The Music Of Living Landscapes’ in Harris and Bundy, *Selected Essays of Wilson Harris*.

¹⁴²Roads, *Microsound*.

¹⁴³Draksler, “Cecil Taylor: Life As... Structure Within a Free Improvisation.”

¹⁴⁴Graves et al., *In Conversation*.

¹⁴⁵Templates for movement are derived from abstracting drum kit elements (organic) and pulse pattern configurations (synthetic).

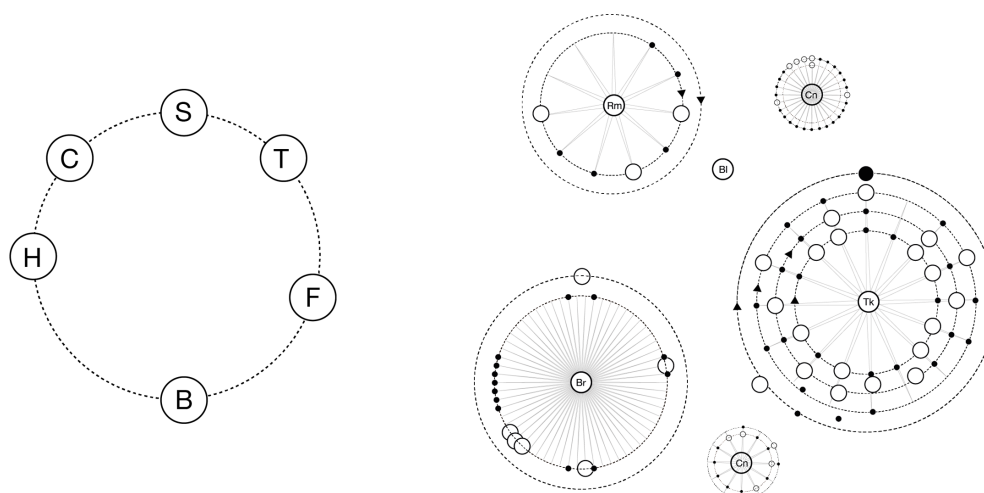


Figure 5: Templates to choreograph organic (left) and synthetic (right) movement¹⁴⁵

Small's body. This kit is a persuasion, a set of elements, a cast of histories, each with its own story, nested as a compound of stories. The drum kit idiosyncratically organises and encloses a body through the spatial, emotional arrangement of the set of individual drum elements. Small is surrounded, sat in, encircled by, and modulating this cast of histories. What they feel as expression is the reproduction of their body modulated, respoken by these historical voices. Words bounce off the walls. The drum kit re-characterises organic movements of their body: expressing a complex cross-cultural weave of cultural, social and political histories, and the materials and peoples which articulate those flows.¹⁴⁶ The kit instrument is the tool or sub environment from within which their body is sounding, reading, learning time. Through this instrumentation, Small is becoming an electro-chemical emotion clock. But rather than a mechanism for articulating exactitudes of division and mechanical ordering, Small—instrument, body—is generating a swerve pattern architecture of time grown through play. Both clock and body entangle in time.

This drum-kit or weather-clock is organised around a central seat. Surrounding this seat, feeling out front, clockwise, to the right (as is a convention, often, in Western

¹⁴⁶“The transatlantic slave trade is a crucial context in which to understand the origins of the historically low status of drums and drummers. [...] racially prejudiced dismissals of drum-based music-making were unfortunately commonplace in nineteenth-century musical discourse.[...]” Brennan, *Kick It*.

music idioms) are the drums known as snare, tom, floor tom, bass drum, hi-hat, tom. A kind of circular spiralling form holds these discrete elements together. Time relationships could describe the spacing between these elements. Floor tom rests 768 milliseconds to the right of the snare drum, which rests 2635 milliseconds away from the ride cymbal, which sits 1103 milliseconds to the right of the top tom. Small feels an asymmetrical ergonomics of this instrumentation in their body practicing to read some text or regularity. The published performance of a drum kit (playing, to an audience) can be a graphic illusion of volition. What appears to be an intent (cause) to sound (effect) chain, hides the complex contingent nature of the situation. Small finds a study ‘Movements, Timing, and Precision of Drummers,’

Drum strokes can be considered discrete events, separated in time, but they are typically linked together by continuous motion. In order to deliver a stroke on time, its preparation may be initiated as early as during the previous stroke. The feedback and rebound from the instrument also affects the preparation for nextcoming stroke, something that skilled players can take advantage of. Furthermore, the striking movements can also convey visual information on expression and timing to observers.¹⁴⁷

Small’s moving, performing body is the trick at the centre of a stage, animating a critical exploration and sounding the music of research. Their musical body is mediating with the situation it co-produces. The matter acts. Small is a body of ideas, blood, electricity, habits, history, which through movements modulate sound sources and their material vehicles, the behaviours of algorithms, the feel of this room. This is an vibrational ecology which fluctuates them. The process of performance also modulates the matter of subjects. For Small the matter of vibration always returns, rebound, to is cold feet or concrete.

Small encounters three dances, Milford Graves, in the snow, in Queens;¹⁴⁸ Andrew Cyrille in a grand room in Paris,¹⁴⁹ and Susie Ibarra at Cafe OTO in

¹⁴⁷Dahl, “Striking Movements.”

¹⁴⁸ICA Philadelphia, *Mondays with Milford*.

¹⁴⁹Patris, “‘Les Grandes Répétitions’ Cecil Taylor à Paris.”

London.¹⁵⁰ Graves' moves are asymmetrical, spontaneous and deeply organised oscillations—this is his method, part of a suite of approaches—to learn the vibrations of weather and a thinking body through a moving interface of limbs in the cold. Drummer Andrew Cyrille is being filmed, in a large and grand room in Paris, with pianist composer Cecil Taylor. He moves in a focused and patient way adjacent to the perpendicular swing of a pendulum crossing a complex group music.¹⁵¹ Percussionist composer Ibarra sounds the deep intelligence of touch and sensitivity to context, as edges of time and contact dissolve through endless, organic permutations. In all these instances, Small notices, that instead of a disciplining metronome, a generosity of interference patterns emerges to write their dance. Small learns a situation like this can be called ecological. This means interconnected, or together like nature, or an ocean.

Small feels there is always more going on than any apparent centre of attentions. An open field of attentions is emerging out of previously peripheral forces and materials in motion. Small is sat within some fabric, weave, net mesh of pulses, some smaller than their body, some larger, longer. Small moves back to the waterfall edge, the semantic bevel, to take a digression to rewrite the matter of drums through experiments in metaphorical mutation:

Experiment memory One

From finding feet down at a conventional set or setup of technologies written through latin root vegetables, twisted. The normal mode doesn't fit, so this is the plan. "A process of reasoning by parallel cases," but if these cases, their lines slip together, or these are terms suspended on a ring, orbiting. Names of things, Bloboy, like High Hats or Lowboy. This net, mesh, kit, being in a Sphuzo future made up of (along the latin route) Curcubita, Asariberi, Brassica, Solanum, Uvacrispa, Pyrus (invisible), and the Orbits. Division, discretion, separation being only an abstract act, slicing of the blade, a semantic autopsy reduction—but, to unfold for the purposes of registration—arranged in conventional mode (following the emergent drum-kit standards of contemporary western

¹⁵⁰Ibarra, *Rhythm Cycles* - 7.11.19.

¹⁵¹Patris, "‘Les Grandes Répétitions’ Cecil Taylor à Paris."

popular music culture in the Northern hemisphere).

Experiment memory Two

In houses of at least 2, what Small feels is: A hollow and truncated Curcubita cone is composed of a number of sheets of tonewood ply, stacked, wrapped, glued and fused—A larger truncated cone—faced a foot forward (for imagined address). This cone is stretched over an upper end is a thin mylar membrane, a few millimetres thick. For cylinder seasoning this plastic ear is interchangeable. A Synthetic CurcubitaX Stretches out from Curcubita wood, augmenting this nature. Holding this surface to the Curcubita body (this is a feature of all the cones) is a metal rim edged with threaded rods that I turn to adjust the tension and overall metabolism (tone) of the cone. A flattened pouch covered the outer plane of both the Curcubita, and another smaller, central, and upward facing cone. This underside auxiliary gag refocused spill. Sitting feet, tri-faced forward. Brassica—the smallest of the cones—is positioned on top of the Curcubita, in front, away from, and often slightly to one side. Directly in front, roughly in the centre of a field of options, between two lifts, is the Asariberi. This stainless tube has between 8 and 24 thin and twisted pieces of metal-wire that vibrate against the lower, ground facing surface, to contribute a buzzing character to the voice of the cone. To the left of this, slightly forward, is the Uvacrispa, a pair of smaller elevated alloy discs, connected to a pedal by my sock. These discs rest face to face, some inches apart, or close in contact should my sock drop.

Small emerges in a cloud, the cloud-in-space described by Anthony Braxton, feeling that semantic slippage and opportunity might be encouraged by timbral ambiguity. Small hears timbral-vibrational irregularity offer the possibility of complicating the apparent physical source origin or archetype of sound. This leads Small to a closer consideration of synthetic sound, extending the drama. Small gravitates towards the non-standard sounds opening the body to non-standard choreographies. Less pressure on the limbs, new timbral interest growing out from uncaged patterns. Small detects multiple simultaneous feelings, from each sound. Combinations of parts of their body, and the emotions which produced or followed these feelings. This was not the simple matter whereby high frequency sounds appear to talk to the

nervous system, or low frequency sounds the intestinal system. This is the complex conversation weaving timbral-rhythmic and electro-fluid body music. Small hears Graves, on polymeter play,

And it's not only twofold, where they're talking about the two parts of the brain, it's multifold. [Addresses the right forearm held out, clenched fist] Because that simple type of sadness may produce, like, subdivisions of that sadness. [Arm raised, opens hand] That takes on all different types of degrees of sadness.¹⁵²

Small is growing a space through which synthetic sounds emerge and rhythmically play organic movements through synthetic choreographies. Imagined sound pressures release hidden physical and cognitive motions. As Small moves limbs around the instrument, their glancing, bounced or brushing gestures effect the story of synthetic sounds which modulates the drama of (pre- or de-) scripting. They feel the timbral and rhythmic character of synthetic sound effecting physical movements, and the body, moving, in turn effects the rotary story of the synthetic sounds. Small is modulated through variable *response pattern* relationships. They are concerned: is it elegant?

Small is finding ways to massage, write and be moved by time. Making and unbecoming in time. Finding what is elastic, stretched with pressure, as growth plays them, without a slash or slicing time. No clocks are innocent. They begin with something undivided, a range of motions. As some sense of time emerges, Small is establishing a politics through the language which names it. This language clocks the world it describes, and the bodies which both populate and action that world. In addition to, alongside, entangled with semantic-taxonomic issues of describing discretions of time, toward establishing an architecture based on this description, is a way into slivers, words, parts of time through the feelings of the body. Small finds a book called *Master Studies* which appears to provide frameworks to focusing

¹⁵²Graves, transcribed in Holder and Abbott, *Very Good**; In support and contrast, Small hears echoes of drummer Eddie Prevost, who quotes "we are searching for sounds and for the responses that attach to them." Cardew, quoted in Wright, "The Group Learning of an Original Creative Practice: 1960s Emergent-AMM."

attention on the small differences in time perception and a feel for idiomatic patterns. These disciplines program a musician to move in relation to a system of metric regularity and grid sub-divisions. They immerse in play to find a rhythmic and embodied practice of becoming sensitive to smaller-more subtle distinctions in the changing quality of time.

Small is preparing to play, learning to listen and perceive their situated performance with greater detail, not to locate essentializing facts or matter. They are learning to read the effect of the time they generate and divide, learning about their body as they are organised by time. They are slow, carefully attempting to relax into un-clocked uncertainty. As they differentiate part from whole, long cutting twists require words cleaved from the field. As they move, divisions are re-organised, and they restructure time patterns to relieve tensions. Through a sense of pulse, through the body, Small is learning about time. Their pulse swings with a flexing in-between, which they sense is not fully described by the concepts meter or rhythm. Small is inhabiting and holding together drums and body parts, as they move and listen. Wood, skin, plastics, viscera and metal modulate time as they sense the pulse or character of a repeated figure or time-frame. Without and alongside thinking, they inscribe time as it is expressed through organic matter and synthetic patterns. Heartbeat, bloodflows, fascial elastics, eardrum excitation, neural pathways, air pressure changes, sound waves, semantic concentrations: all press time through feelings and emotion into a body reading for the character of change. Their body is a conditional language, writing volition, to read sounds organising attention. Their first reading is gentle, slow, fluid, or a slice. Small acts to write the time they sound, through a series of folds and returns of physical movement. Small reads philosopher Micheal Serres in *Rome: The First Book of Foundations*, as he kneads time and bread to encourage a sense, the possibility of foldings, thickness, residue. They feel their body kneading the passing of time into various and shapely cages.

Time enters into the dough, a prisoner of its folds, a shadow of its folding over.¹⁵³

¹⁵³Serres, *Rome* and in Holder and Abbott, *Very Good**.

Repeats bounce Small's body, and algorithms move to organise, unfold or re-read their pulse. Small learns of periodicity in practice and cycles, phases of growth. Small feels words collect then pass, through their body. They use these words to reimagine the passing of time as a streamed collections of chunks, bumps, elements, grains, dust, or blocks. As Small moves, their limbs test this lexicon of imaginary musics. Small learns that a convention, in some musical practice, is to divide time evenly and systematically and have everything relate to one central kernel 'whole note' of time.¹⁵⁴ Chunks of repeated physical activity, as groupings of these notes or divisions of those notes, might be called a pattern, ostinato, rhythm, chain, timeline, sequence or *figure*. The word rhythm sticks, but growth, Small notices, is happening through movements which smear across, stretch between, proliferate and confuse divisions. This sliding pulse world is their stethoscope, library, a politics, their ears. Small recalls a warning, and hears drummer Jerome Cooper, "Rhythm is secondary to me.. I'm not into rhythm.. I'm into sound. Once you get into certain sound frequencies, the rhythm will come."¹⁵⁵ Small is exploring if this passing and play of time is a slicing or a swim. They discover that the way they inhabit and perceive time establishes a political and affective pulse economy. This is simultaneously a spatial, semantic and emotional economy. Small is organising and moved by beats and rests, eyes and windows, movement and discretion. They becoming aware that these patterns are defined by and facilitate emotions, and that these emotional semantic environments have implications.¹⁵⁶

Small learns many conflicts and overlaps in practices and descriptions of rhythm. They discover that in music, rhythm often refers to a pattern of quantised time. They read computer scientist Godfried Toussaint who in *The Geometry of Musical Rhythm* says, "rhythm is the highest and most autonomous expression of time-consciousness," and provides a list of rhythm definitions.¹⁵⁷ Small notices

¹⁵⁴Partch, *Genesis of a music : an account of a creative work, its roots and its fulfillments*; Helmholtz, *On the Sensations of Tone as a Physiological Basis for the Theory of Music*.

¹⁵⁵Cooper, Jerome Cooper - Extended Interview.

¹⁵⁶Baraitser, *Enduring Time*.

¹⁵⁷A few examples of definitions and characterizations of rhythm, both ancient and modern: Plato: "An order of movement." Baccheios the Elder: "A measuring of time by means of some kind of movement." Phaedrus: "Some measured thesis of syllables, placed together in certain

these definitions seem sourced narrowly from Western classical philosophical or musicological sources, and hears Ibarra, “birds were the first drummers.”¹⁵⁸ Small feels prescriptive rhythms establishing affordances and limits, blindspots and rivers. Small hears composer Curtis Roads, and reads about “microsound composition” and incomplete stratifications of the ordering of time.¹⁵⁹ Small is considering the nine stratifications of time described by Roads, and imagines the gaps. Small plays with layers or levels of pulse organised into granular, micro, and macro patterns. Macro pattern is body movements, discernible pulse, ‘beat’ and so on. Small begins to collect pulse layers which weave invisibly through rhythmic relationships and response patterns. There are deep rhythm structures that inform emergent, higher order rhythmic patterns and sound qualities. Small is growing through an integrated physical-acoustic, synthetic, algorithmic pulse environment which is variable, contingent and modulated through live performance.

Another repetition and Small is struck again, that the vocabulary of rhythm effects

ways.” Aristoxenus: “Time, divided by any of those things that are capable of being rhythmized.” Nichomachus: “Well marked movement of ‘times.’” Leophantus: “Putting together of ‘times’ in due proportion, considered with regard to symmetry amongst them.” Didymus: “A schematic arrangement of sounds.” D. Wright: “Rhythm is the way in which time is organized within measures.” A. C. Lewis: “Rhythm is the language of time.” J. Martineau: “Rhythm is the component of music that punctuates time, carrying us from one beat to the next, and it subdivides into simple ratios.” A. C. Hall: “Rhythm is made by durations of sound and silence and by accent.” T. H. Garland and C. V. Kahn: “Rhythm is created whenever the time continuum is split up into pieces by some sound or movement.” J. Bamberger: “The many different ways in which time is organized in music.” J. Clough, J. Conley, and C. Boge: “Patterns of duration and accent of musical sounds moving through time.” G. Cooper and L. B. Meyer: “Rhythm may be defined as the way in which one or more unaccented beats are grouped in relation to an accented one.” D. J. Levitin: “Rhythm refers to the durations of a series of notes, and to the way that they group together into units.” A. D. Patel: “The systematic patterning of sound in terms of timing, accent, and grouping.” R. Parncutt: “A musical rhythm is an acoustic sequence evoking a sensation of pulse.” C. B. Monahan and E. C. Carterette: “Rhythm is the perception of both regular and irregular accent patterns and their interaction.” M. Clayton: “Rhythm, then, may be interpreted either as an alternation of stresses or as a succession of durations.” B. C. Wade: “A rhythm is a specific succession of durations.” S. Arom: “For there to be rhythm, sequences of audible events must be characterized by contrasting features.” Arom goes on to specify that there are three types of contrasting features that may operate in combination: duration, accent, and tone color (timbre). Contrast in each of these may be present or absent, and when accentuation or tone contrasts are present they may be regular or irregular. With these marking parameters, Arom generates a combinatorial classification of rhythms. C. Egerton Lowe writes: “There is, I think, no other term used in music over which more ambiguity is shown.” Then he provides a discussion of a dozen definitions found in the literature.’ Toussaint, *The Geometry of Musical Rhythm*.

¹⁵⁸Ibarra in Graves et al., *In Conversation*.

¹⁵⁹See ‘Time Scales Of Music’ in Roads, *Microsound*, 5, fig 1.1.

meaning and matter, and sometimes the languages of musicological analysis do not match evidence from the culture. Small discovers another way to describe a combination of pulse patterns, called ‘additive rhythm,’ and that this concept is often associated with rhythmic forms derived from or developed in West Africa. In *Representing African Music: Postcolonial Notes, Queries, Positions*, ethnomusicologist Kofi Agawu asks “Do African musicians think additively?”

The evidence so far is that they do not. Writing in 1972 about the Yoruba version of the standard pattern, Kubik stated. ‘There is no evidence that the musicians themselves think it as additive.’ I have argued elsewhere that additive thinking is foreign to many African musicians’ ways of proceeding. [...] Then, too, there appears to be no trace of an additive conception in the discourses of musicians, whether directly or indirectly. [...] It would seem, then, that whereas structural analysis (based on European metalanguage) endorses an additive conception of the standard pattern, cultural analysis (originating in African musicians’ thinking) denies it. [...]¹⁶⁰

Small listens to drummer Shannon Jackson’s *Pulse* while thinking again of Wilson Harris.¹⁶¹ Small feels that there are different kinds of words which do different things to music, and learns about timbre semantics, and some categorisations. Small reads about “The Semantics of Timbre,” where acoustics researchers Saitis and Weinzierl say, “combining previous theoretical accounts of musical semantics with empirical neurobiological evidence, Koelsch (2011) concluded that there are three fundamentally different classes of musical meaning: *extramusical*, *intramusical*, and *musicogenic*.”¹⁶² For Small some words write abstract ideas about music, some words guide music through vibrations, some words open images from sounds. Beats, eyes, windows, rests. And accountability. Small gets a feel of a pulse pattern made of blocks and refusals and, listening to *China: Folk Instrumental Traditions* learns from ethnomusicologist Steven Jones in *Folk Music of China* that, in contrast, in

¹⁶⁰Agawu, *Representing African Music*; Also see Perchard, “New Riffs on the Old Mind-Body Blues.”

¹⁶¹Jackson, *Pulse*.

¹⁶²Saitis and Weinzierl, ‘The Semantics of Timbre’ in Siedenburg et al., *Timbre: Acoustics, Perception, and Cognition*.

some Chinese traditional folk musics, historical evidence shows rhythm is described in terms of beats and eyes.¹⁶³ Small imagines beats and eyes generating a new dance of movements, and feels the sounds of those movements in their body. As this is happening concepts of time divide their attentions and register Small as an object. Time according to both musicologist Justin London and philosopher William James is a matter of attention.¹⁶⁴ Small discovers neuroscientist Bud Craig, who leads Small through the interior of their body, to the skull and into the island fold of the anterior insula brain region.

The anterior insula is crucial for our subjective sense of time, that it is uniquely responsible for our sense of cross-modal synchrony, and that it is critical also for our capacity for creating and appreciating music.¹⁶⁵

Small senses emotion in response to sounds report the qualities of time and homeodynamic bodily processes. They feel rhythm reflecting the qualitative state of their body. Small decides to concentrate their attentions on micro movements of time, the organisational feelings of rhythm, to better read and understand their body as it performs. Small begins to establish micro rhythmic conditions for their possible music. Thread. Body attention, designing by acting a variable synthetic pulse pattern environment. Their body, in excess of the mechanical dance, begins to choreograph synthetic movements, in orbital movements. Small is developing a pulsing synthetic sound environment constituted of precise but variable rhythmic structure patterns. Each swerve of the pulse speaks their history, their friends, conditions. Small is negotiating the growth of a small unit of wobbly repetitions to generate tangential pulsing events in a micro-fluid or like fabric. They watch as instrument designer Don Buchla presents their own fiendishly complex pattern generator, the *200e* and ask, “*how complex can a metronome be?*”¹⁶⁶ Buchla’s instrument elegantly employs combinations of pulse patterns arranged in orbit

¹⁶³“Musicians use the term *pai*, ‘beats,’ to describe the metre of their music. Urban and literate musicians, at least, will know the term *banyan*, ‘beats and eyes.’” Jones, *Folk music of China: living instrumental traditions*.

¹⁶⁴London, *Hearing in Time*, James, W. in Holder, W. ed., *F.R.David*, ‘Correctional Facility,’ 2021

¹⁶⁵Craig, *How Do You Feel?*

¹⁶⁶Buchla, *Don Buchla - How Complicated Could a Metronome Be?*

formations to generate complex emergent results. Small thinks of water clocks, but notices the absence of irregularities, swing, slippage or traffic.¹⁶⁷

Milford Graves insists on accommodating heart beat variability.¹⁶⁸ Small moves to something perpendicular to feel a body of organic micro-rhythms. Small imagines a micro-rhythmic interpretation of a truck joke recited by engineer-inventor Ibn al-Razzāz al-Jazarī. Small begins to organise musical material through a comedy learning mix of direct and indirect participation. They focus again on growing and exploring rhythmic relationships between the drum kit and synthetic sound patterns. Small picks up *The Book of Knowledge of Ingenious Mechanical Devices (Kitāb fī ma ‘rifat al-ḥiyal al-handasiyya)* and encounters 'The Water Clock Of The Drummers'.¹⁶⁹ The clock, designed by Ibn al-Razzāz al-Jazarī, utilises mechanical operations to direct water to choreograph a drama of characters which animate the passing of time. Small notices that reading the description of the clock changes their sensation of the present time. Small learns 'algorithms' are "a finite sequence or structure of instructions."¹⁷⁰

Small beings to write notes for an algorithmic system (in the style of the water clock descriptions) to grow organic and synthetic movements. They imagine flexible pulse patterns which will respond to and catalyse organic movements of the body, direct synthetic sounds and choreograph micro musical rhythms. They call this part of their instrumentation Orbit.

Orbit notes: choreographing synthetic movements: An algorithmic pulse stream or series of streams produce an orbiting pulse which determine the timing and quality of synthetic sound objects it generates. Bachelard, *Air, Water*. A pulse is a short duration 'event', with no duration information. The

¹⁶⁷Buchla, "Buchla Lem3 Spider 252e User Guide."

¹⁶⁸Meginsky and Young, *Milford Graves Full Mantis*.

¹⁶⁹Ibn al-Razzāz al-Jazarī, *The Book of Knowledge of Ingenious Mechanical Devices*.

¹⁷⁰"Ideas about what we now call 'algorithms' can be found at least as early as 900 AD, and in many different cultures, from Arabic and Greek to Indian. Clearly the word has relationships to algebra, and there is a sense in which a contemporary piece of algorithmic music has access to the whole codification of mathematics, as well as programming languages." Dean and McLean, *The Oxford Handbook of Algorithmic Music*.

bare bones; a series of dots, points, along an imaginary (tacit) continuum or stream. This 'stream' is the time these pulses are situated in. Harris. Stones in the river. Tidal rock. The pulse streams are organised into patterns (patterns of pulses, grouped lumps of time, rhythmic units). These pulse-streams are semi-autonomous. They persist independently of external stimulation and respond variously to external influence. Various qualities of these pulse streams are modulated by the activity of the physical body. The body performing live generates contact events. A hand or foot, mediated by stick or pedal, in contact with, landing, on an acoustic drum element, constitutes a (physical) contact event which stimulates a (synthetic) response. A synthetic response movement is the quality of change to each pulse stream. At the moment of each contact information about the quality of that contact event (timbre, pressure, speed, timing etc.) is generated and potentially sent to the pulse streams. Butler, Fourier. The relationship of each physical contact event to a pulse stream is mediated by a response pattern. An physical or cognitive version of response pattern mediation is our thoughts, environment, our dreams. Perceptual filtering. The response patterns are themselves pulse patterns and timing quality variables which determine the effect a contact event has on the qualities of a pulse stream. Each physical contact event, mediated by the response pattern, can stimulate a variety of responses. An onset event stimulates a single sound object to play; a burst event stimulates a pulse stream to trigger sound objects to play for a certain duration, with a certain character. The initial excitation might be either an internal master pulse or external source. An external acoustic drum onset event triggers a step through each pattern pulse. Each onset might be determined by another variable, onset trigger pattern or external (acoustic) drum onset event and triggers the pulse generator for a burst of some milliseconds. The pulse stream is organised into patterns by specifying

the size of the duration between each pulse event. This is known as inter-onset interval spacing. Fell, Treanor. Inter-onset intervals are specified as a string of numbers, as an alternative to specifying divisions or subdivision proportions to a parent meter.

Having imagined these first steps of a computational scheme, Small discovers a commentary by musician Mark Fell in his thesis *Works in sound and pattern synthesis*, in response to Anne Danielsen's ideas on rhythm in her *Musical rhythm in the age of digital reproduction*¹⁷¹ Fell quotes musicologist Danielsen:

[M]ost scholars privilege the attack-point rhythm and ignore the potential impact of sound or any other non-timing aspects. The temporal location of the rhythmic event is identified with its point of attack alone, and relevant durations (or the distances between events) have been conceptualized as the intervals between such attack points, the so called inter-onset-intervals (IOI).¹⁷²

Following this concentration on time-spacing, Small plays the feeling of gravity pressure, or height spacing into the mix of movements. Micro swing brought to bear (up) into vertical oscillations. Small thinks of the "rebound:" the word used to describe the moment a drum stick bounces back up, off the drum head membrane, following a landing. This rebound is a particularly concentrated moment of interaction between body and instrument. A chance for the body interface to read intense moving musical pressure changes. Small reads researcher Sofia Dahl in *Striking movements: A survey of motion analysis of percussionists*,

Playing with an implement makes it possible for a player to excite an instrument with more force than the bare hands. If held in a relaxed grip, the stiffness of a drumstick also allows the player to use the rebound from the impact. A normal drumhead is elastic, which allows the drumstick to move "on its own." At slow tempi, and for single strokes the effect of the rebound on the drumstick movement is easily observed.¹⁷³

¹⁷¹Fell, "Works in Sound and Pattern Synthesis - Folio of Works."

¹⁷²Danielsen, Hawkins, and Burns, *Musical rhythm in the age of digital reproduction*.

¹⁷³Dahl, "Striking Movements."

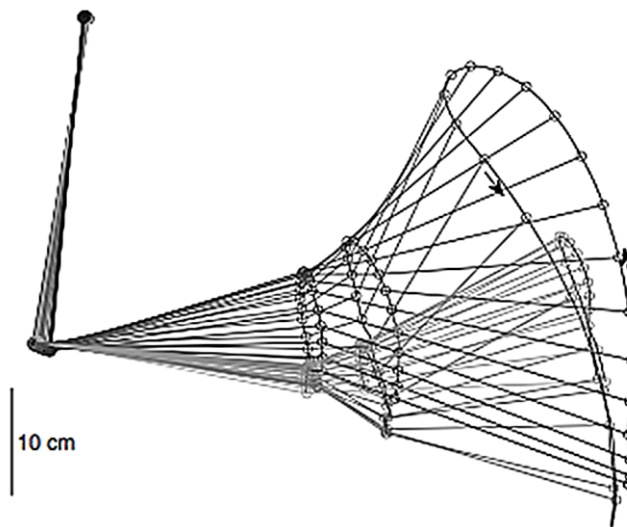


Figure 6: “Arm, hand, and stick trajectories during a stroke” in Dahl,¹⁷⁴ p.1846, fig 4.¹⁷⁵

Small plays rebounds against the orbit algorithm, learning how to garden the gap to grow a pattern through a mix of time spacing and physical movement. The gap might be undefined, between two things, places, points, times. This gap might be messy, absorbent, repellant or smooth. This is a formal representative, spokesperson for, the placeholder of all gaps, any time, persons, skin or movement of air. The gap is the central energy holding the spin of Small’s pulsed body, in a rotary improvised movement. Small learns from Fred Moten, who quotes musician Charles Mingus talking with drummer Danny Richmond,

[S]uppose you had to play a composition alone. How would you play it on the drums? [...] OK, if you had a dot in the middle of your hand and you were going in a circle, it would have to expand and go round and round, and get larger and larger. And at some point it would have to stop, and then this same circle would have to come back around, around, around to the little dot in the middle of your hand. [...] I use the term “rotary perception.” If you get a mental picture of the beat existing

¹⁷⁴“Movements, Timing, and Precision of Drummers.”

¹⁷⁵Dahl’s original caption continued: “The preparation for the stroke starts with the hand moving upward and the stick following (see upward arrow). After reaching the preparatory height, the actual downstroke starts (downward arrow) and the stick quickly gains velocity. After the impact the rebound from the drum moves the stick up for another, smaller loop.”

within a circle you're more free to improvise.¹⁷⁶

Orbit notes: Each unit can respond as a child to a parent or external pulse, or as a parent produce an independent underlying pulse which the patterns defined in the child unit will refer to. In child mode any number of units can synchronise to a single parent underlying pulse to generate complex cross-rhythms which may variably interlock, synchronise or operate autonomously, asynchronously and/or 'out of time.' Keil. As percussion sounds conventionally have short(er) durations, short notes are used to specify the time point. This method can generate rhythms of variable length, with no fixed sequence length limit. Simple variations of the pattern are achieved by modifying the numbers of single IOI values to generate new rhythmic units. A list of IOI values constitutes a rhythm. If this rhythm is synchronised to a parent pulse it is known as a rhythmic unit; when acting independently it is known as a rhythmic gesture. These concepts also apply to a rhythmic performing of the acoustic drum kit. And the two in combination define organic and synthetic movements. The main variable qualities for each unit are 'swing' at the beat level and 'orbit' at the tempo level. A swing value determines the amount of variation from the underlying pulse for each beat, recalculated after each pulse. This might feel to the body, as slippage, delay, discrepancy or interest from a regulated, metrically steady pulse. The 'orbit' value defines the degree to which the rhythm is felt to spin out, centrifugally, from some central pulse rate point of 'gravity'.

Small is composing sets of relationships to grow micro-rhythms, rhythmic characterisation, through which macro musical character is starting to emerge. Small reflects on the very many philosophical discussions on the relationship between process and form which span numerous fields, and they think of biological life. Small gathers historian of science Janina Wellmann and Curtis Roads,

¹⁷⁶Charles Mingus in Moten, *Black and Blur*.

A form is constructed according to a set of relationships. A set of relationships implies a process of evaluation that results in a form.¹⁷⁷

[I]t is not possible to observe the processes of life themselves, but only the structures that ‘mediate’ them.¹⁷⁸

Small continues to develop a pulse focused metaphorical-musical micro-climate somewhere between an intersection and a breathing heart beat. They focus on developing low-level rhythmic relationships which trouble at a direct address. Small slips, and through an opening, notices Anthony Braxton flanked by a pair of ornate European classical harps, reciting a story to a room full of people:

[T]his is a joke it took me like five years to get together. OK here’s the joke. Mr and Mrs John Doe wake up at say four thirty, have breakfast and then Mr Doe goes out - he’s going to work. As he goes towards the stoplight a truck passes him. That night when Mr Doe comes home, Mr and Mrs Doe go to an opera. They’re watching opera and suddenly the same truck goes across the stage. Mr Doe says to Mrs Doe, “it doesn’t get any better than that.” And that’s what I’m talking about. The transformation of actual reality into a state with the same kind of components. A music that facilitates or seeks to facilitate composite reality, and in doing so will bring forth a different way of looking at form.¹⁷⁹

Small notices the stop light, a pause. This is their possibility for an emergent music at this intersection (discrepancy), through a mix of contingency, routine (ritual rhythm) and reflection. All growing through, catalysed, in the solvent of humour. On the stage—the dramatic environment—of the composition, there are different kinds of agents, driving motion. (Protagonist) Mr Doe, (invisible) truck driver, (implied) audience. Here, on the stage of the movements of Small’s emerging music, they open to the complicating, the dissolve, of what might usually be recognised as single centres of gravity, subjectivity, and the attentions of embodied performance. What they are doing is expressed—sounds—in direct and indirect ways. There are

¹⁷⁷Roads, *Microsound*.

¹⁷⁸Wellmann, *The Form of Becoming*.

¹⁷⁹Braxton, Anthony Braxton in Conversation with Alexander Hawkins at Cafe OTO.

numerous drivers, seeds and growth through the drama of our organic environment. Rotations of semi-autonomous sound mix with the presence-fall of the stick to skin. They fluctuate between time points, a vibration of tensile discrepancies. They are at the wheel of some micro-truck who's path across stage sounds an idiosyncratic buzz. They encounter composer Robert Ashley who says,

Maybe only the British, after 1970, survived free improvisation free of jazz influences. Why? Because they had a rigid caste system, a Royal Family that spoke German at home, and, thus, a sense of humour.¹⁸⁰

Small thinks: perhaps Orbit = micro-truck, and micro-truck drives discrepancy. This brings Small back to Nathaniel Mackey.

Orbit notes: Like an elastic physical body, the pulse based synthetic sound environment is fully flexible, in continual mutation at the micro-macro timing scales. The context in which that composition is grown, unfolds, reshapes algorithmic character. The pulse focused synthetic sound environment is variously responsive to a playing body. Simultaneously discrepant and direct, partial to discrimination and with a tendency to ignore.

Small moves sounds alongside a spin of synthetic, perpendicular events; recalling composer George Lewis;¹⁸¹ the beveled edge of desire and refusal.

Orbit notes: Response modulations are built into micro-timed response modulations. These are developed at a granular onset and pulse level, a variable rhythmic relationship between physical (drum kit) and synthetic (synthesised sound) movements. A number of the features of the unit can be utilised to define response behaviours. In addition to pattern generation, an architecture of rhythms can specify an event response. For example a drum onset event on an acoustic snare drum, might, after seven onset events trigger a response which stimulates the production of a sound or process. An IOI rhythm---also known as a rhythm

¹⁸⁰ Ashley and Reynolds, "The Future of Music."

¹⁸¹ Lewis and Mitchell, *Voyager: improvised duos between human and computer musicians*; Lewis et al., *Rainbow family*.

timeline---could be defined to determine a variable, rhythmic response relationship between acoustic drum onset events and synthetic sound parameter variables. For example the product of the IOI 3-2-2 rhythm response pattern stimulating a [clap sound] would be: after three drum onsets we hear [clap], again after another three drum onsets, and again after another two. A response event example would be: an IOI rhythm unit of 3-2-5 would mean an acoustic drum onset event would trigger a response, and generate a sound/event after three, two and five strikes, in that order. Complexity is developed through series' of rhythm unit variations and variability of pulse level/tempo level accuracy. The timing of a dry acoustic onset to synthetic sound event can vary using the same variables as above: the accuracy and timing of a drum-onset event to synthetic sound event can vary according to the 'swing' value. In addition to micro level timing variations in onset response, musical 'change relationships' (macro level) between the drum kit and the unit can be specified. Rhythm unit variations can be triggered by parts of the drum. These triggered changes can also be modulated by response rhythms.

Small hears composer Phil Harmonic with “Blue” Gene Tyranny, who sings:

(34) Change Now

(50) Change Now

(52) Change Now [...] ¹⁸²

“Blue” Gene Tyranny was a musician who worked often with artist composer Robert Ashley. Ashley’s compositions featured a complex polyphony of fictional voices, and a complex polymetric overlapping of layers of dramatic musical activity, staged in his own theatrical musical, operatic, environment. Small moves from the truck playing micro-movements to macro changes of the body and musical form. They shift attentions from little time wobbles and physical fluctuations to larger musical structure. This macro structuring leads to thinking about higher-level,

¹⁸²Phil Harmonic, *Timing* in Gene Tyranny, *Just For The Record*: transcribed in Holder, *F.R.David*, Winter 2020, uh books.

more outwardly graphic bodily structures. The illusions of visible and audible limbs. Small listens to Cecil Taylor's *Garden* again,¹⁸³ and reads him, describing the shapely strata and moving mix of presence which grow specific musical form:

The first level or statement of three: an opening field of question, how large it ought or ought not to be. From *Anacruisis* to *Plain* patterns and possibility converge, mountain sides to dry rock beds, a fountain spread before the prairie, form is possibility; content, quality and change growth in addition to direction found. 3rd part is area where intuition and given material mix group interaction. Simultaneous invention heard which these words describe.¹⁸⁴

Small is marked by, "which these words describe." Taylor's music has been written in terms of linear progressions of parts, a 'time-line,'¹⁸⁵ but it is the non-linear spread of potential which through Taylor's particular dance or play yields the particular timbral, emotional physical energy of Taylor's music, that Small is noticing. As Small is moving again around the drum kit—their *particular* body in and out of a persuasion forces of sounding algorithms—musical form is emerging from what is fluid, in dialogue with the shapes pressed into growth processes by thought and history. They resume a general mark making, recall, and register. Cave scratches. These forms are noticed, collect in Small's body, as they hear another sentence from Taylor, "Time seen not as beats to be measured after academy's podium angle."¹⁸⁶

Small is joined by Qosel & Detective Engineer. These characters (hereafter "Q&DE") are developing (again) what they call 'Fish Glue Notes' by writing on and off the page in polymetric or syncopated gestures. In these Fish Glue Note lines, Q&DE capture the angles, details, codes emerging through Small in excess or instead of the standards of the roman alphabetic system. These marks collect as words and diagrams. These diagrams, images, sets of relations engender a material (drum

¹⁸³Taylor, *Garden*.

¹⁸⁴Taylor, "Unit Structure Liner Notes: Sound Structure of Subculture Becoming Major Breath - Naked Fire Gesture."

¹⁸⁵Westendorf, "Cecil Taylor" and in contrast: Draksler, "Cecil Taylor: Life As... Structure Within a Free Improvisation."

¹⁸⁶Taylor, "Unit Structure Liner Notes: Sound Structure of Subculture Becoming Major Breath - Naked Fire Gesture."

kit wood, metal, plastic; body flesh, fluids, electricity) and semantic meta-mutation. Small's body re-describes the drum kit as another fiction. Small plays with the ideas "writing *plus* words," and "writing *beyond* words." They hear Fred Moten, quoting scholars Boone and Mignolo, defining writing as "the communication of relatively specific ideas in a conventional manner by means of permanent, visible marks."¹⁸⁷ Small imagines these visible marks structured as diagrams, and learns, through scientist-philosopher Gilles Châtelet, how the persuasions of a mathematical formal diagrammatic substructure might reorganise their physical body. Small encounters Elizabeth de Freitas & Nathalie Sinclair,

Gestures, for Châtelet, are elastic and never exhausted; they cannot be reduced to a set of descriptive instructions [...] Châtelet insists on the diagram's capacity to midwife new gestures, new forms of (imagined) bodily mobility.¹⁸⁸

Small recalls Moten and artist Wu Tsang's 'Gravitational Scansions,'¹⁸⁹ and thinks of Richmond and Mingus' rotational rhythmic. Small feels diagrammatically moved, and semantically-swerved perception growing a potential for re-imagining their body. Small reads musicologist Naomi Cumming,

Consider that it is possible to know oneself as an agent of choice, and to reflect upon patterns of choosing. Looking at my musical performance, I can interrogate the factors that constrain my choices of timbral nuance, making articulate those unexamined "beliefs" that manifest themselves as inhibitions in the production of sound. [...] It is when I become aware of the "outward" face of my musical identity, as a pattern of actions, that I can begin to question how I am constrained in my performance. What is the ideology that governs me?¹⁹⁰

Small hears Taylor again,

The player advances to the area, an unknown totality, made whole thru self analysis (improvisation), the conscious manipulation of known

¹⁸⁷Boone and Mignolo, *Writing Without Words* in Moten, *In The Break*.

¹⁸⁸Freitas and Sinclair, "Diagram, Gesture, Agency."

¹⁸⁹Reproduced in Holder and Abbott, *Very Good**.

¹⁹⁰Cumming, *The Sonic Self*.

material; each piece is a choice; architecture, particular in grain, the specifics question-layers are desposed-deposits arrangements, group activity establishing the 'Plain.'¹⁹¹

Small makes another return, refiguring the memory or dream performance. Performing grows words to (re)direct attention, to concentrate limbs. Small re-starts here, with a feeling, the desire for words which open and share their movements. Their motions are an awkward celebration or emphatic negotiation of the body pre- and de- scribed through sound. Writing, swerved by feeling, emerges through Small, through their body, recorded in Fish Glue Notes by Q&DE. This is a live performance. Writing and the drum kit re-orientate attention. Small feels another kind of gravity collect through their attentions. A weight of focusing, implications. Small discovers Crary, and London played together exploring the history of attention and time. Cultural theorist Johnathan Crary, in *Suspensions of Perception: Attention, Spectacle, and Modern Culture* contextualises a history of attention, while London refers to meter as the synchronisation of attention,

Meter is defined as musically-specific form of entrainment, the synchronisation of attention and/or other behaviours (especially motor behaviours) with periodic rhythms in the environment. [...] Metric events, such as beats and downbeats, involve periodic peaks of attention. These periodicities are organised into metric hierarchies that coordinate attention to events on various time-scales. [...] These hierarchies, in turn, affect the way we group a series of notes into a rhythmic figure.¹⁹²

As Small plays, they feel uneasy with this. They work against this 'rhythmic figure' definition to advance their own relational and three or more dimensional alternative, which insists on a flexible growth space between beats or words. They recall Fell's criticism of attack-point privilege ("temporal location of the rhythmic event is identified with its point of attack alone"¹⁹³). Small feels the changing character of attention develop through the sounding and stretching of gaps. Attentivity moves

¹⁹¹Taylor, "Unit Structure Liner Notes: Sound Structure of Subculture Becoming Major Breath - Naked Fire Gesture."

¹⁹²'Meter as a Kind of Attentional Behavior' in London, *Hearing in Time*.

¹⁹³Fell, "Works in Sound and Pattern Synthesis - Folio of Works."

them back to their body, and they encounter neurobiologist A.D. (Bud) Craig and philosopher Judith Butler. Small reads a paper by Craig, influential in the field of neuroscience, called *How Do You Feel?: An Interoceptive Moment with Your Neurobiological Self*. The paper centres on the part of the brain called the insular cortex, which Small encountered earlier,

[The anterior insular cortex] is uniquely sensitive to time duration, rhythmic timing, temporal sequences, and temporal incongruities between sensory modalities. This same region of the cortex is also uniquely associated with subjective awareness of bodily feelings, emotional feelings, and feelings of cognitive states [...] The affective feelings that you experience are interoceptive reflections of emotional motivations, which are expressed by activity throughout the peripheral and central autonomic nervous systems of your body and your brain which produce behaviour that you ‘feel’ as it happens.

Butler,

I am suggesting simply that the senses are primary and that we feel things, undergo impressions, prior to forming any thoughts, including any thoughts we might have about ourselves.¹⁹⁴

Small feels something simultaneously clarify and blur, and pauses to attempt to summarise their ongoing performance,

‘There are minimum necessary preparations preceding a performance, which is situated action, producing and produced by emotion, which generates the perception of these emotions as feelings which are the movements of action and emotion becoming form. Form is the presentation, to internal consciousness and/or a public, of a thought pattern. A thought pattern is a bodily constitution: a mix of neural connections, electro-chemical informal and physical structure. This form is expressed through sound and sign.’

They hear Cumming again,

This then is the outward face of identity, a publicly observable thing. Without this face, it would not be possible to ‘see’ evidence of identity in

¹⁹⁴Butler, *Senses of the subject*.

gestural mannerisms or to “hear” it in the characteristic timbral choices of musicians performing on an instrument.¹⁹⁵

Small reads the sensations of their hand as it writes memory into air pressure changes, moulding drum timbre, mental imagery. Cumming returns, “Identity cannot be located in some ‘inner’ space, which is known through introspection alone. Nor is the subject isolated in his or her private ‘be-ing.’”¹⁹⁶ Small hears writer Lyn Hejinian on memory, and read the preface to ‘Writing is An Aid to Memory,’ in which they say,

I wanted to release the flow of accumulated syntax in time and thereby make sentences (and their concomitant thoughts) happen. In both cases, I felt that formations of knowledge could be made perceptible—offering a picture of knowledge underway.¹⁹⁷

Small reads Hejinian continue to say “language gives structure to awareness,” which, they feel, is the like the drum kit. Small remembers, “a small gravitational field that is always in excess of itself, a machine for the making and transgression of limits.”¹⁹⁸ They attempt to sense where exactly in their body, this attention is gathered as they play. They begin to read how their body is ordering the music, and is re-structured by sounds the music manifests in the room. Small attends to the body as they perform movements of less-resistance: habits, informed by history, modulated by volition. These habits in turn express as sounds variations of choreographed micro-movements. During the performance, Small notices how macro structures are emerging like shape-cutters through dough, marking out in time new signifying figures. Small learns from Butler and Cumming,

[R]epetitive practice establishes patterns of action that allow standardised significations. [...] It could be said that a culturally determined sign (or set of signs) is imprinted in the trained body.¹⁹⁹

Small continues to perform, repeating attempts to focus attentions on a specific part

¹⁹⁵Cumming, *The Sonic Self*.

¹⁹⁶Cumming, *ibid*.

¹⁹⁷Hejinian, *The Language of Inquiry*.

¹⁹⁸Fred Moten, quoted above: see ‘letter to B and B’ above.

¹⁹⁹Cumming, *The Sonic Self*.

of the body as sounds guide physical movements. A series of ideological prisms begin to come into focus. It is through these prisms Small is able to differentiate different areas of the body. These prisms appear at times as words, other moments as a set of physical gestures. Small begins to understand these prisms are shaped by a history of their experience of everyday life, and their exposure to ideas. The prisms dictate how they read, feel and listen to information from the body, and in turn from the environment their body is situated in. The prisms simultaneously describe, divide or dissolve the body and its parts, in different ways. These prisms are ways of reading the body, and mean what follows is that: different movements are possible, different bodies are described, published, public; or ignored, impossible, estranged, identified as permissible or rendered illegal. Another thought-pattern emerges in Small: that perhaps these prisms, these systems of describing and reading the body also constitute practices of notation.

Small encounters historians Kuriyama and Wellmann and learns from Kuriyama that a significant divergence between historical models of reading and interpreting the body in medical practice go on to influence the culture. This centres on a distinction between dissection and pulse reading as a method to learn about and describe the human body as a generalisation. To articulate this distinction Kuriyama reads contrasting developments in Chinese and European medical history. He encounters, in the histories of dissection which had dominated the European perspective,

[V]ague terms [which] are blunting, distorting, and misrepresenting what the fingers feel, [and] the restless urge to rename and redefine.²⁰⁰

Small is biologically predisposed against a mechanical dissection modelling of a body, through knives or words, and how an ideological methodology of separation extends to separating and subdividing body from mind processes. It seems to Small strange, too violent. Small rebounds, reenergised by, moved, in the manner of words used to describe flows and parts in attempts to coerce and read body functions. This semantic-material quality effects differently, what movements Small generates, the nature of their interoception, the music these motions engender. Small recalls

²⁰⁰Kuriyama, *The Expressiveness of the Body and the Divergence of Greek and Chinese Medicine*.

in rhythmic terminology the physical effect of eyes and beats, quarter-notes and diagrams, fictions of the theatre. This brings Small back to pulse and rhythmic sensibility as embodied, in the body, part of biological life in general.

Small encounters Wellmann, Graves and Craig, whose ideas, together, on rhythm, as a mode of pulsation in biological life, provide Small with another framework to feel more in the gap between pulse-points and meaning in movements between destinations or contact.

Bud Craig, reminds Small,

[A] ready basis for a time metric is available in the brain. Time is inherently subdivided and ordered by oscillations, and the global functions of the brain are implemented by voltage oscillations at several different frequency ranges[.] [O]ur perception of time in this intermediate range [3—40 secs] depends on the interoceptive integration of signals from the body that are directly related to autonomic function, especially the heartbeat.²⁰¹

Milford Graves interjects, in contrast,

If you felt your pulse-rate at your wrist, or any other place other than
listen to your heart, you're gonna hear that
bhump bhum bhump bhum

They should be different. [...]

But if you're counting like a metronome and everything is like
bup bup bup

just like the second hand ... that is extremely dangerous.²⁰²

With Q&DE, Small begins to develop compositions which focus their attention, thoughts, mental images on an imagined part of the body. They learn a correlation between imagining the body and the physical reality of this body.²⁰³ Q&DE try to

²⁰¹Craig, *How Do You Feel?*

²⁰²Graves, Milford in Meginsky and Young, *Milford Graves Full Mantis* transcribed in Holder and Abbott, *Very Good**.

²⁰³Zatorre and Halpern, "Mental Concerts", Preester, *The Interoceptive Mind*, Preester and Knockaert, *Body Image and Body Schema*.

encourage imaginary musical environments but not discipline Small's body. Perhaps the body is directed, persuaded, choreographed through responding to certain sounds. They discover the connection between hand movements and perception and the interconnections of touch and skin as the membrane of interoceptive and homeodynamic information.²⁰⁴ Small continues to perform, remodulated through these new ideas and feelings about words and their body, responding through the mix of prisms focusing their perception of feelings. They play through a complicated mix of attentions, trying to sink *into* play and recognise *the effect of play* on their body parts. They feel a density between of observation and subjectivity. A combined frozen leap or decent toward the maelstrom of musical action and balance on the semantic-physical bevel drum edge of performance. Small plays into and against the possibilities of both fictional and actual music. Small moves to listen, facilitate depth, shapes, revision. Small discovers these words, sounds, are sometimes called 'signs.'

Q&DE write as Small is playing. Small is simultaneously thinking and writing a body. They learn that this body is legible through concepts of body schema, dissection, semiotic deconstructions. Q&DE register particular concentrations in the body give form to ideas. They write sounds, patterns, parts of Small's body through a weave of measurement and speculation. They write to forge another lens, prism, through which to hear (read), and therefore reimagine changes of the body. As Small continues to perform, Q&DE attempt to register shapes to structure the sounds and signs beginning to emerge. Some initial stratifications materialise, through a reading of haptics, biomechanics and interoception.²⁰⁵ Surface (touch); muscle (concentration), viscera (internal milieu, fluids). Small discovers a character called Oeandha, circling around the performance, their body, as they play. Oeandha is writing to explore touch, the first layer.

²⁰⁴"Processing in one sensory modality can affect processing in another, either by increasing or suppressing activity; similar interactions also appear to occur if one or both tasks are based not on perceptual, but on imagined information." 'Cross-Modal Interactions' in Zatorre and Halpern, "Mental Concerts."

²⁰⁵Preester, "To Perform the Layered Body."

Q&DE begin to develop specific sheets to record gestures, drum material specificities, and detect the changing needs of notation. Small listens to composer-instrument inventor Harry Partch in *Genesis Of A Music*, and hears the names and shapes writing feelings and music, as the “horns of dilemma.”²⁰⁶

[T]he horns begin to hurt, because the hodgepodge of lines, numbers and notes which results from this necessity is no sesame to an understanding of the fabric of theory which the composer has laboriously built up.²⁰⁷

Partch says that what is needed is a double notation system: one specific type of notation for each instrument, to account for its physical, vibratory specificity; and another high-level system for the musician to integrate instrumental notation into a larger system. Reading Partch, Small notices a gap:

[Notation is] a clumsy prescript and a clumsy record; just how clumsy we can appreciate if we analyse our own translation of notes into actions, and perceive how many of those actions are not indicated in any absolute way, and often not at all.²⁰⁸

While hearing musician Anne Gillis, and simultaneously recalling artist Yasunao Tone, Small hears Anthony Braxton:

I’m thinking of the solo by Warne Marsh on *The Song Is You*. I think as a young guy what fascinated me [...] I don’t know how to say it [...] Warne has a gravity and a vibrational presence that’s [...] It’s like the notes are here [*waves arm horizontally*] but the real logic is in the internal world [*waves arm at lower level*]. I was more intrigued by that internal world than by the actual notes, in terms of how he was able to manipulate internal presence and feeling in his music. It’s not something that can be written out. It was at that point that I would discover that what I call a sound is not necessarily what someone else would call a sound.²⁰⁹

Small encounters ethnomusicologist Floris Schuiling, who asks if the compositional work of notation is an unsounded music,

²⁰⁶Partch, *Genesis of a music : an account of a creative work, its roots and its fulfillments*.

²⁰⁷Partch, *ibid.*

²⁰⁸Partch, *ibid.*

²⁰⁹Lock and Braxton, “‘What I Call a Sound’ ”; Tone, “Yasunao Tone Lovebytes 2007” and see 4.1 ‘Concurrent Projects’

[A] musicality of notation not in terms of its representation of musical structures, but of its mediation of the social and creative agency of musicians.²¹⁰

Crash. Small is listening to a fictional music set in the breeze by Nathaniel Mackey, drifting out from his Broken Bottle. Learning from Mackey, Braxton, Amacher, Harris and others—Small and Q&DE begin to explore characterisation as a means to modulate the structures which are emerging from their play, with structures which they formulated in response to, and outside of the timespan of performance. They sense characters emerging out of and expressing the ecological situation, in contrast and harmony with the alternative abstraction of organising note events, numbers, forms. Q&DE explore recognising and writing ambiguous, indirect sign-relationships between characters and movements. The characters are an invitation, vibrating through metaphor, an intervention.

Prioritising listening and proximity over vision, Q&DE are attempting to record gestures, mark, remember and extract subjective details from the movements of Small's body. They make 'Character Development Sheets' to retain, encourage and amplify somatic, mathematical and semantic ambiguity. Q&DE cultivate a poetic, ambiguous-idiosyncratic transcription process. A notation lexicon grows out from the Character Development Sheets, to record Small's activity.

Small moves through characters as generous structures, which limit and tease possibility from discrete parts of the body. Q&DE develop kernel characters, sets of gestures, physical sonic features. Emerging from a synthesis of imagined situations, remodulated personal memory and dream experience: Q&DE identify five characters. Knee (Lover), Core (Pendulum), Limb (Leaf), Back (Peacock), Neck (Folds).²¹¹

As Small performs, diagrams emerge out from the mix of play and design which characterise the process of performing each character. Each diagram features a set of

²¹⁰Schuiling, "Notation Cultures Towards an Ethnomusicology of Notation 1."

²¹¹These characters emerge, coalesced, [partly] through: artist Ian White's knee; drummer Milford Graves' polymeter limbs; typographer Will Holder's back; AH's neck (via filmmaker Keira Greene) and drummer Andrew Cyrille's 'core.'

symbols organised into organic movements (for the body) and synthetic movements (for synthesised sounds and patterns).

Small is concentrating, first, on the human hand, as a point of departure.²¹² They listen to drummers Susie Ibarra and Toshi Tsuchitori, hearing the range of ways that contact is dramatised across surfaces of cymbals and drums.²¹³ Small senses the density of distance, from the approaching or rebound hand through the entire body and imagination. They sense the distance contact insists on, and the mirror this idea rests, in, and hear histories of reason, mirrors, more prisms. A feeling is emerging, a desire for the dissolve again of oppositions, in skin, or other matters.

Our mind's relationship to the world is said to rest on distance or, as the very synonym for reason suggests, reflection.²¹⁴

²¹²Departure or contestation: Butler, “HOW CAN I DENY THAT THESE HANDS AND THIS BODY ARE MINE?”; Sudnow, *Ways of the Hand*; Wilson, *The Hand*; Bell, *The hand: its mechanism and vital endowments as evincing design*.

²¹³Ibarra, *Susie Ibarra's Fragility*; Tsuchitori, *Ajagara*.

²¹⁴Erlmann, *Reason and Resonance*.

2.2.1 Nsular Publication

The following section presents the second Rhythmic Figure publication: Nsular. This document features a booklet, reproduced in the following pages, which accompanies 61 minutes of audio, across 5 tracks, which are available to listen to as separate files (see List of Recordings). The sounds, and the writing were produced and are now shared, as closely related elements. You are invited to consider this while listening and reading, in the sequence which feels best for you. Nsular introduces the fictional characters Oeandha and Clyvv, who write an ‘Oeandha Orbit’ text. Qosel and Detective Engineer, who were first introduced in Ductus, present more ‘Fish Glue Notes.’

NSULAR



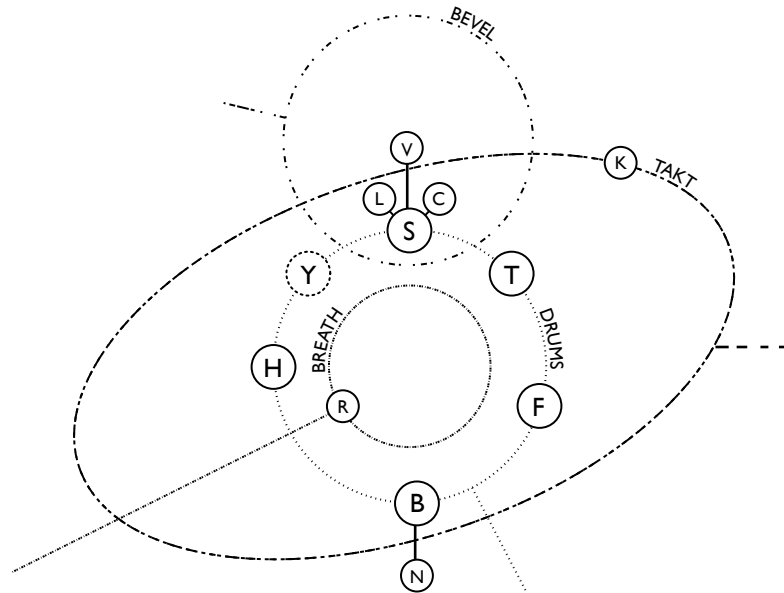
PAUL ABBOTT

Rhythmic Figure 2

NSULAR

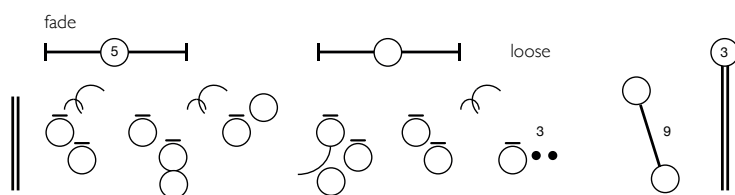
So we OEANDHA perform the five theatre body or environment characters of NSULAR: *Knee (Lover)*, *Core (Pendulum)*, *Back (Peacock)*, *Limb (Leaf)* and *Neck (Folds)*. The five character revisions write us repeated through three strata or distinction of body. (1) *surface* touching non or skin contacts of our first cycle play of edges; (2) *muscle* bone or machine motions through compound hinges and fibre weight tensions of hand; (3) *depth* faded listening through viscera. Against the cataclysm of borders we pulse a nosolo body of constraint and sharing.

fish GLUE NOTES
by DETECTIVE ENGINEER & QOSEL

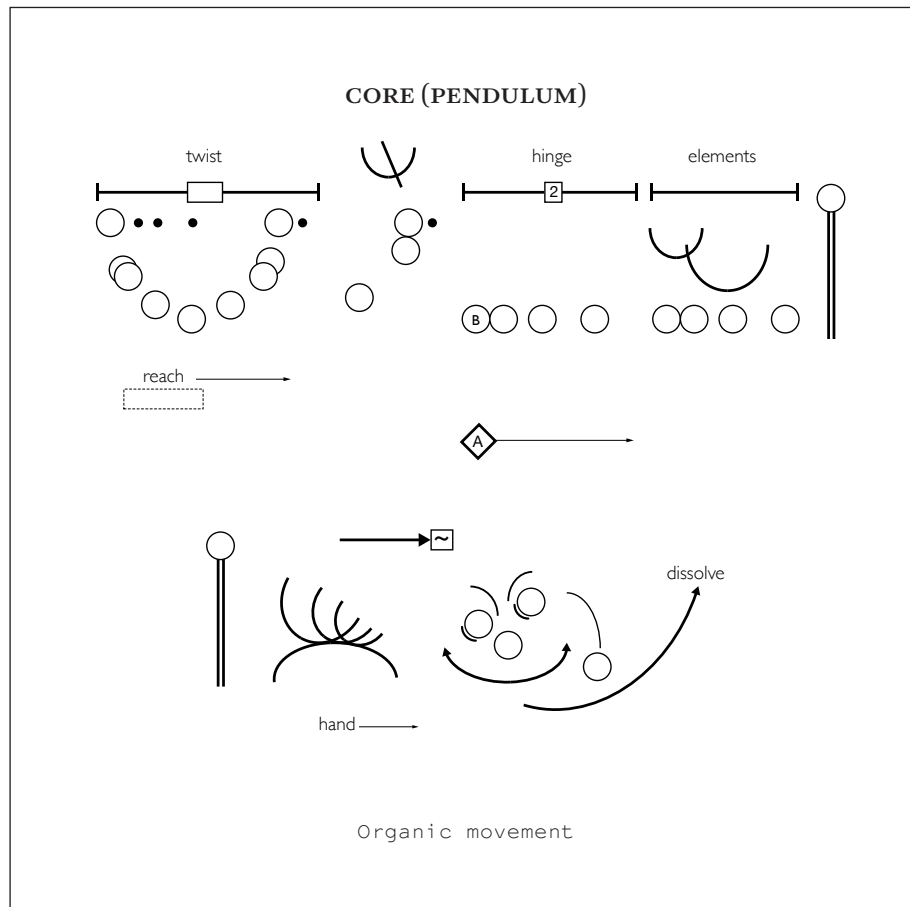


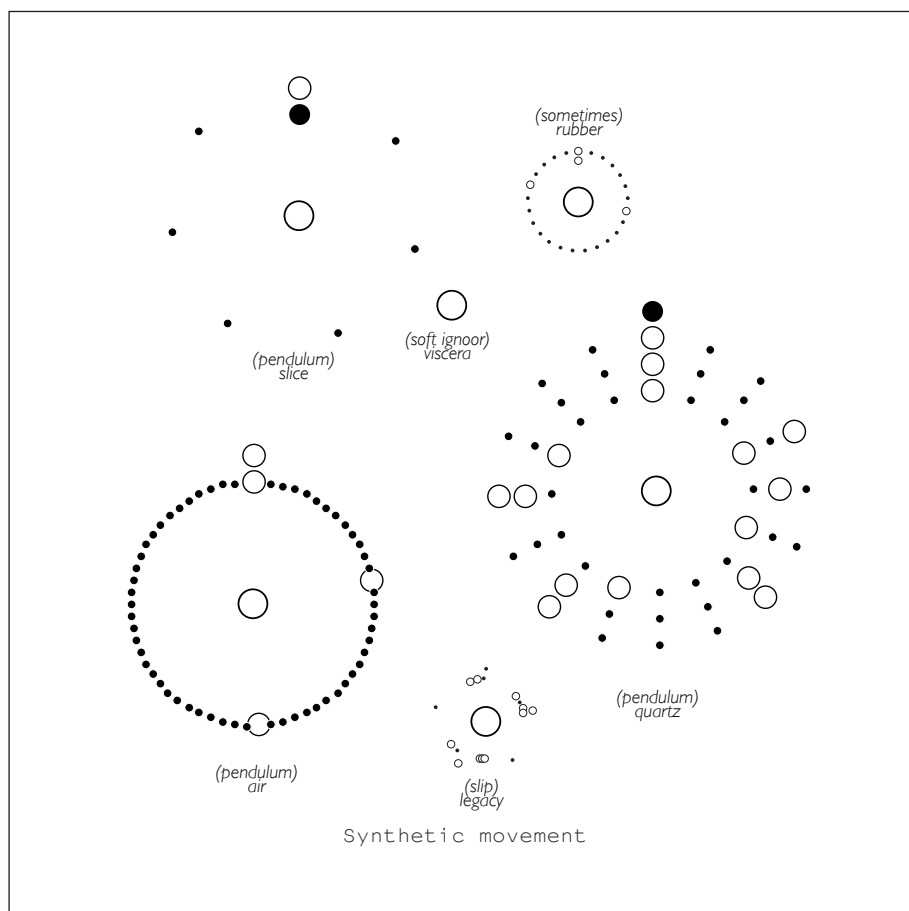
organic & synthetic elements—physical & rhythmic relationships—breath (R); snare (S),
bevel (V), belt (L), contact (C); tom (T), floor (F); bass (B), contact (N), hat (H); cymbal (Y);
takt (K)

KNEE (LOVER)

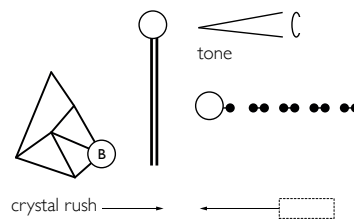
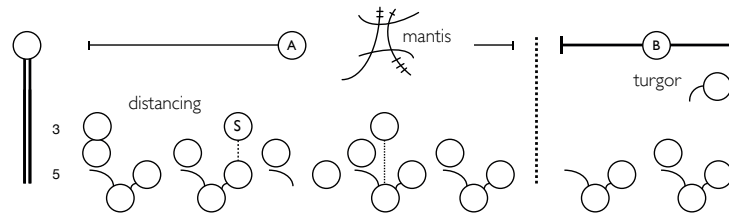


Organic movement

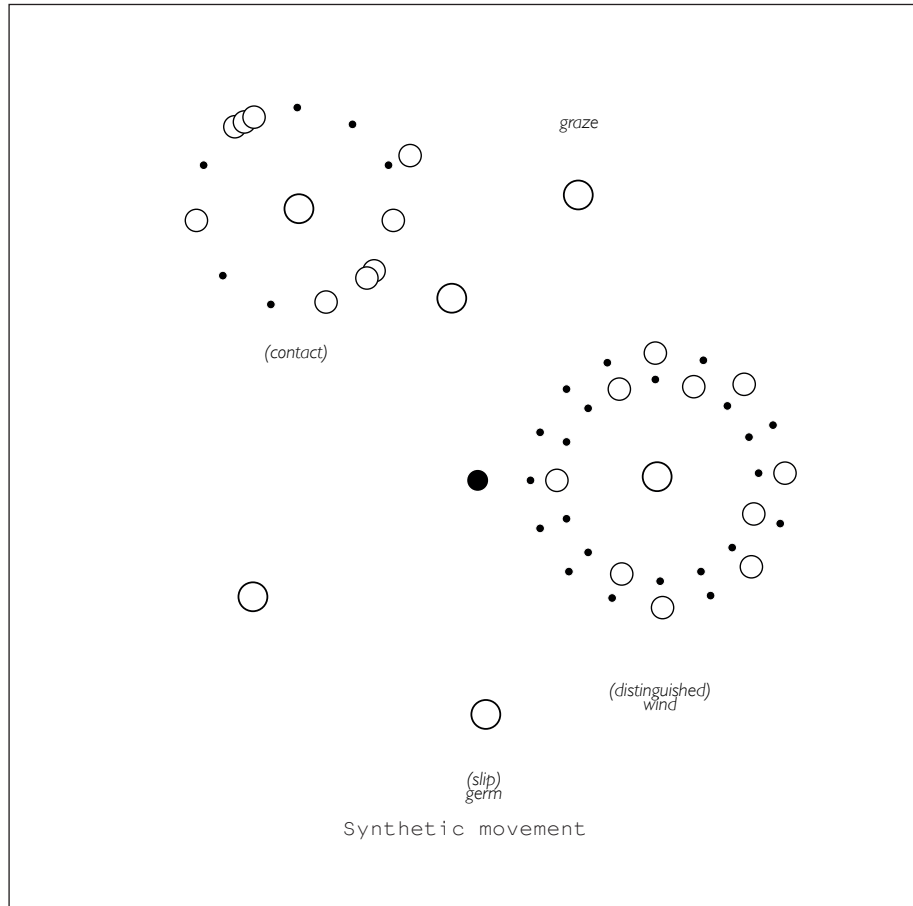




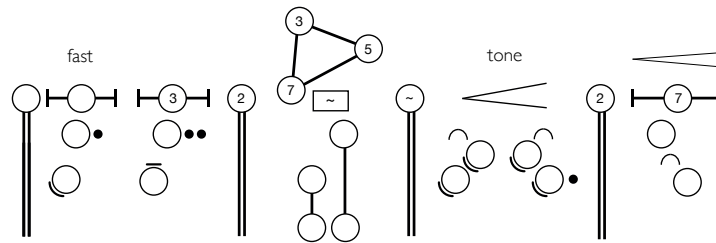
LIMB (LEAF)



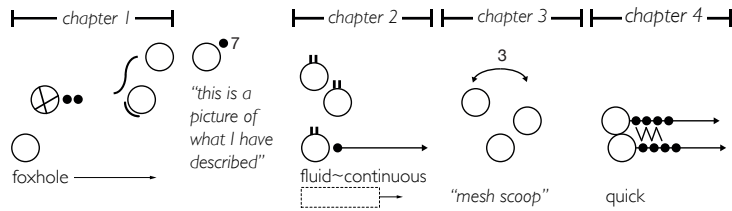
Organic movement



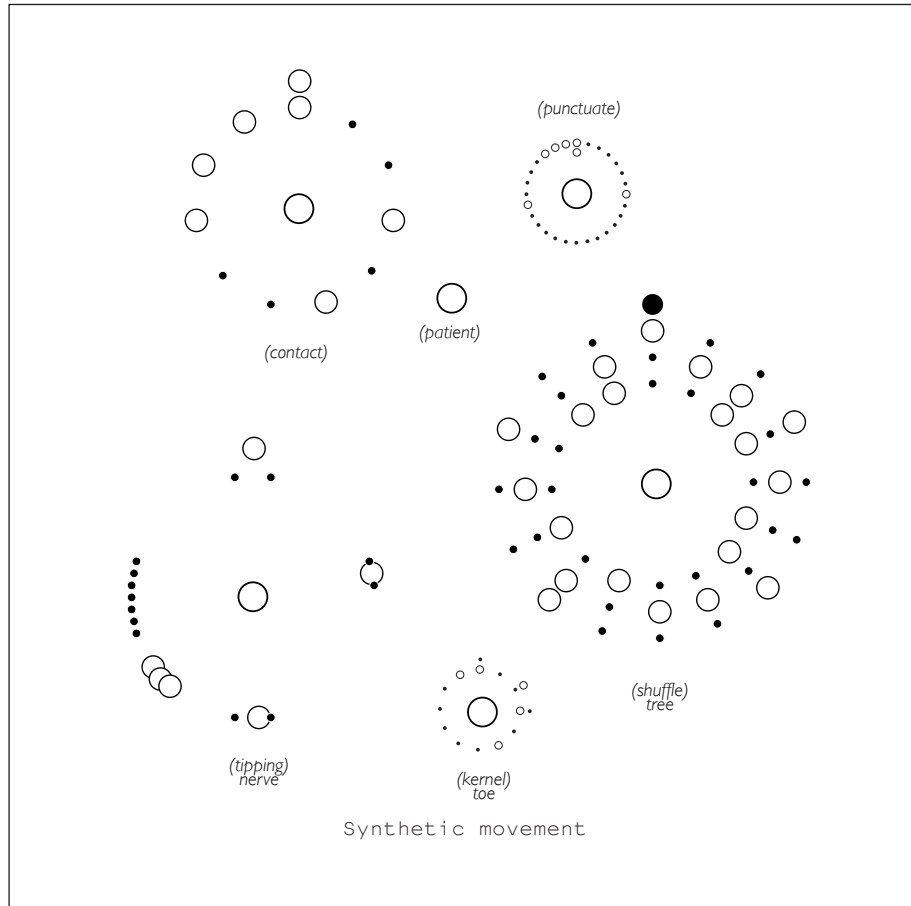
BACK (PEACOCK)



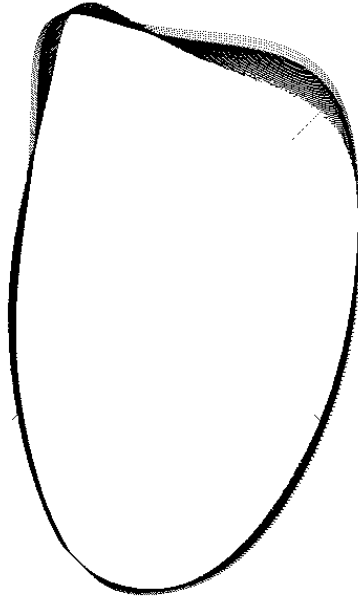
Very Good* [live]



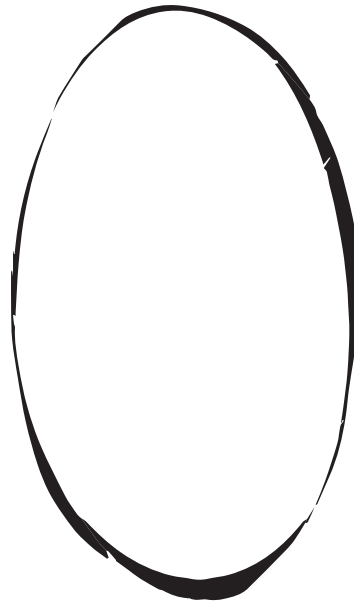
Organic movement



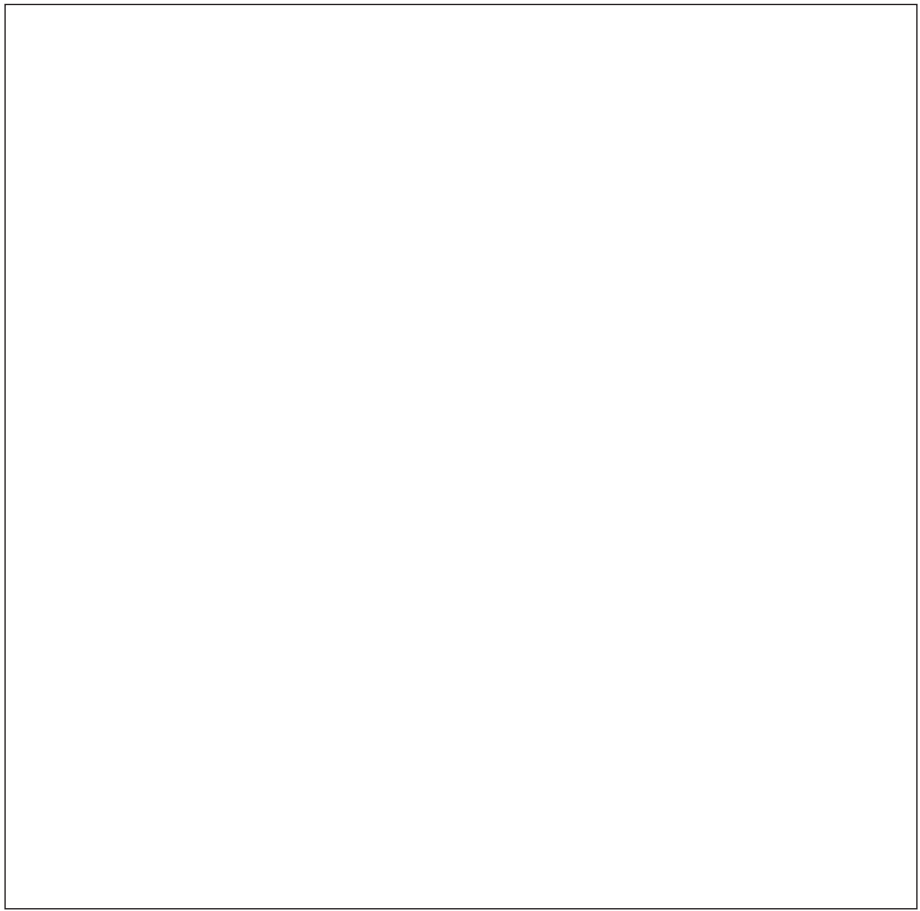
NECK (FOLDS)



Organic movement



Synthetic movement



OEANDHA ORBIT

Surface

We are written by the feeling of the possibility of touch. Feeling as state or stage of reporting made available to words by emotion.¹ We are written through fine movements of flesh motivating oscillations between physical and imaginary touch. A chiasmic dance of pulsations writes our skin.² Not real, but not excluding exacting fact or slices of perception. CLYVV: “is something called thinking already at work”?

Our body is re-visioned through a performance of feedback and corners of memory—short rolls and triplets, lift shaft or stick ascension—to ask if micro syncopations of habit are skin thinking at work. Our play or sounding surface is a canvas for weather, conditions, history. Sounds glancing surfaces embody in us a self and selves.³

1 “under what conditions does the ‘I’ become capable of reporting on what it feels?” [...] “The written status of the “I” splits the narrator from the very self he seeks to know and not to doubt”. Butler, *Senses of the Subject*.

2 Chiasmic or the intertwining. Kuriyama, *The Expressiveness of the Body and the Divergence of Greek and Chinese Medicine*.

3 “to ask as well whether in sensing, something called thinking is already at work, whether in acting, we are also acted upon, and whether in coming into the zone of the thinking and speaking I, we

Watering plants. Opposite hospital. Fine fade or missed.⁴ CLY–

VV: “rebound–skimming, grazing, pressing, pushing in, squeezing, smoothing, scratching, rubbing, stroking, palpating, groping, kneading, massaging, embracing, hugging, striking, pinching, biting, sucking, wetting, holding, letting go, licking, jerking, looking, listening, smelling, tasting, avoiding, kissing, cradling, swinging, carrying, weighing’–.”⁵

It is only through words in this ‘here’ weather of virus that our body can be written against compassionate abstinence. We are written as a music of abstinence and desire.⁶

Touch is a place or stick holder, provisional. Our performing touch is ambiguous, unclear, growing (unified, knotted, entangled, irreducible). First touching *snare* covered immediately *floor* covered touching *bridge* arc-ingly pause touching *snare* covered *floor* *bass*

are at once radically formed and also bringing something about.” Butler, *Senses of the Subject*.

4 Bachelard, *Air and Dreams*.

5 Derrida, *On Touching*, Jean-Luc Nancy.

6 “the law in fact commands to touch without touching it. A vow of abstinence. Not to touch the friend (for example, by abstaining from giving him a present or from presenting oneself to him, out of modesty), to not touch him enough is to be lacking in tact; however, to touch him, and to touch him too much, to touch him to the quick, is also tactless.” Derrida.

foot touching open arc-ingly pause pause covered *snare* touching open uncovered *tom* touching open or pause spacing touching below up from touching *snare* covered *bass* curving *floor* covered pause breath touching arc-ingly loose touching covering *floor* three repeated breath pause opening *hihat* touching up joining *bass* nine seven or five reaching repeat three.

The source of actions which might result in the sounds which might collect to constitute a music is generously opaque. Unclear as our blurred or multiple edges, smeared angle, mutating clock, floating sign. Our body writes resistance as a reversal of common balance. Obscurity recesses the present edges of the dominant, revealing what is subtle. Motion, air, body.⁷ CLYVV: "clarity of natal secret, or touching bifurcation?"⁸

We are sounded simultaneously in plurality of starts. CLYVV: "voice in the organs, course of a story?" In many places, a gift of performance. Our polyphonous body traced signs touching skin, wood and plastic; hands touching wood, elbow

7 "there is thus no clarity for me that is not implicated in obscurity, and that obscurity is myself." Butler, *Senses of the Subject*.

8 "Touching is the very experience of 'origin' as 'plural singularity'." Derrida, *On Touching*, Jean-Luc Nancy.

and breath; air touching plastic, metal and pause; plastic touching wood, lungs and history; breath touching W, Toshi and Susie; Mantis touching air, ground and flight; shelter touching Porto, K and Brussels; Andalusia touching S, Boo and Edinburgh; five touching three, feet and refusal.

Dynamic forces enable a tension flight of motion. We are written through the solution of air. CLYVV: "growth (re-)solution, impelling imagination?"⁹ Patience looks back to our score through clinical windows and masks of imagination. Breath (tipping) nerve orbits sparsley gathered shallow or spacing touching bass foot (slips) clusters or a clot of pulses touching rim (glances) crisp empty pausing belt (flight) after maybe 7 touching (welcome) snare landing ghost(note)ly touching takt grouping (chair) textured floor patterns. CLYVV: "neutral movements, or failing?" The flexible surface of our hope.

Differential(s) of touch or moving skin of our interests, articulate the history organ of a pattern.¹⁰ Coming close to the matter, we examine the air or motor of shapes. We listen closely to movements

9 "Imaginary air, specifically, is the hormone that allows us to grow psychically." Bachelard, *Air and Dreams*.

10 "The differential of a living fall." Bachelard.

in the theatre of gravity. The theatre void of our fall or environment is written first by the gravity of attention. What we notice reaches timbre of indication in the score of paper or music of trees. CLYVV: "Check the weather. Second fade or knee bend, scheme or schema?" We choose the five three ratio mistake, arriving back, just off one.

In our first inverted shape of falling or flight we are struck by what brushes or sticks to the frames of pulsation. Resistance is written through the skin of tensions and rhythms of permission.¹¹ Writing sounds osmosis or excess on drums of glass or oil in a vertigo of music. CLYVV: "Acting sounds or weighed by the world?"¹² We fear the falling which never starts, a resistance without breath. Gravity evaluates the sounding of our falling thought; sounding of the falling of our inner thought, inner voice awaiting translation on the surfaces of weather skin and drums. A fine skin of inscriptions wraps the living stone of signs. CLYVV—"court of dancing or rib cage

11 "This is not a matter of discovering and exposing an origin or track- ing a causal series, but of describing what acts when I act, without precisely taking responsibility for the whole show." Butler, *Senses of the Subject*.

12 "the act of thinking is an actual weighing; it is the very weighing of the world." Derrida, *On Touching*, Jean-Luc Nancy.

of discrimination?"¹³ We were falling before being written by the sound of gravity. The vibration body of our void precedes any landing sound.

Our falls feed consequences. Not free and boundless but constrained, open, modulated. We need an ethics of falling. A careful, explicit, harmless music of near landings outside habit. Slipping outside time. CLYVV: "falling vertical for gravity or horizontal for time?" How can we fall? Agent or matters of spin and twist around the desires of gravity? Upward, down, forward, fluid? CLYVV: "inverted ascension?"¹⁴ What is the quality of the falling, rising, turning, dance? We are afraid of this fall, of the total deafness, the absence of perception in the excess stimulation, inaccessible word in flight before contact. Tympan and skin readings precede the sound our body moves. Hip impulse, shoulder transmission, arms occupy air, skinned stick. Ascent into a maelstrom of time. Edges and words are blurred in the erotic dance of our fall.¹⁵

13 "the change in the very substance of the one who is falling and who, as he falls, becomes more weighted down, heavier and guiltier." Bachelard, *Air and Dreams*.

14 Bachelard in *Air and Dreams* suggests that the fear of falling is an inversion of the upward dynamism of the imagination: "imagination of the fall as a kind of sickness of the imagination of rising [...] nostalgia for heights." Bachelard.

15 "the fear of falling is a primitive fear [...] it is what constitutes the dynamic element of the fear of

The soundless dark becomes control in the performance light of sociality, the noise of judgement. Sounds give way to skin, and the fall moves faster than touch.¹⁶ Pulse patterns compressed in the weather of our fall. All rhythms and none with the benefit growth of constraint. The improvisation of this fall is the music of imagination (not the fetish of nobility).¹⁷ CLYVV—"tactile, touch, haptic, or illusion of endings or tools?"¹⁸ Where our bodies might end and our tools might begin, now, five is our number, image or scheme. Fingers or three as our surface or map. This writing is a (presence) playing (again) of the score (after) but also a rehearsal, or preparation for a music. Our touch imagines paper brushing background emotions. Flesh lets or lands mutes below maple. Through the cloud fluctuations of our body, a move, stir or pre-touching touch, erratic or eyes.¹⁹ CLYVV—"earliest interruption?"²⁰ Our

the dark." Bachelard.

16 Hudin and Hayward, 'When Hearing Defers to Touch'.

17 Heller-Roazen, *The Inner Touch*.

18 Moten, *Black and Blur*.

19 "You are in a cloud in space. Something moves, you are in the house of two. Decisions can be made." Braxton, Anthony; Hawkins, 'Anthony Braxton Interview Alexander Hawkins'.

20 "the heartbeat, with its syncopal interruptions, which gives its rhythm to pulse, pulsion, or even haptical compulsion, the cum of non-contact, coming to link or conjoin only where disconnection

heart embeds rhythmic character—first voice of our decisions, first feels of our risk. At some instant this risk hardens around KNEE, our guide, character, score. Our eyes fall on the page, score of marks—the dimensions and proportions of the page, the quality of the page, the history of the paper, the geographic location of the paper mill, the age of a tree, the sunlight falling on leaves, the humidity of the air, the moisture in the soil, the weather-tectonics. A context for our music. CLYVV—“seed, deposit, catalyst?”²¹

Without the clear feeling of contact or chronology an ensemble of compressions gathers a pulse.²² STRIKE: “A *diffraction of our fused forces without contact or reflection sounds a new and hybrid matter. Dance hands stumble through a collapsed excitation of fields. A messy clap sounding of skin hands. No things collide but from somewhere vibrations swell to the scale of a sound or sounds.*”²³ CLYVV: “ready to come apart?”²⁴

remains at work, as well as possible disjunction.” Derrida, *On Touching*, Jean-Luc Nancy.

21 Mackey, ‘Discrepant Engagement : Dissonance, Cross-Culturality, and Experimental Writing’.

22 “we do not always know, or cannot always say, who touched whom first, or what was the moment of being touched and what was the moment of touching.” Butler, *Senses of the Subject*.

23 ‘STRIKE’ in Abbott, *Sphuzo*.

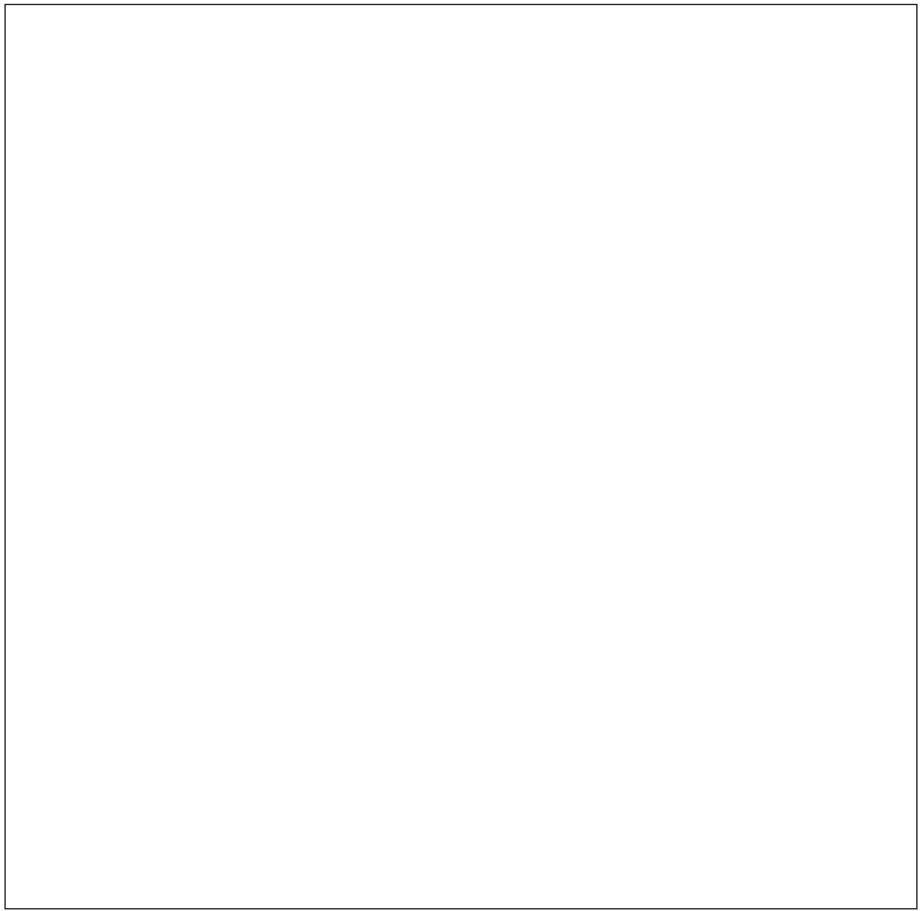
24 The ‘soft-solid’ of flesh (“ready to come apart”) sounding touch somewhere between or through the hard (“letting its surface be pushed toward the inside with difficulty”) and soft (“a solid which receives [a push] with ease”)—Avicenna, Book Of Definitions in Heller-Roazen, *The Inner Touch*.

A published excitement of matter. Somewhere in a dynamic moment and memory of contact—our soft-solid of flesh sounds or splits a thickening of emotion and forces.²⁵ Our touchless hinge of KNEE glances the sounding edge of pulse and sign.²⁶ CLYVV: “deforming imagination?”²⁷

25 “So when one touches a living and sentient being, one never touches a mass, for the moment of touch is the one in which something comes apart, mass splits, and the notion of substance does not—cannot—hold.” Butler, *Senses of the Subject*.

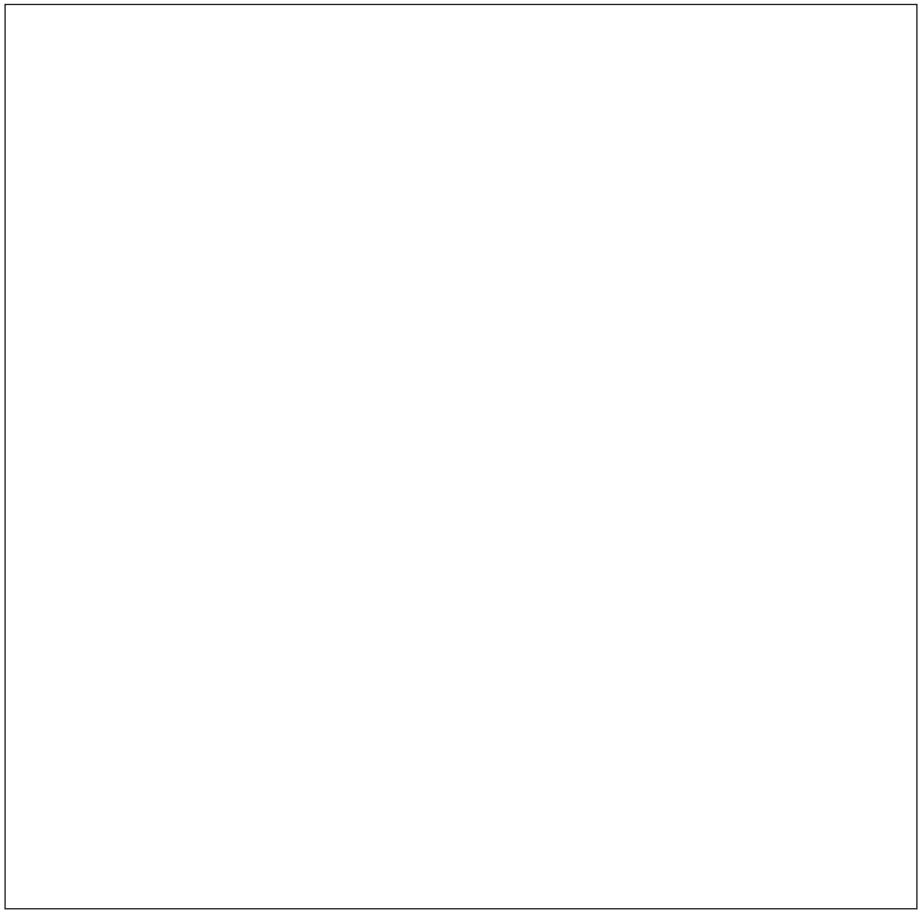
26 “touch reopens the domain of speculation as a necessary precondition for the theorization of embodiment and tactility.” Butler.

27 Bachelard, *Air and Dreams*.



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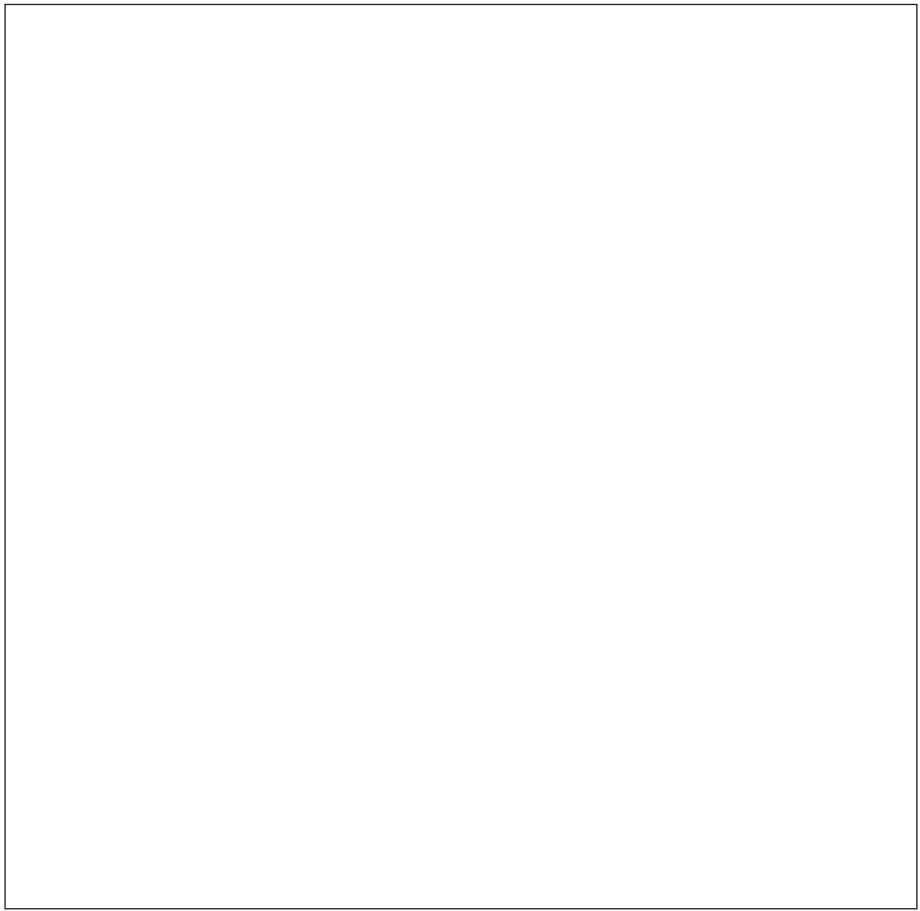
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APPENDIX

Recorded 22-24 January 2020 using: Bass Drum: 20" Yamaha Custom Absolute Maple (Blue Sparkle); batter head: (unknown, clear); [resonant head removed]; dampening foam—Snare Drum: 6.5x14" Ludwig Supraphonic LM402 Snare Drum; Remo Ambassador Black Suede batter head; [resonant head removed]—Floor Tom: 16" Yamaha Custom Absolute Maple (Blue Sparkle); Remo Pinstripe batter head; [resonant head removed]—Tom: 13" Yamaha Custom Absolute Maple (Blue Sparkle); Remo Pinstripe batter head; [resonant head removed]—Hi Hat Cymbals: 13" Ziljian Quick Beat—Pedal: Tama Iron Cobra, Accu-Strike Beater—MOTU Ultralite mk3; Sensory Percussion; Live, Max; Razor; Chromaphone 2—Microphones: DPA 4060, EV RE20, Neuman KM140, Senheisser MD421, DPA 4060, Neuman KM140, Fishman V100, Radial PZ-DI; Monitor Speaker: Genelec 1031A.

Typeset in Arnhem, NotCourier Sans, Gill Sans.



2.3 Rhythmic Figure 3: Gyri

Welcome to Gyri, the third Rhythmic Figure. In this section, a fictional character called Small will prepare for a live performance. Small is an imagined and multiple human body. Their body is a collection of interconnected processes: organs, fluids, electrical impulses, fibres, ideas, emotions, thinking. Their live musical performance will simultaneously involve an acoustic drum kit, synthetic (computer generated) sounds and writing. Small will prepare and then perform. The performing will become more preparation. Fish Glue (proposals) will move body, sound and sign. This is an invitation. Leaving (the first cycle) *surface*, moving through (the second and third cycles) *muscle/frame* and *viscera*: Small/Oeandha will perform again, the dramatic environment and body of Gyri.

2.3.1 Gyri Publication

The following section presents the third Rhythmic Figure document: Gyri. This document proposes conditions for a dramatic musical environment in which a future, imagined performance, will take place.

GYRI



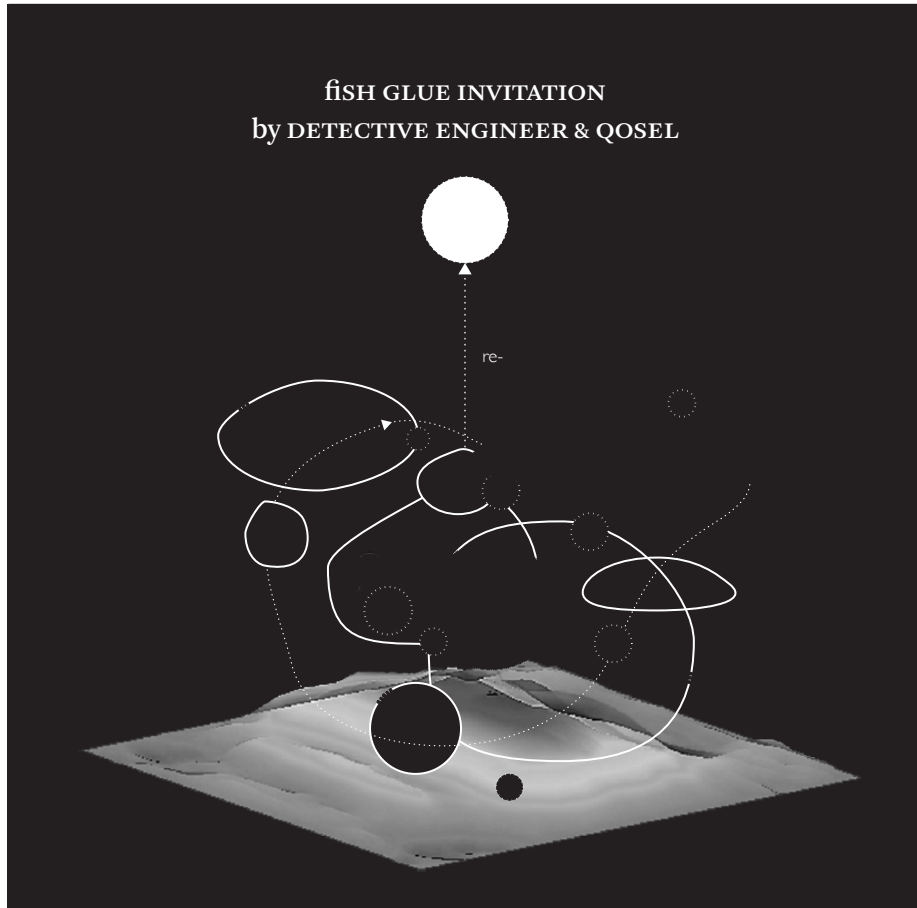
PAUL ABBOTT

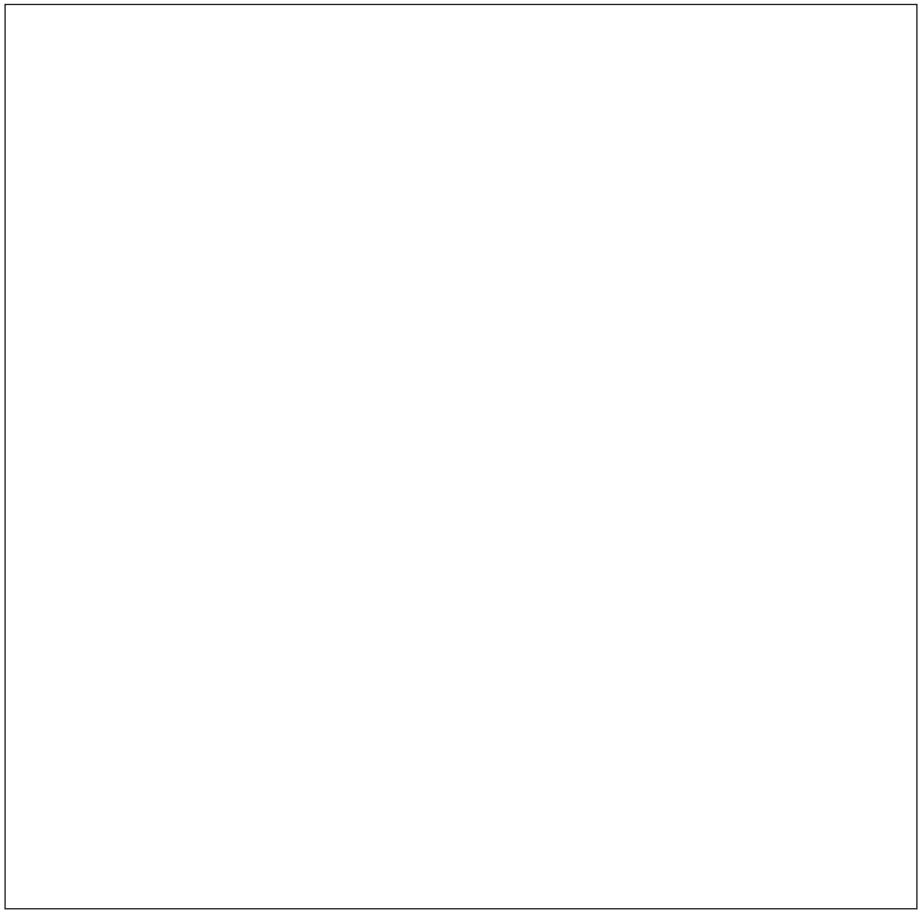
Rhythmic Figure 3

GYRI

SMALL, STRIKE, OEANDHA and CLYVV imagine
organic & synthetic movements: dissolving together somewhere
between the truck joke and a heartbeat.

fish GLUE INVITATION
by DETECTIVE ENGINEER & QOSEL

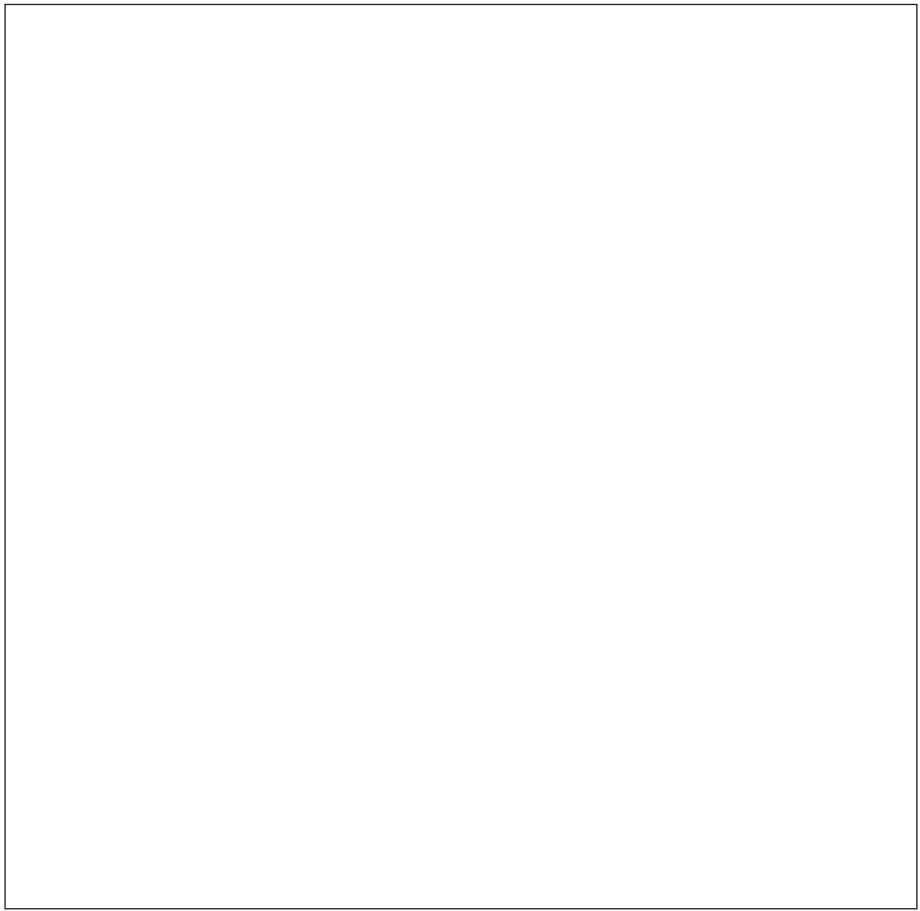




APPENDIX

Imaginary 'wave terrain' rug: reworked output from 3D Snare code derived from 'Percussion Instrument Modelling In 3D: Sound Synthesis Through Time Domain Numerical Simulation' by Alberto Torin.

Typeset in Arnhem, NotCourier Sans, Gill Sans.



3 Exits

This final section presents a brief review of the project, reiterating central themes and concerns, and reflecting on potential future outcomes.

3.1 Review

This practice-based research explores musical imagination through examining relationships of embodied musical performance and writing. Motivated by the complex firsthand experience of embodied musical performance this research makes legible, audible, the mix of movement, energy, language(s)—bodies, ideas, vibrations—constituting the generative relationship between imagination and intersubjectivity.

Creative practice was used productively as a research methodology through the following devices: (1) A ‘hybrid drum kit’—combining acoustic drums, cymbals, and synthetic sounds—was proposed, and used as the basis for practice. The drum kit was treated to a broadly historical and theoretical examination of material practice; (2) Rhythm was conceptualised and deployed as a systematic and recursive method for musical play, in order to investigate the interrelationship of sonic, semantic and physical elements; (3) Creative writing was used to explore and inscribe the imagination of musical play, based on theories of embodied cognition.

This specific creative practice methodology, grown through performance practice, was used to articulate and respond to the following initial questions: (a) What is the felt relationship between listening and inscription? (b) How do particular words,

diagrams, real and imagined materials effect the sound of drum performance? (c)
How do movements of the body relate to semantic and timbral conventions?

3.2 Reflections

Through the use of characterisation and imaginary structures staged in a ‘dramatic environment,’ this thesis ultimately demonstrates a challenge to the notion of an autonomous, solo subject in musical performance practice. An example of how a performing body mixes influences and responses to engender new music and writing is shown. Throughout the sonic and written material presented in the Garden section musical performance is expressed in various ways as an ecologically-grounded activity animated by polyvalent real and imaginary elements.

Rhythm was used as both a method and a practice, to explore musical play, by way of repeated returns: to generative moments in non-standard musical and imaginative movement. This necessitated the exploration of specific notation techniques to -pre and -de scribe movements of sound and body, to generate new music. This is exemplified, for example, by the ‘Fish Glue Notes’ presented in *Nsular*,²¹⁵ and the sounds these scores accompany.

Repeated drumming and writing, occurred, often, in close physical and temporal proximity: in the same room, or nearby; on the same, or subsequent day. This engendered a specific rhythmic methodology grown through performance practice. Together methodology and practice extend, support, and document the idea that rhythm expresses a growth process. The challenge was then engaged, to practically and imaginatively articulate the musical contents of this transitory process: gaps, intervals, openings, discrepancies.

This project demonstrates complex ways the formal aspects of music making bear on the musical imagination: the capacity of inscription to variously capture, inscribe, cultivate or block the mix of forces at work in an emerging music. This was done

²¹⁵see 2.2.1 *Nsular* Publication

through an examination of temporal, sonic, and fictional architectures: through the rhythmic intervals, pulse patterns, timbral changes and dramatic spaces expressed across *Ductus*, *Nsular* and *Gyri*.

Through rendering features of this complex ecologically grounded process, an ongoing and critical material dialogue is established between (a) perceptual filtering: quantification and inscription; and (b) the complex, non-verbal, aspects of embodied performance most resistant to transcription.

The drum kit, and writing, used in embodied music practice were treated simultaneously as artistic materials and critical technologies. This allowed the sensations, signs and sounds, grown through practice, to simultaneously illuminate both analytical and poetic aspects, of the subjective experience of the musical imagination.

Ongoing investigations were, over time, structured by three Rhythmic Figure studies, focusing, through embodied performance, on a particular aspect of the research. Through these studies I encountered the complexity of developing choreographies for drum kit play in order to investigate, in detail, the interrelationship of sonic, semantic and physical elements. Through performance I experienced a continual, dynamic mixing—of the real, imagined, speculative, vibratory, physical and semiotic. *Ductus*, *Nsular*, *Gyri* express some of the numerous and continual oscillations, between: acoustic and synthetic sound; the measurable and the complex; the bodily and the inscribed.

This required the overall form of the project—thesis and creative practice output—to coalesce, reflect and extend the synthesis of real, imagined, poetic and analytic aspects I had encountered. The Rhythmic Figure studies feature a number of fictional characters, necessitating a dramatic environment—the Garden section—to stage outcomes.

Performing the Rhythmic Figure studies demonstrated interwoven imaginative, material, and theoretical aspects. The overall sonic and fictional character of *Ductus* and *Nsular* exemplifies this complex mixing: through acoustic and synthetic

sound; real and imagined drums; multiple voices. The research, by extension, shows how situated, particular and subjective conditions for growth and synthesis (sonic, physical, imaginative) modulate an emerging music, and its performer(s).

3.3 Summary

The body of the performer—engaged in the specific dynamic physical and semiotic play that music performance necessitates—is the site of ‘discrepant translations:’ an ongoing dynamic mix of tension and generative growth between registers of language and modes of consciousness and communication. The product of this process subjectively expresses the musical imagination: making apparent the capacity of a performing body to critically synthesise and restructure material and semiotic conditions.

This research demanded a granular sensitivity to the effects of musical sound and semantic substance on processes of the body. This engendered a detailed subjective impression of a flow of affects: between body, sign, and sound. Performing live, I practically explored a particular subjective aspect of the imagination, generating sonic and semiotic structures; these emerging structures were in turn modulated by intersubjective and interoceptive bodily experience, the technologies mediating the performing body (drum kit, writing) and the real and imagined context of musical performance, over time.

A series of publications combining audio recordings and writing was produced to present findings alongside the thesis. These demonstrate pre- and de- scription as it mixes with the moment of live performance: sonic and semiotic movements between the concrete, material, immediate, and abstracted, signified, and distanced.

3.4 Future

Through practice based research, numerous questions have been raised, opening up multiple potential future research trajectories.

This research concentrates on rhythm as a basis for growing method and practice, focusing on pulse and interval. Future research could continue to engage the challenge of ‘imaginatively articulat[ing] the musical content of these intervals’²¹⁶ I would propose synthesis could be used—in both the general sense ‘how things mix,’ and music-technical sense: making new sounds—as concept and material practice, to look at moving *through* the gap. This could specifically explore qualities of sonic, semiotic and physical *transition* which express *how* to get from one temporal, timbral and semiotic ‘character’ to another.

An similar future trajectory could return to the body as the site of a particular kind of *ecological* synthesis: using the concept of ‘discrepant translation’—applied to movements of sound, body and language—as a guide into the dynamic content of the gaps. I would explore discrepant translation, imaginatively applied to acoustic and digital sound synthesis techniques, bodily movements and semiotic transformations.

This research has explored questions of pulse/interval/character on a often on a granular level, through first-person experience. Another area for future development would be to expand the scale and subject scope, to concentrating more closely on macro musical/temporal structures, explicit physical architectures, multiple performing bodies and collective practice.

3.5 Limitations

This project is a product of a larger context, and therefore not exempt from inevitably reproducing aspects of continuing individual and institutionally embedded legacies of structural inequality and bias. Every attempt has been made

²¹⁶see 1.2.3 Interval

to learn, and challenge—at the root—where and how these conditions work through this project, and its author.

I advocate for an ecologically grounded embodied musical performance practice, contesting the notion of an autonomous, solo performer. In apparent contrast—apart from a number of indispensable and supportive supervision meetings and conversations with peers—my research-practice was largely conducted alone, in relatively controlled (rehearsal/recording) spaces. Independent practice is always the expression of the mixing of manifold (historical, contemporary) collaborations. The project engages with these attendant complex implications: of advocating for an ecological, intersubjective, distributed creative imaginative practice (suggesting there is ‘no solo’), by way of first-person independent performance.

Practice based doctoral research is a highly specific context in which to explore musical performance. It would perhaps be more common to hear a drum kit performance in potentially noisy, sweaty, unpredictable conditions which often animate the live music venue. Historical conditioning determines that the doctoral research format *primarily* affords and encourages a rarefied, abstracting, rational-analytical encounter with creative practice. This presents a particular, complex challenge to a practice-based research project simultaneously performing and detailing complex interconnected contributions of non-verbal, sensory, and intersubjective experiences of the musical imagination.

The research context and particular features of musical imagination which the project focuses on constitute both affordances and limits. Specific re-readings of practice which the project necessitates are partial observations seen through the prism of doctoral-academic formatting. The project recognises both positive *and* negative implications of this framing: publishing the semiotic and material effect of these irregularities through documented creative practice. Through Butler, Mackey, Moten, Harris and others, plus my own experience of practice, I learn that partiality can be felt and understood as a proliferation of possible perspectives, understandings, expressing the diversity of subjective experiences. This is the position this research supports: encouraging a legitimacy of the partial.

3.6 Contribution

In its original, creative demonstration of the interconnected contribution of non-verbal, sensory, and intersubjective imagination to musical play, this project contributes argument and evidence for the manifold ways of knowing music which sit beyond discursive norms. Conclusions which may be drawn from this project constitute set of future questions, which have come to light through this specific academic iteration of critical reflection. These questions emerge from and address the first person experience of musical performance in dialogue with writing. In particular the ongoing embodied process of transition and translation between sound and sign, which animates emerging music. Detailing the embodied experience of this imaginative musical movement articulates new understanding of the tension and growth—in sound, sign and the body—between “ways of telling and ways of knowing.”²¹⁷ The research expresses a subjective iteration of the general experience of embodied musical performance: showing the capacity of signs and sign systems—as part of musical experience—not to enclose meaning, but to open gaps signalling imaginative, musical and therefore subjective possibility. The project evidences there are manifold ways—to listen, feel, move, write—*music*, against standardised experiences, to enrich the imagination.

²¹⁷Edwards, *Epistrophies*; or, as Ingold says “articulate and personal knowledge.” Ingold, *Making: anthropology, archaeology, art and architecture*.

4 Appendix

4.1 Concurrent Projects

Selected activity:

Ductus, solo performances: Serralves, Talbot Rice Gallery, 2019.

Duo performance with Rian Treanor: Counterflows Edinburgh, 2019; Cafe OTO, 2020.

RP Boo Trio (with RP Boo, Seymour Wright): Counterflows Festival; Cafe OTO; Badd Bon Festival, 2019.

yPLO (duo with Micheal Spears) & Rui Leal: *Wolf Ecologies* performance, Cafe OTO, London, 2019.

Nathaniel Mackey with the Creaking Breeze Ensemble (Ute Kanngiesser, Evie Ward, Seymour Wright, Billy Steiger): performances at Cafe OTO, 2019. *Fugitive Equation*, CD/Digital, Fonograf Editions, 2021.

F.R.David, Very Good*. Co-edited with Will Holder, 2020.

Keira Greene, *Folds*, (Soundtrack) 2020.

XT (with Seymour Wright): *Deorlaf X*, LP, OTORoku, 2021; XT with Anne Gillis, *Our/s Bouture(s)*, Recording/broadcast, 2021.

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