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Emergent behaviours in five long-term collaborations for clarinet

Carl Rosman

A commentary accompanying the performance portfolio
submitted to the University of Huddersfield in partial
fulfilment of the requirements for the degree of PhD.

September 2021

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Ethics Declaration

I confirm that the composers interviewed for this thesis have completed Participant Consent Form E4 giving their explicit written consent, and have had the opportunity to review, and if desired withdraw, their contribution.

List of Portfolio Works

- Richard Barrett: *Flechtwerk* (2004–2006)
clarinet in A: Carl Rosman
piano: Mark Knoop
recorded: Studio des Ensemble Musikfabrik, Köln, 2016
- Richard Barrett: *Hypnerotomachia* (2005–2009)
clarinets in A: Carl Rosman, Richard Haynes
recorded: STUK, Leuven, 2011
- Richard Barrett: *interference* (1996–2000)
contrabass clarinet/voice/pedal bass drum: Carl Rosman
recorded: Iwaki Auditorium, Melbourne, 2004
- Aaron Cassidy: *Self-portrait, 1996* (2020)
Ensemble Musifabrik/Aaron Cassidy
piccolo/alto flute: Helen Bledsoe
clarinet in E^b/contrabass clarinet: Carl Rosman
quartertone horn: Christine Chapman
cello: Dirk Wietheger
recorded: Studio des Ensemble Musikfabrik, Köln, 2020
- Aaron Cassidy: *The wreck of former boundaries* (2016)
clarinet in B^b: Carl Rosman
recorded: Studio des Ensemble Musikfabrik, Köln, 2016
- Justin Hoke: *drawn, drowned, myrrh* (2014)
musette: Peter Veale
bass clarinet: Richard Haynes
contrabass clarinet: Carl Rosman
percussion: Peter Neville
recorded: Salon, Melbourne Recital Centre, 2014

- Justin Hoke: *state of sunlessness* (2018)
 Ensemble Musikfabrik/Jean-Michaël Lavoie
 clarinet in E^b: Carl Rosman
 contrabass clarinet: Richard Haynes
 recorded: WDR Funkhaus am Wallrafplatz, Köln, 2018
- Justin Hoke: *thane* (2016)
 bass clarinet: Richard Haynes
 contrabass clarinet: Carl Rosman
 recorded: Remise, Bludenz, 2016
- Evan Johnson: *“indolentiae ars”, a medium to be kept* (2015)
 classical basset clarinet in A: Carl Rosman
 recorded: Studio des Ensemble Musikfabrik, Köln, 2016
- Rebecca Saunders: *Aether* (2016)
 bass clarinets: Carl Rosman, Richard Haynes
 recorded: Herkulesaal, Munich, 2017
- Rebecca Saunders: *Caerulean* (2010–11)
 bass clarinet: Carl Rosman
 recorded: Studio des Ensemble Musikfabrik, Köln, 2016

Audio recordings of all these works are appended. *Caerulean*, *indolentiae ars* and *interference* have also been recorded on video: these are available online, as noted in the bibliography. Works composed before 2013 were completed outside the period of PhD registration but nevertheless form part of the research discussion.

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Aaron, Evan, Justin, Rebecca, and Richard are five of my dearest musical better halves – it has not been easy to refer to them for so long by their surnames and it is a privilege to have the chance to be so intimately involved with their creations. I am immensely grateful for the time they have taken in sharing with me their own insights on their work and our collaborations.

Deepest thanks are due to my supervisor Monty Adkins. I can no longer remember how many supervision sessions began with me being convinced I could not see this project through and ended with me being even more firmly convinced of the opposite.

This project would not have commenced without Heather Roche's impetus, for which my sincere thanks.

It will hopefully not escape the notice of the attentive reader that Richard Haynes, my dear friend and colleague in ELISION and elsewhere, appears in every one of these case studies, not only in the works for two clarinets, in which I could not have wished for a more inspiring duo partner, but as a trusted collaborator with these composers in his own right. My heartfelt thanks for his musical companionship over the past seventeen years and counting.

Among those who have had nothing directly to do with this project but without whom it could not have happened are of course my parents, Beth and Gavan Rosman, who have remained unfailingly supportive over the decades even when it became clear that the musical direction in which I was drifting was one whose wide appeal and financial sustainability were questionable at best. I also thank Daryl Buckley, whose tireless directorship of the ELISION Ensemble has provided me with nearly thirty years of friendship and constant musical stimulation. And Milica Djordjević's encouragement during the final stages has been crucial, even at a time when she might well have wished me to devote my efforts to another collaborative project entirely.

If I had managed to complete this project within the timetable originally planned, Richard Toop (1944–2017) would have been able to see it finished. It is not only a source of great sadness that he could not: this project would have benefited immensely from his help and encouragement. What follows is dedicated to his memory.

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Abstract

Collaboration between composers and performers can lead to decisive mutual developments in creative practice. Instrument-specific explorations involve the performer in shaping the musical substance of new work, enhancing their understanding of their own resources. Anton Stadler's resources, including the development of the extended basset clarinet, had specific influences on the music Mozart wrote for his instruments. Alan Hacker's widening of the clarinet's palette, including the revival of the basset clarinet, led to specific developments in the music composed for him.

This research investigates how specific new instrumental resources have been devised, refined, and integrated by me and five composers in contexts of emergent collaboration over an extended period. I have developed a multiphonic resource of small-interval dyads, previously underexploited in the literature, which runs through these collaborations. Their coherence and their utility as a pitch reservoir have made them useful in the formation of musical structures and as a basis for further explorations.

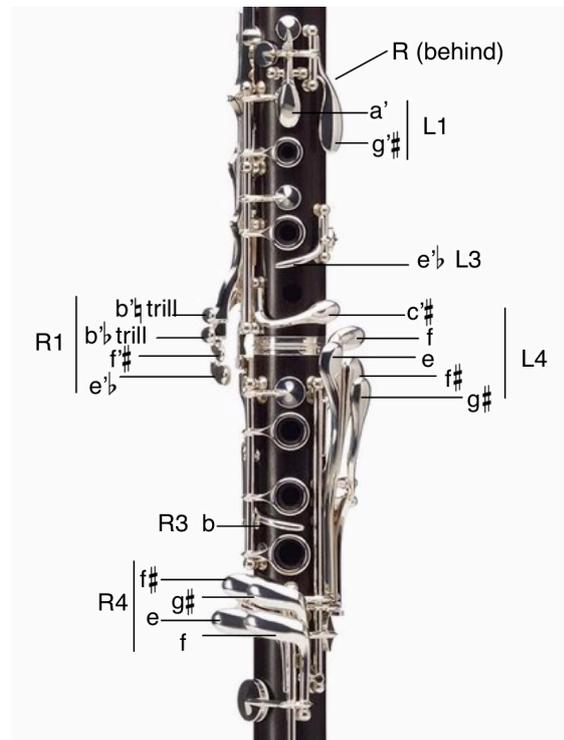
Richard Barrett's *interference* uses a wide range of anecdotal resources, some of which were originated spontaneously in our working sessions. His *Flechtwerk* for clarinet and piano uses dyad repertoire to create virtual polyphony and shape large-scale pitch structures. Rebecca Saunders uses dyad repertoire for clarinet in A through several chamber and ensemble works. Her bass clarinet solo *Caerulean* uses a new palette extrapolated from dyads available for the bass clarinet. Aaron Cassidy's early *metallic dust* uses instrumental decoupling technique in a non-clarinet-specific manner. Later works employ tablature techniques, while his most recent works amalgamate tablature and sonically-based procedures. Evan Johnson's writing uses collaborative material primarily as a background rather than explicitly. Justin Hoke uses audio recordings as a basis for collaboration at a distance and privileges instrumental resources which unfold in time.

Clarifications

Where pitches are referred to in the text:

- c' denotes middle C, b' the B above it;
- c'', c''', c'''' the octaves above;
- c, C, C', C'' the octaves below.

Fingerings correspond to the following system:



R denotes the register key. All other keys are named according to the note with which they are associated in the chalumeau register. In some charts (particularly in Rebecca Saunders' works), ♯ alone denotes the top trill key for the right index finger and b alone its neighbour. In diagrams, the L3 and R3 keys are usually represented by a slanted line between the holes for the respective second and third fingers.

The fingers are referred to as LT, L1–4, RT, R1–4. 1 denotes the index finger, not the thumb.

To avoid overloading the text with diagrams, fingerings are also notated in shorthand text form: for example, Rx/xxxC#/xxxF. In the shorthand form, the direction left-to-right corresponds to top-to-bottom in the diagram and on the instrument; to aid legibility, slashes separate left thumb / left-hand fingers / right-hand fingers. An x denotes a closed hole, o an open hole, ø a partially opened hole or a finger depressing a ring without covering the associated hole. As with the full diagrams, R denotes the register key and all other keys depressed are named according to the note with which they are associated in the fundamental (chalumeau) register.

Keys for the lowest notes of the bass clarinet vary between models. On mine, L4 has an additional key for d, R4 additional keys for d and eb, and RT keys for c# and c.

The nine-key 'Stadler' basset clarinet for which Evan Johnson composed (Chapter 7) has a register key which also serves as an a^b key. Other keys are present for a' (L1), g# (R4), f# (L4), and e (L4), in the same positions as the above diagram. R4 additionally has a keyless hole for f. Keys for e^b, d, c#, and c are on the rear of the instrument, operated by RT. A hole on the 'knee' leading to the bell gives B if held against the player's body while fingering c.

Use is occasionally made in the text of specific terms for the clarinet's registers:

- chalumeau: the fundamental register, from e (or c if present) to b^b;
- throat: the highest notes in the fundamental register, from g' to b^b;
- clarino: the first overblown register / third partials, from b' to c''.

Chapter 1: Introduction

interactions

The increasing academic attention devoted in the recent past to composer-performer interaction has perhaps as much to do with the increasing acceptance of performance as research, and the increasing presence of performers in academia, as with a genuine change in collective praxis. For much of the history of Western art music, the composer-performer interaction would have taken place within one person's head. As Sawyer and DeZutter note, “[w]hen cognitive processes are distributed across groups, they become visible”¹: the (historically speaking) relatively recent Platonic split of composer and performer from their respective soulmates is a prerequisite for the process to leave any traces at all for other parties to examine.

In their (itself collaborative) *Recercar’ – The Collaborative Process as Invention* (2007), Fabrice Fitch and Neil Heyde make the crucial point that the process from compositional idea to performance does not simply involve a handover of responsibility for the work at a clear single point in a linear process. They observe:

In a musical culture that has understood the performer's role primarily as mediator between composer/piece and audience, very little attention has been paid to the performer's potentially significant mediation between composer and piece.²

The passage from compositional idea to finished work is for non-composers one of the great mysteries of the compositional process. (Harrison Birtwistle provides an apt description of his own perspective: “[i]t's as if the whole piece is sounding in your head. It's got nothing to do with the particular details. It's as if the entire piece is there, as if time is in a ball [...] [T]hat's a bit how it is before I write a piece [...] I know what it is before I've even written it, but in other ways I don't know at all. As I unravel it, it never turns out to be what you think it's going to be”.³) The specifics of the sonic materials available for the realisation of the work can hardly fail to form a part of the process leading to a fully elaborated musical form in such a collaborative process as those considered here: it should be no surprise to find it in certain cases operating at a far deeper level than the purely cosmetic.

Fitch and Heyde additionally observe that “[c]ollaboration is frequently a matter of the performer giving the composer access to his ‘box of tricks’, or of the composer presenting notated sketches to be tried out, adopted, discarded, or refined. Such pragmatic approaches may well be beneficial to both parties, but they come at the cost of reinforcing the boundaries inherent in their respective roles”.⁴ There is doubtless something of these two processes in most collaborative interactions. None of the collaborative relationships considered in the present project has been entirely devoid of them. It is extremely probable that a performer with any significant prior knowledge of their

¹ R. Keith Sawyer and Stacey DeZutter, “Distributed Creativity: How Collective Creations Emerge from Collaboration”. In *Psychology of Aesthetics, Creativity, and the Arts*, Vol. 3, No. 2 (2009), 81.

² Fabrice Fitch and Neil Heyde, “Recercar’ – The Collaborative Process as Invention”, in *Twentieth-Century Music* 4, No. 1 (2007), 72.

³ Harrison Birtwistle and Fiona Maddocks, *Wild Tracks* (London: Faber & Faber, 2014), 162.

⁴ Fabrice Fitch and Neil Heyde, “Recercar’ – The Collaborative Process as Invention”, in *Twentieth-Century Music* 4, No. 1 (2007), 72.

instrument (presumably a prerequisite for such a collaboration) will bring *something* ready-for-use to the process, and it is certainly an essential part of any dialogue that the composer confer with the performer on how their instrument-specific techniques might manage the transition from catalogue to musical utterance. At the same time, none of the collaborations considered here has avoided the type of interaction in which each party has, to some extent, stepped on the other's turf: a more vulnerable position but incomparably more intimate, and certainly with the potential to bear fruit in ways unthinkable in a rigidly partitioned process.

materials and methods

The use of instrument-specific techniques as more or less optional extras in an otherwise abstract musical texture is a familiar phenomenon. At the other extreme, the piece which consists almost entirely of such techniques is hardly less so. Instrument-specific techniques have the potential not simply to ornament a structured musical discourse (or even to substitute for one) but to contribute fundamentally to its substance. Collaborative work has the potential for the parties not only to combine the materials they contribute, but symbiotically to advance their individual understanding of their own praxes. None of the collaborations here solely involved me contributing pre-existing materials. All required me to find materials additional to those I initially brought to the process, and in some of these cases finally provided me not only with new sonic resources but with a new understanding of their categorisation.

It is a trivial observation that each of these composers during this process expanded their knowledge of the clarinet's potential. Some of them observe for themselves, however, that their collaboration has influenced their work beyond simply their use of the clarinet. Richard Barrett and Rebecca Saunders respectively:

I think that *interference* (the work-process as well as its results) opened a new chapter in my work with woodwind instruments, and that subsequent pieces, for oboe, flute and saxophone as well as clarinet, took a related approach to exploring the instrument's range and then extrapolating the fabric of the music from the findings of those explorations.⁵

The harmonic implications of the dyads available on the instrument defined a new harmonic field in which I could work. Up to this point I had tended to avoid harmonic fields, exploring more consciously the essentially polyphonic linear writing. Working on dyads for different wind and brass families enabled me to expand my harmonic language, creating quasi-static harmonic fields or acoustic landscapes.⁶

The precise method of interaction involved in a collaboration has an effect on the process and even on the outcome: a period of time to reflect on materials explored may present different creative implications from those involved in continued real-time investigation. The difference between the collaborative processes in Justin Hoke's, Rebecca Saunders' and Aaron Cassidy's pieces is considerable. The first involved the generation of copious recorded materials for the composer himself to notate; the second consisted of working sessions spread over several years; the third involved general discussions over several years leading to brief but concentrated in-person working sessions on three consecutive days.

⁵ Richard Barrett, email to the author, 20th August 2018.

⁶ Rebecca Saunders, email to the author, 20th May 2018.

A performer will most likely employ a certain amount of preselection in deciding which materials to offer and which situations to explore. The performer's understanding of the composer's style plays a part, and multiple feedback loops will often be at play. It is relatively unlikely that a performer will spontaneously offer something completely different from the materials previously explored, or different from what the performer already knows of the composer's already existing works, even though for the composer this may at any point be precisely the requirement. The performer may in some cases contribute to a reshaping of the composer's sonic vocabulary; the composer may in return contribute to a reshaping not only of the performer's sonic vocabulary but even of their musical identity, especially if a piece comes to figure as prominently in the performer's repertoire as, for example, Barrett's *interference* (1996–2000) and Saunders' *Caerulean* (2010–11) have in mine. The techniques brought by a performer may come to exercise an influence in the composer's wider output beyond the needs of the specific piece or even the considerations of the particular instrument involved: the musical properties of materials derived collaboratively may come to occupy a more prominent place in the composer's musical priorities. It is self-evident that the responsibility for compositional decisions and the final authorial status rest with the composer; nonetheless, the materials which supply the basis for those decisions may well be created with, and in some cases by, the performer, and constitute an input which can only realistically be described as creative. Fitch and Heyde again, concerning Lachenmann's dictum "composing means building an instrument"⁷:

[T]he composer becomes, according to Lachenmann, not only an organologist but also an instrumentalist [...] But the converse is also true: in the process of reshaping the instrument, the performer takes on some of the attributes of the composer in Lachenmann's model.⁸

distribution/emergence/improvisation

The topic of creativity itself is surely limitless and has been analysed from a variety of perspectives. An individualistic focus has long been superseded by a model of creativity not merely embedded in but arising from its socialities: as Howard Becker succinctly puts it, "art as something people do together".⁹ The notion that creative input within a collaborative context might be distributed among its participants is widely acknowledged and has received extensive critical attention at a variety of levels of focus, from researchers considering the wider phenomenon to participants documenting their own practice: productive recent examples are offered in particular by Fitch and Heyde (2007), Östersjö (2008), Roche (2011), Clarke, Doffman, and Lim (2013), Kanga (2014), and Payne (2015).

Keith Sawyer and Stacy DeZutter's consideration of distributed creativity, primarily from the perspective of improvised theatre, has been particularly influential. They note that "a wide range of empirical studies has revealed that significant creations are almost always the result of complex collaborations".¹⁰

⁷ In the original: "*Komponieren heißt: ein Instrument bauen*" (Lachenmann's italics). Helmut Lachenmann, "Über das Komponieren", in *Musik als existentielle Erfahrung* (Wiesbaden: Breitkopf & Härtel, 1996/2015), 77.

⁸ Fabrice Fitch and Neil Heyde, "Recercar' – The Collaborative Process as Invention", in *Twentieth-Century Music* 4, No. 1 (2007), 92–3.

⁹ Howard S. Becker, "Ethnomusicology and Sociology: A Letter to Charles Seeger", *Ethnomusicology* 33 (1989), 282.

¹⁰ R. Keith Sawyer and Stacey DeZutter, "Distributed Creativity", 81.

In their view an improvisational environment affords optimum conditions for what they term ‘collaborative emergence’:

Collaborative emergence is more likely to be found as a group becomes more aligned with the following four characteristics:

- the activity has an unpredictable outcome, rather than a scripted, known endpoint
- there is moment-to-moment contingency: each person’s action depends on the one just before
- the interactional effect of any given action can be changed by the subsequent actions of other participants
- the process is collaborative, with each participant contributing equally.

Collaborative emergence is a defining characteristic of social encounters that are improvisational because only when the outcome is not scripted can there be unpredictability and contingency.¹¹

There is necessarily some slippage involved in attempting to transfer these considerations, originating in a theatrical context, to music, particularly to a musical context involving a division of roles. Sawyer comments elsewhere that “the extreme situation of collaborative emergence would be a fully improvised performance, one that did not begin with any score, and one performed by an ensemble that was not controlled by a conductor”.¹² A musical situation in which materials for a notated work are arrived at in dialogue between composer and performer lies outside this frame of reference. It is clear that collaborative emergence is not so easily discernible in *the performance itself* of a scored work (it is, however, far from being entirely absent – Sawyer acknowledges that “there remains some degree of collaborative emergence, because of the unavoidable moment-to-moment contingency of performance, and the interactional effects of each performer’s actions on those of the others”¹³); the performance itself, however, is not the only musical process worthy of consideration in this context.

The nature of ‘improvisation’ has itself received close attention, revealing itself as a slippery thing indeed under close examination. Bruce Ellis Benson notes the applicability of the term to a wide range of musical situations, noting that improvisational impulses are to be found in many creative musical situations besides that of a scoreless performance.

Composers never create *ex nihilo*, but instead “improvise”: sometimes on tunes that already exist, but more frequently and importantly on the tradition in which they work. Performers – even when performing music that is strictly notated – do not merely “perform” but also “improvise” upon that which they perform. Thus, there are many senses or levels of improvisation, probably so many as to make firm distinctions impossible.¹⁴

Elsewhere he refers more explicitly to a situation corresponding more closely to those considered here:

¹¹ R. Keith Sawyer and Stacey DeZutter, “Distributed Creativity”, 82.

¹² R. Keith Sawyer, “Musical Performance as Collaborative Practice”, in *Collaborative Creative Thought and Practice in Music*, edited by Margaret S. Barrett (Surrey: Ashgate, 2014), 273.

¹³ *ibid.*

¹⁴ Bruce Ellis Benson, *The Improvisation of Musical Dialogue: A Phenomenology of Music* (Cambridge: Cambridge University Press, 2003), 25–26.

If composers improvise their pieces amid the activity of music making, then performers are *already there*. For they are just as much a part of music making as composers. *There is no sense in which the composer is prior* – either ontologically or historically.¹⁵

His concept of ‘improvisation’ is undeniably (and deliberately) broad, and not uncontentiously so. Georgina Born comments that:

[...] it is becoming common to highlight the improvisational qualities of the performance and even the composition of Western art music (Benson 2003), thus attempting to lessen its ontological difference from other forms of human music making. Yet despite these qualifications, the ontological differences outlined remain resilient, and some of the effort being expended on eliding them seems misguided. The nature of improvisation, to take an obvious point of contention, is quite different when applied to the interpretation of scores or the working out of material in the production of a scored composition as against when it is understood to be the primary act of musical creation in live performance. Improvisation is practically, materially and aesthetically different in each of these settings, above all because these differences come enmeshed in distinctive musical ontologies.¹⁶

Born stops short, however, of contradicting Benson’s thesis outright (the ‘some’ is decisive): the passage comes in the context of *her own* qualification of the differences between the musical ontologies she examines, and such a qualification, specifically in the matter of their possessing characteristics that can be described as improvisational (“practically, materially and aesthetically different” as they may be), is precisely Benson’s point. In any case, any musical manifestation, whether or not it involves a score, exists as part of a process comprised of multiple encounters in each of which unpredictability and contingency can play a decisive part. That the manifestation itself may involve a ‘script’ of a kind says nothing in itself about spontaneities in the process that gave rise to it. Composer/performer Frederic Rzewski puts it pithily: “of course improvisation exists in classical music. It’s called interpretation”¹⁷, referring not even to the creation of new written works but to the performance of existing repertoire.

Richard Barrett, of the composers considered here the most active as an improvising (or indeed as any kind of) performer, explicitly stresses the improvisational qualities of his compositional practice, not only in his own improvisational performances (whose compositional nature he takes care to emphasise) but in the processes leading to his notated works.

It isn’t so easy to make a statement on the ‘crosstalk’ between my improvisational and compositional activities, because in my own mind they are so intertwined as to be inextricable [...] [M]y compositional work, especially in the intimately instrument-related aspects I mentioned before, has been deeply affected by the attitude towards instrumentalism, as well as the sound-worlds, characteristic of free improvisation. This doesn’t mean that my compositions are in some way written-out improvisations, except in the sense that the somewhat complex compositional systems and procedures which lie behind my work are intended to delineate a ‘virtual space’ in which this instrumentalism, as well as the poetic identity of the work and its in-time structure, become the ‘physical laws’ governing the pathway(s) taken by the music, rather than defining those pathways with a controlling strictness. Another way of putting this would be to say that the systems

¹⁵ Bruce Ellis Benson, *The Improvisation of Musical Dialogue: A Phenomenology of Music* (Cambridge: Cambridge University Press, 2003), 148 (his emphasis).

¹⁶ Georgina Born, “Music: Ontology, Agency, Creativity”, in *Distributed Objects: Meaning and Mattering after Alfred Gell*, edited by Liana Chua and Mark Elliott (New York: Berghahn Books, 2013), 148–49.

¹⁷ Luk Vaes, “Testing Respect(fully): An Interview with Frederic Rzewski”, in Paolo de Assis (ed.), *Experimental Affinities in Music* (Leuven: Leuven University Press, 2015), 221.

and procedures together constitute an ‘instrument’ on which improvisation becomes possible: but an instrument embodying time-proportions, structural relationships and so on. Or is that pushing a shaky analogy too far?¹⁸

The above was written in 1998; Barrett expands on the point in an interview from 2014.

[T]hese techniques for me are there in order to create ‘instruments’ I can respond to spontaneously. I want to create the conditions where the potential of sudden insight can be made fruitful [...] One of the things I might systematise, for example, is the order in which I might compose the cells or segments of a composition, not arbitrarily but as an essential part of the evolution of the music’s expressive and structural identity. I would then randomise the order in which I complete the composition of these segments. I might start off somewhere in the middle, with empty spaces before and after, above and below, and as the random filling of the mosaic proceeds, I begin to have to make connections between segments in any or all directions.¹⁹

Improvisation also receives consideration in even broader contexts than music and theatre, in a manner which can productively be brought to bear on the musical environment. In Ingold and Hallam’s *Creativity and Cultural Improvisation*, the term is considered from a primarily anthropological viewpoint. They cite John Liep (with whom, it should be noted, they explicitly disagree), “associating creativity with the production of novelty *as opposed* to the ‘more conventional exploration of possibilities within a certain framework of rules’ [...] for the former he uses the term *innovation* – which he regards as a virtual synonym for creativity – while reserving the term *improvisation* for the latter”.²⁰ Where, then, in this consideration, does the ‘production of novelty’ reside in a composer-performer collaboration? Is it in the origination of new instrumental materials, where the performer’s contribution is certainly at its most useful? Or is it in their assemblage into a musical form, almost invariably the proviso of the composer? It is perhaps not so useful to take this line of questioning too far, but it is nonetheless instructive to see a definition of the term ‘improvisation’ that might be considered more applicable to the composer’s side of the interaction than to the performer’s.

In any case, Ingold and Hallam continue: “[o]ur claim is not just that life is unscripted, but more fundamentally, that it is unscriptable [...] it would [...] be a mistake to suppose that a disciplined performance that strains after the perceived perfection of its model is any less improvisatory than one that celebrates the leeway of performers to follow any path they choose”.²¹

clarinets in general

As with any other instrument, the clarinet has never offered a truly blank canvas to composers. With few exceptions, the most notable solo works have to some extent turned the instrument’s ‘limitations’ into their material, not merely steering around technically restrictive aspects but embracing the instrument’s specific capabilities to the point where they contribute to shaping the musical discourse.

¹⁸ Richard Barrett, “Tracts for our times”, *The Musical Times*, Vol. 139, No. 1864 (Autumn, 1998), pp. 21–24.

¹⁹ Richard Barrett, quoted in Andrew Ford, *Earth Dances: Music in Search of the Primitive* (Collingwood: Black Inc., 2015), 54–55.

²⁰ Tim Ingold and Elizabeth Hallam, “Creativity and Cultural Improvisation: an Introduction”, in Tim Ingold and Elizabeth Hallam (eds.), *Creativity and Cultural Improvisation* (Oxford: Berg, 2007), 2.

²¹ Tim Ingold and Elizabeth Hallam, “Creativity and Cultural Improvisation: an Introduction”, in Tim Ingold and Elizabeth Hallam (eds.), *Creativity and Cultural Improvisation* (Oxford: Berg, 2007), 12–13.

The earliest documented clarinet concerto, composed by Valentin Rathgeber (1682–1750), dates from 1728. It is almost entirely diatonic in its demands on the soloist except for the single chromatic degree $f^{\#}$, and makes little use of the instrument’s range below c , with only c , e , and g appearing in this part of the range. The six concertos composed after 1743 by Johann Melchior Molter (1686–1765) are more varied in their demands. They employ only a handful of chromatic notes, but, precisely because of the relative paucity of chromatic degrees available, these are decisive in determining the tonal areas which the pieces visit. The works composed by Wolfgang Amadeus Mozart (1756–1791) for the soloist Anton Stadler (1752–1812) will be considered in some detail later. They show a close relationship between Stadler’s capabilities on his newly invented clarinet with extended range (but otherwise, as far as we can tell, with normal late eighteenth-century keywork) and tonal areas privileged in the musical discourse.

The clarinet reached its present shape, at least in terms of the layout of its keys, surprisingly early.²² Less than 60 years separate the Lotz basset clarinet Stadler played (Mozart’s Quintet KV 581 was first performed at the end of 1789) from the Klosé- Buffet patent (1844) for a clarinet almost identical in keywork to today’s French-system instruments. If the instrument Klosé and Buffet presented at the 1839 Paris Exhibition was the same instrument they patented in 1844, a mere half-century separates their instrument from Stadler’s.²³

Adorno polemically notes concerning a child who has found a new harmony on a piano: “[...] But the chord was always already there, the possibility of combinations is limited, actually everything already rests within the keyboard itself”.²⁴ To what extent can multiphonics and other recently-developed resources be said to be ‘already there’ in an instrument which reached its current key layout around 180 years ago, at a time when even such a repertoire staple as Robert Schumann’s 1849 *Fantasiestücke* had yet to be written? One hesitates to imagine an enterprising soloist in the 1840s presenting Schumann with a palette of small-interval dyads – and yet these techniques are perfectly possible on instruments of this vintage. Whether or not (and in what sense) these resources can reasonably be considered as already ‘resting within’ the instrument of Buffet and Klosé’s 1844 patent, the instrument is being used to achieve a result that its creator could not conceivably have foreseen. The instrument has barely changed; the performer has constructed new affordances. Any suggestion that these instrument-specific techniques might be seen solely as properties of the instrument itself which the performer merely ‘finds’ should, then, be taken with a degree of scepticism: it seems far more realistic to accept that these techniques are indeed inventions of the performer, originated through constant re-evaluation of their instrumental approach. Perhaps it is in any case polemical to push the distinction too far, given that our word ‘invention’ derives from the Latin *invenire*, one meaning of which is ‘to discover’. In addition, it should at no point be forgotten that the instrument is not merely a tool of the performer: the performer has spent, in most cases, the greater part of their lifetime, including some of their formative years (in the most literal sense), having their imagination (and to a far-from-trivial extent their physical bodies) shaped by the possibilities and history of the instrument. The ramifications of my training as a clarinetist extend from such cosmetic considerations as the shape of my right thumb to the musculature of my face and the potential of my breathing apparatus. The instrument,

²² The inside is another matter: the internal dimensions of the instrument have been subject to continual readjustment, in particular with the aim of improving the intonational relationship between the registers.

²³ E.A.K. Ridley, “Birth of the ‘Boehm’ Clarinet”, in *The Galpin Society Journal* 39 (September 1986), 68.

²⁴ Jonathan De Souza, *Music at Hand: Instruments, Bodies, and Cognition* (Oxford: Oxford University Press, 2017), 26.

in its broadest sense (not simply, or even necessarily primarily, as a tool of wood and metal, but as an absorbed, embodied, lifelong discipline) acts upon the performer; an individual performer's agency contains, in Ingold and Hallam's phrase, "the dynamic potential of an entire field of relationships".²⁵

Close considerations of instrumental physicality in the literature so far fall short of significantly illuminating what happens inside a clarinet. Part of the reason is that, in contrast to the more easily observed keyboards and strings, so much is indeed not happening inside the clarinet but inside the player. The role of the clarinetist's fingers is not primarily one of sound production; their positioning merely determines the length of the resonating air column, except in rare passages where percussive key- or finger-noise is specifically called upon. The embouchure determines certain features of the reed's vibration, but crucial aspects of instrumental resonance are hidden inside the body. The 'instrument', fully considered, is barely more susceptible to precise quantitative analysis than that of a singer. Jonathan De Souza's *Music at Hand*, a particularly important text in this context, focusses, as its title implies, primarily on what is happening at the external interface between performer and instrument. His brief consideration of Helmut Lachenmann's *Dal Niente (Intérieur III)* (1970)²⁶ accordingly privileges the surface level of finger movements over the liminal area between breath and tone production which is far more central to the work. Lachenmann in his own note on *Dal Niente* points to a strand of thought that finds an echo in many of these collaborations, writing that "all sounds point, to a certain extent, to the prerequisites for their production".²⁷ In my collaborations with Cassidy and Hoke in particular, the process of discovering the new sonorities found for the works is to a certain extent 'staged' in the works themselves.

Neither in orchestral use nor in a contemporary music context is the clarinetist restricted to a single instrument. At least as long ago as Schoenberg's *Pierrot lunaire* (1912) the bass clarinet became an essential addition to the clarinet's contemporary music palette, and the clarinet in E^b, clarinet in A, basset horn and contrabass clarinet all have their own distinct voices, with solo pieces to exploit them. The multiple tonal palettes of the clarinet family are themselves a productive resource. Research on any one instrument informs investigations of the others and each has its own predilections arising from its individual acoustic properties. The larger reed and lower fundamentals of the bass and contrabass clarinets create excellent conditions for slap-tonguing and for overtone multiphonics, encouraging the player to explore these techniques further on the smaller instruments. In the other direction, even in the standard repertoire the bass clarinetist is encouraged to pursue greater technical agility by their own capabilities on the smaller instruments, while the pursuit of glissando techniques on the bass clarinet is invariably aided by the target provided by the same performer's own example on the soprano clarinets.

The historical understanding of the clarinet as an exclusively monophonic instrument has long been superseded; but an important strand throughout these collaborations is a wish to develop a multiphonic concept of the instrument which significantly extends pre-existing norms. It is relatively common in the clarinet's late twentieth-century solo repertoire to see a multiphonic used

²⁵ Tim Ingold and Elizabeth Hallam, "Creativity and Cultural Improvisation: an Introduction", in Tim Ingold and Elizabeth Hallam (eds.), *Creativity and Cultural Improvisation* (Oxford: Berg, 2007), 7.

²⁶ Jonathan De Souza, *Music at Hand: Instruments, Bodies, and Cognition* (Oxford: Oxford University Press, 2017), 86.

²⁷ "...alles Klingende [weist] zu einem gewissen Grad von sich weg auf die Voraussetzungen seiner Hervorbringung [hin]". Helmut Lachenmann, *Musik als existentielle Erfahrung* (Wiesbaden: Breitkopf & Härtel, 1996/2015), 382.

purely as an ‘iconic’ sonority to underline a pivotal moment in a musical form constructed otherwise out of exclusively monophonic materials – Berio’s *Sequenza IXa* (1980) and Elliott Carter’s *Gra* (1993) supply two classic examples. A woodwind instrument capable of a few harmonic verticalities is one thing; one that is capable of realising a harmonic texture, unique to the instrument, that is nonetheless of sufficient scope to sustain a compositional argument is quite another. The mere *novelty* of the sounds is of subsidiary importance, indeed in itself is to some extent a distraction, as Lachenmann cautions, with typically polemic tone.

Certainly, there are always new instrumental techniques to discover; there is no need to avoid them. But ‘new sounds’ as such are not the point; rather a mode of listening that constantly renews itself through reflection, and which must show equal proficiency in dealing with familiar and unfamiliar sounds alike – though the latter seems rather more easily achieved, in the sense that it bypasses genuinely innovative claims, instead withering away in the sonically ‘interesting’ – i.e. boring – no man’s land of exotic defamiliarizatory acrobatics.²⁸

In Rebecca Saunders’ *Caerulean* (2010–11), the use of multiphonic textures is practically continuous, and other bespoke sonorities perform a similar function. In her three (to date) *Stirrings Still* pieces (2006, 2008, 2019 respectively) it is the few *single* notes that stand out from the multiphonic texture, aided by a crescendo-diminuendo that although relatively gentle stands out from the constant pianissimo of the dyads.

my clarinets (and other resources)

All performers bring a specific creative identity to a collaborative situation: a composer working with me is certainly not confined to using the clarinet as a ‘blank canvas’, whatever aspects of my resources they may finally choose to incorporate in the work.

My work in Ensemble Musikfabrik and ELISION is rarely restricted to the clarinet’s most familiar models, and I bring a relatively wide range of instruments to these collaborations for possible use. I also have a substantial stock of copies of various historical models of members of the clarinet family, including chalumeaus and Baroque clarinets, as well as Classical models, one of which Evan Johnson chose for *indolentiae ars*. Although many performers of new repertoire have also been prominent in performance of standard repertoire on historical instruments (Alan Hacker, Hans Deinzer, Lesley Schatzberger, Antony Pay and Charles Neidich being only a few notable examples), there is still relatively little contemporary repertoire utilising this resource in depth. This is understandable enough: a composer must certainly have very specific intentions for an historical instrument to compensate for the inevitable restriction of the pool of possible performers for a new work, even if Johnson’s “nobody else will ever play it”²⁹ is (one hopes) an exaggeration. It is entirely possible that “*indolentiae ars*”, *a medium to be kept* (2015) (see Chapter 7) constitutes the first detailed use of specifically notated multiphonics for a clarinet with historical setup.

My particular focus on the area of small-interval dyads has led to a collective expansion of this resource involving several composers and indeed other performers, in which its exploration in

²⁸ Helmut Lachenmann, “Philosophy of Composition: Is there such a Thing?”, in Peter Dejans et al. (eds.) *Identity and Difference: Essays on Music, Language and Time* (Leuven: Leuven University Press, 2004), 66.

²⁹ Evan Johnson, email to Emily Payne, 15th April 2014, quoted in Emily Payne, “Repurposing the Past? The Historical Basset Clarinet in Creative Collaboration,” *Contemporary Music Review* 35, No. 6 (2016): 649.

Saunders' *Stirrings Still* (2006) and Barrett's *Flechtwerk* (2004–2006) has led to its further exploration in other collaborations, not all of them with any direct connection with me, and on other members of the clarinet family. In particular, Heather Roche's blog (heatherroche.net) has become an important and influential resource on this subject, and on many others relating to the clarinet and its repertoire.

Similarly, many of the pieces to be considered here have been taken up by other performers. The Saunders works in particular have been taken up by players such as Richard Haynes, Ernesto Molinari, Shizuyo Oka, Heather Roche, and Olivier Vivarès – and given Saunders' penchant for allowing material to recur across works, there are few of her recent clarinet parts which do not draw on these resources to some extent. Barrett's *interference* is perhaps the most surprising in this regard, since its vocal requirements initially seemed to both Richard and me likely to deter future players. In fact, its demands in this regard seem if anything to have had the opposite effect, attracting players partly because of its potential for displaying the performer's vocal abilities (Dominique Clément of the French-based Ensemble Aleph took it up not long after its first performance, giving the French premiere in 2001, and several other players have performed it since, notably including Richard Haynes, Theo Nabicht and Lori Freedman).

My own instrumental resources are used to various degrees in different works. My own performance resources do not stop at the instrument, even the instrument itself includes the vocal tract as an inescapable part of its resonance, and the composers considered here make varying use of my vocal resources and other aspects of my performance identity. The exact boundary of what constitutes suitable material for a new clarinet work is difficult to fix. Evan Johnson writes, in the dedication to "*indolentiae ars*", *a medium to be kept* (2015):

This piece is tailored in every possible way to Carl Rosman: his unusual instrument and his explorations upon it (and therefore his multiphonics, his fingerings, his microtones), his transcendent virtuosity, his penetrating intellect, his tolerance of ambiguity, his immersion in musical history, his voice, his stage presence, his control of silence, even his page-turning technology.³⁰

Although this is characteristically generous phrasing from Johnson, he makes the point amply clear that the resources a performer brings to a collaboration are very much not confined to the instrument, and certainly cannot be restricted to areas suitable for written description or analysis. A performer's on-stage personality, and indeed various off-stage interactions not necessarily directly connected with the task at hand, can all percolate into the collaborative process. There is no inherent reason why these things should necessarily be, as a musical resource, less important than a multiphonic chart.

I have developed my vocal resources to a greater degree than most instrumentalists and have given several performances of Maxwell Davies's *Eight Songs for a Mad King* (1969), as well as such repertoire works as Xenakis's *Kassandra* (1987) and Georges Aperghis's *Récitations* (1978). I have also premiered solo vocal works by two of my collaborators here, Evan Johnson (*A general interrupter to ongoing activity* (2011)) and Aaron Cassidy (*I, purples, spat blood, laugh of beautiful lips* (2003–2006)).

³⁰ Evan Johnson, "*indolentiae ars*", *a medium to be kept* (Unpublished, 2015), i.

Those works were not originally conceived for me to sing.³¹ Nonetheless, they precede the composers' solo clarinet works created in collaboration with me, and even though Cassidy did not make use of my vocal resources in his clarinet solo *The wreck of former boundaries* (2016), our collaboration on the piece for voice is an inescapable part of our mutual background.

The most explicit use of my vocal resources in a clarinet work is in Richard Barrett's *interference* (1996–2000), which begins with a vocal solo gradually descending from high falsetto through a four-and-a-half-octave range. Their appearance in Evan Johnson's "*indolentiae ars*", *a medium to be kept* (2015) is no less important for being rather less spectacular: voice and clarinet are combined throughout, the voice gradually taking on more importance than the clarinet, in the end having the last (fragmentary) word. Rebecca Saunders has not so far made use of my voice in a solo or chamber work, but her *Yes* (2016–17) for ensemble, composed for Ensemble Musikfabrik, employs the voices of all participants speaking fragments from Molly Bloom's final monologue in James Joyce's *Ulysses* (1918–20), and between the first and second performances the work acquired an additional brief monologue, spoken by me, the only passage in the work where Joyce's text is heard continuously at length. One of Saunders' longer-term plans, with no fixed date at the time of writing, is a work for the Donaueschinger Musiktage for alto voice, bass clarinet, accordion, and large choir, in which all participants' voices will be used, mine extensively filtered through the instrument.

Transferability of the specific resources employed here was at no point a significant concern – at least not for me. (It is quite normal in a collaborative situation for a composer to ponder out loud whether the other players will be able to play the piece. My stock reply is that I am precisely the wrong person to ask.) Since the collaborations necessarily focus on what I can contribute to the evolving work, they usually explore highly specific properties of my own praxis. This includes specific properties of my own instrumental equipment. Some of my instruments are more or less standard-issue, but others are more or less distant from current widely available models due to age (my bass clarinet dates from 1992, my E^b clarinet from the 1960s) or to simply not being designed for orchestral performance (the replica Stadler basset clarinet employed by Evan Johnson). The intention in this project is not primarily to help future performers to come to grips with this specific repertoire, but far more to document the productive potential of a particular kind of collaborative practice.

Barrett, Saunders, Cassidy, Johnson, Hoke

As the saying goes, the plural of 'anecdotes' is not 'data': this is emphatically a plurality of anecdotes. Objective methodological comparison of these collaborations is implausible. They all overlap to some extent, and given the necessarily cumulative nature of the process, they each grow from a different starting point. My own repertoire of sonorities and techniques has always been fluid and has developed considerably over the course of these collaborations. All of these collaborations involved the origination of sonorities, and thus an enlargement of my own sonic repertoire, not only for the specific piece concerned but necessarily also for the pieces which followed it, whether or not those pieces actually make active use of this expanded repertoire.

³¹ The Johnson work was originally intended for Deborah Kayser; the Cassidy work was begun without a specific singer in mind and completed on request from ELISION for me to perform.

Nonetheless, certain research questions recur across all these collaborations and receive particular consideration in what follows:

- What materials have I helped to originate for the purpose of these collaborations, either as separate researches or as results emerging from the collaborative process?
- To what extent have these materials influenced the musical content and structures of these works?
- To what extent have these materials influenced developments in the composers' works outside these collaborations?

These collaborations presented in this research have taken place across an extended period. I first worked with Richard Barrett on one of his already existing pieces in 1994, and my first working session with him towards a new solo clarinet work took place well over 20 years ago. They are also all to some extent current, as discussions with all these composers for future solo works are ongoing, in varying degrees of concreteness. There is thus no methodological homogeneity of approach across the collaborations, and it would be futile to simulate one. The one consistent factor has been the performer – however, even here, the performer who collaborated with Rebecca Saunders in 2003 is quite different in many crucial respects from the performer who collaborated with Justin Hoke in 2017 (and, for that matter, from the performer who will again collaborate with Rebecca Saunders in the future). Some of the differences are to do with the collaborations themselves, which have all exercised an influence on each other. The question of what Rebecca Saunders might have done with Justin Hoke's 'box of tricks' (or vice versa) is intriguing but ultimately hardly answerable. There is also no consistency of instrumentation, either from the point of view of the clarinet involved, or from the perspective of the full instrumental setting: considered here are solo works, small chamber works and the clarinet parts in a work for full ensemble. The composers' levels of prior experience in writing for the clarinet also differed widely, as did their level of compositional experience in general.

It would have been entirely possible to create a separate tabulation of sonorities originated for the specific works and the more general collaborative relationships discussed here. However, this would have been contradictory to my working methods and to the aims of my collaborative practice, which include allowing resources originated as part of the process to shape musical situations at the largest feasible scale, ideally to the point of determining musical materials and structures, rather than simply providing isolated sonorities for an existing musical form.

The portfolio itself, rather than a series of fingering charts, serves as the true documentation of the research outcomes of the continuing and larger project. This work is thus quite distinct in its aims from research which seeks to establish a palette of sonorities on which composers and performers can subsequently draw independently of the musical context: such material can readily be found in the standard treatises prepared to this end (notably those by Rehfeldt³², Krassnitzer³³, and

³² Phillip Rehfeldt, *New Directions for Clarinet* (California: University of California Press, 1977/94).

³³ Georg Krassnitzer, *Multiphonics für Klarinette mit deutschem System und andere zeitgenössische Spieltechniken* (Aachen: Edition Ebenos, 2002).

Bok/Wendel³⁴). Important recent work has also been devoted to revising and augmenting these treatises, for example by Sarah Watts, whose tabulation of resources for bass clarinet³⁵ is expressly designed “to create a new and up-to-date comprehensive resource and original and accurate charts for both performers and composers in a way that is useful and that will encourage both parties to experiment further with their use”³⁶ – an important aim, but quite distinct from my own.

If the clarinet is not a blank canvas, neither is the performer. My own aesthetic preferences/agenda are undoubtedly present in my investigation and selection of material, and would have been perverse to suppress even if I had wanted to, especially given this project's location primarily in the artistic realm. Again, analysing them realistically would require more distance than I either have, or wish as this stage to acquire, especially given that the broader project is ongoing. I have, similarly, largely avoided subjecting the work considered here to perceptual or phenomenological frames of theoretical reference: they would be external to the work itself and I neither have, nor desire to have, the necessary distance to do so.

I do not imagine that a reader will approach this project expecting it to constitute an objective or distanced analysis of the work it contains. I certainly have not. The collaborative work came first, the research project second: this is a documentation of collaborative instances in the work of a performer, not a project conceived *ab initio* as research. I did not have spare resources during these collaborations to devote to real-time documentation. Documentation in these collaborations is largely confined to such materials as emerged naturally from the working process, with the notable exception of the collaboration with Evan Johnson, whose documentation by Emily Payne, present at many of our working sessions, is published elsewhere.³⁷ Rather than research into established models of collaborative practice, this thesis presents a variety of ongoing emergent relationships between several composers and a single performer, exploring circumstances under which reciprocal creative stimulus has occurred.

Richard Barrett had already written a substantial solo work for clarinet by the time we met (*knospend-gespaltener* (1992–93) for clarinet in C, composed for Andrew Sparling). We met for the first time at the 1994 Darmstädter Ferienkurse, where I performed the work. He would shortly complete another (*CHARON* (1994–95) for bass clarinet), also composed for Sparling. He had also composed for clarinet in several chamber and ensemble works, notably for E^b clarinet in *Another heavenly day* (1989–90). Some of his investigations were made without the intervention of a separate performer:

My first two solos for clarinet were written for Andrew Sparling, although another strong influence was the metal clarinet I found in a flea market in London at the beginning of the 1990s, which formed the context in which I first began to understand the logic and personality and irregularities of the instrument, actually the first woodwind instrument I'd investigated in such detail.³⁸

³⁴ Henri Bok and Eugen Wendel, *New Techniques for the Bass Clarinet* (Paris: Editions Salabert, 1989),

³⁵ Sarah Watts, “Spectral Immersions: A Comprehensive Guide to the Theory and Practice of Bass Clarinet Multiphonics” (PhD diss, Keele University, 2015).

³⁶ *ibid.*, 8.

³⁷ Emily Payne, “Repurposing the Past? The Historical Basset Clarinet in Creative Collaboration”, in *Contemporary Music Review* 35, No. 6 (2016).

³⁸ Richard Barrett, email to the author, 20th August 2018.

One of the most characteristic features of Barrett's clarinet writing, employed in the solo works *knospend-gespaltener* (1992–93) and *CHARON* (1994–95) as well as in many chamber and ensemble works, was arrived at by this process: the use of the R1 'trill' keys for purposes other than the trills for which they were originally intended, a technique which runs throughout Barrett's clarinet work from *knospend-gespaltener* onward, with the exception of *interference* (1996–2000), written for a contrabass clarinet not possessing these keys.

At the time we met, **Rebecca Saunders** was a composer who, although relatively well-established, had composed nothing for solo clarinet, and nothing which had explored the clarinet's tonal palette in precise detail. The first work of hers I was able to experience in depth was *albescere* (2001) – we met in the context of an Ensemble Modern project in which I played, although on that occasion I did not play this piece. The writing for clarinet in *albescere* presents a tantalising prospect for a performer interested in further collaboration: a composer intensely interested in the clarinet's tonal range although working with it in a broad descriptive sense rather than in detail. Multiphonics are required but specified only with a single note and a description. This practice would continue in the first work by Saunders I played, the clarinet/cello/electric guitar material from *insideout* (2003), also found in different forms in *chroma* (2003) and *vermilion* (2003). Saunders writes:

After *vermilion* in 2003 it became clear I had to get seriously specific and as I was working so closely for so many projects with you and with MF [Ensemble Musikfabrik], big projects and small, I began with you to notate very exactly these fragile sounds that so fascinated me. These sounds are made for the Boehm system, born out of their fascinating inconsistencies and wealth of colour.³⁹

Those 'fragile sounds' were the dyads I demonstrated to her at our first working meeting, and appropriately shaped would eventually form almost the entire clarinet material for *Stirrings Still* (2006). Saunders continues:

[...] what drew me to the instrument pre-rosman, so to speak, was the extraordinary purity of tone of the clarinet, the ability to come out of and disappear into silence. the extraordinary quality of circular breathing. a timeless static quality.⁴⁰

The 'ability to come out of and disappear into silence' would be ideally demonstrated in the multiphonic palettes for Saunders' future clarinet music.

Like Richard Barrett, **Evan Johnson** had, by the time he first wrote a piece for me to premiere, already enjoyed a continuing productive collaboration with a clarinetist, in this case Gareth Davis, for whom he had already composed the solo work *Supplement* (2004, for bass clarinet) and would soon compose *Ground* (2010, for contrabass clarinet). As with Barrett, the clarinet was the first woodwind instrument Johnson had investigated in detail. Indeed, in Johnson's case it was not only the first *woodwind* instrument, Johnson writing that:

[...] the clarinet became the first instrument I gained any particular sense of in any concrete, specific sense beyond the most general orchestration-textbook level of range/registral shifts/dynamic curve/etc. at the time [Johnson refers here to *Apostrophe 1* (2008)] I was interested (clearly) in the

³⁹ Rebecca Saunders, email to the author, 20th May 2018.

⁴⁰ Rebecca Saunders, email to the author, 20th May 2018.

limits of breath and in the possibilities for reliable timbral homogeneity and virtuosity at very low dynamic levels.⁴¹

Like Rebecca Saunders, Johnson again presented an attractive prospect for collaboration: a composer with an extremely exact timbral and musical imagination who nonetheless at that stage used the clarinet primarily in terms of generalities. This would not, however, eventually result in a work in which clarinet-specific techniques come particularly to the foreground (see Chapter 7).

I am not interested in writing music that says “ooh, look at this pretty sound I found”, and it’s a sort of writing I don’t have much patience for in others unless it is EXCEPTIONALLY well done... I have this constitutional reticence to doing anything particularly explicitly, though, an exaggerated distaste for even the appearance of didacticism.⁴²

The first clarinet work by **Aaron Cassidy** I premiered was written not for me but for Harry Sparnaay, who performed excerpts from the work in a number of workshops for composers but never played the piece in full. *metallic dust* (1998–99) arose from the wish to realise, for a woodwind instrument, techniques of particular interest to Cassidy at the time (and since) which originated in a particular corner of the late twentieth-century string repertoire. Cassidy writes:

[...] following a period of considerable study on the recent string music of Klaus K. Hübler and Frank Cox (namely, Hübler’s *Third String Quartet* [1982] and *Opus Breve* [1987] and Cox’s *Shift* [1994] for five cellos) in which the various elements of performance technique—bowing action, string assignments, bow pressure and position, and the fingerings of the left hand—are “de-coupled,” given separate, independent rhythmic layers which interact in wonderfully unpredictable ways.⁴³

metallic dust ‘de-couples’ the embouchure and fingers through notating their actions separately. Cassidy’s later *Being itself a catastrophe, the diagram must not create a catastrophe (or, Third Study for Figures at the Base of a Crucifixion)* (2008–9) would carry this principle further, notating the actions of the fingers separately with no explicit designation of resulting pitch.

I met **Justin Hoke** relatively early in his postgraduate studies. He was, however, far from lacking in clarinet experience, already experiencing as an undergraduate a “natural affiliation with the instrument, the repertoire, and what it can do”⁴⁴, and carried this predisposition for the instrument’s ‘extended’ technical vocabulary into *Pantomime-Aria* (2011–12), performed by Ensemble Musikfabrik in our 2012 residency at Harvard University. *Pantomime-Aria* has a relatively modest ‘extended’ palette but deploys it with fluency, and again shows a composer with tantalising prospects for more detailed collaboration.

⁴¹ Evan Johnson, email to the author, 7th August 2018.

⁴² Evan Johnson, email to the author, 7th August 2018.

⁴³ Aaron Cassidy, “Programme Note,” <http://aaroncassidy.com/product/metallic-dust/> (accessed 11th January 2020).

⁴⁴ Justin Hoke, email to the author, 8th August 2018.

Nearly all the instruments used in these studies are well established in the performance of new repertoire (the exception being the Classical nine-key basset clarinet of *indolentiae ars*). Despite this, there are many sonorities which have been originated as part of this collaborative process. There is no collaboration considered here which does *not* employ a sonority previously found nowhere else in the repertoire and unknown to me before we started work. To put it another way: there is no collaboration considered here which has not deepened my own knowledge of my instrument.

Chapter 2: Stadler and Hacker

Anton Stadler (1753–1812) and Alan Hacker (1938–2012) provide two important and contrasting historical examples of clarinetists whose collaborative work with composers, and development of their instrumental resources (not only their manner of performance, but the instruments themselves), gave them an important role in the origination of musical materials for the works composed for them. Their work merits brief consideration here as a prelude to my own case studies, not only as important and inspiring historical examples but as an influence on specific aspects of my own collaborations. Stadler's extension (together with instrument maker Theodor Lotz (1748–1792) of the clarinet's range gave rise to an instrument for which, in a modern reproduction by Peter van der Poel, Evan Johnson composed his "*indolentiae ars*", *a medium to be kept*. Hacker's role in my own work is less specific but his assertion of his role in the creation of one particular solo work (Alexander Goehr's *Paraphrase*) as being inherently compositional forms an indispensable background to much of my own research.

Stadler and Mozart

The works by Wolfgang Amadeus Mozart featuring members of the clarinet family in a soloistic role are among the pillars of the clarinet repertoire. Many of their materials are to some extent determined by then-new features of their intended performer's practice: both the extended range of his instruments, and Mozart's use of particular tonal areas cultivated by the performer.

It has long been established that the Quintet KV 581 (1789) and Concerto KV 622 (1791), among other works by Mozart, were written not for a clarinet with the now- (and then-)standard range to low e, but for a model with an extended lower range. In his consideration of the speculative original text for these works, Joel Sheveloff speculates that Mozart himself must have had a role in extending the range of the various soprano clarinets. He declares, with the full rhetorical flourish of Mozart's complete list of baptismal names: "[t]he one person who would find purpose and gain in attaining the lowest C, who would pester Lotz and Stadler for it, would be none other than Johann Chrysostom Wolfgang Theophilus Sigismund Mozart himself!" As he puts it himself, however, although "[s]everal rationales support this theory [...] none of them can be dignified by the term 'evidence'".⁴⁵ The line of argument is revealing: the extended palette of the basset clarinet has too important an influence on the fabric of Mozart's solo clarinet works for Sheveloff to give credit for it to a mere instrumentalist and an instrument builder.

The development of the basset clarinet in fact built logically on Stadler's known technical preoccupations. Contemporary accounts suggest that Anton Stadler at least sometimes played second clarinet to his brother Johann⁴⁶; it is clear that Stadler's concentration on the clarinet's low register, then still an underutilised part of the instrument's compass, was of considerable importance. Mozart's earliest surviving clarinet parts, in early divertimenti from his Salzburg period such as the Divertimento KV 113 (see Figure 1) take the usual early 18th-century approach to writing for the instrument: it is employed almost exclusively in its upper register apart from a few

⁴⁵ Joel Sheveloff, "When Sources Seem to Fail: The Clarinet Parts in Mozart's K. 581 and K. 622", in John Knowles (ed.) *Critica Musica: Essays in Honour of Paul Brainard* (Abingdon: Routledge, 1996), 379–401.

⁴⁶ Pamela Poulin, "The Basset Clarinet of Anton Stadler", *College Music Symposium*, Vol. 22, No. 2 (Fall, 1982), 67–82.

triadic notes in the lower, and the instrument's range below c' is left untouched. His second clarinet parts after his own arrival in Vienna make prominent use of 'Alberti bass' figurations, constituting a marked change in his practice.

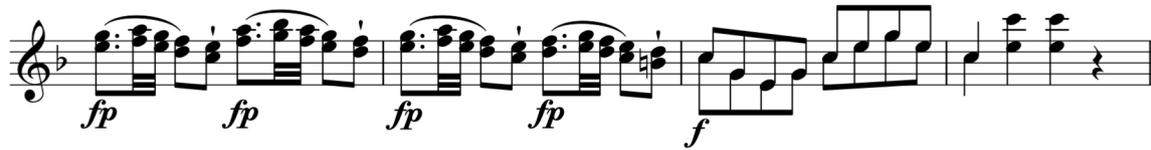


Figure 1: Wolfgang Amadeus Mozart, Divertimento KV 113, 1st movement, bars 24–27, clarinet parts only

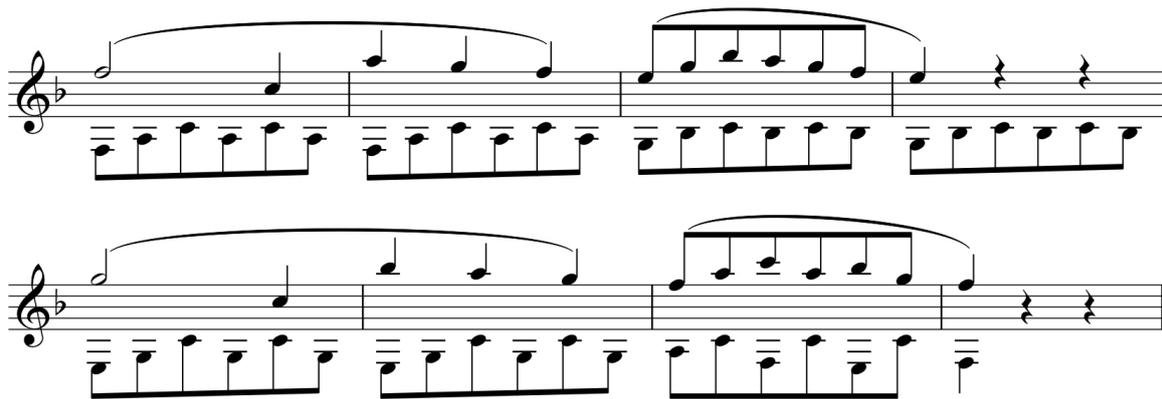


Figure 2: Wolfgang Amadeus Mozart, Symphony KV 543, 3rd movement, beginning of Trio, clarinet parts only.

It is entirely possible, then, that Stadler might have played not the melody in the trio of the Minuet in Mozart's Symphony KV 543 (this is the only soloistic use of clarinets in Mozart's entire symphonic output apart from the second version of the Symphony KV 550, and even there the clarinet is merely allocated some of the oboe solos of the first version) but the highly characteristic and no less prominent Alberti bass accompaniment (see Figure 2). In the Divertimenti for three basset horns K.Anh. 229/439b, it is only the lowest part that takes advantage of the extended lower range that Mozart would exploit in some of the solo writing for basset horn known to have been for Stadler (specifically, the obbligato part in the aria "Non più di fiori vaghe catene" from *La Clemenza di Tito* KV 621). The upper two parts might well have been played on smaller basset horns not equipped with this low range.

The second clarinet part in the opera *Così fan tutte* KV 588 (1790) contains not only challenging and prominent low-register figuration which again rivals the first clarinet part for prominence, but, in the tenor aria "Ah, lo veggio", notes below the clarinet's normal range. It seems logical to speculate (as, for example, does Eric Hoeprich⁴⁷) that Stadler might have employed his basset clarinet for this accompaniment – profligate on Mozart's part, as there are only two 'basset notes' in the part, both buried in the tutti.

⁴⁷ Eric Hoeprich, *The Clarinet* (New Haven: Yale University Press, 2008), 102.

Whatever specific lines Stadler might have played in Mozart’s orchestral or ensemble clarinet writing, all Mozart’s *solo* works written for Stadler make extensive use of the low-register figuration idiomatic to second clarinet parts. It is part of the stock-in-trade of concerto writing for melodic material to wander into the orchestra while the soloist assumes an accompanying role, and this form of low-register writing is ideal for the purpose. Contrasting the low register with the more characteristic upper range also allows Mozart to write for the solo instrument in dialogue with itself.

The appearance of notes below written low e for clarinet, as striking as it is to modern eyes and ears, was not in itself an innovation attributable directly to Stadler, since notes to low c were already present on the basset horn. What might have been even more striking to listeners of his day was the provision of all the chromatic degrees at the bottom of the compass. A 1790 press report in the Berlin *Musikalische Korrespondenz*, having mentioned Stadler’s extension to low d and c, calls special attention to the fact that “he also negotiates the c[#] and d[#] in between, and those with especial ease!”⁴⁸

While it is scarcely possible at this distance to attribute extensions of the clarinet’s keywork to specific individuals, it is certainly revealing in the context of Mozart’s clarinet music that the fully chromatic basset extension of the basset horn (that is, a range to low c including all chromatic notes) appears to have originated in the time of Mozart’s own closest association with the instrument, and conceivably at the hands of the Stadler brothers themselves. Lawson⁴⁹ notes that the earliest basset horns are not furnished with any keys at all for the notes between the bottom c and normal low e, while the intervening low d may well have been Lotz’s own improvement to the instrument in the early 1780s. Melanie Pidcocke notes in her comprehensive consideration of Lotz’s surviving basset horns that none of them possesses a fully chromatic lower range.⁵⁰

If the low c[#] and d[#] are indeed up-to-the-minute innovations on Stadler’s new instrument (intriguingly, the report in the Berlin *Musikalische Korrespondenz* does not explicitly say whether Stadler produced these notes by means of keywork or by some other means), the mysterious semibreves which constitute the entire solo part for bars 216–219 in the first movement of the concert KV 622 (see Figure 3) take on a new significance as a tribute to Stadler’s work: bars 217 and 219 were very possibly an octave lower in the original, in unison with the cellos, which would have placed Stadler’s new chromatic low notes directly in the spotlight. (Bars 207 and 209 also have d[#] and c[#] respectively on their downbeats.)

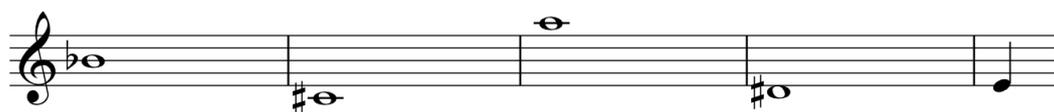


Figure 3: Wolfgang Amadeus Mozart, Clarinet Concerto KV 622, 1st movement, bars 216–220, solo part only.

⁴⁸ Quoted in Albert R. Rice, *The Clarinet in the Classical Period* (Oxford: Oxford University Press, 2003), 72.

⁴⁹ Colin Lawson, *Mozart: Clarinet Concerto* (Cambridge: Cambridge University Press, 1996), 20–21.

⁵⁰ Melanie Pidcocke, “Theodor Lotz: A Biographical and Organological Study” (PhD diss., University of Edinburgh, 2011), 191.

It is ironic that keys for c^\sharp and d^\sharp in the *normal* range are not documented on surviving instruments until a decade or more after Mozart's concerto. The extended basset range was apparently a more urgent priority than access to reliable chromatic notes in the instrument's 'normal' compass. It remains possible that these semibreves might indeed have been intended for the written octave. The precise layout of Stadler's basset clarinet keywork is not known. It might conceivably have included keys for these notes (a contemporary description of Stadler's instrument as "almost overloaded with keys"⁵¹ has given today's players carte blanche to equip themselves with any keys which might seem helpful). Alternatively, Stadler might have used half-holing or embouchure adjustment to perform these two notes, perhaps rejoicing in the veiled tone-colour which would have resulted. Stadler might even have found a way to obtain the notes in the *lower* octave by embouchure adjustment: Mozart's writing for basset horn in F includes low written c^\sharp and e^b although again no instruments with keys for these notes are documented until significantly later. All we can say for certain is that, whether these notes were intended in the octave we know them or in the octave below, they were highly unusual notes for a clarinet in 1790, and that this is presumably the reason for their prominence in the texture, whatever means Stadler may have had for obtaining them.

There is a particular harmonic area which appears to have been particularly amenable to Stadler's technique. Three of Mozart's solo parts (two for basset clarinet in A, one for basset horn) feature extended episodes of playing in three flats, whether C minor or E^b major. (Mozart, Stadler, and the instrument builder Theodor Lotz were members of Viennese Masonic lodges: the Masonic associations of the key signature of three flats, and indeed of the basset horn itself, are doubtless also relevant in this context.⁵²) The first movement of the Concerto KV 622 (see Figure 4) moves to written C minor for the soloist in bar 78, at the beginning of its second subject area, modulating swiftly to E^b major (allowing Stadler to show off his mastery of its dominant 7th arpeggio). The last movement (see Figure 5) features a particularly virtuosic episode in C minor/ E^b major (remembering that a^{bb} and b^{bb} were performed with cross- and fork-fingerings on clarinets of the period). In the first movement of the Quintet KV 581 (see Figure 6), the clarinet begins its contribution to the second subject area in written G minor at bar 50 but has moved to E^b major by bar 54. It also commences the development section (beginning in bar 80) with a modulation to written E^b major, and even begins its recapitulation of the second subject in written C minor before slipping back into the major as convention demands. The aria "Non più di fiori vaghe catene" from *La Clemenza di Tito* KV 621 (1791) has an extensive basset horn obbligato, intended for Stadler. It is mostly in C major for the basset horn but again commences its Allegro section (see Figure 7) with a shift to the minor, and figuration showing a clear similarity to the second subject in the first movement of KV 622 – clearly a favourite facet of Stadler's technique.

⁵¹ Colin Lawson, *Mozart: Clarinet Concerto* (Cambridge: Cambridge University Press, 1996), 48.

⁵² Katharine Thomson, "Mozart and Freemasonry," *Music & Letters* 57, No. 1 (January 1976): 25–46.



Figure 4: Wolfgang Amadeus Mozart, Clarinet Concerto KV 622, 1st movement, bars 78–85, solo part only.



Figure 5: Wolfgang Amadeus Mozart, Clarinet Concerto KV 622, 3rd movement, bars 207–214, solo part only.



Figure 6: Wolfgang Amadeus Mozart, Quintet KV 581, 1st movement, bars 49–57, clarinet part only.



Figure 7: Wolfgang Amadeus Mozart, “Non più di fiori vaghe catene” from *La Clemenza di Tito* KV 621, opening of Allegro section, basset horn part only.

The first movement of the Concerto KV 622 has one passage (see Figure 8) which repeatedly alternates b and a^\sharp : extremely unidiomatic on a clarinet of the period, on which b has no fingering with reliable intonation (the note is otherwise rarely emphasised in Mozart’s clarinet works). Perhaps Stadler had developed either a technique or instrumental hardware which allowed him to perform this material with accurate intonation (a half-holing technique for R1; an instrument provided with a double hole for this finger; or a key enabling b to be played in tune – although such keys are not otherwise documented until the beginning of the 19th century), or perhaps Mozart expected the result to be intonationally and/or timbrally impure, perhaps even as one of

the jokes which he was known to play on his performers. Again, as with the mysterious c^\sharp and e^b , at this distance, it is impossible to know which.



Figure 8: Wolfgang Amadeus Mozart, Clarinet Concerto KV 622, 1st movement, bars 115–119, solo part only.

Lawson recounts a well-known anecdote concerning technical difficulties in Mozart's writing:

Mozart's biographer Otto Jahn reported a dialogue between Stadler and the composer, which derives from the composer Sigismund Neukomm, and clearly relates to an awkward passage [...] which Stadler asked to be altered: 'Have you the notes on your instrument?' 'Certainly they are on it.' 'Provided they exist it is your concern to produce them.'⁵³

Composers concerned only with the purity of their ideas rather than with any thought for the performer's needs are a cliché of the literature, but this anecdote should nevertheless here be compared with the evidence provided by the draft KV 584b⁵⁴ (a preliminary stage of the Concerto KV 622), showing Mozart (and perhaps not only Mozart) weighing up different detours around a tricky area of the late 18th century clarinet's keywork. Low e and f^\sharp are both taken by the left little finger on the clarinet of Mozart's day⁵⁵ – Mozart originally wrote a scale moving upwards through d , e , f^\sharp and g in semiquavers, but in the draft (see Figure 9) this has been crossed out and replaced with a less problematic version alternating g and f^\sharp . (Many players of modern reproductions play the scale as Mozart originally wrote it. Again, in the absence of the original instrument we can only speculate as to whether there was some quirk of Lotz's original keywork that made this particular figure unwieldy. A further puzzling detail is the presence of precisely this part of the scale for the basset horn in the fragment KV 580b, and for the lowest basset horn in the Menuetto of the third of the Divertimenti KV 439b.)

⁵³ The dialogue is of course pithier in Jahn's original: "Stadler soll sich einst gegen Mozart über eine sehr schwierige und unbequeme Stelle beklagt und um deren Abänderung gebeten haben. »Hast Du die Töne in Deinem Instrument?« habe Mozart gefragt, und auf die Antwort: »Drin sind sie freilich« gesagt: »Wenn sie drin sind, ist es Deine Sache sie herauszubringen.« So erzählte mir Neukomm." Original consulted at http://www.zeno.org/Musik/M/Jahn,+Otto/W.A.+Mozart/3.+Theil/4.+Buch/7.#Fu%C3%9Fnoten_48 (accessed 8th March 2021). Translation quoted from Colin Lawson, *Mozart: Clarinet Concerto* (Cambridge: Cambridge University Press, 1996), 53–54.

⁵⁴ Reproduced in Franz Giegling (ed.) *Neue Mozart-Ausgabe, Serie V, Werkgruppe 14, Band 4: Klarinettenkonzert* (Kassel: Bärenreiter-Verlag, 1977), 165–176.

⁵⁵ This is still the case on the German-system clarinet, although today's instrument features rollers allowing the finger to move smoothly between them, as well as a mechanism allowing the e key to act as an f^\sharp key if the right little finger does not depress its f key, as it normally would for both notes. On modern instruments the movement from e to f^\sharp can thus be achieved by lifting the right little finger instead of sliding the left.



Figure 9: Wolfgang Amadeus Mozart, draft (KV 584b) for Clarinet Concerto KV 622, bars 94ff.

Mozart's music for clarinet, then, shows the composer's keen interest in the latest technical possibilities of the instruments. Important musical elements, from fine details of figuration to harmonic areas privileged within the musical form, are attributable to Stadler's extension of those possibilities, through both finding new uses of a well-known instrument (in cultivating his playing in unusual tonal areas) and participating in new developments augmenting it.

While Stadler and Mozart's collaboration is undoubtedly one of the most fruitful in the history of the clarinet, it also stands as a cautionary example of what can go wrong. Stadler seems to have kept both his instrument and Mozart's original text strictly for himself, understandably enough given the importance to his career of his exclusive ability to perform Mozart's concerto and quintet. Stadler's exclusivity, however, proved to be fatal to the survival of the concerto and quintet in their original form, when Stadler lost both Mozart's manuscripts and the instrument on which he played the pieces. Unless and until Mozart's manuscripts miraculously resurface, performers on basset clarinets will continue to rely on speculative reconstructions on the internal evidence of the adaptations for conventional clarinet in A, as well as on the evidence of Mozart's sketch and the AMZ review. In other words, we will most likely never know *exactly* what Stadler's instrumental innovations were, nor how Mozart used them. Until Pamela Poulin discovered an engraving showing Stadler's instrument in Riga in 1992, it seemed as though even the design of Stadler's instrument would likewise remain a matter of speculation. Until Poulin's discovery, most performers employing a basset clarinet (historical or modern) used an extended straight clarinet, although Eric Hoeprich for his 1985 recording⁵⁶ used a model of his own construction closer to a basset horn in appearance.

⁵⁶ Mozart, *Clarinet Concerto, Clarinet Quintet*, with Eric Hoeprich/Orchestra of the 18th Century, conducted by Frans Brüggen. Philips 420 242-2. 1988, CD.

Given Evan Johnson's use in *indolentiae ars* of a reproduction, by Peter van der Poel⁵⁷, of this instrument, a detailed consideration of its design is appropriate here.

From the mid-20th century it had become clear to a number of authors (George Dazeley, Jiří Kratochvíl, and Ernst Hess among others: see Lawson, *Mozart: Clarinet Concerto* 52ff.) that it was highly probable that Mozart's Quintet and Concerto had originally been written for a clarinet with an extended lower range, and reworked before publication. Press articles from Mozart's time and shortly after substantiated this conjecture, including an 1802 review⁵⁹ of the 1801 Breitkopf & Härtel edition of the concerto in the *Allgemeine Musikalische Zeitung* by an author who was apparently familiar with the original, although Mozart's manuscripts had been lost. Since Stadler's original instruments had also been lost, the exact design of the instrument was until relatively recently also a matter of conjecture. Poulin's discovery of the Riga engraving (see Figure 10), when compared to surviving basset instruments of the approximate period, enabled most details to be settled, although the precise details of keywork are still to some extent conjectural (most of the keywork is sketchy – and although the keys for the right thumb are relatively clear, only two are visible).

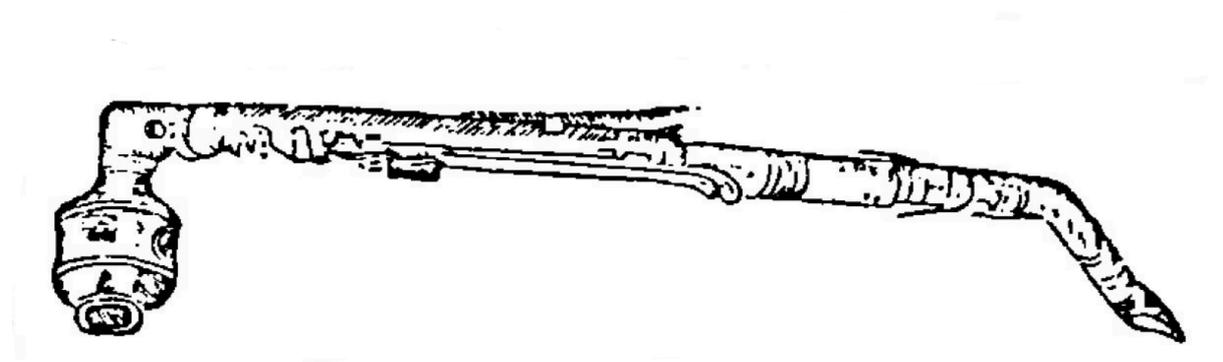


Figure 10: Stadler's basset clarinet – contemporary engraving.

The discovery of the Riga engraving was not solely a matter of resolving the question of the design of the instrument: it also led to a new understanding of the precise range of Stadler's instrument. The design resembled that of two important surviving instruments: a basset clarinet in C by Johann Benjamin Eisenbrandt and a basset horn by Johann Georg Braun.⁶⁰ Although sketchy in many details, the Riga engraving clearly shows a hole lower on the instrument than the pad for the low c – indeed the Braun basset horn has a key for this hole, showing that at least on that instrument it was undoubtedly intended for the production of another note. (Whether the hole on Stadler's instrument was specifically intended for the production of an extra note remains a subject of debate. Some modern bass clarinets and basset horns, for example the current Buffet Prestige range, also have a keyless hole in approximately this position, intended not to extend the range but to equalise resonance between the lowest note and the rest of the compass.) The Riga drawing has no key for the hole, but when the hole is closed by pressing it against a convenient part of the player's anatomy, the B a semitone below the low c can be produced. The low B is now widely (although not universally) accepted in recent reconstructions of Mozart's original text of the

⁵⁷ <https://www.petervanderpoel.nl/klarinetten/bassetklarinetE.html> (accessed 31st March 2021).

⁵⁹ reproduced in Hendrik Wiese (ed.), *Mozart, Klarinettenkonzert A-Dur KV 622, Klavierauszug* (Munich: Henle Verlag, 2003), 43–46.

⁶⁰ Pictured in Conny Restle & Heike Fricke (eds.), *Faszination Klarinette* (Munich: Prestel Verlag, 2004), 75.

concerto, appearing in recordings by players such as Craig Hill, Eric Hoepflich and Lorenzo Coppola. The presence of the low written B and the physical contortions required from the player to obtain it are of particular importance in Evan Johnson's *indolentiae ars* (2015), which features the note at a crucial structural point and multiphonics requiring the low B hole throughout the piece.

Alan Hacker

Clarinetist Alan Hacker (1938–2012) was a member of the Manchester Group alongside Peter Maxwell Davies, Harrison Birtwistle, Elgar Howarth, John Ogdon, and Alexander Goehr. He joined the London Philharmonic in 1958 but in 1966 suffered a spinal thrombosis leading to permanent paraplegia. As his orchestra did not accommodate his mobility requirements, his twin professional emphases from that point were new music, and performance on historical instruments.⁶¹

Hacker brought a uniquely varied set of possibilities to any composer writing for him. He had studied with clarinetists with strong individual voices in three disparate national schools (in particular, Jack Brymer and Reginald Kell in London, Louis Cahuzac in France, and Alfred Boskovsky in Austria), further enlarging his tonal palette by drawing on an instrumentarium embracing a wide selection of clarinet models from many times and places. Not only did he acquire a wide range of instruments, sourced from a wide range of sources (literally including rubbish bins⁶²): when it became clear to him that Stadler's clarinet must have had an extended lower range, he had suitable instruments built, as modifications both of 'modern' and of historical instruments.

Hacker also developed an extended range at the other end of the compass. The climax of Maxwell Davies' *Hymnos* (1967) is a written e^{'''b}, exceeding anything in the standard repertoire. Maxwell Davies' *Ave Maris Stella* (1975) and Harrison Birtwistle's *Melencolia I* (1976) both ascend to a written f^{'''}, and Maxwell Davies' *The Seven Brightnesses* (1975) twice reaches g^{'''}. Composers writing for him could thus draw a unique set of abilities both above and below the staff: Figure 11 shows an excerpt from Davies' *Hymn to St Magnus*.

The image shows a musical score excerpt for the clarinet part of Peter Maxwell Davies' *Hymn to St. Magnus*. It consists of two staves of music. The first staff starts with the tempo marking 'allegro' and the dynamic 'ff tutta forza'. It then transitions to 'allarg.' (rallentando) and 'prestiss.' (prestissimo), with a dashed line indicating the tempo change. The second staff begins with 'più lento, liberamente' (much slower, ad libitum) and the dynamic 'f' (forte), followed by 'p' (piano) and 'poco sfp' (poco sforzando).

Figure 11: Peter Maxwell Davies, *Hymn to St. Magnus*, clarinet part (excerpt).

⁶¹ Obituary by Duncan Druce: <https://www.theguardian.com/music/2012/may/03/alan-hacker> (accessed 31st March 2021).

⁶² Alan Hacker, *My Life With Clarinets* (unpublished, 2012), 20.

In her 2015 PhD thesis, Emily Payne quotes Alexander Goehr in a 1981 edition of the radio programme *Kaleidoscope*: “I can’t compose for wind instruments without thinking of [Hacker] [...] I once caught him saying “In a sense, I wrote [*Paraphrase*]””.⁶³ She further quotes Goehr in an interview agreeing: “Hacker ‘can say yes he did [write *Paraphrase*]’, despite the fact that ‘he didn’t actually write the notes””.⁶⁴ As Roger Heaton had remarked some years earlier concerning the same anecdote, its grain of truth comes “because [*Paraphrase*] embodied [Hacker’s] technique and performance personality: altissimo register, extremes of dynamics, the notation of tone-colors, the exaggeration of gesture, the quick-fire edits between contrasting moods of aggression and calm”.⁶⁵

Concerning the possibility of employing multiphonic content in the solo work, Goehr and Hacker had discussed Bartolozzi’s *New Sounds for Woodwind*, at first not productively. “Alan found that basically the book is nonsense [...] although those chords looked very attractive, in fact that’s not remotely what they sounded like”.⁶⁶ But they persisted. “I said: ‘the important thing is about how you get into those sounds and out of them again.’ And that’s what I did and that’s how we did it. Because Alan said ‘New sounds for their own sake are absolutely uninteresting’.”⁶⁷ A crucial feature of the collaboration, then, was not merely the supply of new sonorities for implantation into a given musical context, but the creation of a musical context from which the new sonorities would arise, embedded in the musical argument. By far the most prominent multiphonics appearing in works composed for Hacker are the overtone variety, produced by embouchure manipulations of standard fingerings. In Goehr’s *Paraphrase* these overtones allow him not only to fade in and out of multiphonic textures during otherwise normal playing, but to execute glissandos with complete multiphonic sonorities.

It is common with new sonorities to search for specific means of notating them. Many works composed for Hacker, however, have clarinet parts with a relatively low degree of specificity in the notation. In works such as *Eight Songs for a Mad King* (1969) and *Vesalii Icones* (1969), Peter Maxwell Davies merely sketches in many sonorities or textures, some of them not literally realisable (including, for example, glissandos over several octaves), relying on Hacker to come up with an appropriate technical solution. Even when precise textures are written, they do not always seem to be intended for precise realisation: one passage from Davies’ *Revelation and Fall* (1968), if taken literally, would require sixteen notes to be played within a single beat at MM=144.⁶⁸ In a 1994 radio interview⁶⁹, Hacker stresses the importance as a model for his own performance of woodwind players such as Léon Goossens and Reginald Kell, with a playing concept inspired above all by singers. The influence of folk and jazz styles of playing seems to have been at least as important to him as pure Conservatoire technique – and when one considers the manner in which his orchestral playing career ended, this can hardly be much of a surprise.

⁶³ Emily Payne, “The creative process in performance: a study of clarinetists” (PhD diss., University of Oxford, Oxford, 2015), 89.

⁶⁴ *ibid.*, 90.

⁶⁵ Roger Heaton, “A Few Issues Regarding the Performance of New Music,” in Roger Heaton (ed.), *The Versatile Clarinet* (Abingdon: Routledge, 2006), 88.

⁶⁶ Emily Payne, “The creative process in performance: a study of clarinetists” (PhD diss., University of Oxford, Oxford, 2015), 89.

⁶⁷ *ibid.*, 90.

⁶⁸ Peter Maxwell Davies, *Revelation and Fall* (London: Boosey and Hawkes, 1971), 51.

⁶⁹ <https://www.bbc.co.uk/programmes/p0093qqg> (accessed 31st March 2021).

Many advances in instrumental technique occur as a result of technological advancement, with Stadler's basset clarinet only one obvious example. Hacker's extended tonal palette, on the contrary, was accompanied (and surely to some extent driven) by his interest in *obsolete* hardware and in playing styles his contemporaries regarded as superseded. (He quotes a comment from Jack Brymer: "Alan, that sound went out in the 1890s",⁷⁰ presumably intended disapprovingly, although resurrecting a sound that might have inspired Brahms will presumably have been Hacker's intention.) The new instrumental affordances documented in works composed for Alan Hacker are not simply a matter of musical possibilities which suddenly become feasible through some kind of technical advancement (such as the extension of the piano range at various points in Beethoven's output – or, of course, Mozart's writing for Anton Stadler). Hacker's extended lower range is a *rediscovery*, of something that was briefly possible and then temporarily lost; his extended upper range and multiphonic possibilities are a fresh creative approach to a commonplace physical resource. Hacker's creative personality is another matter again, and one rather less definable, although just as crucial to the final shape of the works created in collaboration with him. If I have considered his contributions here it is not primarily because of any direct influence he exercised over the collaborations presented here (I never met Hacker personally and he was not a particularly decisive influence on any of these composers); it is simply because of the influence his performing style and tonal imagination have exercised on my own musical development and preoccupations. I cannot imagine my own performing style, or my own extensions of my instrumental palette, without his example.

⁷⁰ Alan Hacker, *My Life With Clarinets* (unpublished, 2012), 4.

Chapter 3: Small-interval dyads

technical considerations

In the last few decades, one particular class of multiphonic has become an increasingly prominent resource in writing for clarinet: ‘small-interval’ dyads, obtainable only at a relatively quiet dynamic, featuring two clear, dynamically balanced pitches, without a tendency to merge into a sound aggregate, and with an interval between them usually smaller than an octave and sometimes as small as a semitone.

The fingerings employed to access these multiphonics generally conform to a predictable pattern with one or more holes open relatively high on the instrument (some combination of the upper two R1 trill keys, the a’ and g[#] keys, the register key, the left thumb hole and the L1 hole), and most of the holes lower on the instrument being closed. The close interval thus results from a multiphonic combining a note high in the chalumeau register with a note low in the clarino register. Although there is no room here for a comprehensive consideration of clarinet multiphonic acoustics, it might nevertheless be worth noting that the air-column length of a note in the fundamental register effectively terminates at the first open hole, whereas the air-column length of a note in higher registers can continue beyond it – indeed the open hole of the register key is generally the prerequisite for obtaining a higher-register clarinet note, whatever the length of the air column.

It is an understandable priority in cataloguing multiphonics to privilege those of greatest versatility, typically characterised by relatively easy production and some dynamic flexibility. Close-interval dyads possess neither of these characteristics. Despite their relatively low dynamic level they are relatively tiring to play (Sciarrino’s scores provide the helpful hint ‘molto aria e pressione quasi nulla’ – much air and almost no pressure), often require a highly specific embouchure orientation, and are susceptible to dynamic alteration only within a relatively narrow band.

Although their pitches are generally clear, they are not entirely predictable between instruments and players. The upper pitch is relatively predictable but the lower pitch is typically the result of a very occluded low-register fingering, making it relatively unstable, although unfortunately not susceptible to manipulation by the player, as generally only a very restricted range of embouchure possibilities will allow the multiphonic to speak under a given set of performance conditions (reed, mouthpiece, instrument, and player).

The lower pitch is also very much influenced by the degree of openness of the open hole high on the tube. Despite what the terms ‘open’ and ‘closed’ might imply, treating the situation as a binary matter is a convenient simplification. The pad is never so far from the hole that it ceases to influence the pitch; the distance between the hole and the pad when the key is in its open position is an important parameter in the regulation of the instrument, and a parameter which can significantly affect the lower pitch in particular of these dyads.

Although these dyads are relatively restricted in their dynamic capabilities, they nevertheless expand the dynamic potential of the clarinet’s broader multiphonic palette. There are few ‘conventional’ multiphonics capable of functioning at their most characteristic in the very lowest part of the

dynamic range. Crucially, the lower end of the dynamic range is also where the clarinet itself has a flexibility unrivalled by other wind instruments, with its capacity to disappear into silence, noted by writers on instrumentation as early as Berlioz, for whose famous remarks on the clarinet's ability to produce "the echo of an echo"⁷¹ these dyads provide an apt contemporary illustration. They also expand the tonal potential of the multiphonic palette thanks to their relatively clear pitch content. They do not possess the characteristic 'rasp' of the more standard vocabulary: to put it bluntly, they do not 'sound like multiphonics'.

presence in the literature

The vast majority of clarinet multiphonics documented in standard treatises are notated with an aggregate pitch range of an octave or more. It is also standard for three or more identifiable pitches to be notated, especially when multiphonics are notated with the aid of electronic analysis⁷², although the degree to which separate pitches are perceived as musically independent 'notes' as opposed to merging into partials of an aggregated sonority is constantly ambiguous, not least because of the relative dynamic levels of the component pitches. As Phillip Rehfeldt notes, "multiphonics really cannot be equated with chords. The reason for this is that the pitches characteristically appear at varying degrees of intensity, ranging from the most prominent [...] to almost inaudible or even implied"⁷³.

Rehfeldt's multiphonic catalogue is divided into seven categories. His description of category 5 specifies that "when played with extreme care, and [...] only at the softest dynamic levels, it is possible to obtain two pitches only, as opposed to the more common three or more"⁷⁴. Although none of the dyads he gives in his chart⁷⁵ has an interval smaller than a perfect fourth, his first four in particular demonstrate two clear, dynamically balanced pitches with a relatively small interval between them; the dynamic level obtainable is indeed restrained, although there is a little more flexibility obtainable than his description implies.

Besides his main multiphonic chart, in both 1977 and 1994 editions, Rehfeldt reproduces as an appendix the catalogue compiled by clarinet multiphonic pioneer William O. Smith. None of the intervals given by Smith is smaller than a major ninth. It is worth noting that Smith includes one multiphonic fingering (x/Axxx/xxxF) which is identical with the smallest-interval dyad in Rehfeldt's chart – but gives the pitches resulting when this fingering is overblown to a higher upper note (Smith gives the minor tenth g'/b"^b, Rehfeldt the perfect fourth g'/c"). Smith seems not to have been investigating the available fingerings with the embouchure orientation required for these smaller intervals in mind. Paul Harvey suggests two such dyads as an 'alternative ending' to the second of his *Three Etudes on Themes of Gershwin*; the work is dated 1975 but the programme note to

⁷¹ "C'est celui de tous les instruments à vent, qui peut le mieux faire naître, enfler, diminuer et perdre le son. De là la faculté précieuse de produire le *lointain*, l'écho de l'écho, le son *crépusculaire*." Hector Berlioz, *Grand traité d'instrumentation et d'orchestration modernes*, Op.10 (Paris: Schöenberger, 1855), 138.

⁷² The charts in Georg Krassnitzer, *Multiphonics für Klarinette mit deutschem System und andere zeitgenössische Spieltechniken* (Aachen: Edition Ebenos, 2002) give thirteen (!) pitches for some examples.

⁷³ Phillip Rehfeldt, *New Directions for Clarinet* (California: University of California Press, 1977/94), 43.

⁷⁴ *ibid.*, 45.

⁷⁵ *ibid.*, 51.

the Emerson Edition publication, proposing dyads $g^{\flat}-b^{\flat}$ and $g^{\sharp}-b^{\flat}$ “implying a Tierce de Picardie in e minor”⁷⁶, is dated 1990.

A larger palette than Rehfeldt’s, including some smaller intervals, appears in Giuseppe Garbarino’s *Metodo per Clarinetto*⁷⁷ (see Figure 12). The clarinet employed by Garbarino for his research is not a model nowadays commonly found, but a so-called ‘full-Boehm’ clarinet with several keys not found on the standard French-system instrument, including, crucially, a key for the written e^{\flat} a semitone below the soprano clarinet’s normal range. Six of Garbarino’s nineteen examples employ the low e^{\flat} key, shown as 18 in the diagram (other keys are given in the caption). The chart appears at first glance to give 21 examples, but on closer examination, the fourth is identical to the sixteenth, while the eighth has an identical fingering to the 21st but a microtonally different lower pitch.

Bicordi
Double-string

Figure 12: dyads from Giuseppe Garbarino, *Metodo per clarinetto*.

[T=left thumb; 1=R, 2=a², 3=g²#, 8=L4 low e, 9=b² trill key,
10=b² trill key, 15=f², 16=f, 17=e, 18=e^b]

⁷⁶ Paul Harvey, *Three Etudes on Themes of Gershwin / for clarinet solo* (London: Chappell & Co., 1975), 1.

⁷⁷ Giuseppe Garbarino, *Metodo per clarinetto* (Milan: Edition Suvini Zerboni, 1978), 77.

Garbarino's half-page of examples proved to be surprisingly influential, despite being compiled for what has since become a relatively rare instrument. Some of these multiphonics quickly found their way into important solo works such as Berio's *Sequenza IXa* (1980) and Sciarrino's *Let me die before I wake* (1982).⁷⁸ One of these multiphonics in particular would become a fingerprint of Sciarrino's clarinet writing, found not only in *Let me die before I wake* and the chamber concerto *Che sai guardiano, della notte?* (1979, requiring the even rarer 'full-Boehm' instrument in A) but in numerous ensemble works including *Introduzione all'oscuro* (1981). The 'fingerprint' multiphonic Sciarrino uses is Garbarino's 8th/21st example – notated even in Garbarino's chart (see above) with two slightly different intervals for the same fingering, neither of which corresponds exactly to Sciarrino's notation. The rarity of the instrument required for the performance of these multiphonics has, unsurprisingly, been problematic for the performance practice of works requiring them.

Such dyads are also found in works for bass clarinet, including Sciarrino's *Muro d'Orizzonte* (1997) and Pierluigi Billone's *1+1=1* (2006), although again they are absent in the standard texts for the instrument (Rehfeldt, Bok, and Sparnaay). In one of these two works, research has been undertaken directly with a performer (for Sciarrino, with the clarinetist Paolo Ravaglia⁷⁹); in the other, by the composer himself⁸⁰, without recourse to a standard text. It seems likely that it is the requirement of a standard text to present multiphonics accessible to a wide variety of performers, and usable in a wide variety of musical situations, that has in the past prevented the wider propagation of these resources, which are characterised by their delicacy and restricted dynamic palette.

small-interval dyads in my own earlier practice

For a period during my undergraduate studies, I had access to a 'full-Boehm' instrument owned by the Melbourne Conservatorium of Music. I was thus able to familiarise myself with the Garbarino list of dyads, some of which appear in David Young's chamber work *pale* (1992), composed for the libra ensemble. As a result, I furthered my own research into extending this particular palette for the 'standard' clarinet mechanism. Some close-interval dyads appear in two works composed for me in the early 1990s, Adam Yee's *le shetach met* (1993) and Chris Dench's *ruins within. le shetach met* uses a small selection of dyads. Yee extrapolates from these the principal pitch and intervallic content for the piece, and also uses them to mark off the piece's formal sections, while Dench's *ruins within* (1994) uses a selection of dyads as part of a layer of 'subtones' present as an architectural layer throughout the work.⁸¹

In March 2003, as part of a performance in the Maerzmusik festival in Berlin, the ELISION Ensemble premiered Michael Finnissy's *Sorrow, and its beauty* (2002), a trio with flexible instrumentation.⁸² The first performance was given by Ute Wassermann (voice), Yan Jiemin (erhu) and Carl Rosman (clarinet in A). All three parts employ three distinct types of notation: clear copy on a single staff (apparently and conceptually 'printed', although in fact the most meticulous

⁷⁸ Sciarrino in fact found his multiphonics for this work not in Garbarino's treatise, but in sessions directly with Garbarino (Michele Marelli, email to the author, 12 September 2019).

⁷⁹ Michele Marelli, email to the author, 12th September 2019.

⁸⁰ Heinz-Peter Linshalm, email to the author, 12th June 2019.

⁸¹ For detailed examination of *ruins within* see Carl Rosman, "Präokkupation und Praxis: neuere Entwicklungen in der Musik von Chris Dench", in *Musik & Ästhetik* 5, Heft 17 (January 2001), 36–47.

⁸² Michael Finnissy, *Sorrow, and its beauty* (Unpublished, 2002). There is a duo from 2017 for erhu and piano with the same title.

The development of these dyads as a maximally coherent multiphonic category enables composers to create musical structures entirely within it. The development of this category to the point where it enables access to a wide range of pitches facilitates the creation of clear relationships between these and other musical structures. My research on this multiphonic category, developed in this instance purely for my own realisation of an 'open' instrumental part, resulted in a resource which has informed my most important collaborative work in the nearly two decades since.

Chapter 4: Richard Barrett

<i>interference</i> (1996–2000)	for solo contrabass clarinet (Leblanc model)/(male) voice /pedal bass drum
<i>Flechtwerk</i> (2002–2006)	for clarinet in A and piano
<i>Hypnerotomachia</i> (2005–2009)	for two amplified clarinets in A

“[...] if the circumstances are right, the outcome of a particular moment, whether in a performance, or when composing, or when working with a performer such as yourself on techniques for a new piece, has an immediacy about it that goes beyond the ephemeral.”⁸³

Early clarinet writing: Another heavenly day, what remains

Of the composers considered here, Barrett has both been ‘established’ for the longest period and had the most experience in writing for clarinet in a solo or soloistic context before we first worked together. Barrett’s first notable chamber work for clarinet, *Another heavenly day* (1989–90), takes a relatively broad-brush approach to microtonal writing for the instrument compared to his later works. In *Another heavenly day*, there is an awareness of the likely result of quarter-tone writing for the instrument, Barrett specifying in the preface that “[f]ingerings for microtones are preferable to embouchure adjustments, but in any case a seamless legato with ‘classical’ pitch-definition and consistency is not the desired result”.⁸⁴ There is, however, no specification of fingerings, or clear differentiation in the writing between quarter-tones with available fingerings and those without. In this respect, Barrett’s practice at the time recalls that of two important influences, Michael Finnissy and Iannis Xenakis.

[B]oth composers (I believe) employed this feature as a way of generating timbral and (in for example glissandi) articulation/textural variety, rather than approximating more or less to an ideal of timbral consistency across the 24-note scale.⁸⁵

‘Extended’ techniques are used relatively sparingly. Four degrees of breath component in the sound are specified: ‘normal’, breathy, more breath than pitch, and breath only. Besides flutter-tongue there is also ‘throat-tremolo’, defined as “an iterated ‘h’ articulation”. *Another heavenly day* makes no explicit use of multiphonics, although the flutter-tongued first bar carries the note “occasional intrusions of ‘foreign’ pitch are intentional” and the entry at bar 86 is labelled “rich in overtones” – both of these directions could certainly be interpreted as implying the intrusion of simultaneous pitches).

The later trio *what remains* (1990–91), for flute, bass clarinet, and piano, employs multiphonics with specific fingerings provided by Harry Sparnaay. Multiphonics with specific fingerings, as opposed to overblown low notes, are otherwise rare in Barrett’s solo or chamber music with clarinet until *Flechtwerk*: at this stage, Barrett still mistrusted the potential of multiphonics because of the

⁸³ Richard Barrett, email to the author, 20th August 2018.

⁸⁴ Richard Barrett, performances notes to *Another heavenly day* (London: United Music Publishers Ltd., 1990), page unnumbered.

⁸⁵ Richard Barrett, email to the author, 1st April 2021.

difficulties associated with integrating them perceptually into an instrumental texture. In bar 26 an overtone glissando is notated, and is intended to be performed as a multiphonic, with the fundamental retained in the sound. Slap-tongue is also specified, as well as the same degrees of breathiness and ‘throat tremolo’ required in *Another heavenly day*. Quarter-tones are utilised with a much greater degree of specificity than in *Another heavenly day*. In the earlier work, they are distributed across the entire range with no apparent concern for fingerings, while in *what remains* and later works, quarter-tones where no fingering is available are avoided except in very specific cases, while fingerings where available are generally given in the score.

knospend-gespaltener

Although it was composed not for me but for Andrew Sparling, *knospend-gespaltener* (1992–93) had a decisive influence, at the very beginning of my own career, on my perceptions of the clarinet’s potential as a source of concrete musical material. I received a copy of the score in the year of its completion, giving my first performance of it at the Darmstädter Ferienkurse in July 1994. My engagement with this work played a crucial part in determining the subsequent direction of my research into my own instrumental resources, making it of pivotal importance to all the research described here, and not only the works with Richard Barrett.

Prior to *knospend-gespaltener*, Barrett had had a certain reticence concerning solo writing for woodwinds, writing that:

[b]efore 1993, I had composed a number of solo instrumental pieces, almost all of which were for bowed string instruments (including three for cello alone). I had somewhat disdained woodwind instruments because of what I perceived as their timbral uniformity, the difficulty of systematizing the relationship between their fingering and pitch production (as opposed to a piano keyboard or the four strings of the cello, for example), and their relative inability to produce continuous changes of pitch (i.e., glissandi) or uniform microtonal divisions of pitch. I also distrusted so-called extended techniques on woodwind instruments, especially multiphonics, owing to their insecurity of production and the difficulty of integrating them compositionally. The change came, as it often has, at the point when I began to ask myself how it would be to think of these problems not as problems but as solutions.⁸⁶

knospend-gespaltener presents an entirely higher level of instrumental specificity than Barrett’s previous works employing clarinet. It also involved a particularly direct approach to the instrument, bypassing a separate performer entirely for some of his research.

[M]y approach to the instrument was threefold. First, there were some pre-compositional conceptions, intimately connected with, but developed away from, the clarinet. Second, I recorded a session in which Andrew and I and his clarinet began to focus on particular areas of the instrument. Third, I bought myself a clarinet (in a street market) so that I could develop a *feeling* (as opposed to a more abstracted intuition) for the sound and the fingering system of the instrument. By the time the compositional work was underway, I think I had learned the characteristics of the clarinet, the range of aural states it can occupy, and the ways in which one might navigate through this space.⁸⁷

⁸⁶ Quoted in Christopher Fox, “The Extended Clarinet”, in Roger Heaton (ed.), *The Versatile Clarinet* (Abingdon: Routledge, 2006), 25–26.

⁸⁷ *ibid.*, 18–19.

In *knospend-gespaltener* for clarinet and *CHARON* (1994–95) for bass clarinet every facet of the composition, from microscopic details to the overall formal design, evolves from the nature and potential of the relationship between instrument and player.⁸⁸

The concept of the ‘radically idiomatic’ is often invoked in discussion of Barrett’s music, not least by the composer himself. Anders Førisdal elaborates on the concept⁸⁹ in reference to works by Brian Ferneyhough and Klaus K. Hübler as well as Barrett. In Barrett’s own 1995 article, “Standpoint and Sightlines”, he describes a “trajectory” running through his compositions for solo instruments which “could be described as a ‘plunge into the instrument’, an attempt to engage as intimately as possible with the musical resources at the conjunction between performer and instrument, an engagement which attempts to dissolve the boundaries between instrumentalism and compositional materials”.⁹⁰ Barrett’s placement of the composer “at the conjunction between performer and instrument” recalls Fabrice Fitch and Neil Heyde’s reference to the “performer’s potentially significant mediation between composer and piece”.⁹¹

The “attempt to dissolve the boundaries between instrumentalism and compositional materials” does not preclude the possibility of substantial areas of the terrain being at least primarily one thing or the other. The materials of *knospend-gespaltener* include a mapping of the composition’s pitch landscape (see Figure 14):

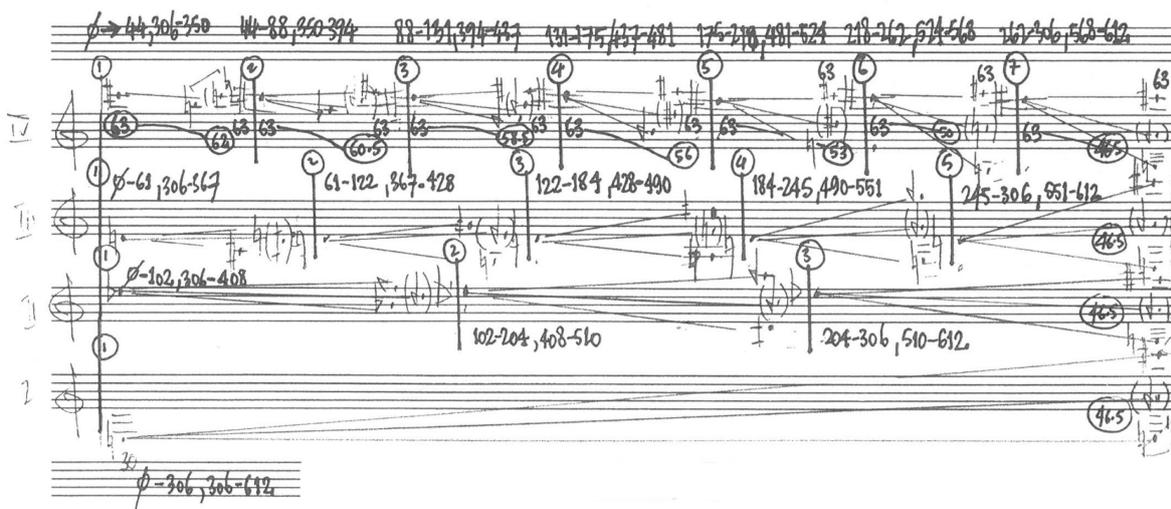


Figure 14: Richard Barrett, *knospend-gespaltener*, registral sketch.

On one level, these are four pitch layers, dividing the clarinet’s range, which expand at different speeds through the work. The slowest unfolds over the sketch in a single progression, while the fastest comprises seven repeating cycles, with the entire structure repeated, progressing in their total effect from maximum to minimum differentiation as each comes to occupy the full pitch

⁸⁸ *ibid.*, 27.

⁸⁹ Anders Førisdal, “Music of the Margins: Radically Idiomatic Instrumental Practice in Solo Guitar Works by Richard Barrett, Brian Ferneyhough and Klaus K. Hübler” (PhD diss., Norwegian Academy of Music, Oslo, 2017).

⁹⁰ Richard Barrett, “Standpoint and Sightlines (provisional) 1995 – beyond ‘postmodernism’”, in *Forum Musik Wissenschaft* Vol. 3, edited by Nina Polaschegg, Uwe Hager and Tobias Richtsteig (Regensburg: ConBrio Verlagsgesellschaft, 1996), 27.

⁹¹ Fabrice Fitch and Neil Heyde, “‘Recercar’ – The Collaborative Process as Invention”, in *Twentieth-Century Music* 4, No. 1 (2007), 72.

range used. As Barrett notes on another sketch page, the “eventual result is quasi-randomness (i.e. loss of individuality in the 4 layers, breakdown of metrical/registral coherence)”.⁹² On another level, these layers outline the clarinet’s registers (chalumeau, throat, clarino, high), and thus have concrete instrumental connotations beyond an abstract distribution of pitches: an important aural experience leading to *knospend-gespaltener* was hearing the virtual polyphony resulting from Andrew Sparling performing a solo work in a resonant space. It could perhaps be said that pure abstraction of pitch material, thus considered, is effectively impossible. Barrett might not disagree, commenting that:

I wrote in connection with the orchestral piece *NO* that I think there is no such thing as ‘abstract’ music – not even a fugue by Bach [...]⁹³

and:

I recently read a concert review by a respected English journalist who approvingly paraphrased Mallarmé to the effect that “music consists not of concepts but of notes”. Music does *not* consist of notes. It consists of *sounds*. Notes are just a necessary medium of communication between composer and performer. The sounds of a composition are the physical embodiment of its ideas.⁹⁴

This registral plan is in any case only one extreme of a spectrum running along the course of *knospend-gespaltener* from maximally abstract to maximally concrete writing for the instrument. Single lines soon branch off (the German word ‘knospend’ translates as ‘budding’) from the four-part texture of the opening; at first in ‘abstract’ quarter-tone scales, but soon employing textures native to the clarinet’s mechanical possibilities. From bar 14, Barrett introduces a device where a note is played but interrupted by momentarily lifting the left index finger; from bar 24 he introduces reverse-envelope attacks; and from bar 33 he instructs the player to execute mordents on left-hand notes by momentarily depressing the two top R1 trill keys.

Writing for the trill keys to be used for tasks other than those for which they were designed occupies an important place in Barrett’s writing for clarinet from *knospend-gespaltener* onwards. Even within *knospend-gespaltener* itself, the technique progresses from simple microtonal mordents in bar 33, to melodic use of the resultant pitches in bar 130 (see Figure 15), and trills on the keys, with the resulting pitch inflected by the left hand fingering silent fundamentals, in bar 134. The technique will also appear in *CHARON*; in the ensemble writing of *DARK MATTER* to produce a trilled stepped glissando in clusters for three clarinets; and in *Flechtwerk* to produce a selection of multiphonics.

⁹² Unpublished sketch material.

⁹³ Richard Barrett, *Music of Possibility* (Vision Edition, 2019), 264.

⁹⁴ <https://richardbarrettmusic.com/NOinterview.html> (accessed 28th March 2021).

Figure 15: Richard Barrett, *knospend-gespaltener*, bar 130.

From bar 143 Barrett introduces a microtonal texture at first involving the open trill keys and progressing through stepped glissando textures through the throat register. During bars 145–146 this texture moves through 42 microtones within the space of $1\frac{3}{8}$ tones, all obtained by opening holes at the top of the instrument (either the trill keys or the normal throat keys) and closing holes further down. Barrett refers specifically to the microtonal and timbral potential of this part of the clarinet range in “Standpoint and Sightlines”:

[...] the quasi-spatial dimension delineated by the instrument’s pitch-range has a highly intricate ‘curvature’, since the availability of pitches ‘between’ the traditional chromatic fingerings varies widely throughout the range, from zero at the lower end to areas in the middle register where fourteen or more discernable pitches (each of which also has a more or less individual timbre) are available between the semitones. Such ‘incidental’ features as trill keys and unorthodox fingerings thus also generate irregularly microtonal pitch-repertoires as well as modulating the timbre, and in such compositions as *knospend-gespaltener* (1992–93) for clarinet in C and *CHARON* (1994–95) for bass clarinet I have incorporated these phenomena into the basic material of the work. What results is a ‘tuning system’ which is evolved neither from a geometrical division of frequency as in chromatic or quartertone temperament, though this too manifests itself, but a *mechanical modality* whose basis is the construction of the instrument and the ‘ergonomics’ of fingering, embouchure, breath and so on – a curvature of pitch-space, a pitch-resource-vocabulary, which is unique to (in these cases) the C clarinet and the bass clarinet respectively.⁹⁵

This ‘mechanical modality’ is by no means confined solely to conjunct motion: if it were, it would not be particularly noteworthy, as Sciarrino in particular has already extensively mined this particular vein. Barrett employs microtones fingered with the aid of the trill keys throughout the passage from bars 130–150, sometimes (as in bar 149) juxtaposing microtones using the trill keys with near-neighbours fingered normally, exploiting the strong resulting timbral contrast.

The “relative inability to produce continuous changes of pitch (i.e., glissandi)”, which Barrett cited as one of the historical obstacles to his writing for woodwinds as opposed to strings, is to a large extent circumvented in *knospend-gespaltener*, with glissando writing dominating much of the piece from bar 98. Barrett specifies embouchure glissandi separately from finger-glissandi, using a straight line for the first and a wavy line for the second. At one point he notates a glissando with the fingers while the embouchure depresses the pitch so that it remains constant, allowing the glissando to be purely timbral. Barrett also employs the superimposition of embouchure slackening over extended passages, somewhat in the manner of an electric guitar’s tremolo arm. The piece’s

⁹⁵ Richard Barrett, “Standpoint and Sightlines (provisional) 1995 – beyond ‘postmodernism’”, in *Forum Musik Wissenschaft* Vol. 3, edited by Nina Polaschegg, Uwe Hager and Tobias Richtsteig (Regensburg: ConBrio Verlagsgesellschaft, 1996), 27.

final gesture is dominated by a fingered quarter-tone fragment with an embouchure glissando superimposed on top.

Another of Barrett's obstacles to woodwind solo writing pre-*knospend-gespaltener* was his reticence concerning multiphonics "owing to their insecurity of production and the difficulty of integrating them compositionally".⁹⁶ He addresses this consideration in *knospend-gespaltener* by employing multiphonics solely as a result of overblowing altered low-register fingerings. The precise resulting pitches are unspecified, and very much of subsidiary importance compared to the purely instrumental situation, in which alterations are superimposed upon fingerings, and physical considerations (here, the act of overblowing) are superimposed in turn upon this altered state.

I had no influence whatsoever on the development of the techniques mentioned above. Their relevance in the present context is quite the reverse: *they* had a decisive influence on *me*, drawing my attention to potential uses of my instruments that have accompanied me throughout these collaborations.

CHARON

The opening of *CHARON* (1995) was originally conceived to exploit the microtonal resources available low in the clarino register of the bass clarinet, specifically below the note b' (see Figure 16).

Figure 16: Richard Barrett, *CHARON*, beginning.

Many older bass clarinet models, including the model used by Andrew Sparling at the time *CHARON* was written, have a mechanism requiring the low e^b key to be depressed for all notes below written e (often referred to as the 'basset notes'), as well as the key dedicated to the note in question. This mechanism has since fallen out of general use, in favour of a mechanism with a linkage between the lower keys and the low e^b key, requiring only the key allocated to the note in question to be depressed and thus simplifying the fingerings for the lowest notes in the range. While the fingerings are theoretically simpler, the older mechanism without linkage is considerably simpler to keep regulated as the single-touch keys often slip out of regulation relatively soon after a visit to the repairer, often requiring the player to use both little fingers in any case. The first full-range instruments (with range down to low written c) that I encountered had the mechanism without the basset-note linkage, including the bass clarinet on which I first performed works such as Ferneyhough's *Time and Motion Study I* (1971–77), a borrowed Selmer instrument which I no

⁹⁶ Quoted in Christopher Fox, "The Extended Clarinet", in Roger Heaton (ed.), *The Versatile Clarinet* (Abingdon: Routledge, 2006), 26.

longer used by the time *CHARON* was completed. The timbral fingering chart in Bok/Wendel⁹⁷ shows timbral fingerings which do not function on more recent instruments because of the presence of this linkage. By the time I purchased my own first bass clarinet in 1993, just a few years after the appearance of Bok and Wendel's book, the mechanism without linkage was no longer present on new instruments – an unusual case of the continuing evolution of a standard orchestral instrument causing compatibility problems both for a brand-new solo work and for a reference text just a few years old.

As the fingerings show, the colour/microtonal fingerings at the beginning of *CHARON* were originally intended to be performed by adding the lowest keys to the written b', with the e^b key remaining open. On all current models of French-system bass clarinet⁹⁸, this solution would require mechanical intervention to remove the linkage between the d/c[#]/c keys and the low e^b key. Another solution presented itself, however, in that it proved possible to obtain small inflections of pitch and timbre by opening holes at the top of the instrument rather than closing holes in the low range. I already knew that it was possible, while playing a note low in the overblown register, to open the holes covered by the upper trill keys without causing the note to return to the fundamental register, since the most intonationally reliable fingering for c'' 1/4-sharp consists of adding the two top trill keys to the fingering for c'', on both bass and soprano clarinets. Employing the two upper trill keys separately and together provides three distinct inflections of the b', corresponding to the inflections of the original. Fortunately, Barrett did not employ these inflections in the instrument's lowest range, where no such solution would have been possible.

CHARON shares some of the technical preoccupations of *knospend-gespaltener*, including the exploitation of regions of the instrument's range particularly suited to the production of sequences of close microtones. The superimposed embouchure-glissando effect of *knospend-gespaltener* returns here but with an extra nuance: Barrett requests the effect to be primarily timbral, with minimum influence on pitch. This distinction will be found in later writing for me, in particular in Aaron Cassidy's solo *Wreck of former boundaries* (2016).

interference

Barrett has remarked in private correspondence, referring to our first rehearsals of *knospend-gespaltener* in Darmstadt in 1994, that:

I remember thinking during rehearsals how different your approach to this piece was from Andrew [Sparling]'s, and that if I'd written it for you it would have turned out quite differently. Andrew for example doesn't (or didn't at that time) do slaptongue or circular breathing. Not that this compromised the music, or indeed the depth of its exploration of the instrument, in any way.⁹⁹

interference (1996–2000), Barrett's first solo work for me, goes some way towards confirming this supposition.

⁹⁷ Henri Bok and Eugen Wendel, *New Techniques for the Bass Clarinet* (Paris: Editions Salabert, 1989), 38.

⁹⁸ German-system instruments do not possess the linkage between the lowest keys and the low E^b key. I am not, however, aware of any performers on German-system bass clarinets to date who have taken advantage of the inherent suitability of their instrument's mechanism for performance of *CHARON*.

⁹⁹ Richard Barrett, email to the author, 20th August 2018.

If the beginning of *knospend-gespaltener* is maximally abstract, the beginning of *interference* is maximally anecdotal. Composition was already underway when Barrett dreamt the beginning, with me singing in Latin in high falsetto, accompanying myself on pedal bass drum. He would indeed put this into action, choosing a text by Lucretius from *De rerum natura* particularly suitable for the large-scale project of which *interference*, in a version with ensemble, forms a part: the *DARK MATTER* project employs texts dealing with various cosmological models. The title of *interference* refers to the two-slit experiment confirming the wave-particle duality of light.

Barrett had already had experience of my performances of works combining clarinet-playing and vocalising. He had turned pages for my solo performances on ELISION's 1994 tour of Richard David Hames' *Zurna* (1982), a work making extensive use of the performer's voice, including at pitches, which for a male performer, are relatively high in the falsetto range. The highest pitch required from the performer's voice is a notated g", sounding the same f" on which *interference* begins. Barrett had also heard me perform Vinko Globokar's *Voix instrumentalisée* (1973), in which the bass clarinet, with its mouthpiece removed for the entire piece, serves among other things as a resonance tube for the performer's voice.

I did not own a contrabass clarinet at the time Barrett commenced work, or indeed until some time after the premiere. The initial working session took place in 1997 in London at the studio of instrument repairer John Coppen. Coppen was in the process of fine-tuning Selmer contrabass clarinets for various players (the model was then relatively new on the market and in many cases the instrument as delivered required the attentions of a repairer to make it suitable for use). Our initial work in determining the availability of fingered microtones and the potential of overblown multiphonics was carried out on one of these instruments. Although the Selmer instrument I used at these sessions differs in many important ways, not least its visual appearance, from the Leblanc instrument for which the piece would finally be completed, the specific techniques investigated at these sessions, in particular, overblown multiphonics and microtonal fingerings, turned out to be transferable between the models.

The specificities of the contrabass clarinet compared to the smaller family members were at that stage relatively little investigated. In Barrett's words, it was "an instrument whose character is rather unfamiliar except in a fairly broad way, owing to the lack of repertoire".¹⁰⁰ It is also an instrument whose available models are more disparate in construction than any of the other 'standard' clarinets. No 'fingered' multiphonics appear in *interference*, for the simple reason that at the time of its composition I had yet to find any. The multiphonics used are exclusively of the overblown variety, in which embouchure adjustments allow overtones to be sounded above normally-fingered fundamentals. Our initial explorations pointed to the possibility that, thanks to the distance of the overtones from the fundamental and the possibility of inflecting these overtones with the embouchure, the overtones available above a certain pitch could be considered as sufficiently arbitrary to allow for the possibility of relatively free two-part polyphony, a texture exploited extensively in the last main section of the piece.

Further working sessions took place in 1999 at the University of Queensland, during a pedagogical project (New Music Now), presented by ELISION and the Australian Youth Orchestra, for which

¹⁰⁰ Richard Barrett, email to the author, 20th August 2018.

Figure 18: Richard Barrett, *interference*, bars 28–30.

Flechtwerk

Around the turn of the millennium, pianist Mark Knoop and I were joint artistic directors of the Melbourne-based Libra Ensemble. We gave many performances as a duo and also gave most of the early performances of Barrett’s *what remains*, with flautists Elizabeth Barcan and Kathleen Gallagher. It seemed logical to commission Barrett to write a duo, especially once both Mark and I had moved to Europe, and Libra Ensemble performances in larger groupings became gradually less feasible. *Flechtwerk* was completed in 2006. Barrett’s programme note refers to the specific connotations of the title:

The title has a double (but interconnected) reference: to “interweaving” and to the symbiotic organisms known in English as lichens (*Flechte*). *Flechtwerk* attempts to create a “symbiotic” relationship between the two parts such that each is required to complete the other. If the fungal and algal components of a lichen are separated from one another in a centrifuge, they continue to grow but as amorphous white or green masses respectively, as opposed to the considerable amount of structure displayed by the natural state. The two organisms are intertwined to the extent of widespread DNA exchange taking place between them.¹⁰²

In a 2014 interview with Andrew Ford, Barrett describes certain features of his early duo for trombone and percussion, *EARTH* (1987–8):

One point of departure was the idea that you have two instruments with almost nothing in common – one played by blowing, the other by hitting – and more particularly that the sounds they produce can’t be merged with one another in any way. So *EARTH* ended up as a series of attempts to bring the instruments together, a sequence of angles of approach that the two instruments take towards each other, ultimately resulting in them coming apart – not only from each other but also within themselves, so that, for example, the trombonist eventually has independent notations for the slide and the lips. On the other hand, one of the ways in which the instruments could form a single whole is through different kinds of rhythmical and structural synchronicity, which is probably one of the most memorable features of the piece.¹⁰³

Like *EARTH*, *Flechtwerk* takes an exploration of the compatibility of its duo partners as an important part of its material. Indeed, here again one instrument is “played by blowing, the other by hitting” – although, in contrast to the situation with trombone and percussion, there is a long tradition of music which overcomes this barrier with a certain amount of success.

¹⁰² Richard Barrett, unpublished programme note.

¹⁰³ Andrew Ford, *Earth Dances: Music in Search of the Primitive* (Collingwood: Black Inc., 2015), 45.

Both *interference* and *Flechtwerk* end with relatively extensive passages of two-part polyphony for the clarinet alone, permitted by a particular feature of instrumental technique. In the case of *interference* the polyphonic lines are several octaves apart (note the “15” above the upper line’s clef). The overtones such a large distance above the fundamental are so close together, and susceptible to sufficient embouchure manipulation, that the upper notes available are to a certain extent independent of the fingered pitches, allowing for a certain looseness of the correspondence between the notation and the sounding result, in particular in the area of timbre (see Figure 19).

Figure 19: Richard Barrett, *interference*, bars 199 ff.

Flechtwerk presents, in effect, the opposite conceptual extreme. The two lines are as close together as the clarinet’s multiphonic palette allows, sometimes as little as a semitone apart, and required careful choice on Barrett’s part, being subject to the rigid condition of the availability of appropriate multiphonics sharing pitches. The polyphony is nonetheless to a certain extent ‘virtual’ in both cases – we are, after all, dealing with an essentially monophonic instrument. In particular, a small discontinuity in the held note at the change of multiphonic is almost inevitable. These are of course the same dyads used by Rebecca Saunders in *insideout / Stirrings Still / Stasis*, put to contrapuntal use. During the same trip to Berlin on which I demonstrated to Rebecca Saunders the dyads I had found for ELISION’s performance of Michael Finnissy’s *Sorrow, and its beauty*, I had also demonstrated them to Richard Barrett, who would also take them into his clarinet palette, not only in *Flechtwerk* (see Figure 20) but in four-part form in his duo for A clarinets *Hypnerotomachia* (2005–2009), and later still for another clarinet model in the basset horn solo *the world long ago ceased to exist* (2020).

The “rhythmical and structural synchronicity” which provides one “angle of approach” for the two instruments in *EARTH* finds an equivalent of sorts in *Flechtwerk* in three passages (bars 67, 86, and 107) loosely referencing certain characteristics of *gondang* music from Sumatra for reed instrument and tuned drums.¹⁰⁵ There is no extra-musical point being made here beyond the fact of Barrett finding this music lodged in his mind while working on *Flechtwerk* and concluding that it must have some relationship to the work in progress¹⁰⁶ – specifically, “the intuition of an analogous relationship between wind instrument and drums in the Sumatran music to the kind of ‘symbiotic’ one between clarinet and piano that pertains throughout *Flechtwerk*”.¹⁰⁷ The resemblance is in any case confined to “the general rhythmical character (analysed statistically and reconstituted) and the occasional dips into half-speed staccato sequences; the pitch material [...] is *Flechtwerk* material only”.¹⁰⁸

Further special techniques involving the upper two trill keys return here, having been absent in *interference* simply because the Leblanc clarinet for which it was written does not possess them. Situations in which the upper trill keys are opened while the main finger-holes are covered not only form a substantial part of *knospend-gespaltener*, and indeed nearly all of his subsequent clarinet works, but they also form a substantial part of the dyad chart. Some multiphonics in the dyad chart also employ low or mid-range notes with L1 lifted, another technique familiar from *knospend-gespaltener*.

A particularly extensive use of the trill keys appears in the tablature notation of bar 178 (a single bar of 78/8). Here the left-hand fingerings are effectively ‘decoupled’ from the movements of the R1 trill keys, with overblowing appearing increasingly through the section as a further superimposed layer. The effect is a deliberate tribute to the solo playing of Barrett’s regular collaborator Evan Parker in its extensive use of circular breathing and its employment of the right-hand trill keys independent of the movements of the left-hand fingers. In this context it is perhaps worth recalling one of Barrett’s important statements contextualising the ‘radically idiomatic’, often quoted without its first sentence:

I am more interested in what an intelligent improviser has to say about a particular instrument, in terms of the sounds and energies of their music, than what any composer has to tell me about it as a machine for translating dots into notes. A consideration of such improvisational practice can lead to a “radically idiomatic” conception of instrumentalism, where the instrument/player combination itself, in all perspectives from ergonomic to historical, becomes the “material” from which music is shaped, either in real time or in notation.¹⁰⁹

This particular moment is decidedly at one end of the spectrum of ‘approaches’ of the two instruments: namely, the maximally distant end, as is the piano solo that follows it. The final section, which in turn follows that, contains, as mentioned above, most of the moments of maximum proximity.

¹⁰⁵ Heard by Barrett on *Gondang Toba (Nordsumatra)*, Museum Collection Berlin (West), 1984, ISBN 3 88609 512 6, LP.

¹⁰⁶ Richard Barrett, text message to the author, 22nd March 2021.

¹⁰⁷ Richard Barrett, email to the author, 1st April 2021.

¹⁰⁸ Richard Barrett, text message to the author, 22nd March 2021.

¹⁰⁹ Richard Barrett, “The Possibility of Music”, <http://www.rogerreynolds.com/futureofmusic/barrett.html> (2002).

Like *knospend-gespaltener*, *Flechtwerk* features an over-arching pitch structure (see Figure 21):

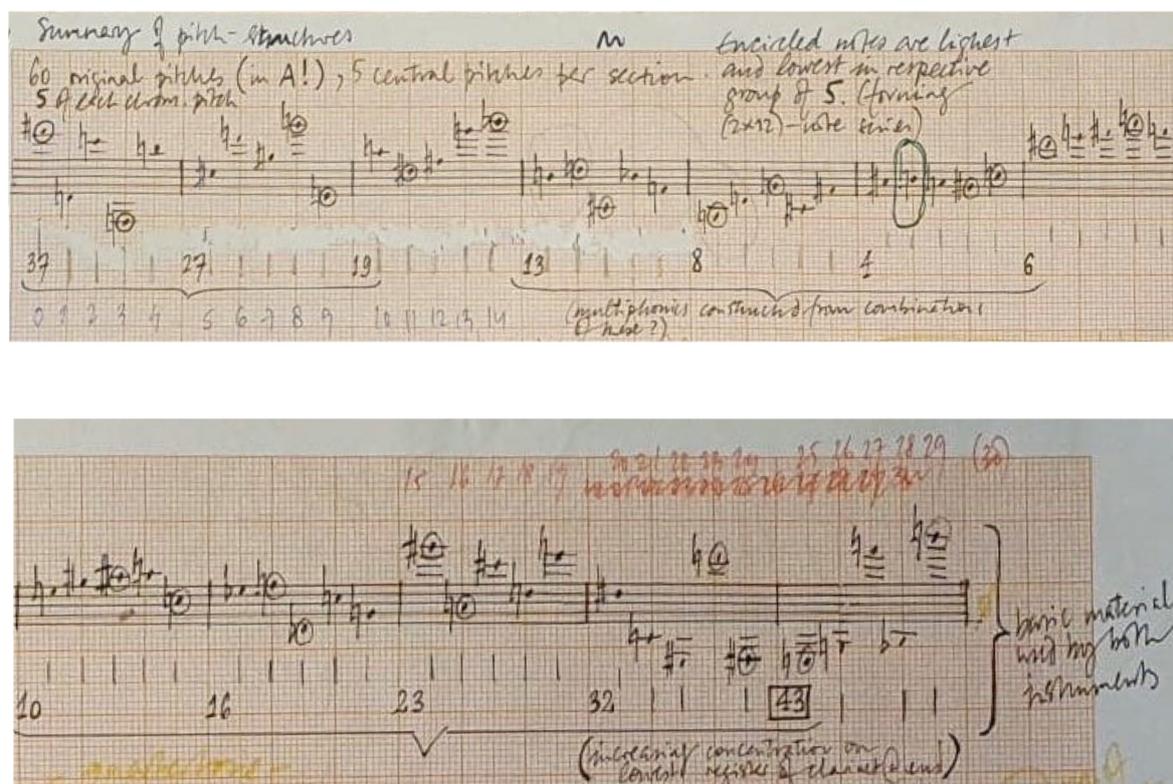


Figure 21: Richard Barrett, *Flechtwerk* pitch series (reproduced from the composer's sketches).

Here, rather than a registral map, there is a series of 60 pitches in which the twelve chromatic pitch classes each appear five times. The series is outlined at the beginning of *Flechtwerk* in the first notes of each bar, at first played by both instruments in unison. The ranges of the five-pitch groups are controlled, decreasing then expanding, “the maximum ranges in semitones are in ascending order 4, 6, 8, 10, 13, 16, 19, 23, 27, 32, 37, 43 (an approximation to an exponential series). So it’s a way of mapping ‘clarinet space’”.¹¹⁰ There are also another eleven derived series, not shown here. They repeat the first line with various contractions of its intervals into ranges that correspond to those of the original five-pitch groupings, employing quarter- and eighth-tones for those which correspond to the groups of the original with smaller range.

Again, the apparent abstraction is not absolute. Besides the obvious fact that the 60 notes are distributed through the range of the clarinet, Barrett notates the entire series in A to keep direct control over the ‘clarinetistic’ nature of the individual areas (the fourth, fifth and sixth groups of five are already marked out for multiphonic possibilities; the last two groups include an instruction to increase concentration in the lowest register towards the end). Indeed, the first full sketch of the beginning is notated in A for *both* instruments, prioritising control over the clarinet writing and the pitch combinations with the piano over precise details of the music’s fit to the keyboard – the piano in any case stays at least conceptually within “clarinet space” for the first pages, initially remaining on a single staff and staying mostly within the clarinet’s range until reaching for the extremes of the keyboard at the beginning of bar 65.

¹¹⁰ Richard Barrett, text message to the author, 28th March 2021.

Hypnerotomachia

[H]earing the quasi-counterpoint based on pianissimo multiphonic dyads that characterises the final stages of *Flechtwerk* led directly to imagining the passages of four-part counterpoint for two clarinets in *Hypnerotomachia*, based on exactly the same dyads. So the performance of one work served as the preparatory investigation for another. Or, to put it another way, a particular moment of close contact might give rise to ideas that don't all fit into the project immediately at hand.¹¹¹

There is, in fact, little to add to Barrett's description of the process. The composer required no extra material other than his own imagination of two clarinets sharing the material of *Flechtwerk* to compose *Hypnerotomachia* (2005–2009), a duo for clarinets in A which Richard Haynes and I first performed at an ELISION Ensemble concert in London in November 2009. Like many of Barrett's smaller-scale works it also appears as part of a large-scale project, in this case *CONSTRUCTION* (2003–2011); his previous clarinet solos *knospend-gespaltener* and *CHARON* are no exceptions, having been integrated into *Opening of the Mouth* (1992–97). Of course, 'requirement' is not really the point, Barrett having over the years compiled an impressive cumulative instrumental palette, beginning with contributions from Andrew Sparling, Harry Sparnaay, and Barrett himself, experimenting on his own flea-market clarinet.

It is a curious detail of Barrett's work with the clarinet that his palette has such an important place for the right index finger's trill keys. It is worth in this context returning to one of Barrett's most significant statements on instrumentalism: his description of a 'radical idiomaticism' "where the instrument/player combination itself, in all perspectives from ergonomic to historical, becomes the 'material' from which music is shaped, either in real time or in notation".¹¹² As it happens, those little keys are intimately connected with both the ergonomic and the historical aspect:

[...] they're on the instrument for specific purposes connected with tonal music, but if one detaches oneself from that history they can act as means of expanding the harmonic, articulatory and timbral potential of the instrument. It would be interesting to think about building an instrument with even more side-keys whose function could be more attuned to particular musical purposes [...] but, on the other hand, where the clarinet is concerned I still feel there's a lifetime's worth of possibilities in terms of going further into what's already there, in tandem with performative skills and attitudes such as your own.¹¹³

¹¹¹ Richard Barrett, email to the author, 20th August 2018.

¹¹² Richard Barrett, "The Possibility of Music", <http://www.rogerreynolds.com/futureofmusic/barrett.html> (2002).

¹¹³ Richard Barrett, email to the author, 20th August 2018.

Chapter 5: Rebecca Saunders

Caerulean (2010–2011) for solo bass clarinet

Aether (2014–2016) for bass clarinet duo

The harmonic implications of the dyads available on the instrument defined a new harmonic field in which I could work [...] enabled me to expand my harmonic language, creating quasi-static harmonic fields or acoustic landscapes.¹¹⁴

For Rebecca Saunders, the generation of a timbral palette (*Klangpalette*) is of crucial importance to her engagement with an instrument. In 1996 Saunders was already “preoccupied with drawing out multi-perspectives of the colour of a tone. By creating palettes of *Klangfarben* for each instrument, and for groups of instruments, I explore ‘shades’ of a tone, seeking a direct and very intense music”.¹¹⁵ In a 2016 interview with Jeffrey Arlo Brown, Saunders comments that it “[s]ometimes [...] takes three or four years to really absorb the essential characteristics of an instrument and develop my own palette of sounds for it”.¹¹⁶ In 2006 she told James Saunders:

A group of instruments can provide an infinite palette of sounds, so I initially seek to reduce or condense the material as far as possible, to find something like its ‘essence’. Also, where possible, I work closely with musicians (and/or try to borrow instruments) to keep close to the physical reality of the instruments’ core sounds. The clearly differentiated sound worlds that then develop define the direction the form will take. At a certain point I have to block out thinking about the ‘intention’ of the piece. I want to only hear what I can make of the very reduced selection of sounds, within each different palette I have found. This process of going into the chosen sounds (listening to them, pushing them to the edge) is often a long one.¹¹⁷

insideout

The rehearsal phase for the ELISION Ensemble’s Berlin premiere of Michael Finnissy’s *Sorrow, and its beauty* (2002) was, as described in Chapter 3, a source of much material in my own multiphonic research. These rehearsals overlapped with preparatory meetings, also in Berlin, for the *insideout* (2003) project, a ‘choreographic installation’ involving, besides Saunders, the dancers of the Schaubühne am Lehniner Platz (directed by Sasha Waltz) and musicians of Ensemble Musikfabrik. Much of the music of *insideout* is also present in *Chroma* (2003–2019¹¹⁸), composed in parallel with *insideout*, and similarly a work in which musicians play from various stations and the audience moves among and between them. *insideout* features a new layer for clarinet, not present in *Chroma*, played twice in the complete work – once inside a perspex cabinet built into a wall of the set and once from the roof of a single room separate from the main body of the set. In the latter case, the clarinet layer was performed simultaneously with layers for piano and for bowed crotales, resulting in strong microtonal clashes with these fixed-pitch instruments. Saunders would extract

¹¹⁴ Rebecca Saunders, email to the author, 20th May 2018.

¹¹⁵ Rebecca Saunders, quoted in Roswitha Sperber, *Komponistinnen in Deutschland* (Bonn: Inter Nationes, 1996), 93.

¹¹⁶ Rebecca Saunders, interview with Jeffrey Arlo Brown, 16th June 2016: <https://van-us.atavist.com/rebecca-saunders>

¹¹⁷ <http://www.james-saunders.com/interview-with-rebecca-saunders/> (accessed 31st March 2021).

¹¹⁸ *Chroma* requires revision for each new space in which it is performed. Accordingly, it does not have a ‘completion date’ as such, merely the date of the most recent revision (as of 2019 there have been twenty in all).

all three layers for the independent work *Stirrings Still* (2006) (renamed *Stirrings Still I* after the composition of *Stirrings Still II* (2008)), in which clarinet, piano and crotales are supplemented by similar close-dyad multiphonic textures for alto flute and oboe. Although a purely concert work, it retains elements of the spatial distancing of the performers in *insideout*.

The first working session with Rebecca Saunders in 2003 initially took the form of an introduction to the clarinet techniques found in Saunders' existing works for clarinet. Saunders stated that she had not previously composed for the French-system instrument. Her multiphonic writing up to that point did not call for specific fingerings, instead either specifying a single prominent pitch and verbally describing the desired multiphonic result, or asking for an unspecified undertone to be produced by 'underblowing' from a given note in an upper register.

Saunders asked if there were any clarinet techniques of particular current interest to me and I demonstrated the list of dyads I had found for the Finnissy work (see Figure 22).



Figure 22: dyads used for performance of Michael Finnissy, *Sorrow, and its beauty*.

These dyads were augmented by others found while experimenting with potential material for the Finnissy trio but because of their pitch content not suitable for use in that work. Saunders also requested two additional dyads, both at the interval of a semitone – solutions could be found (numbers 10 and 11 in Figures 23 and 24) but with a slightly higher degree of approximation than in the Finnissy selection. The dyads were eventually to constitute almost the entire material in the clarinet layer newly composed for *insideout*, with the exception of a few isolated 'normal' notes and some underblown multiphonics. There are two clarinets in *Chroma* and one of its modules is a little chorale texture for them both. This module, however, was composed for a later version of *Chroma*, performed by Ensemble Contrechamps in 2006: it is the clarinet duet which deputises for the solo clarinet's dyads, not the other way around.

The performance material for *insideout* retained the approximate notation resulting from the dyads' origin as performance solutions for the Finnissy work. After the initial *insideout* performances I investigated the pitch content more precisely. This was then used to refine the notation of the same material in the later work *Stirrings Still* (2006). Another work (*Stasis*, first performed in Donaueschingen in 2011) uses the same dyads again, although in a further developed form, and with a second clarinetist (in the first performances, Richard Haynes) playing the same material out of phase. The clarinet in A had proven slightly more amenable to my initial investigations of this material than the B^b clarinet. As a result, all of these works (as well as Richard Barrett's *Flechtwerk*: see Chapter 4) employ the clarinet in A for performance of this material (see Figures 23 and 24).



Figure 23: dyad notation from Rebecca Saunders, *insideout*.



Figure 24: dyad notation from Rebecca Saunders, *Stirrings Still I*.

Saunders and I had already discussed the possibility of a solo work resulting from the *insideout* material, analogous to the double-bell trumpet solo *Blaauw* (2004), extracted from *insideout*'s solo trumpet module. The static nature of the dyad layer did not lend itself to extraction as sole material for an independent piece but discussion toward a solo work would continue later.

small-interval dyads in Saunders: performance issues

These dyads present a particularly cohesive palette within the repertoire of clarinet multiphonics. They characteristically consist of two clear, homogeneous pitches separated by a relatively small interval, generally centred around the middle of the treble staff. The fingerings are also characteristic, with a 'long' basic fingering combined with one or more open holes high on the instrument: the open holes are in most cases the upper trill keys or the 'throat' keys, although in some cases this role is played by the register key or the holes for the left thumb or index finger. (The characteristics of the fingering are reflected in the interval content of the result: a note high in the fundamental register combined with a note low in the overblown register.) Dynamically, the material is restricted, with the dyads generally not playable above approximately a soft *p* dynamic. In *insideout* and *Stirrings Still* they are only heard in sparse textures, and even then, only in combination with similarly quiet sonorities on the other instruments. The material is in a purely physical sense relatively demanding to perform, perhaps surprisingly so given its restricted dynamic range. It certainly proved an asset for future performances of the material that the *insideout* project recurred in Ensemble Musikfabrik's programming at regular intervals for several years. *insideout* has been performed over 100 times to date and the dyad material appears twice in each performance.

Many of the dyads employed require the upper trill keys to be depressed simultaneously with the closure of the holes allotted to the fingers of the right hand. This requires the wrist to be slightly rotated so that the trill keys can be reached with the lowest joint of the right index finger. For some performers (in particular those accustomed to using the b^{bb} trill key as a normal fingering for the throat b^{bb}) this requires no significant readjustment, but for players with small hands, or for players who typically keep the right-hand fingers at a more perpendicular angle to the instrument, this requires an adaptation to their right-hand technique, operating the trill keys with the right thumb, which can then no longer perform its normal role of supporting the instrument. The instrument might then need to be supported on the knee, a simple matter if the performer is seated but potentially requiring an adjustment of posture (or the employment of a footstool) should the

performer be standing. Some dyads in the repertoire, none of them employed in *Stirrings Still*, require the use of the b' natural trill key without the b^b trill key; this is in many cases only possible with the involvement of the right thumb.

Saunders specifies the French (“Boehm”) system for the material of *Stirrings Still* and these dyads are indeed unsuited to performance on German-system clarinets. While solutions can often be found on each system for performing multiphonics conceived for the other, these dyads all result from the opening of precisely the holes which show the greatest difference between the systems. The trill keys on German-system clarinets are differently placed, in accordance with the different functions they perform. On the German system the second trill key is typically intended for trilling c^{'''}-d^{'''}, not a^{''}-b^b, although on Austrian clarinets, including those used to compile Krassnitzer’s multiphonics catalogue¹¹⁹, the second trill key typically functions as in the French system and is considerably higher on the tube. The tone-holes for the throat notes are also slightly wider, which has generally beneficial effects for tone-colour in the standard repertoire but drastically reduces the availability of these multiphonics in particular, as these close-interval dyads rely on tone-holes small enough to act simultaneously as tone-holes proper and as ‘nodes’ for overblowing purposes. Even the holes for the left index finger and for the left thumb are slightly differently deployed on German system instruments. While on French-system instruments LT alone gives f[♮] and L1 alone f[♯], on German-system instruments LT alone gives f[♯] and L1 alone is not a normally-employed fingering.

The pitches available from these multiphonics do not have any particular abstract unifying features. They offer a range of intervals from a semitone to a major sixth plus a quarter tone and the pitches available are spread across the treble stave. They nonetheless offer, by their nature, not only a highly coherent tonal environment but a circumscribed repertoire of pitches. They also served to establish the nature of the additional flute and oboe layers which would give rise to *Stirrings Still*, constructed from corresponding resources available on those instruments.

bass clarinet investigations: materials for Caerulean

Saunders’ next new work for Ensemble Musikfabrik was the large ensemble work *a visible trace* (2006), a co-commission by Ensemble Musikfabrik and Ensemble Intercontemporain. She had chosen to write for bass clarinet, which required some sessions to work on specific resources since the bass clarinet had not appeared in a Saunders work since the *Trio* for bass clarinet, cello and piano (1992) (then, and as of 2021 still, withdrawn). Many possibilities were discussed which did not find their way into the ensemble work (or in fact into any of her works as of the time of writing), among them pitched breath noise and pitched key percussion, neither of which is well suited for use in a large ensemble context. Our discussions of a solo work continued at intervals, now transferred to the bass clarinet. Of particular interest was the possibility of finding sounds for bass clarinet corresponding to the dyads for soprano clarinet. Due mainly to the larger tone-holes of the bass instrument, the available close-interval dyad palette is more restricted. Nonetheless,

¹¹⁹ Gerhard Krassnitzer, *Multiphonics für Klarinette mit deutschem System und andere zeitgenössische Spieltechniken* (Aachen: Edition Ebenos, 2002).

some possibilities exist, and are not unprecedented within the existing repertoire: the first two shown in Figure 25 are present, for example, in Sciarrino's *Muro d'Orizzonte* (1997).¹²⁰



Figure 25: bass clarinet small-interval dyads from Rebecca Saunders, *Caerulean* (2010–11).

Initial sketches for the new bass solo (Figure 26, lower line) clearly show Saunders taking the *Stirrings Still* clarinet part (Figure 26, upper line) as a starting point.

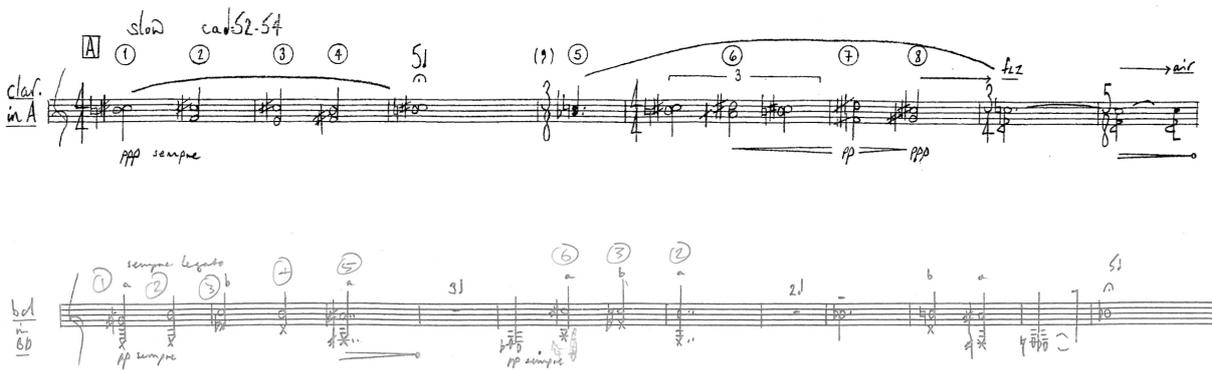


Figure 26:
top: beginning of clarinet part, Rebecca Saunders, *Stirrings Still*.
bottom: beginning of an early sketch for Rebecca Saunders, *Caerulean*.

The widely spread overtone multiphonic on low c (see Figure 27) is heard only in a single form and at a single, formally pivotal moment, although the technique is equally feasible on other notes in the extreme low register (in the bass clarinet duo material from *Stasis*, derived from *Caerulean*, it appears simultaneously on c and on c[#]). It is notable that the clarinet is unique among wind instruments in its ability to play both extremes of its range simultaneously.

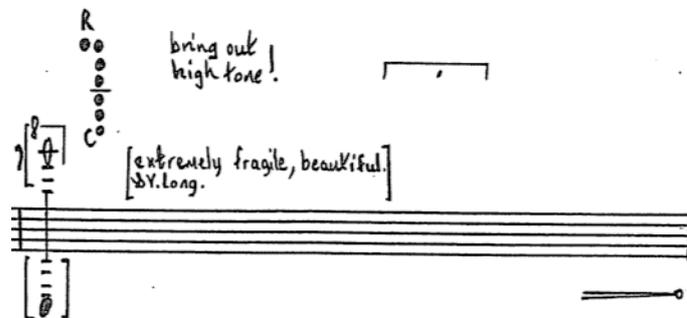


Figure 27: wide overtone multiphonic from Rebecca Saunders, *Caerulean*.

During an investigation of double trill resources, I spontaneously demonstrated the possibility of trilling between two double trills (see Figure 28). Unfortunately for my purposes here, I no longer

¹²⁰ In that work they appear notated to the nearest semitone, as f^{-g} and e^b-g[?].

recall exactly when this occurred, but it has since been central to Saunders' bass clarinet writing. This gesture is possible in other forms but its exclusive use on this specific pitch level both enables it to recur as a point of reference throughout the piece and allows variations in specific detail (particularly dynamic level and the speed of the single trill) to be more clearly registered.

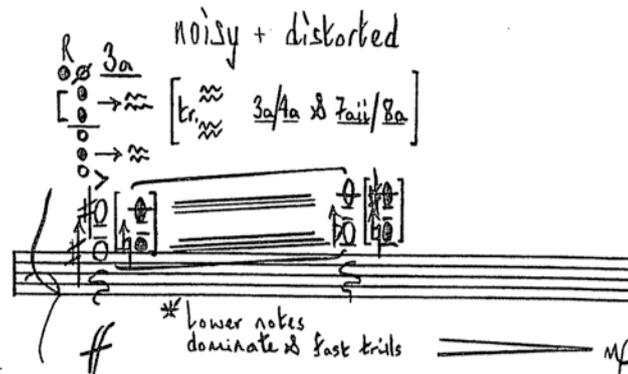


Figure 28: 'double-double trill' from Rebecca Saunders, *Caerulean*.

Requests from Saunders for multiphonics featuring the pitches $f^\#$ and $e^{\flat\flat}$ (written $g^{\flat\flat}$ and $f^{\flat\flat}$) led to my suggestion that the normal fingering for written $g^{\flat\flat}$ can, in a relatively quiet dynamic, be overblown to sound both of Saunders' requested notes simultaneously. This casual inquiry would unlock a complete category of material, since the same technique is applicable to other notes in the vicinity – unsurprisingly so, since it involves manipulation of a standard fingering. (The technique is far from unprecedented, also appearing in Helmut Lachenmann's clarinet concerto *Accanto* (1975–76).) This gives rise to the following series of intervals (see Figure 29):



Figure 29: multiphonics combining third and fifth partials from Rebecca Saunders, *Caerulean*.

Others are possible but Saunders chose in this work to restrict the scope of the selection. Saunders specifically requested *not* to be given further resources in a specific technical area once she judged the amount of available information to be sufficient for her current compositional needs. As quoted in the interview with James Saunders above, "I initially seek to reduce or condense the material as far as possible, to find something like its 'essence'".¹²¹ Thus, certain sonorities appear in *Caerulean* in a more restricted selection than were demonstrated in working sessions.

It should be noted, however, that a further example of this 'family' ($c^{\flat\flat}$ and $a^{\flat\flat}$) appears in the third line of page 4, immediately preceding the wide overtone multiphonic on low c – an extension of the deliberately restricted palette thus immediately precedes the one sound in the work which belongs to no such 'family'.

¹²¹ <http://www.james-saunders.com/interview-with-rebecca-saunders/> (accessed 31st March 2021).

Here the technical element has a clear and decisive influence on the harmonic vocabulary of the work, with the strong presence of the interval of a major sixth colouring much of the harmonic palette of the piece, particularly in the passages in which these multiphonics (in effect, dyads, although Saunders reserves this specific term for the close-interval dyads as used in the *Stirrings Still* family of pieces) are used in parallel motion. It is unusual in a multiphonic context to find a coherent palette of fingerings which so consistently produce equal-tempered intervals, or nearly so. This is certainly not the case with the corresponding technique on the soprano clarinets, where the intervals between third and fifth partials on the same fingering contract markedly as the air column decreases in length.

A sequence of bass clarinet multiphonics giving more varied harmonic content can be obtained by adding the R3 key to normal clarino-register fingerings. This key performs an important function apart from simply closing a hole: it is attached to the lever which causes the register key mechanism to switch between the bass clarinet's two register holes.

It was clear from the early history of the bass clarinet that a single register key would not cope adequately with the demands of a tube of such dimensions: Adolphe Sax's bass clarinet, patented in 1838, already features a separate register key for the high register.¹²² Even on the soprano clarinet the use of a single key both to overblow notes along the entire length of the tube (ideally requiring not only the smallest practical aperture, but such an aperture at a different point on the tube for each note), and as part of the fingering for throat b^{bb} (ideally requiring a larger hole, and one further down the tube than the register key is positioned), is a compromise solution whose survival has depended partly on the pragmatism of retaining the simple mechanism. On early models of bass clarinet the register keys are independent, requiring the player to change the left thumb from one to the other according to the note to be produced. On current French-system instruments this change is made automatically: when the R3 key is depressed simultaneously with the register key, or when the throat a' key is also opened for throat b^{bb} , a larger hole on the main body of the instrument opens, whereas otherwise the register key opens a smaller hole on the crook. In the clarino register, the larger hole is thus opened for the notes from b' to e^{bb} , the smaller for e'' and above. Depressing the R3 key while playing notes from f'' upwards thus raises the pitch of these notes (barely for f'' but increasingly so up to the top notes in the clarino register, which are raised by approximately a semitone). Importantly for Saunders's purposes, it also destabilises these notes, facilitating the production of underblown pitches.

These multiphonics are used in *Caerulean* in the following series (labelled series 'b' by the composer; the major sixths are series 'a') (see Figure 30):

¹²² Albert R. Rice, *From the Clarinet d'Amour to the Contra Bass: A History of Large Size Clarinets 1740–1860* (Oxford: Oxford University Press, 2009), 291–292.

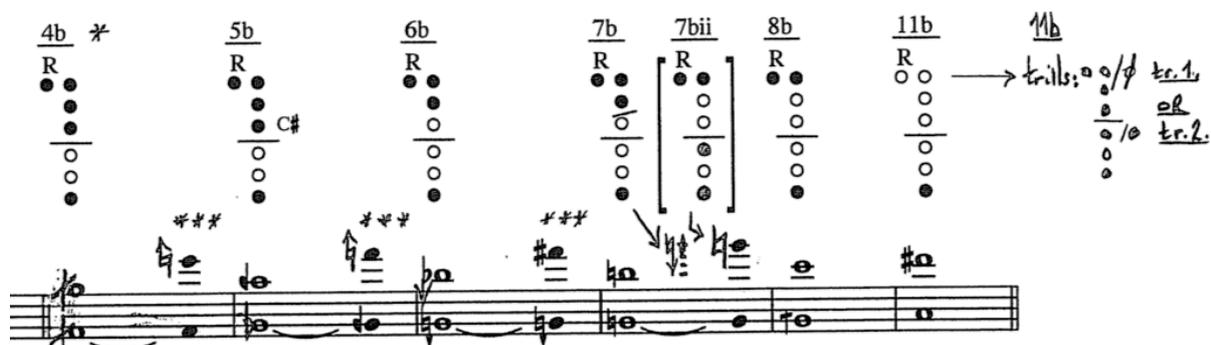


Figure 30: alternative register-key multiphonics from Rebecca Saunders, *Caerulean*.

These multiphonics are closely related to the series of sixths above, as can be seen from the upper notes available from each. Saunders exploits this fact in moving between multiphonics of the two series and moving into the multiphonic layers from single pitches: she refers to the realisation of this interconnectedness as “[t]he decisive moment in developing the complete material for *Caerulean*”.¹²³ The coherent harmonic palette again allows the derivation of a corresponding musical progression. This group of multiphonics is often used to offer a ‘virtual fundamental’ to the series of major sixths, by progressing (as shown in Figure 31) from the initial interval, as notated in hollow noteheads in the Figure 30 series, to the major sixth sharing the same upper note, as shown in Figure 29.



Figure 31: transition between ‘b’ and ‘a’ series multiphonics from Rebecca Saunders, *Caerulean*.

Although the *Caerulean* dyad palette (Figure 25) seems as disparate as the corresponding palette from *insideout/Stirrings Still* (Figures 23 and 24), a strategy of ‘virtual fundamentals’ here allows them to be unified with the rest of the material, in particular by subjecting them to similar transition strategies between registers. The characteristic fingering of these dyads combines a fundamental fingering low in the register with a nodal fingering high on the air column. Closing the hole which functions as a node enables a smooth transition with the acoustic fundamental of the upper note of the dyad, for example allowing the fundamental to appear gradually under the upper note. The technique is particularly effective in quiet dynamics, in which the twelfth above a low chalumeau note is in any case prominent in the overtone spectrum and the upper note of the dyad thus never definitively vanishes (see Figure 32):

¹²³ Rebecca Saunders, email to the author, 5th April 2021.

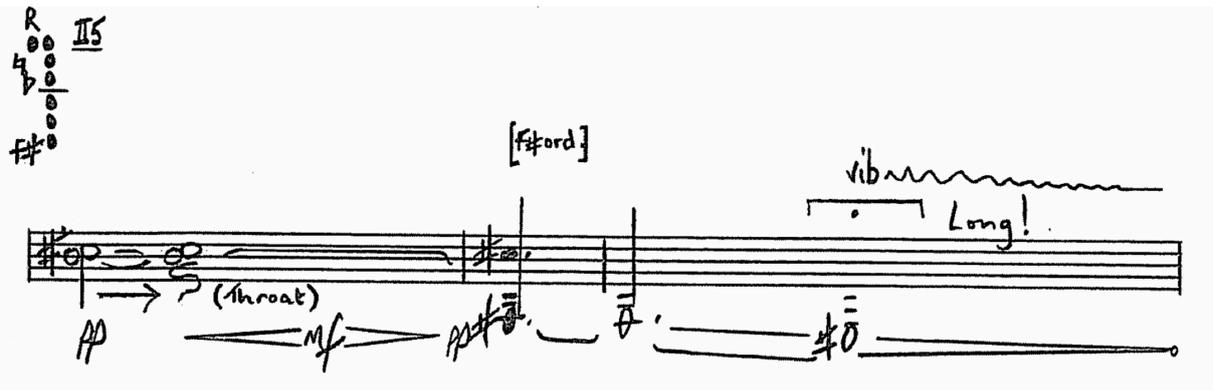


Figure 32: transition from dyad to low fundamental in Rebecca Saunders, *Caerulean* (page 1, line 4).

An alternative technique, present throughout the piece, consists of a tremolo between a dyad fingering and its fundamental. Here again the result is not as clear-cut as the notation perhaps implies, with the upper note remaining present both in the overtone spectrum of the fundamental and in the room acoustic (see Figure 33).

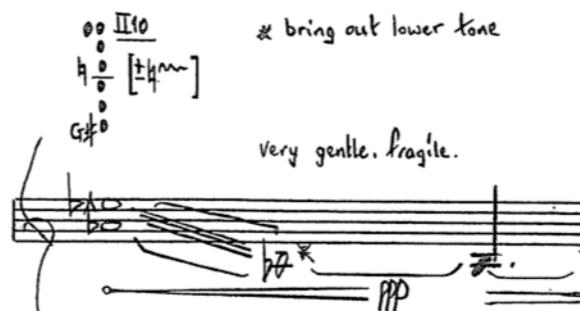


Figure 33: dyad-fundamental tremolo in Rebecca Saunders, *Caerulean* (page 4, line 1).

Saunders' initial intention in compiling material for the solo work was to find further material which would contrast strongly with the above materials, which are characteristically slow-moving and quiet. Being less stable than conventional playing, they are both unsuited to louder playing and require more time to speak, and are thus best approached either from one another or from silence. After consideration of several possibilities, including rhythmic pitched key percussion, the eventual solution was a simpler, more radical one: simply to play the material loudly and let the effects collapse.

What interested me was turning the material on its head – forcing an extreme polarised palette out of the same material. I do this a lot on different levels. [...] In *Caerulean* this is perhaps an early example of my seeking a “dialectical” quality in the reduced timbral palette of sounds.¹²⁴

Given that most phrases in the piece, and indeed a high proportion in Saunders' music in general, begin and/or end in a *niente* dynamic, investigating the collapse of these effects at the other end of the dynamic spectrum offers a definite symmetry. Perhaps more decisively for the musical behaviour of the work, it also allows the desired contrast to be obtained by direct physical transformation of the effects themselves rather than by imposing an extra layer of material. Indeed,

¹²⁴ Rebecca Saunders, email to the author, 5th April 2021.

the transformations inherent to the bass clarinet's technical palette as employed in *Caerulean* in no small part determine the trajectory of the work. Between *Caerulean*'s phrases, there are continual emergences out of and retreats into silence; within the phrases, there are continual transitions between registers and between multiphonic zones.¹²⁵

Our working process was characterised by relatively brief meetings to refine sonic resources, separated by periods in which Saunders and I worked on other projects. This was in part simply the pragmatic result of the time we both had available, but it happily suited Saunders' working methods. She writes:

I need these one-to-one sessions to focus acutely on the player, the instrument, very specific sounds I am presently working on, and also to observe and develop the relationship between the player and his/her instrument. Out of these relatively short and extremely focused sessions I then transcribe into a notation that is as clear as possible for me and the performer, creating a kind of timbral palette, a reduced selection of inter-related sounds. I need this period of distance. When the timbral palette feels completely organically worked through I can then begin the piece. At this point I need no further work with the performer, When the piece is finished the rehearsal process is then again very important for me to work with the performer and establish if the desired sound is exactly as imagined and clearly notated.¹²⁶

Caerulean had originated in the wish to derive a solo work from a single layer in *insideout*, a collage of materials played by instruments spread around the performance space. Before *Caerulean* had its premiere, its materials had already in large part appeared in another such spatial collage, *murmurs*, composed for Ensemble Recherche and premiered by them on 9th October 2009. *murmurs* can be seen as a stage between the raw materials and the eventual solo work, with the materials of *Caerulean* to a large extent already present. Indeed, as the duration of *murmurs* (stopwatch-determined) is over 28 minutes and the duration of *Caerulean* is, according to the score, no greater than 17'30" (although my own performances have not always remained strictly inside this limit), the main work to be done in determining *Caerulean*'s final shape from the material of *murmurs* was abridgement and reorganisation rather than further extension.

I would define it as filtering and reducing. *murmurs* was indeed the preparatory 'study' where many parameters could be tested within a large-scale collage work. *Solitude* [for cello solo, 2013] was first in *Stirrings* [2011], in a very reduced form, then massively expanded with a dialectical palette in the cello concerto *Ire* [2012] and finally the solo for Séverine [Ballon], which I think is the best one of the three. Working on a solo requires the material to be completely absorbed, writing for it in ensemble pieces beforehand helps.¹²⁷

There is, though, a crucial addition, not of extra material but of dynamic shaping. More than anything else, it is the contouring supplied by the extension of crescendos into the forte/fortissimo dynamic range which ensures the clarity of *Caerulean*'s form.

¹²⁵ In her 2006 interview with James Saunders, Rebecca Saunders draws attention to the importance of silence in her work. "Imagine that a seemingly empty page is already full, indeed saturated, with silence before starting to write. It is as if each single note or sound that is then imposed on that already full page must be absolutely necessary. It follows that with the writing down of each new sound it is necessary to adjust the delicate balance between sound and silence." (<http://www.james-saunders.com/interview-with-rebecca-saunders/>, accessed 31st March 2021.)

¹²⁶ Rebecca Saunders, email to the author, 20th May 2018.

¹²⁷ Rebecca Saunders, email to the author, 5th April 2021.

Following a performance in a preliminary version at hcmf// on 26th November 2010, the official premiere of *Caerulean* took place on 5th May 2011 in the Festival Les Amplitudes, La Chaux-de-Fonds, Switzerland. Not long after, *Caerulean*'s materials would reappear in *Stasis*, a new spatial collage commissioned by the Donaueschingen Festival for Ensemble Musikfabrik and premiered in Donaueschingen on 14th October 2011. The materials of *Stasis* are divided into modules, similar to Saunders' procedure with the earlier collages *Chroma* and *insideout*, and include a new treatment of the dyads of *insideout* and *Stirrings Still*. They also include *Caerulean*, effectively in its entirety, reordered and supplemented. Most importantly, they also include a second clarinettist. For the last third of the work (29'49"–45'00"), the second clarinettist plays the same sequence of dyads for clarinet in A as the first clarinettist but temporally displaced, sometimes simply in canon, sometimes in an abridged sequence. Until this point in the work (0'50"–27'08") the second clarinettist plays an additional part for bass clarinet added to the material of *Caerulean*. This material would eventually form the basis for the free-standing duo, *Aether*.

Aether

The 'palette' of materials for *Aether* (2014–2016) considerably extends that of *Caerulean* and is shown in full in Figure 34. While the 'a' series of dyads is unchanged, the 'b' series is nearly doubled in scope (in *Caerulean* it comprised 4–8 plus 11, in *Aether* it comprises 4–14). The 'II' series of dyads receives an additional six members. II4 was known to us from previous investigations but not used in *Caerulean*. The dyad II2b is entirely new to the palette and only used in the second bass clarinet part as it is considerably more effective on the Selmer instrument played by Richard Haynes, the other clarinettist in the first performances of both *Stasis* and *Aether*. Dyad II2 has a quite different lower note on the Selmer instrument (d' instead of e' quarter-flat) and is not required from the second bass clarinet. Dyads II11, II12 and II13 were known to Saunders from Pierluigi Billone's concert-length bass clarinet duo *1+1=1* (2006) (these dyads were found by Billone himself¹²⁸) while II14 is a logical derivative of II8.

¹²⁸ Heinz-Peter Linshalm, co-dedicattee of *1+1=1*, email to the author, 12th June 2019.

Perhaps the most striking new sound in *Aether*, though, is not a multiphonic but an articulation. Starting from section D on page 3, slap-tongue attacks increasingly punctuate the texture. Throughout *Caerulean*, the characteristic dynamic shape of the phrases, despite some exceptions, had been a crescendo from nothing and a diminuendo back to it: a natural, seemingly ‘breathed’ gesture, at least on the surface. (The ‘naturalness’ is relative, since the musical ‘breaths’ do not necessarily correspond to those of the performer: many of the phrases are longer than a single breath could feasibly be, or at least require more than a lungful of air to sustain them, making circular breathing effectively indispensable.) Throughout extensive stretches of *Aether*, slap-tongue attacks become the norm, even where the musical context is otherwise held notes at a quiet dynamic. The difference seems minor but is nonetheless significant to the overall effect, supplying the “further extreme contrast within the existing material needed to carry a longer piece with a more complex structure”.¹²⁹ The few moments at a higher dynamic in *Caerulean* take place in a context of predominantly smooth growth and decay; sudden forte moments are mostly sustained and where they suddenly return to a quieter dynamic (as in the *sffppp* and *sffpppp* moments of gesture 9), they invariably crescendo back to a higher dynamic level. By contrast, in *Aether* many of the slap-tongues rupture an otherwise smooth surface, above all in gestures 8 and 20 (see Figure 35):

Figure 35: Rebecca Saunders, *Aether*, gesture 8 (complete).

The presence of a second instrument permits the harmonies supplied by the multiphonic palette to be combined, creating new harmonic aggregates. Saunders consistently prefers in this context to generate close harmonies, sometimes by combining closely related sonorities from the available palette, such as the final played bar of gesture 6 (see Figure 36), which combines II12 and II13 to give four separate pitches all within the interval of $1\frac{1}{4}$ tones. At other times she combines a multiphonic in one instrument with a more distantly related sonority closely neighbouring it in one of its pitches; or indeed she may juxtapose a multiphonic simply with a single pitch, which in this timbral context decidedly does not have the effect of a ‘normal note’ (see Figures 36–38):

¹²⁹ Rebecca Saunders, email to the author, 5th April 2021.

Handwritten musical score for Figure 36. The top staff has a treble clef, a key signature of one flat (Bb), and a time signature of 4/4. It contains a half note followed by a whole note. Above the staff are notes for R (Right hand), Eb, and Eb. Annotations include 'n.tr.' and 'Basso'. The bottom staff has a bass clef and contains a half note followed by a whole note. Above the staff are notes for Eb and Eb. Annotations include 'hear beats!' and 'S'. Dynamics include 'pp' and 'p'.

Figure 36: Rebecca Saunders, *Aether*, end of gesture 6.

Handwritten musical score for Figure 37. The top staff has a treble clef, a key signature of one flat (Bb), and a time signature of 4/4. It contains a half note followed by a whole note. Above the staff are notes for R (Right hand), Eb, and Eb. Annotations include 'fizz (throat)'. The bottom staff has a bass clef and contains a half note followed by a whole note. Above the staff are notes for R (Right hand), Eb, and Eb. Annotations include 'espr.'. Dynamics include 'ppp', 'p', and 'pp'. There are also markings for 'Bis.', 'L2+', 'L3', and 'L4'.

Figure 37: Rebecca Saunders, *Aether*, gesture 3, bar 4.

Handwritten musical score for Figure 38. The top staff has a treble clef, a key signature of one flat (Bb), and a time signature of 4/4. It contains a half note followed by a whole note. Above the staff are notes for R (Right hand), Eb, and Eb. Annotations include 'Some urgency' and 'air -> tone'. The bottom staff has a bass clef and contains a half note followed by a whole note. Above the staff are notes for Eb and Eb. Annotations include 'vib. espr.', 'Bis.', and '+/-tr.'. Dynamics include 'mp', 'pp', and 'f'.

Figure 38: Rebecca Saunders, *Aether*, gesture 5, bar 1.

Even when both bass clarinets are playing single pitches, these are mostly closely neighbouring notes, sometimes microtonally separated, with a favourite effect being one bass clarinet sliding through the pitch played by the other, as in *Aether*'s very first bar (Figure 39):

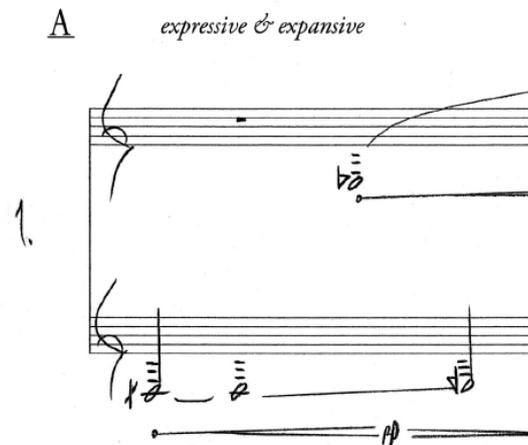


Figure 39: Rebecca Saunders, *Aether*, opening.

While this strategy would certainly be of musical and timbral interest even considered purely as an abstract musical decision, it is far more significant that it replicates and develops the harmonic effect that the close-interval dyads possess in their own right. The second instrument allows Saunders, instead of simply expanding *Caerulean*, to enter more deeply into the confined harmonic spaces that the palette of dyads offers. It is notable that both Richard Barrett and Saunders chose to combine the dyads I provided into four-part writing for two clarinets. It is also worth noting the very different results obtained by the two composers in combining two clarinets playing these dyads – of course the manner in which they employed the dyads for a single clarinet is also strikingly different. I asked Saunders what had prompted her to combine two clarinets playing this material:

I love to clone instruments. to make a kind of *super-instrument* [...] the expansion of this very special palette of dyads and the two series of underblown tones for not just one but two bass clarinets was an exciting and entirely natural progression. I could imagine writing for 8 bass clarinets with these sounds [...] the palette is still intensely exciting for me.¹³⁰

Such an octet has not as yet materialised but is undeniably an exciting prospect.

dyads: further resonances in Saunders' ensemble works

The harmonic content of these dyad palettes had an important influence extending beyond the specific pieces on which we were working – and not merely because Saunders retains her *Klangpalette* for future projects with a given instrument, or even because of her re-use of instrumental layers across her collage-based works. Saunders writes that:

The harmonic implications of the dyads available on the instrument defined a new harmonic field in which I could work. Up to this point I had tended to avoid harmonic fields, exploring more consciously the essentially polyphonic linear writing. Working on dyads for different wind and brass families enabled me to expand my harmonic language, creating quasi-static harmonic fields or

¹³⁰ Rebecca Saunders, email to the author, 20th May 2018.

acoustic landscapes. Each instrument has a very personal peculiar and reduced palette of dyads. The colour harmony and technical limits are clearly defined. Using fluttertongue and bisbigliando created somewhat more stable sonic environments but essentially these harmonic fields were fragile and extremely intimate. This in turn opened up a whole world of possible harmonic “resonance” situations which I could insert into my pieces, almost like an objet trouvé.¹³¹

This point can hardly be overstressed: the ‘harmonic implications’ made available by these dyads not only fed into Saunders’ writing for clarinet in general, beyond these specific pieces, but formed part of a new consideration of her tonal palette for woodwind and brass in general, and of their capacity for combination. This particular collaborative situation thus exercised an influence on Saunders’ writing reaching well beyond the specific instrument under investigation.

Stirrings Still already combines dyads available to the clarinet in A with some similar resources available to the alto flute. Saunders directs that the clarinet and flute be situated closely enough in the space to allow for acoustic ‘beatings’ to emerge between them. Although the work has no explicit vertical synchronisation, if the clarinetist strictly observes the given metronome marking, the flute’s entry after 27” gives approximately the following alignment (see Figure 40):

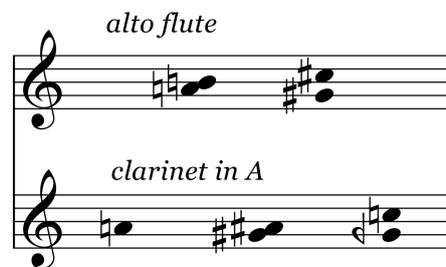


Figure 40: Rebecca Saunders, *Stirrings Still*, opening alignment of alto flute and clarinet (sounding pitches).

The ensemble work *a visible trace* (2006) aligns the same sounding $g^\#-c^{\#\#}$ dyad in the alto flute with the same written dyad $b-c^{\#\#}$ in the clarinet, but on the B^b instrument, giving a different pitch aggregate (see Figure 41):

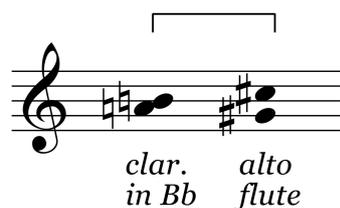


Figure 41: Rebecca Saunders, *a visible trace*, bar 21, clarinet and flute dyads (sounding pitches).

The dyads notated in Figure 36 above for the two bass clarinets of *Aether* yield the following sounding result with the players explicitly directed to “hear beats!” (see Figure 42):

¹³¹ Rebecca Saunders, email to the author, 20th May 2018.

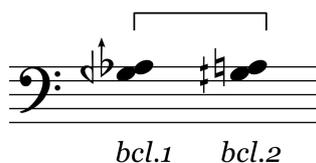


Figure 42: Rebecca Saunders, *Aether*, end of gesture 6 (sounding pitches).

In the ensemble work *Nether* (2017–19), the availability of dyads and related sonorities from bass flute, oboe, bassoon, and two trumpets as well as bass clarinet leads to microtonal aggregates of considerably greater intricacy (see Figure 43):

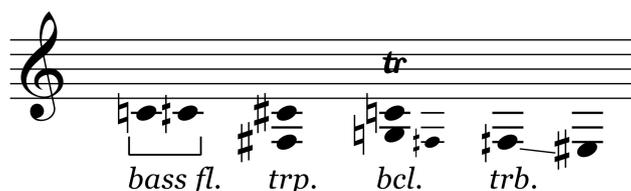


Figure 43: Rebecca Saunders, *Nether*, harmonic aggregate bars 2–3, wind parts only (sounding pitches).

According to Eva McMullan-Glossop,

[w]ith the increased sonic diversity in the music of Saunders, and her contemporaries, the terms ‘pitch’, ‘rhythm’, and ‘melody’ have become increasingly redundant, with musical parameters such as ‘space’, ‘colour’, ‘texture’, and ‘timbre’ increasing in applicability. Thus, [quoting James Saunders (2006)] “colour, not pitch, is the principal carrier of line: whilst nostalgic fragments of compressed melody and clearly defined pitch centres can be heard, they are not at the forefront of the music.”¹³²

While this may to some extent apply to the earlier works James Saunders discusses, including *dichroic seventeen* (1998), the phasing metronomes of *CRIMSON – Molly’s Song 1* (1995), and the massed music boxes of *chroma* (2003–2019), Saunders’s compositional strategy in *Caerulean* rejects a clear dichotomy between pitch and timbre as parameters vying for primacy. On the concluding page of the score, headed “The Material”, Saunders reminds the interpreter that “this is a melodic line, which should always be in motion”.¹³³ It is a particular feature of our collaboration on *Caerulean* that it created an instrumental environment in which timbral exploration and pitched argument need not be mutually exclusive categories.

¹³² Eva McMullan-Glossop, “Hues, Tints, Tones, and Shades: Timbre as Colour in the Music of Rebecca Saunders”, in *Contemporary Music Review* 36, No. 6 (2017): 488–529; she quotes James Saunders from <http://www.james-saunders.com/interview-with-rebecca-saunders/> (2006, accessed 31st March 2021).

¹³³ Rebecca Saunders, *Caerulean* (Leipzig: Edition Peters, 2011), 6.

Chapter 6: Aaron Cassidy

Wreck of former boundaries (2016) for solo B-flat clarinet
Self-portrait, 1996 (2019–2020) for piccolo/alto flute, E-flat/contrabass clarinet,
quarternote horn, & cello

I was so completely shocked by the fact that you were able to do it at all [...] how do you now rehearse? In the way that you would normally rehearse as though it was actual music and someone was actually playing it? I had to pick my jaw up off the ground and then suddenly recalibrate.¹³⁴

Early clarinet writing: metallic dust

Like Evan Johnson, Aaron Cassidy had written for clarinet in a soloistic context prior to our collaboration: in his case, a solo work (*metallic dust* (1999), for bass clarinet, and a duo (*Being itself a catastrophe, the diagram must not create a catastrophe (or, Third Study for Figures at the Base of a Crucifixion)* (2008–2009)) for oboist (playing oboe, musette and English horn) and clarinetist (playing E^b, B^b and bass clarinets). *metallic dust* was intended for Harry Sparnaay and written entirely without my involvement – however, I premiered the work in 2002 and the experience shaped our subsequent work together.

These works employ contrasting approaches to the phenomenon of instrumental ‘decoupling’, a concept of central importance across Cassidy’s work, following on from work by composers such as Brian Ferneyhough, Klaus K. Hübler, and Frank Cox in separating out aspects of the performer/instrument interface which are normally combined. The result is to throw the focus for the listener/audience member onto the matter of the “polyphony of physical and aural elements of a performance”.¹³⁵

My work as a composer has centred almost exclusively on what I would call an ‘experimental’ approach to composition. Most of that work has been for solo instruments or small ensembles, and it has prioritised an approach to instruments that in large part strips those instruments of their conventions. Instrumental geographies are remapped, their physical spaces reconsidered, and the possible movements within and across those spaces reimaged, based on a highly prescriptive, choreographic notion of musical gesture. I have approached instruments as physical and mechanical problems to be solved, as neutral spaces on which I might make an unexpected, unpredictable and occasionally inscrutable music. The solo pieces in particular have deconstructed their instrumental resources to a minute degree, eschewing predictable results of pitch, dynamics or timbre and instead mapping movements and gestures in a collection of tiny, balletic scenes on key mechanisms, fingerboards or mouthpieces. In short, my approach to instruments has been one of discovery and exploration, even sometimes one of naïveté, but in each case it has focused specifically on individual

¹³⁴ Aaron Cassidy, interview with the author, 2nd April 2020 (recalling the first rehearsal session for *metallic dust* in 2002).

¹³⁵ Aaron Cassidy, “Interconnectivity and Abstraction: *metallic dust* as a Testing Ground for Monophonic and Structural Polyphonies,” In *New Music and Aesthetics in the 21st Century volume 1: Polyphony and Complexity*, edited by Claus-Steffen Mahnkopf, Frank Cox, and Wolfram Schurig, (Hofheim: Wolke Verlag, 2002), 148.

instruments, their mechanisms, the interface between performer and instrument, and on inventing a unique set of physiological movements and states to destabilise that interface.¹³⁶

The early *metallic dust* (1999) separates instrumental activity into two layers: ‘mouth’ on the upper system, ‘fingers’ on the lower. The rhythmic content of each individual layer is deliberately kept relatively simple, to throw the focus on the results of their combination. “Were all the individual motivic components made of highly disjointed, fragmented and otherwise unidentifiable units, the rhythmic energies of the work would be largely dissolved.”¹³⁷

As Cassidy notes, “the monophonic solo line is itself the result of a series of polyphonically separated layers (predominantly, a decoupling of the actions of the mouth and the fingers of the performer)”¹³⁸ Dynamics are almost entirely confined to the mouth stave, rather than attempting dynamic differentiation of the various percussive finger actions, with the exception of a few isolated key clicks marked ‘exaggerated’, and some directions to keep the finger actions subtle despite the forceful activity marked for the mouth layer.

The specific effect for the listener – who is hopefully not only listening but also watching – is not entirely left to the chance recombination of parameters: “[t]hrough theatrical histrionics are to be avoided, it should be understood that much of the work is set up to create specific *physical* gestures which do not necessarily correspond to their *aural* counterparts”.¹³⁹ The ‘polyphonic’ elements never interact in the same musical area. “This is, in the end, a strangely monophonic polyphony: the aural field of the work is only ever an aggregate of distinct processes and techniques.”¹⁴⁰

The mouth and finger layers are, however, not entirely separate, or indeed entirely separable. Cassidy notates fingerings across a four-octave range, although in normal playing precisely where in that range a particular fingering *sounds* is dependent on the actions of the performer’s mouth. Rests are notated in the finger layer although the fingers themselves make no sound: since Cassidy’s intention here is for air sounds only in these moments, a rest in the *finger* layer affects the action required in the *mouth* layer (see Figure 44).

Figure 44: Aaron Cassidy, *metallic dust*, bars 31–32.

¹³⁶ Aaron Cassidy, “The String Quartet as Laboratory and Playground for Experimentation and Tradition (or, Opening Out/Closing In),” in *Contemporary Music Review*, 32:4 (2013), 305-323.

¹³⁷ Aaron Cassidy, “Interconnectivity and Abstraction: *metallic dust* as a Testing Ground for Monophonic and Structural Polyphonies,” In *New Music and Aesthetics in the 21st Century volume 1: Polyphony and Complexity*, edited by Claus-Steffen Mahnkopf, Frank Cox, and Wolfram Schurig, (Hofheim: Wolke Verlag, 2002), 152.

¹³⁸ Aaron Cassidy, “Interconnectivity and Abstraction”, 150.

¹³⁹ Aaron Cassidy, *metallic dust*, ii.

¹⁴⁰ Aaron Cassidy, “Interconnectivity and Abstraction”, 159.

While these considerations do not significantly complicate the realisation of the intended physical interactions, Cassidy's later works for clarinet would take a more radical attitude to the separation of parameters.

I, purples/Being itself a catastrophe/Bacon's scream

The next work by Cassidy I would premiere was also not explicitly composed for me and is mentioned here mainly for context. *I, purples, spat blood, laugh of beautiful lips* (2003–2006) was commenced without a specific performer in mind and completed on invitation from Daryl Buckley for me to perform for ELISION. There were no collaborative sessions before our work on the complete piece. As Evan Johnson notes, it is an exception in Cassidy's work in that it "is *not* a by-product of colliding physical motions"¹⁴¹: instead of a separation of things normally combined, it is a combination of things which might normally be kept separate. The text consists of three interwoven layers. Rimbaud's *Voyelles*, an English translation thereof, and Christian Bök's *Voile*, a homophonic version of the Rimbaud in which the French text is rendered by English words of similar sound rather than corresponding meaning. There are no notated pitches. Instead, the singer is given, in an earpiece, a continuous glissando inaudible to the audience combined with a click-track, rendered by a Max/MSP patch, changing direction and speed on each downbeat, the singer having entered their desired vocal range before commencing.

And the scream, Bacon's scream, is the operation through which the entire body escapes through the mouth (or, Three Studies for Figures at the Base of a Crucifixion) (2007–2009) is a work for large ensemble, composed for ELISION; *Being itself a catastrophe, the diagram must not create a catastrophe (or, Third Study for Figures at the Base of a Crucifixion)* (2007–2009) is a duo for oboist and clarinetist extracted from it. Although I was not involved in the original performances of these works, their tablature notation is of interest in contextualising Cassidy's later notational practice. At the time of *metallic dust*, Cassidy had not yet developed a precise knowledge of the instrument's keywork and the information in the 'finger' layer in that work is thus notated as a sequence of pitches. There is clearly more to decouple here, and in *Being itself a catastrophe, the diagram must not create a catastrophe* (2007–09) Cassidy instead notates directly for the individual fingers in a tablature system (see Figure 45). He does not simply specify whether or not the finger is to be raised or lowered, but devises a notational system specifying four distinct actions: a white square notehead indicating that the finger should not be depressed (used only for clarification); a black square notehead indicating that the finger should be fully depressed in its normal position; and two intermediate noteheads indicating a 'small' and a 'maximal' removal of the finger from its normal position (Cassidy requests various degrees from a 'leaning' of the finger, through half-holed fingerings, to the operation of keys normally the preserve of other fingers: in the service of "a much more physically distorted, mutated approach to the instrument, one that removes the connection between fingers and their normal roles"¹⁴²). There is again an embouchure system, specifying pressure on the reed in a range from 'maximal' to 'minimal'. Cassidy writes that "the approach is intended to remove (or at least dramatically destabilise) the connection between the mouth and any prediction/expectation of sounding pitch results".¹⁴³

¹⁴¹ Evan Johnson, booklet note for Aaron Cassidy, *The Crutch of Memory*, ELISION Ensemble. NEOS Music NEOS 11201. 2012, Compact disc, 6.

¹⁴² Aaron Cassidy, *Being itself a catastrophe*, i.

¹⁴³ *ibid.*

9

Figure 45: Aaron Cassidy, *Being itself a catastrophe...*, bars 9–11.

The wreck of former boundaries

The B^b clarinet solo *The wreck of former boundaries* (2016) forms part of a cycle of works (2014–16) for the ELISION Ensemble with trumpeter Peter Evans. The title applies not only to a work for two solo trumpets, clarinet in B^b, alto saxophone, trombone, electric lap steel guitar, double bass, and 5.1 channel electronics, but also to each of its separately performable sections (a trio for piccolo trumpet, quartertone flugelhorn, and trombone; a solo for alto saxophone with 5.1 channel electronics; a solo for electric lap steel guitar with 5.1 channel electronics; a solo for double bass; this work for solo B^b clarinet; and a fixed media work for 5.1 channel electronics).

Cassidy and I had extended informal discussions concerning the solo work over several years in the context of meetings around other projects. Throughout these discussions it was clear that the result would be a solo for ‘normal’ clarinet with notes.¹⁴⁴ The actual working sessions were surprisingly tidily packaged over a few days’ work, despite forming part of a working relationship which even then already encompassed a decade and a half. The sessions themselves took place in March 2016 on three consecutive mornings (23rd–25th). The solo would be completed in April and recorded for CD on July 27th. Its official concert premiere took place on November 24th at an ELISION Ensemble concert in Belgrade, although I gave an unannounced performance of the solo piece at a function at the University of Huddersfield for the release of the CD, shortly after the 22nd November 2016 hcmf// performance of the full *Wreck* cycle, in which the solo appears in an ensemble context.

As his working notes prepared prior to the first session show, Cassidy had already sketched out the sound-world of the solo piece in detail.

curves, arcs, bends – and layers/stacking of curves (independent curves for fingers + embouchure/breath – bending, sliding, twisting)

¹⁴⁴ Cassidy recalls this as being partly a result of my scepticism concerning the tablature notation in *Being itself a catastrophe...* It fitted in any case with his own self-imposed constraint concerning the new project: “I wasn’t allowed to do anything that I already knew how to do [...] those two things actually kind of worked well together”. (Aaron Cassidy, interview with the author, 2nd April 2020.)

- starts with very fast microtonal lines, mostly descending, quickly grabbing starting pitch again and restarting (irregular looping – but steady speed for scalar materials in fingers)
- start introducing irregularity from embouchure – initially steady, sustained, & loud – start introducing little double tongues, guttural interruptions, then more extreme distortions – initially dynamic contour changes (<) then timbral distortions (including bends, rips, various flz/z, glisses, etc.)
- w/ fingers – settle on double trills when finger passagework passes poss. double tr. fingerings
- introducing wider leaps, interruptions, extremity
- introduce stable, static trill/trem material – soft multiphonic trills (opening out of massive embouchure rips and squawks)
- > building to moments of long, sustained tones w/ massive gliss/pitch bend fluctuation – match lap steel material – high, all emb./lip gl.¹⁴⁵

The first session took the form of a ‘refresher’ on various embouchure/articulation considerations. We investigated results obtainable from various kinds of embouchure manipulation, including the distinct results obtainable from slackening to prioritise pitch bend and slackening to prioritise timbral alteration (the parameter of ‘embouchure slackening’ is most definitely not a linear situation and these two results can be to a large extent independently ‘targeted’ – Richard Barrett’s *CHARON* (1995) also requests this independence), as well as overblowing to obtain higher overtones than the fingered notes.

We also investigated the possibilities of teeth-on-reed playing, in which the lower teeth are placed directly on the reed without the usual intervention of the lower lip. The characteristic result is a whistling sound generally above the normal playing range. Controlling these pitches precisely is not invariably part of a player’s technical armoury (certainly not my own). Cassidy’s notes on the sessions include a doubt as to the predictability of the results. Aptly so, since at the one point in the solo where the technique is requested, I have in no performance to date placed my teeth on the reed: it became clear in our first working sessions on the finished piece in July 2016 that the desired results would be more reliably obtainable with the ‘short lip’ embouchure used for the altissimo range, in which only a thin layer of lip is placed between the teeth and the reed, and the cheeks are lightly inflated to lower the air pressure in the mouth.¹⁴⁶

A particular focus of the session, and one which gave rise to a number of unexpected results which would be of particular importance to the solo piece, was the investigation of double trills – these were already part of Cassidy’s planning prior to the sessions, and are extremely present in the solo as a whole, appearing in all but two of the piece’s thirteen complete lines.

Cassidy’s initial intention was simply to document the availability of double trills with a reasonable degree of completeness throughout the normal range. The process gave rise to a number of cases of special interest where the result of the trill was other than might at first have been predicted in which either the resultant notes were in the ‘wrong direction’ (closing a hole led to a *rise* in pitch

¹⁴⁵ Aaron Cassidy, handwritten notes (unpublished).

¹⁴⁶ This not un-risky technique for the altissimo register, analogous to Sigurd Raschèr’s research for the saxophone, is documented in detail in Joseph Marchi, *Étude des harmoniques et du suraigu* (Paris: Editions Henry Lemoine, 1994).

The double trills of particular interest are marked with a red asterisk on the chart. The focus on this phenomenon, an emergent feature of our first collaborative session, increases over the course of the piece, from occasional flickerings in the course of the first page to 26 continuous beats from the second system of the final page.

Our March 24th session focussed on small-interval dyads. It would have been entirely possible for Cassidy simply to refer to the catalogue which I initially compiled after my working sessions with Rebecca Saunders in 2003. In our working session, however, I demonstrated the process by which I search for them on an unfamiliar instrument: opening a key high on the tube and playing a chromatic scale with the fingers below this key until a dyad emerges, then investigating adjacent fingerings to see if more can be found (see Figure 47). Sometimes, in this context, dyads which cannot normally be used in isolation can be accessed from others, especially in the context of trills, since the slightly chaotic environment of a trill can prevent an unstable sonority from ‘collapsing’ into a monophonic result. This information is far too specialised for inclusion in a standard multiphonic chart. These trills can of course include double trills, thus making this phenomenon ideally suited for integration with one of the main technical preoccupations of the piece.

Figure 47: Aaron Cassidy, *The wreck of former boundaries*, sketch materials (mostly my handwriting): working notes on finding dyads, and available double trills.

The process of finding the dyads (demonstrated in the session, but of course not present on a standard chart) would eventually be incorporated into the work itself, forming an important part of the work’s closing section. The dyads used are approached as the result of systematic exploration of directly physical fingering strategies, and as the product of a compositional process not specifically focussed on the pitch result (and thus entirely characteristic of Cassidy’s output as a whole) rather than exclusively as a sonic ‘found object’.

The microtonal scales which result from playing a downward chromatic scale below an open key (also of course a preoccupation in Richard Barrett's *knospend-gespaltener*) fit closely with the initial pitched argument of the work, an irregular eighth-tone descent in the high register. Cassidy had brought the idea of high-register descending microtonal scales to the first session. It is worth noting here Justin Hoke's use of overblown multiphonics in his contrabass clarinet parts (and indeed Cassidy's use of those sonorities in his own contrabass clarinet writing in *Self-portrait, 1996*, below). These likewise incorporate the process of investigating and accessing the sonorities into the unfolding of the work, rather than simply detaching single sonorities as pure verticalities from this process.

The idea of left and right hands performing tasks which are to some extent independent or contradictory is an additional close fit to one of Cassidy's fundamental enduring compositional concerns, that of the decoupling of instrumental layers. Cassidy allows the high open keys and the lower long tube particular independence in systems 4–5 of page 2 (see Figure 48: note the superimposition of the throat g^\sharp key, throat a' key and register key on the fingerings notated on the main staff). He also specifies further decoupling of the instrumental articulations from the fingering processes, recalling the 'mouth layer' writing which dominates *metallic dust*.

Figure 48: Aaron Cassidy, *The wreck of former boundaries* (excerpt from p. 2).

These microtonal scales not only allow for an integration of small-interval dyads into the texture, but provide a means of subverting their limited dynamic range and register. Cassidy's notes refer to "significant attack and decresc." of the microtonal scales, as well as "accessing the overblown partials". Both of these techniques are important preoccupations of the work's closing moments and Cassidy's working notes on the day's sessions already indicate their suitability for the end of the piece.

The overblown partials are already investigated in a rough diagram from the session on 25th March 2016. I sent Cassidy a further, more detailed chart on April 28th but since the final score is dated April 2016 it cannot have been particularly necessary. The chart is primarily a fair copy, with a little elaboration, of materials already mapped out at the March 25th session. In any case, *The wreck of former boundaries* started from the point of an entirely different level of understanding of the instrumental situation from the “undergraduate orchestration class knowledge of the instrument”¹⁴⁷ Cassidy had at the time of composing *metallic dust*. Figure 49 shows a fragment from Cassidy’s preparatory sketches. The green bars at the left of the diagram show the number of different fingerings available for each eighth-tone in this section of the clarinet’s range.

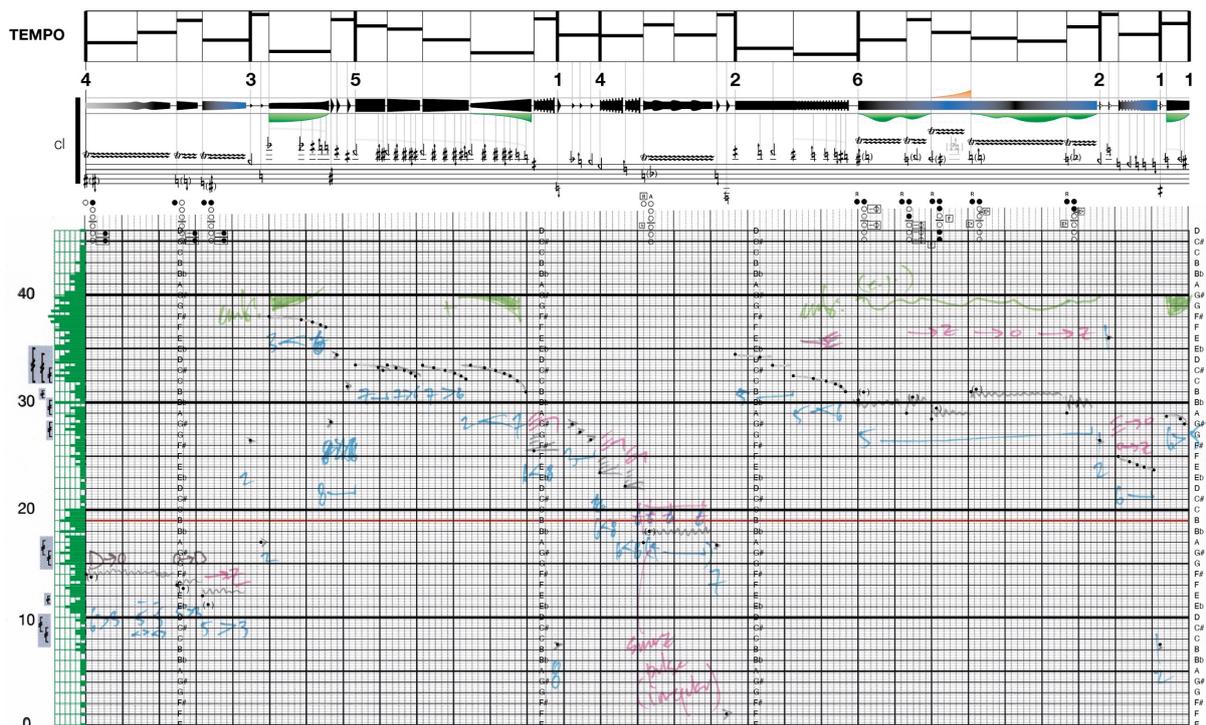


Figure 49: Aaron Cassidy, *The wreck of former boundaries*, detail from the sketch material.

Self-portrait, 1996

The quartet *Self-portrait, 1996* (2020), after Gerhard Richter, arose as part of a collaborative project between CeReNeM and Ensemble Musikfabrik. Initial discussions took place in September 2017, with various discussions and workshop sessions leading eventually to a concert performance on 9th March 2020, with studio recordings the preceding day.¹⁴⁸

Cassidy’s original plan was to use the bass clarinet. By August 2018 he had instead settled on contrabass clarinet, to which he would later add a clarinet in high E^b. On 14th March 2019 we met at the Ensemble Musikfabrik premises in Köln to work on the contrabass clarinet materials. This session was somewhat more spontaneous than those in 2016 for the B^b clarinet solo: in a largely improvisatory manner, I explored the possibilities of overblowing on the contrabass clarinet’s

¹⁴⁷ Aaron Cassidy, interview with the author, 2nd April 2020.

¹⁴⁸ Cassidy’s programme note can be found at <http://aaroncassidy.com/product/self-portrait-1996/>

lowest notes with the addition of the register key, a strategy which had also been employed for Justin Hoke's contrabass clarinet materials. Another visit by Cassidy to Köln allowed for further improvisatory explorations of these results in a session on July 16th.

Cassidy recorded some of the results in five short videos, which show a number of particular favourite tactics. Moving through available overtones allows the possibility of 'locking in' on close, high clusters; this allows dwelling on sonorities which are particularly convenient in the moment of performance. Some indeterminacy of pitch is entirely in keeping with Cassidy's more general practice, in which exact pitches are in certain contexts not prioritised over instrumental actions. Releasing the register key allows the fundamental to appear gradually. The notation in the final score allows for precisely this 'searching' process to be integrated into the work: there is a clear correspondence with the use of close dyads in the *The wreck of former boundaries* solo, where they are not simply presented as 'found objects' but arrived at from the same experimentations with fingerings that I use to find the dyads in the first place. The acoustic correspondence with the 'blurred, smeared' surface of the Richter self-portrait¹⁴⁹ on which Cassidy's work is based is intended, and indeed inescapable.¹⁵⁰

A further technique explored spontaneously in the session would also find a place in the finished piece, namely experimenting with flutter-tongue speed, a technique which given the relationship of the 'pitches' available by this method to the instrumental register allows for a certain degree of what Cassidy in the session referred to as 'polyphonic layering'.

Cassidy's clarinet writing in the duo with oboe *Being itself a catastrophe, the diagram must not create a catastrophe* (2007–9) had concentrated exclusively on tablature notation; *The wreck of former boundaries* had employed pitch-based notation; the new quartet moves between these notational options. The tablature system employed here differs in several details from that of *Bacon's scream*. In particular, it is frequently employed in situations where results of definite pitch are intended. The notation in *Bacon's scream* (in accordance with the general preoccupations of that work) often leaves unspecified the exact position of the finger on the instrument, and in the case of L4 and R4 never specifies which key is to be used. The tablature notation adopted in *Self-portrait, 1996*, on the other hand, is wider-ranging, covering a spectrum including traditional fingering combinations and multiphonic fingerings (both often with embouchure manipulations denaturing their results), while still capable of incorporating the "tiny, balletic scenes on key mechanisms" characteristic of his earlier works (although the wanderings of the fingers away from their normal positions as prescribed in *Bacon's scream* are not attempted here).

Besides the material explored in our working session, Cassidy also draws on multiphonic material from existing sources: the E^b and contrabass clarinet material from Justin Hoke's clarinet works (mostly originated by me in the working process for those pieces, discussed in Chapter 8) and charts at Heather Roche's online resource.¹⁵¹ Much of our initial correspondence leading up to *Self-portrait, 1996* concerns the consolidation of these resources: homogenising their notation, verifying results on my specific setup, and removing minor irregularities in transcription and transmission.

¹⁴⁹ <https://www.gerhard-richter.com/en/art/paintings/photo-paintings/portraits-people-20/self-portrait-8185/?p=6> (accessed 30 June 2021)

¹⁵⁰ <https://player.vimeo.com/video/428788054>

¹⁵¹ <https://heatherroche.net/>

In early December 2019 we worked on charts of 37 multiphonics for contrabass clarinet (some from my previous work with Justin Hoke, and some from Heather Roche's blog¹⁵², on which Hoke also drew for certain pieces) and 47 for E^b clarinet (14 underblown from normal clarino register fingerings, and others 'bespoke' for my preferred E^b clarinet, a 1960s Leblanc model). This work had the result not only of verifying the collection of material, but of supplying Cassidy with audio material to augment the charts.

These multiphonics are used not only as they stand, but also as source material for tablature manipulation, returning to a favourite Cassidy preoccupation. Cassidy sometimes requests fingerings to be changed with gradual rather than abrupt movements of the fingers, and often the fingerings in the two hands are treated independently, with the pitch result again not always of primary compositional importance. (Cassidy's videos recorded during the July 2019 sessions had emphasised the fingering orientations required for various multiphonic techniques, crucial for the tablature manipulations employed.) The most prominent multiphonic in the piece, a loud fermata for contrabass clarinet alone, is on such a composite fingering. Its exact pitch content, bearing in mind that a given fingering can generally produce a variety of different multiphonic results depending on embouchure considerations, was not determined until final rehearsals, and could certainly vary in future performances.

Cassidy's statements on the importance to his music of a certain kind of experimentation in for example, his 2012 paper "I am an experimental composer"¹⁵³, are reasonably unequivocal. They are also no longer entirely up to date. In a recent lecture entitled "A Way of Making Ghosts"¹⁵⁴ (also the collective title of *Self-portrait, 1996* and a companion quartet, *Self-Portrait, Three Times, Standing (15.3.1991–20.3.1991)*) composed for ELISION, Cassidy hints at a shift in approach:

[...] in the earlier stage of my career I feel now, looking back at it, that I was working to establish a vocabulary – but now, at this point, I think to occupy the kind of expressive space that I want my work to occupy, I have to be working towards something that's more like syntax or grammar, which is to say: ways of working with that vocabulary [...] I feel like I've opened up a Pandora's box with this way of working with instruments, and ways of working with notations, that I now have to account for in my work.

Perhaps the multiplicity of style in Richter's work gives a kind of permission to occupy a wider range of musical, aesthetic, even methodological spaces, and more a sense that that wider network of types of music, of ways of making music, form a broader and probably more complete picture of who I am as a musician. So, the abstract and the referential can then sit side by side, and the rigorously procedural and the fluidly evocative can both be true, they can both be real, and they can both be mine.

The shift is clear, from the relatively abstract writing of *metallic dust*, through the mechanically-oriented writing of *Being itself a catastrophe...*, to a methodology capable of accommodating *both* the intricate disassembly-reassembly of tablature-derived notational practice *and* a keen focus directly on the sound. The evolution parallels the emphases of our collaborative process for *Wreck* and *Self-portrait*: in particular, the growing emphasis on exploring instrumental situations rather than single

¹⁵² <https://heatherroche.net/2015/09/25/a-selection-of-contrabass-clarinet-multiphonics/>

¹⁵³ <http://aaroncassidy.com/experimental-composer/>

¹⁵⁴ <https://player.vimeo.com/video/428788054>: first quotation at approximately 1:02:44, second at 1:08:11.

sonorities, also a characteristic of the other collaborative relationships documented here. There is, though, no need to be too rigorous in sorting cause from effect – and in this type of collaborative situation the two are in any case ambiguous.

Chapter 7: Evan Johnson

“indolentiae ars”, a medium to be kept (2015) for 9-key basset clarinet in A

I have a way of writing for woodwinds now [...] the clarinet has become, thanks almost entirely to you at this point, a central instrument to me”¹⁵⁵

The path to the premiere of an Evan Johnson solo clarinet work was surprisingly circuitous. Johnson and I first met in mid-2003 and *“indolentiae ars”, a medium to be kept*, his first clarinet solo written for me, was completed in 2015 and premiered in early 2016. The intervening years were also not sparse in terms of our collaboration. As well as performing Johnson’s contrabass clarinet solo *Ground* (2010, composed for Gareth Davis) on several occasions from 2013, I premiered his bass clarinet duo *Apostrophe 1 (All communication is a form of complaint)* (2008) and two works involving voice: one solo, *A general interrupter to ongoing activity* (2011), and one with cello, *thaes ofereode, thisses swa mag* (2013)¹⁵⁶. *Apostrophe 1* was composed without any particularly direct contact apart from a few email questions of relatively general nature and neither of the vocal pieces was initially intended for me to perform. As might be expected, however, all Johnson’s clarinet music preceding *indolentiae ars* had some degree of influence on the eventual solo work.

Supplement

In an unpublished text entitled *On Waste and Superfluity: Recent Works* (2010), Johnson reflects on aesthetic considerations in his work in general.

The central principle of my recent work is waste, superfluity, the deflection of effort to “marginal” ends. The effort wasted may be bodily – muscular, pulmonary – or it may be gestural; it may be durational; it may be notational. It implicates the performer(s), the score, and the composer.¹⁵⁷

As the title perhaps implies, ‘wasted’ effort is a central theme of *Supplement* (2004, revised 2007), Johnson’s earliest work for solo clarinet, composed for Gareth Davis and premiered by him in 2006.

A superficial resemblance to certain scores of Brian Ferneyhough is readily apparent in various respects from the dogged insistence on Italian (at least, composers’ Italian) for expressive indications, elaborate rhythmic proportions, to time signatures such as 4/7 and 1/24. There are also aural correspondences such as the abrupt juxtaposition of furious instrumental activity with a situation of stasis, under such conditions that the stasis is no less intense than the active figuration (the prominence of this strategy in Ferneyhough’s bass clarinet solo *Time and Motion Study I* (1971–77) is perhaps no coincidence).

¹⁵⁵ Evan Johnson, email to the author, 7th August 2018.

¹⁵⁶ As *thaes ofereode* was not only not composed for me to perform, but employs the voice only for a few brief passages, it will not be considered here.

¹⁵⁷ Evan Johnson, *On Waste and Superfluity: Recent Works* (unpublished, 2010), 1.

An important difference between the two nonetheless lies in the treatment of ‘impossibility’. Ferneyhough’s instrumental writing, for all its seeming implausibility, generally avoids literal impossibility. Ferneyhough writes:

While some composers may not be concerned with practicality, I think that I am not one of them, except (perhaps) in the inevitable but infrequent cases of crass composer error. Where literally impossible (or at least: unlikely) actions are called for, I specify this in context, so that the relevant indication forms part of the actual score.¹⁵⁸

Johnson ventures far beyond this point, highlighting two potential categories of impossibility: contradictory indications and superabundance. While Ferneyhough does not shy away from writing polyphonic textures for a solo woodwind instrument, he takes care to specify where he intends the player to move between the lines. The notation Ferneyhough employs both implies and includes the approximations required to make the lines performable (see Figure 50). Johnson makes no such specifications, leaving the exact realisation of the lines up to the player (see Figure 51).

The image shows a musical score excerpt for Brian Ferneyhough's *Mnemosyne*, starting at measure 25. The score is written for a solo woodwind instrument and consists of three staves. The top staff contains the main melodic line with various rhythmic markings, including 5:4, 7:6, 3, 9, 3:2, 7:4, and 7:4. It includes dynamic markings such as *pp* and *ppp*, and performance instructions like *sempre un poco gliss.* and *sempre vibr. ord.*. The middle staff features a sustained line with dynamic markings *ppp*, *mf*, and *pp*, and includes the instruction *sempre soave*. The bottom staff is dedicated to fingerings, with specific fingering numbers (e.g., 2, 3, 4, 2, 3, 2, 2, 3, 2, 1) and some rhythmic markings like 6:5, 3:2, and 9. The score is marked *molto marc.* at the beginning.

Figure 50: Brian Ferneyhough, *Mnemosyne* (excerpt from p. 3).

¹⁵⁸ Brian Ferneyhough (ed. James Boros and Richard Toop), *Collected Writings* (Amsterdam: Harwood Academic Publishers, 1995), 71.

This sentiment of this prefatory note is certainly not confined solely to *Supplement*. The same admonition appears in the prefaces to *Apostrophe 1*, *Ground*, and several of his other works.

Although the polyphony here is not realisable in the literal sense of simultaneously sounding lines (and not intended to be), Johnson's conception of the situation is not entirely divorced from reality. Specific fragments and even juxtapositions are often repeated, increasing the chance of recognition of materials in subsequent passings, sketchy though the presentation will unavoidably be. The aim in this proliferation of material is not to constrain the performer's creativity, but on the contrary, to require its engagement. Again, Ferneyhough is relevant:

One chooses degrees and emphases of notational precision with the intention of suggesting appropriate interpretational approaches to the text at hand, not with the aim of eliminating performer autonomy. Quite the opposite! [...] It's true that the momentary conjunction of notational symbols may lead to a consistent problematization of the totalized musical 'image', but this is part of the point [...]¹⁶¹

Ferneyhough again, concerning his bass clarinet solo *Time and Motion Study I* (1971–77):

[...] it is one of several compositions in which I set out to undermine, on the one hand, the beautiful deception of the 'perfect performance' (in any case not a very useful fiction), on the other the often-made assertion that only in music based upon improvisatory or aleatory principles is a significant co-productive role for the performer possible.

[...] In a complicated (and complex) situation, only complex (if not always complicated) means are appropriate.¹⁶²

Supplement also notates explicitly the player's employment of their breath, with extensive use of a system denoting the filling and emptying of the lungs. These indications often stand in apparent contradiction to other simultaneous specifications. The sudden emptying of the lungs may occur during pianissimo playing, or inhalation may be specified while the material in the main stave continues with no apparent break. The notation is, admittedly, crude by the standards Johnson employs for other parameters (perhaps necessarily so, given the limited level of precision that might reasonably be brought to bear on the breathing apparatus). It is no great surprise in retrospect that his later *Apostrophe 1* (2008) specifies this area of activity only in the most general sense, and that later works generally subsume this parameter under the many others which his notation allows to be more precisely manipulated. Johnson's specification of embouchure pressure is similar. While a separate system is often appended to the stave for this process in *Supplement*, in subsequent works this parameter is largely left unspecified, or, again, incorporated into other musical parameters.

Apostrophe 1 (All communication is a form of complaint)

Although Johnson, referring to this duo for bass clarinets from 2008, writes that "the clarinet became the first instrument I gained any particular sense of in any concrete, specific sense"¹⁶³, there

¹⁶¹ Brian Ferneyhough (ed. James Boros and Richard Toop), *Collected Writings* (Amsterdam: Harwood Academic Publishers, 1995), 71.

¹⁶² Brian Ferneyhough, handwritten programme note held among the sketches to *Time and Motion Study I* at the Paul-Sacher-Stiftung, Basel.

¹⁶³ Evan Johnson, email to the author, 7th August 2018.

was effectively no direct consultation during its composition, and despite this being our first direct collaboration there is no requirement for instrument-specific techniques.

The ‘polyphony’ the performer of *Supplement* is required to sketch out on their essentially monophonic instrument is still present, although in a much more straightforward form. Johnson confines the notation throughout to one stave per player and occasionally (despite his assertion to the contrary in *On Waste and Superfluity*) even gives hints for the realisation of the simultaneous lines, such as rapid alternation between them, and the use of the voice. The opening dynamic of *pppppp* persists throughout and the performers are instructed to sit upstage, facing away from the audience. The expressive direction is “pressed between two panes of glass”, appropriately implying not only a certain discomfort but microscopic examination of the results.

There is a second movement, designated ‘petites reprises’ (as a cursory glance at his work list shows, references to earlier repertoires occur throughout Johnson’s work). As in *Supplement*, the performers’ breath is again choreographed, although here only in the most general sense, requiring the players to repeat passages from the opening of the work without retaking breath until the lungs are ‘empty’.

Ground

Ground (2010), composed, like *Supplement*, for Gareth Davis, originated in a commission from the Witten Festival, as part of an ongoing project by Davis devoted to new works drawing on the Great American Songbook; it was premiered on the 25th April 2010 at that year’s Wittener Tage für neue Kammermusik, alongside Roland Dahinden’s *Action for Jackson* (2009) and Bernhard Lang’s *MyFunnyV.* (2010).¹⁶⁴

Ground draws on Arlen and Koehler’s *Stormy Weather*, although the title does not derive directly from the song. Johnson’s titles, and much of his notational vocabulary, draw constantly on Baroque tropes. Combined with his references in the programme note to the repetitive structure of the song, this suggests irresistibly that the title incorporates a reference to the Baroque ‘Ground’ form, best known in Purcell’s work, in particular in his laments for female voice. A lament for female voice *Stormy Weather* most assuredly is, and indeed a narrator seeing their emotions reflected in the outside world is a Baroque aria trope in itself – but characteristically, Johnson stops short of making the reference explicit.

As might be anticipated, Johnson’s response to Davis’s commission involves, in his words, “virtually no audible snippets of the melody in question”.¹⁶⁵ The form is another matter. Here Johnson, again in his own words, “faithfully retraces the sectional pattern of the original”.¹⁶⁶ An AABCA form is clearly discernible, the repeats of A slightly lengthened, as in the original. (Strictly recreating Arlen’s AABACA might perhaps have been a little too much repetition.)

¹⁶⁴ <http://www.wittenerstage.de/festival10.htm> (accessed 29th February 2020)

¹⁶⁵ Evan Johnson, *Ground* (Unpublished, 2010), i.

¹⁶⁶ *ibid.*

Johnson’s “virtually” is nonetheless meant literally, as the original melody does peep through at two particular points which contribute the two principal climactic moments both of the song and the piece. The twelve repeated notes of bar 108 (see Figure 52) form a surprisingly direct (albeit slowed down) quotation (the phrase in the original at the corresponding point is “pitterin’, patterin’, beatin’ an’ splatterin’”¹⁶⁷, likewise set to twelve repeated notes); bar 111 similarly directly quotes the phrase “love, love, love, love”, heard in the original shortly after.

Figure 52: Evan Johnson, *Ground*, bar 108.

Even though the triplets of bar 108 are splintered by the ‘ornamental’ placing of the teeth directly on the reed, both of these moments are unusually bare, and loud, utterances by Johnson’s standards, and are aptly followed by the most notationally cryptic moment in the work, a collection of trills (and other, more Johnsonian, ornaments) without any accompanying pitch indication. This section is described by Johnson in the performance notes as a “‘cloud of ornament’ surround[ing] nothing at all”.¹⁶⁸ With its complete suppression of pitch, this section (Figure 53) aptly parallels *Stormy Weather*’s text at this point – “this misery is just too much for me”.

¹⁶⁷ 2’47” in Lena Horne’s 1943 recording (accessed at <https://youtu.be/TPgni5upihQ>), which served as Johnson’s reference.

¹⁶⁸ Evan Johnson, *Ground*, ii.

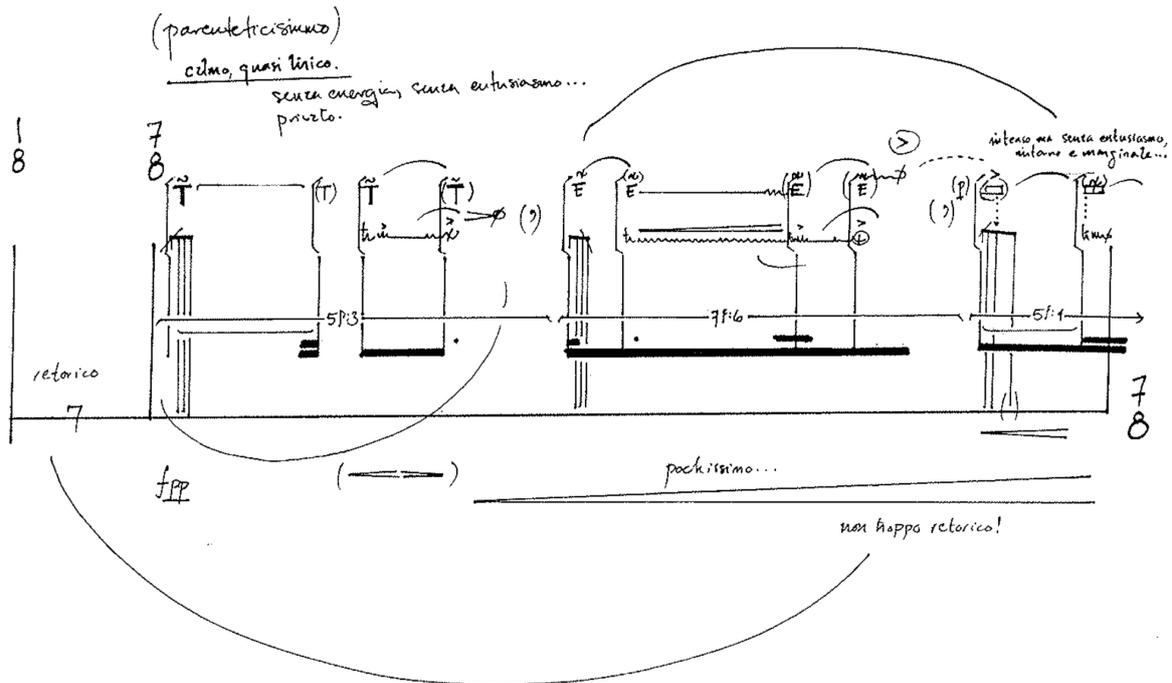


Figure 53: Evan Johnson, *Ground*, bar 113.

The idea of a layer of activity, initially bound with the work's pitched instrumental argument, which eventually disconnects itself from it to assert its own identity, as the 'cloud of ornament' does in bars 113–114, will reappear in the approach to vocal writing in *indolentiae ars*, although in much less paradoxical form.

Johnson's allusion in *On Waste and Superfluity* to the double-edged nature of ornament is crucial here and to his work more generally, and is worth quoting at length:

Ornament is the gratuitous elaboration of superficial surface, an inadequate response to the insufficiency of significant structure and substance; it is the prioritization of the ingratiating over the meaningful. It embodies the hope that dazzling passing details will distract from or obscure a paucity of meaning.

Or, ornament is a way of illuminating an orthogonal scene, testing and rejecting potentialities, raising the specter of alternative material universes in an act of constant distention; cracks and fissures absorbing and releasing gestural energy, marginalia; both a safety valve and a means of securely containing excess.

[...] what the "hopelessly banal" notational framework of early Baroque music (whether of the *clavicinistas* or otherwise) does provide is a referential repository of harmonic and, more relevantly for the present discussion, structural information: whatever ornament lurks in the unlit crevices of this notational praxis is completely subservient to phrase structure, patterns of repetition and sequence (in which different approaches to the ornament of a repeating gesture will not disguise but rather ensure a specific dramatic, rhetorical, teleological meaning to that repetition), sectionally repetitive dance forms, and so on. In my work, the balance is shifted: it is ornament all the way down.¹⁶⁹

¹⁶⁹ Evan Johnson, *On Waste and Superfluity: Recent Works* (2010), 12–13.

Ornamentation in *Ground* is not only superimposed upon the notes, or upon spaces where one might have expected notes to be, it also delineates the barring. Fluttertongue and throat tremolo reinforce the beginnings of very nearly every bar throughout all three ‘A sections’. The exceptions are few, occurring at bars 1, 21, and 146 regardless of the passage of the pitched material. The notation plays with the distinction between ‘ornament’ and ‘substance’ in which ornamental techniques are present both at the uppermost surface level, and as a manner of making audible the unfolding temporal structure. “[O]rnamant all the way down”, indeed.

Ornamentation is also not confined here to traditional musical elements such as trills and mordents, or even the occasional tongue or throat tremolo already mentioned. It also encompasses more drastic techniques such as a ‘mordent’ effect alternating vocal and instrumental tone at the beginning or a note, the momentary placement of the teeth on the reed, or a momentary change of the mouthpiece’s position in the mouth. The possible effect of this palette of ornamentations is wide-ranging, from enhancing the material in typical Baroque manner, or distracting from it, to obliterating it entirely.

While there is no use of multiple staves here, there is certainly no shortage of the kind of polyphonic textures which characterise *Supplement*. Indeed, extra staves might well have been of some clarificatory assistance for certain passages in *Ground*, had the saturated nature of the result not been part of Johnson’s notational agenda (see Figure 54).

(one breath, if at all possible...)

3/8

2/8

ppp
pencil-like,
2 post of ico...

cantabile quasi spasmodico.
"scipulivo"

(quasi mordent)

... repetitivo ...

Figure 54: Evan Johnson, *Ground*, bars 97ff.

However, Johnson’s attitude towards the realisation of these polyphonic passages is here considerably more nuanced than in the earlier work. Where in *Supplement* he simply presents the performer with six staves of material to realise as they see fit, in *Ground* (as in the individual lines of *Apostrophe 1*) he presents a much more restricted selection of material, sometimes also suggesting options for their realisation, such as bracketed trill signs, or suggestions for pitches to be held in the voice while the instrument proceeds.

A general interrupter to ongoing activity

An important work in our collaboration, and the first Johnson solo work which I premiered, was not only not composed for me but not written for clarinet. *A general interrupter to ongoing activity* (2011), for solo voice, was originally intended for the soprano Deborah Kayser to perform. However, because of scheduling pressures, notably her need to prepare for the November 2011 premiere of Richard Barrett's *CONSTRUCTION*, I instead gave the first performance, on 22nd October 2011 at the Transit Festival in Leuven, Belgium.

When Johnson wrote the brief text *On Waste and Superfluity* (2010), *A general interrupter to ongoing activity* was still in progress. It is a particularly apt illustration that, as he puts it, “[t]he central principle of my recent work is waste, superfluity, the deflection of effort to ‘marginal’ ends”.¹⁷⁰ In a paper concerning the piece, he highlights his specific focus on one aspect of the voice, writing that,

[...] the voice relies, in its daily usage, on various inherent devices of obstruction, independently controllable, and each with its own particular character: the glottis, the tongue, the teeth, the lips. It is hard to imagine anyone designing such a thing and calling it a musical instrument.¹⁷¹

Although in a musical context ‘articulation’ has crucial importance as a carrier of phrasing information (just as in speech the consonant takes on the role of supplying specific meaning: in many ancient languages, after all, vowels are not even written down), the etymology is a ‘joining’, an interstice, implying a subordination to the elements it joins. In *General interrupter* the traditional musical roles of consonant and vowel are inverted in that the piece is dominated not by the freely-flowing vowel but by the occluded or obstructed consonant: liquids, fricatives and plosives. The result is a “private rhetoric made up not of sounds at all but of internal stresses on the body”¹⁷², an “intricate internal muscular ballet”.¹⁷³

A reference common to many of Johnson’s recent prefaces and programme notes is to the notion that the primary concern of the sounds is not that they reach the audience. From *inscribed, in the center: “1520, Antorff”* (2014):

Whatever reaches the audience should be overheard¹⁷⁴

and from *Vo mesurando* (2012),

[...] these are all madrigalian figures that you are overhearing, but they are not for you.¹⁷⁵

Finally from *indolentiae ars* (2015):

¹⁷⁰ Evan Johnson, *On Waste and Superfluity: Recent Works* (unpublished, 2010), 1.

¹⁷¹ Evan Johnson, “A general interrupter to ongoing activity: A Constructed Vocality of Occlusion”, in *Performing Voice: Vokalität im Fokus angewandter Interpretationsforschung*, edited by Anne-May Krüger and Leo Dick (Büdingen: PFAU-Verlag, 2013), 169.

¹⁷² *ibid.*

¹⁷³ *ibid.*, 170.

¹⁷⁴ Evan Johnson, *inscribed, in the center: “1520, Antorff”* (Berlin: Edition Gravis, 2014).

¹⁷⁵ Evan Johnson, *Vo mesurando* (Unpublished, 2012).

Whatever reaches the audience should be as if overheard.¹⁷⁶

In *A general interrupter to ongoing activity* this conception, combined with what in any case are the inwardly-directed energies of the musical material, frequently reaches its logical conclusion. There are tongue clicks performed quietly with the mouth closed, and in several passages the throat is in motion but the voice is silent. Such moments are by no means confined to passages of relatively low intensity: in bar 9 (see Figure 55) a *ffff* slide from an alveolar to a velar fricative is performed in conjunction with a *ffff* tongue blockage, with the direction “(almost no sound)”.

The image shows a handwritten musical score for bar 9. It consists of several staves with notes, rests, and various markings. The score is annotated with Italian and English text. At the top, it says "con tensione estrema (almost no sound)". Below that, there are markings like "[ffff]" and "[f]". To the right, it says "insistente ma parentetico". In the middle, there's a large bracketed section with "stabile come bianco" and "... celuzando...". Below that, it says "assolutamente in fondo" and "ppp". At the bottom right, there's a signature "THOLE A LITEL". There are also numerical markers like "105-114", "105-118", "11P:9", and "10P:9".

Figure 55: Evan Johnson, *A general interrupter to ongoing activity*, bar 9.

¹⁷⁶ Evan Johnson, *indolentiae ars* (Unpublished, 2015), ii.

Johnson cautions the performer against overt ‘projection’ of the material. “Consonants mean occlusion, and here their energies are directed away from the audience, back inward”.¹⁷⁷ There is a clear echo here of the direction in *Apostrophe I* for the players to face the back of the stage.

The details of the ‘instrumental’ apparatus receive close attention, with notational strata (Johnson’s term) arranged “in an order corresponding to the physiology of the vocal tract”¹⁷⁸, with material relating to the lips at the top and material relating to the throat at the bottom of the page.

Unlike in the earlier works considered here, “everything in the score is performable as written - despite the many simultaneous arenas of activity, there are no *overtly* self-contradictory actions”.¹⁷⁹ Even though this reassurance is immediately followed by a caveat (“In practice, however, certain strands of material will tend to overshadow, distort, or even ‘overwrite’ others”), it constitutes a departure from Johnson’s practice in the works from *Supplement* through to *Ground*. Of course, the notational strata of the earlier works for the most part overlay simultaneous demands on the same apparatus. It is instructive to recall the extent to which Johnson’s notation for the mouth and the breath in the earlier work were relatively undifferentiated compared to here. In this instance, the mouth of the vocalist is somewhat more accessible in perceptual terms than that of the clarinetist, but a musician performing both works cannot fail to be struck by the symmetries between the two situations despite their clear differences.

There are some pitches required from the vocal cords, and some passages explicitly required to be sung. Given that the work was originally intended for a singer to perform, it is certainly a valid question to what extent these sung moments might be conceived as islands of ‘normality’, especially given that a decade after the work’s premiere, it has still mainly been performed by non-specialist vocalists, with ‘trained singers’ very much in the minority.

Johnson’s approach might be compared with that of Helmut Lachenmann in *Guero* (1969), a work for solo piano in which no pitches are played from the keyboard. Among other actions, the performer produces clicking sounds of varying densities by sliding the fingernails along the instrument’s various surfaces such as the tops and fronts of the keys, or the tuning pegs. In that particular case, as De Souza notes¹⁸⁰, the presence of a trained pianist performing these very un-‘pianistic’ (but in a deeper sense quintessentially pianistic) sounds is part of Lachenmann’s aesthetic plan.

Here, however, the composer answers:

[...] I wrote it for Deborah [Kayser] but without any particular sense of her as a singer and with every intention of avoiding any inherent singerness. So, it’s actually very nice to me that more instrumentalists than singers have done it (and in fact you are kind of the ideal interpreter – and you can put that in your document – as an instrumentalist with a cultivated particular sense of vocal self-awareness). Specifically: the actual sung stuff needs to *not* be SUNG, or at least should not be

¹⁷⁷ Evan Johnson, “A general interrupter to ongoing activity: A Constructed Vocality of Occlusion”, in *Performing Voice: Vokalität im Fokus angewandter Interpretationsforschung*, edited by Anne-May Krüger and Leo Dick (Büdingen: PFAU-Verlag, 2013), 176.

¹⁷⁸ Evan Johnson, *A General Interrupter to Ongoing Activity* (Unpublished, 2011), iii.

¹⁷⁹ *ibid.*, ii.

¹⁸⁰ Jonathan De Souza, *Music at Hand* (Oxford: Oxford University Press, 2017), 86–87.

SUNG – it is (in a sense you are intimately familiar with and quite possibly sick of) meant to be as if hummed to oneself: unpracticed, unpolished, untrained – so that it is particularly perceptible as a muscular phenomenon of throat tension and muscular adjustment rather than having anything whatever to do with *bel canto*. Insofar as singerly training (like most instrumental training of course in general) is designed to render invisible the technical underpinnings and the various awkwardnesses and compromises and artificialities inherent in the physicality of technique, in favor of an illusion of lyrical purity, it is no more appropriate in those parts of “General interrupter” than in the rest. There is no intended hierarchy between a Singer’s comfortable ‘native territory’ and the consonantal alien wasteland.¹⁸¹

The theme of specialist versus non-specialist affordances continues in *indolentiae ars*.

“indolentiae ars”, a medium to be kept

I am not much of a collaborator, compared to a lot of other people, or so I gather [...]¹⁸²

This piece is tailored in every possible way to Carl Rosman: his unusual instrument and his explorations upon it (and therefore his multiphonics, his fingerings, his microtones), his transcendent virtuosity, his penetrating intellect, his tolerance of ambiguity, his immersion in musical history, his voice, his stage presence, his control of silence, even his page-turning technology. In gratitude for almost ten years of a relationship that has become one of the foundations of my musical life: nothing I’ve ever done has been dedicated so profoundly.¹⁸³

If there is not necessarily an outright contradiction between these two remarks by Johnson, there is at the very least a dissonance worth exploring. The first remark refers to one particular mode of ‘collaboration’, a continuing dialogue during the construction of the score. Once he has gathered a certain amount of information, Johnson writes that “fingering charts etc. are usually just as good to me as actually sitting down in a room together”.¹⁸⁴ The second makes amply clear that this in no way rules out a strong ‘presence’ of the performer in the score which results. If the technical resources I contributed to *indolentiae ars* do not have such an explicit presence in the final score as is the case in the other collaborations here, it is no great surprise. If there is any single quality that may be said to characterise Johnson’s music, it is precisely the avoidance of *anything* explicit, in this parameter as in many others.

Given our mutual obsession as listeners with historically informed performance, and given Johnson’s obsession with unwieldy instrumental situations, it was clear that the new solo piece would be written for some instrument or other from my collection of historical instruments. The choice of the Lotz/Stadler model of basset clarinet (described in detail in Chapter 2, and shown in Figure 56 below) was not a difficult one. The instrument is unwieldy and unfamiliar, and simultaneously central to the development of two of the best-loved works of the clarinet repertoire.¹⁸⁵

¹⁸¹ Evan Johnson, email to the author, 27th February 2020.

¹⁸² Evan Johnson, email to the author, 7th August 2018.

¹⁸³ Evan Johnson, *indolentiae ars, a medium to be kept* (Unpublished, 2015), i.

¹⁸⁴ Evan Johnson, email to the author, 7th August 2018.

¹⁸⁵ The *basson di chalumeau* (a bassoon-shaped chalumeau with a register to match; effectively a Baroque bass clarinet) was also considered: even more unwieldy than the basset clarinet and even less familiar, but almost entirely obscure in terms of repertoire. Indeed, like the basset clarinet it is a conjectural reconstruction of a historical model of which no complete originals have survived, although it is a model which is gaining increasing ground in performance of Baroque ensemble repertoire featuring the more familiar sizes of chalumeau. Although I am unaware of any recent solo works



Figure 56: 'Stadler' basset clarinet, replica by Peter van der Poel.

The nine-key boxwood basset clarinet presented a particularly attractive prospect in the context of Johnson's own preoccupations, as an instrument with considerable historical baggage, but to all intents and purposes entirely unexplored for contemporary music as a specific model since Anton Stadler's work in the 1790s. Although Alan Hacker's pioneering rediscovery of the basset clarinet led to many works being composed for him, they were for his 'modern' basset clarinet rather than for the historical model. If the specificities of the instrument were not to be completely ignored (not an inherently invalid strategy, but unlikely in Johnson's case) a palette suitable for 21st-century music thus had to be established from scratch.

This led to a more direct mode of collaboration than had hitherto been the case in Johnson's work for clarinets. Whereas in *Supplement* and *Ground* the instrument-specific nature of the result emerges from such parameters as the realisation of notationally paradoxical textures and is relatively undefined in notational terms, for *indolentiae ars* Johnson sought to arrive at a closer understanding of the instrument's specificities. While the sound of the instrument was to some extent familiar from its use in the Mozart repertoire, Johnson had, as he confessed, "no sense of the instrument whatsoever"¹⁸⁶ prior to our meetings.

These meetings were documented in some detail by Emily Payne in her *Repurposing the Past? The Historical Basset Clarinet in Creative Collaboration*.¹⁸⁷ The article, published separately in 2016, originated as part of Payne's PhD thesis¹⁸⁸, in which various collaborative situations involving clarinetists were considered. My first contact with Payne was in August 2012. In November 2013, we settled on the idea of documenting this specific project.

My own relationship with the historical basset clarinet, and historical instruments in general, springs partly from my interest in these instruments as a listener and partly from desires expressed by various composers at various times to compose something for them. It has been an activity of considerable personal interest, although only tangentially related to my main professional activities. I had spent varying amounts of time in the company of historical clarinets since my undergraduate studies. The Melbourne Conservatorium (where I studied in 1992–93) possessed a B^b clarinet by Moeck with an early 19th-century key layout. Later, during my Masters studies with Peter Jenkin

for the instrument, it appears in works composed for me in Ensemble Musikfabrik by Richard Barrett (*natural causes I, IV, X, XIV* (2016–17)) and Gordon Kampe (*Arien/Zitronen* (2016)).

¹⁸⁶ Evan Johnson, email to the author, 7th August 2018.

¹⁸⁷ Emily Payne, "Repurposing the Past? The Historical Basset Clarinet in Creative Collaboration", in *Contemporary Music Review* 35, No. 6 (2016), 648–669.

¹⁸⁸ Emily Payne, "The creative process in performance: a study of clarinetists" (PhD diss., University of Oxford, Oxford, 2015).

in Sydney, I borrowed some of his Classical-model clarinets, including a B^b/A pair by Daniel Bangham with a basset extension for the A, currently in the possession of Melbourne-based clarinettist Craig Hill.¹⁸⁹ I thus had a certain amount of direct experience of such instruments when planning began for Richard Barrett's *CONSTRUCTION* cycle, a project that employs a substantial historical instrumentarium, composed for the ELISION ensemble and eventually premiered in 2011 in Huddersfield. In 2006, while searching for instruments for this project, I met the clarinettist Diego Montes in Köln. Montes had performed many Baroque and Classical works on historical instruments with Concerto Köln and other ensembles and was selling some of his historical hardware. Many of his instruments were thus incorporated into my collection.

While these instruments included Classical models, Baroque instruments are in general easier to integrate into new-music projects as they are generally constructed at a'=415Hz, effectively a full semitone below modern concert pitch. Classical-model instruments are most often constructed at around a'=430Hz, approximately a quarter-tone below modern pitch and thus more restricted in their capacity for integration into ensemble textures. The timbres of Classical clarinets are also less distant from those of modern instruments than those of Baroque instruments (chalumeaus or Baroque clarinets). My use of historical instruments in fully-scored works within Ensemble Musikfabrik or ELISION has thus been largely confined to Baroque instruments. (Besides Barrett's *CONSTRUCTION* with ELISION, particular examples in Ensemble Musikfabrik's recent history include Gordon Kampe's song cycle *Arien/Zitronen* (2016), with parts for soprano chalumeau and basson di chalumeau, and Hèctor Parra's *Orgia – Irrisorio alito d'aria* (2017), for Ensemble Musikfabrik and Concerto Köln, with a part for three-key Baroque clarinet in D.)

As Payne noted in her documentation of our meetings, my relationship with the Classical clarinet in general (and even more so with the comparatively exotic model chosen for *indolentiae ars*) is thus in no way that of a dedicated specialist. Even if it had been, the disparity between Johnson's style of writing and the instrument's 'home ground' would doubtless have ensured that the task of finding a 'Johnsonian' vocabulary for the instrument would have been unknown territory for all parties involved.

Just as *General interrupter* was composed for voice but "without any particular sense of [Deborah Kayser] as a singer and with every intention of avoiding any inherent singerness"¹⁹⁰, *indolentiae ars*, then, is composed for a historical instrument, but one seen very much from the point of view of a performer whose 'home ground' is performance on 'modern' instruments. While it would doubtless be interesting to hear a performance by a historical-instrument specialist, it would also be a surprise, not least for the composer, who remarked in 2014 that the work then in progress "will be absolutely for the combination of Carl and this particular instrument – no one else will ever play it".¹⁹¹

As De Souza notes, following Heidegger and Gibson, "[a]ffordances [...] are possibilities for action by a particular agent".¹⁹² The affordances of the piano in Lachenmann's *Guero*, the voice in Johnson's

¹⁸⁹ This A clarinet in its basset setup can be seen on Hill's website: <https://mozartbassetclarinet.wordpress.com/a-straight-basset-clarinet/> (accessed 4th March 2020).

¹⁹⁰ Evan Johnson, email to author, 27th February 2020.

¹⁹¹ Evan Johnson, email to Emily Payne, 15th April 2014.

¹⁹² Jonathan De Souza, *Music at Hand* (Oxford: Oxford University Press, 2017), 12 (his italics).

General Interrupter, and the clarinet in *indolentiae ars*, are conceived as those involving, respectively, a pianist, a not-necessarily-specialist singer, and a ‘modern’ clarinetist with a keen interest in historical instruments but a performance practice grounded in the 20th–21st century rather than the 18th. De Souza, quoting Heidegger again, notes that “tools are handy (‘zuhanden’) because they withdraw from my awareness”.¹⁹³ ‘Zuhandenheit’ is elusive in *indolentiae ars*, or at least comes accompanied by a considerable amount of ambiguity, of a sort entirely appropriate to Johnson’s concept of instrumentalism: it is not a persistent quality but a parameter for manipulation. The fingers are on slippery ground, indeed in a very literal sense. The rings of the ‘standard’ modernised instrument are absent, and for a ‘modern’-instrument player deprived of the assistance these rings provide for orientation the fingers at first float alarmingly in space. The impression is heightened by the lack of a thumbrest: the right hand has no fixed point of orientation on the rear of the instrument and even the act of holding the instrument is unfamiliar. There is currently no known historical depiction of the instrument being played and there is disagreement among performers as to in which direction the bell should face: turned back towards the player, as the engraving shows, or towards the audience, as many performers prefer. (The period-instrument clarinetist Lisa Shklyaver told me in conversation that she employs both options according to the requirements of the performance situation.) Some historical-instrument players sit, supporting the instrument between their legs (Australian period clarinet player Craig Hill, one of the first to perform the Mozart concerto on this historical model, rested the bell on a leather strap draped across his lap for many of his early performances); some stand, employing a neckstrap; some stand, holding the instrument in the conventional manner when the thumb is not required for the basset keys and supporting the instrument against the body when the thumb is otherwise occupied. I sat for the first performances of *indolentiae ars*, but for the video recording made on 12th July 2020¹⁹⁴ I stood, without a neckstrap.

For a ‘modern’-instrument player taking their first steps on the Classical instrument, the simplest diatonic music can present an alarming feeling of disorientation: until the positions of the holes have been internalised, the musical straightforwardness of the simplest scale bears no relationship to the disconnection felt by players used an instrument provided with key-rings. Lowering the fingers quickly risks partly missing the hole; ‘searching’ for the hole ensures a distracting glissando as the finger finds its position; the occasional requirement for half-holing (necessary if certain notes in the lower register, particularly *b* and *c*[#], are to be obtained in tune) seems at first encounter to be impossibly random in its intonational results.

Although the interface with the fingers is alarmingly unfamiliar, the interface with the mouthpiece requires much less relearning. The embouchure does require somewhat more flexibility, but the flexibility is at least of a familiar kind (at least, assuming one already has a relatively flexible embouchure concept on one’s ‘normal’ clarinet): sufficiently so that the impression is of an instrument which is part-alien, part-familiar.

Like Johnson’s previous music for solo clarinet (*Supplement* and *Ground*), *indolentiae ars* is conceived for a ‘low clarinet’, but the resemblance of the instrumental situations does not stretch much further than that extremely general observation. Both the bass clarinet of *Supplement* and the

¹⁹³ Jonathan De Souza, *Music at Hand* (Oxford: Oxford University Press, 2017), 20.

¹⁹⁴ https://youtu.be/yf_7y6eoRzM

contrabass clarinet of *Ground* are highly mechanised compared with instruments at the end of the 18th century. The feeling of playing a nine-key boxwood instrument is entirely different. Even with the extra keys for the 'basset' register, the instrument is considerably lighter, and for the most part, the fingers are in direct contact with the wood (during normal playing on bass and contrabass clarinets, the player's fingers are in contact only with the metal of the keys). The vibrating airstream can be felt under the fingers, most strikingly so when performing 'half-hole' fingerings which, given Johnson's continuously microtonal writing, are constantly present.

While fork- and cross-fingerings are rarely employed in normal semitonal playing on the modern French-system clarinet, even the simplest scale on the Classical instrument requires them in abundance. The degree of legato obtainable from the instrument is thus quite different. Sometimes the result is incomparably *smoother* than the modern instrument can assure, in situations where what is required is a simple movement of the finger onto or away from a hole on an unmechanised tube. Sometimes, however, it is considerably more cumbersome than anything prepared for in the 'modern' player's training.

The latter situation proved to be of particular interest to Johnson – unsurprisingly enough, considering his compositional priorities.

It's certainly not going to be based on Mozart and any sort of quote, but it'd be sort of a shame not to have some thought given to that [...] It would be nice to have a special thing that somehow implicitly addresses the historical context in some sense [...] It would not surprise me if there's some sort of idea of Mozartian gesture or ornamental practice or scales or something that wound up somehow, hopefully subtly. I'm really allergic to pastiche.¹⁹⁵

The key word, clearly, is 'subtly'. Not even a close examination of the score shows any obvious Mozartian influence. Yet the influence is there, in Johnson's occasional use of pitches hinting at triadic allegiances, in the occasional presence of material of comparative regularity, and in the continuous and inescapable presence of an instrument which only exists nowadays because, even though the original instrument itself has been lost for over two centuries, the two works Mozart wrote for it are central enough to the repertoire to warrant the painstaking reconstruction of the instrument (in models in varying grades of conjecturality over several decades since the mid 20th century) and of the scores of the works (since the only copies containing the original versions tailored to the specific qualities of the instrument have disappeared).

The first package of written material sent to Johnson in April 2014, then, was not only a small collection of multiphonics but a semitonal fingering chart across the full range from B to c^{'''}. At no point did I provide similarly comprehensive materials concerning the availability of microtones. Nonetheless, in the final work the basic semitonal material is only present as one end of a spectrum. Such material is very much in the minority, only present in any great number as a 'special effect', for example at this important structural point in the work (see Figure 57):

¹⁹⁵ Evan Johnson, interview with the author, 6th April 2014.

der augen (2012) by Ensemble Musikfabrik in our concert series in the Großer Sendesaal of the WDR in Köln. Until *indolentiae ars*, Johnson had written precisely one multiphonic for a woodwind instrument: a single dyad in the solo baritone saxophone work *Largo calligrafico / 'patientiam'* (2012). Multiphonics play a much more important role in *indolentiae ars* and it would of course have suited my present research focus had this heralded a change in Johnson's practice. The composer, however, is characteristically much more equivocal on the subject:

I felt a bit compelled to have [multiphonics] make a cameo in this piece because of the instrument-specificity situation, but in general my attitude hasn't really changed that they're only really interesting to me in terms of their being a certain limit case of other pressures on technique, maybe creating situations where it's possible that they might emerge more or less "accidentally" or "spontaneously" out of a set of conflicting directives from elsewhere.¹⁹⁷

As Payne notes, there are moments in *indolentiae ars* which fit the traditional 'fill this gap' paradigm, in which, at its simplest, a composer requires a multiphonic, which the performer provides, for an musical passage which is otherwise already essentially complete. My jocular "I woz 'ere" quoted by Payne¹⁹⁸ is of course an oversimplification. "I" am far more meaningfully, if less traceably, "'ere" in many other parameters of the work than in a few small gaps efficiently filled.

The investigation of the specific multiphonic behaviour of a historical instrument is worth examining in the context of an understanding of instrumentality, following De Souza, as 'inevitably historical'. De Souza quotes Adorno referring to the search for a previously unheard chord on the piano, stating that: "This chord, however, was always already there [...] the possible combinations are limited, and actually everything is already stuck inside the keyboard".¹⁹⁹ De Souza continues:

The interaction of body and instrument – with all its cognitive consequences – is an interaction of individual and culture, present and past. Instruments ground modes of music cognition that are embodied, technically conditioned, and historically situated.²⁰⁰

indolentiae ars presents, in this context, a somewhat extreme case. The instrument is grounded in a particularly specific historical situation (a repertoire of precisely two pieces); at the same time, performance of historical repertoire on early instruments is a decidedly modern phenomenon. The sounds which the 'Stadler clarinet' was designed to make are in *indolentiae ars* only one point on the spectrum. Indeed, Mozart had already employed idiomaticity as a parameter in some of the first works written for the new instrument. The writing in the Clarinet Concerto KV 622 is at certain moments deliberately 'against the grain', relying on the effect of an instrument reaching for tonal areas for which it is not ideally suited (in particular, bars 117–123 of the first movement, staying for bars at a time on notes which on Stadler's clarinet most likely had no secure well-tuned fingering – see chapter 2, p. 32).

¹⁹⁷ Evan Johnson, email to the author, 7th August 2018.

¹⁹⁸ Emily Payne, "Repurposing the Past? The Historical Bassett Clarinet in Creative Collaboration", in *Contemporary Music Review* 35, No. 6 (2016), 660.

¹⁹⁹ Jonathan De Souza, *Music at Hand* (Oxford: Oxford University Press, 2017), 26. (In the original: "Aber es gab den Akkord immer schon, die Möglichkeiten der Kombination sind beschränkt, eigentlich steckt alles schon in der Klaviatur.": Adorno, *Ästhetische Theorie* (Frankfurt/Main: Suhrkamp, 1970), 55.)

²⁰⁰ Jonathan De Souza, *Music at Hand* (Oxford: Oxford University Press, 2017), 26.

vocal. Only three different pitches are played, all with specific fingerings chosen according to Johnson's wish for a maximally denatured sound.

The 'arioso' material is typically much less active. Some of its sections consist of a single note, or even of silence (arioso 5 and 6 contain only rests), sometimes with the surrounding active material spilling over the barlines. Its durations, however, are out of proportion to their content, with many long fermatas, sometimes measured in entire breaths, which in the case of notes requiring hardly any air (such as the $d^{1/4}$ ^b of arioso 7) can last for up to a minute.

The two 'II' sections function very much as a coda, beginning with a few fragments of the most 'traditional' instrumental writing in the work, separated by extended silences, before again disintegrating into vocal material. The 'II' material begins with an insistent dwelling on the lowest note of the instrument: the low B mentioned above. The last few pages contain the only loud music in the work: from the *pppp privato quasi nascosto* of bar 89, a sudden crescendo in bar 94 brings a series of *fff* or *ffff* interruptions, including slap-tongue articulations and loud vocalisations. Bar 96 includes a *ff feroce!* sung note at the top of the treble stave (appearing even higher since it is written in the same transposition as the instrument), shortly after an instrumental note marked *ffff poss. – con massima forza – ma privato quasi incurvato*, a performance indication entirely characteristic of Johnson's taste for paradox. Louder dynamics are in general extremely uncharacteristic of Johnson's work. The opening *pppppp* of *Apostrophe I*, for example, is unchanged throughout. *Ground*, however, similarly has an *fff* outburst for its climax, and although the 'modern' contrabass clarinet of *Ground* is capable of a much greater dynamic range than the historical basset clarinet, the *fff!* is stifled by the placing of the teeth on the reed.

As in *Ground*, the effect of these explosions is not remotely as spectacular as they appear in the score. The Classical clarinet has a much more restrained dynamic range than that of its modern counterpart, and the Classical basset clarinet even more so. The attempt to play in a *ffff* dynamic thus invariably leads to a stifling of the instrumental sound, and a far less unequivocal result than the score might suggest. Johnson's *ma privato quasi incurvato* is thus somewhat less paradoxical than it might at first appear. In private correspondence, Johnson has clarified what for him are the important nuances of 'incurvato', a performance direction occurring throughout the work, as "bent downwards/inwards, sort of hunched as if under external pressure".²⁰² There is a clear correspondence with the principal performance directions of *Apostrophe I* ("Pressed tightly between two panes of glass") and *Ground* ("Under constant pressure – downwards and outwards"), pointing to the common expressive ground between the works. The direction 'incurvato' appears for the first time in the work in the context of the first appearance (and foregrounding) of the basset clarinet's low B, a note indeed requiring a hunched posture from the performer to close the keyless hole of the 'knee' of the instrument against the performer's body. The performance note emphasises that "everything, even these loud events, should be as if mumbled, privately, with less concern for clarity and communication than with the development and negotiation of a full language within these boundaries".²⁰³

²⁰² Evan Johnson, text message to the author, 4th March 2020.

²⁰³ Evan Johnson, *indolentiae ars*, ii.

I suggested to Johnson that in general, moments of instrumental specificity in his work come about as much simply through his characteristic overload of material as through any explicit strategies, and referred to the semitonal fingering chart I prepared at the beginning of proceedings. Johnson replied:

[...] it's there, as I described above, as a space upon which I think about vectors of difference (to a degree that may be exaggerated relative to its actual importance) [...] it's also for me a question of trying to gain some sympathy for the act of playing the instrument and the way that the fingering mechanism creates its own sense of the topology of a pitch space, which is something I try to incorporate into the gestural and registral language of a piece [...] but I agree that it's probably more a sense of knowing what the terrain is as a background condition rather than seeking to exploit it explicitly. I have this constitutional reticence to doing anything particularly explicitly, though, an exaggerated distaste for even the appearance of didacticism.

Aptly, then, the presence in *indolentiae ars* of materials originated specifically for our collaboration is not particularly explicit on the page. The 'I woz 'ere' moments provided by a few isolated multiphonic sonorities are hardly as far-reaching as the collaborative contributions to other composers' palettes found in the other studies here. And yet Johnson's dedication, quoted at the beginning of this chapter, serves as a convenient reminder that a performer may contribute to a work's substance by other means than the provision of specific musical materials that can be handily identified by reference to their notation in a score. "[My] unusual instrument and [my] explorations upon it"²⁰⁴ are certainly part of the "terrain [...] as a background condition" referred to in the above paragraph. As the dedication reminds us, they are also part of *indolentiae ars*' foundation. Ambiguity of ornament and substance in Johnson's work is constant, and applies no less to the collaborative situation.

²⁰⁴ Evan Johnson, *indolentiae ars*, i.

Chapter 8: Justin Hoke

<i>drawn, drowned, myrrh</i> (2014)	for musette, bass clarinet, contrabass clarinet, and percussion
<i>thane</i> (2016)	for bass clarinet and contrabass clarinet
<i>state of sunlessness</i> (2018)	for eighteen players

“That’s a whole piece, there. (Damn perfect for my preferred aesthetic world, too.)”²⁰⁵

Of all these collaborative cases, the work with Justin Hoke has involved by far the least in-person contact: although there has been a considerable amount of correspondence, to date we have still only met directly on a handful of separate occasions, all connected with performances of his work by either Ensemble Musikfabrik or ELISION. One clear advantage of this situation is that collaboration by correspondence is to a great extent self-documenting. While it is no longer possible to determine precisely at what point, for example, the ‘double double trill’ now used so widely by Rebecca Saunders in her bass clarinet writing emerged from collaborative sessions, practically every word exchanged between me and Hoke during the collaborative process is conveniently documented word for word, and date- (and even time-)stamped.

Pantomime-Aria

I first met Justin Hoke in the context of an Ensemble Musikfabrik composer workshop residency project at Harvard University. He did not compose a new work for the project, but we performed a previously-written piece, *Pantomime-Aria* (composed 2011, revised 2012), for violin, alto flute, percussion, cello, and bass clarinet.

The ‘extended’ techniques demanded in *Pantomime-Aria* (see Figure 59) are relatively modest: varying degrees of breath noise (including an open wedge to denote a hissed ‘breath accent’), overblown multiphonics, trilled actions on the upper R1 trill keys superimposed on figures played with the left hand alone, and colour fingerings on held notes, indicated by rhythmicised diamond noteheads. According to Hoke²⁰⁶, the palette was derived not from any direct working sessions with a performer, but from techniques employed in existing repertoire, above all in Sciarrino’s writing for clarinet (see Figures 60–61).

²⁰⁵ Justin Hoke, email to the author, 13th May 2015.

²⁰⁶ Justin Hoke, email to the author, 30th December 2019.

drawn, drowned, myrrh

At the time of Musikfabrik's Harvard residency (May 2012) Hoke was already planning to compose a work for an ELISION residency project in 2014, to include both bass and contrabass clarinets: *drawn, drowned, myrrh* (2014), also including musette and percussion. Our correspondence concerning this piece commenced at the beginning of 2014.

Hoke's first questions concerned the applicability of known bass clarinet multiphonic fingerings to the contrabass clarinet. There is, however, effectively *no* direct transfer between contrabass and bass clarinets in terms of standard multiphonic repertoire – partly because there is effectively no standard multiphonic repertoire for contrabass clarinets at all. The contrabass clarinet's 'standard' solo repertoire is small, and such multiphonic writing as it contains is largely confined to overblowing of low-register fundamentals. (Gérard Grisey's *Anubis, Nout* (1983) provides an excellent example. There is copious use in *Anubis* of overblown multiphonics, while in *Nout* two multiphonics appear which are notated with specific fingerings, but which are effectively indistinguishable from the overblown multiphonics, since the given fingerings are only barely-altered versions of standard low-register fingerings.) As I wrote to Hoke at the time:

The multiphonic palette is quite different. The toneholes are so large that it changes the acoustical situation quite radically – there are hardly any multiphonics that differ substantially from the overtone variety. On the other hand the kind of colour fingerings you used in *Pantomime-Aria* are very effective.²⁰⁷

Nonetheless, Hoke's initial request – “I have several [multiphonics] for bass that I really like; I guess I was wondering if there's any sort of contrabass versions of them that are effective. They are mostly of the soft, ethereal variety, as you might imagine”²⁰⁸ – suggested a potentially productive starting-point, and did in fact allow for some areas of direct transfer to be found, although not involving multiphonics that would have been considered 'standard' on either instrument. My explorations prompted by his question soon led to a substantial expansion of my own understanding of the multiphonic potential of the contrabass clarinet, both in the then-current piece and in his duo for bass and contrabass clarinets which was to follow: these were entirely new resources grounded in the distinct technical affordances of the larger instrument.

The first multiphonics chart in our collaboration, then (see Figure 62), was sent not from me to him but from him to me, with a request for multiphonics somehow corresponding to his own existing repertoire of multiphonics for bass clarinet; this pre-existing chart would correspond fairly closely to the multiphonics used in the bass clarinet part, which was played by Richard Haynes and not a subject of our collaboration.

²⁰⁷ Justin Hoke, email to the author, 17th January 2014.

²⁰⁸ *ibid.*



Figure 62: Justin Hoke, bass clarinet multiphonic chart 2014 (partial).

As I had anticipated, these were not at all transferable to contrabass clarinet. What did emerge on the basis of an initial exploration was a brief one-page collection of entirely different materials, which I recorded a few days later. Some of these I had found in previous explorations in response to the demands of specific pieces: in particular Jonathan Harvey's *Sringāra Chaconne* (2008), which Ensemble Musikfabrik had performed on several occasions, and which requires a series of "soft and mysterious multiphonics, slightly different from each other"²⁰⁹; some I had randomly collected over time independent of specific projects, and some I found specifically for this chart (Figure 63).

²⁰⁹ Jonathan Harvey, *Sringāra Chaconne* (London: Faber Music, 2008), 69.

Hoke's initial chart shows multiphonics for bass clarinet which function similarly to standard fingered multiphonics on soprano clarinet: in particular, whatever higher pitches may be sounding, a note in the fundamental register is always present. In contrast, all the multiphonics for contrabass clarinet explored in this preliminary collection belong to a category described by the German term 'zwischenblasen' ('blowing between' the registers: there is no succinct English translation in general use). The lower or lowest note of the multiphonic is here not in the instrument's fundamental register; the heard pitches are thus not the first and third partials of the fingering employed, but for example the third and fifth, as can easily be seen from the third, fourth, and fifth multiphonics in the top line. (The clarinet's stopped-pipe acoustics render the even-numbered partials effectively absent for practical purposes.) These are a direct equivalent of some of the multiphonics used in collaboration with Rebecca Saunders: in her *Klangpalette* for bass clarinet²¹¹ these three are notated as 4a, 5a, and 6a, with slight microtonal differences arising from the use of the L1 half-hole (not present on contrabass clarinets) to bring out the upper note.

As I had written to Hoke (quoted above), the large tone-holes of the contrabass clarinet do indeed hinder the production of multiphonics involving the instrument's fundamental range: even in the case of the first overblown register (the third partials) the sounding air column ends practically at the first open hole. Where higher overtones are involved, however, the air column can continue past the open hole, allowing for multiphonic aggregates that are substantially different from the instrument's standard overtone spectrum. (Because of end correction, the effective air column continues past the open hole; in the higher overtones, the end correction is greater. If holes are closed further down the tube, the air column can thus be of significantly different lengths in the different registers. This is the phenomenon which allows multiphonics to contain intervals outside the overtone spectrum.) The third, fourth, and fifth multiphonics on the chart employ adjacent harmonics of a standard fingering, and their pitches are thus a major sixth apart. The first and second multiphonics on the chart both present a note high in the third partials (the high d^{'''} natural sounds as a lowered third partial of the g[#] fundamental) together with a note low in the *ninth* partials (the f^{'''} in both sounds as a ninth partial of the low e^b). Despite the relatively close interval shown in both multiphonics, the sounding aggregate 'skips' two registers. The absolute pitches which result are not so distant from those present in the lowest of the small-interval dyads available on the soprano instrument, although the pitches lie much higher in the overtone spectrum.

The top line of multiphonics gives a coherent pitch reservoir, with all them having either e^{'''} or f^{'''} as a component pitch – with the exception of the fifth multiphonic on the chart, which is in fact (like the third) not used in *drawn, drowned, myrrh*. The multiphonics on the second line also hover around this range in their lower pitches, and all the tremolos on the lowest line of the chart also feature pitches in this range, allowing for a considerable amount of pitch coherence in the multiphonic passages. The multiphonic chart given in the score of *drawn, drowned, myrrh* is shown in Figure 64.

²¹¹ For the Saunders *Klangpalette* for bass clarinet (as employed in *Aether*) see Chapter 5, Figure 34, p. 71.

contrabass clarinet

Figure 64: Justin Hoke, contrabass clarinet multiphonics chart for *drawn, drowned, myrrh*.

Hoke remarks in the score with reference to section E (after various specific technical and expressive requests to the players): “In another sense, though, the whole passage is just a line of Bach, a Schubertian melody”.²¹² ‘Schubertian’ is here not simply a reference to an ideal of melodic projection but has rather more specific connotations. A footnote to p. 10 of the score refers to the text of ‘Der Fluss’ from Schubert’s *Winterreise* (1827) (“ob’s unter seiner Rinde / Wohl auch so reiend schwillt?”), while Hoke also referred in conversation to the background presence of *Der Zwerg*. There is no question of an explicit programme (Hoke’s concrete description of the work’s form in the general notes to the score concerns “a network of interconnected and overlapping ‘orbits’”²¹³). The overall outline of both songs (crudely summarised: a watery setting, suppressed passions, violent climax and a numbed postlude) nonetheless has a clear symmetry with *drawn, drowned, myrrh*’s expressive trajectory.

There is relatively little interpenetration between the materials in the chart – rather, the various technical devices assist in delineating the sections of the piece. Sections A–B feature the most ‘conventional’ playing, with the contrabass clarinet predominantly in its low register apart from occasional isolated high notes. Section C introduces the multiphonics from the top line of the chart, combined with overtone playing; these textures continue through section D in the contrabass clarinet part (where section D is an almost-literal repeat of section C). Section F introduces the multiphonic tremolos from the last line of the chart, continuing into the widely spaced multiphonics (effectively minor ninths) of the second line.

Although they may be absent from the chart, Hoke certainly does not reject the contrabass clarinet’s more traditionally idiomatic overtone multiphonics (extensively used in Richard Barrett’s solo work *interference* (1996–2000), which Hoke heard me perform during the Ensemble Musikfabrik Harvard residency in 2012). The contrabass clarinet both underpins the texture in its low fundamentals and joins with both the piccolo oboe and the stones and bells of the percussion in presenting some of the work’s highest sounds.

²¹² Justin Hoke, *drawn, drowned, myrrh*, general notes (page not numbered).

²¹³ *ibid.*

thane

In 2016, Richard Haynes and I premiered Hoke's *thane* (2016) in a duo programme in the Tage zeitgemäßer Musik in Bludenz, Austria. The other repertoire for the concert consisted of bass clarinet duos by Rebecca Saunders *Aether* (2014–16) and Evan Johnson *Apostrophe 1* (2008). *Aether* was also a premiere, although much of the material had already appeared in the modules for two bass clarinets in her spatial collage for ensemble, *Stasis* (2011). Richard and I had premiered *Apostrophe I* in Brisbane in 2008.

Our collaborative process for *thane* was quite different from that pursued in *drawn, drowned, myrrh* and much more sonically based. A one-page catalogue and a brief recording had been sufficient material for the earlier work. For the new work, I sent Hoke literally hours of recorded material in mid-2015, exploring as exhaustively as practicable various instrumental situations of special interest. The plan at that stage was not for a duo but for a solo piece; the duo commission came at the beginning of 2016 and the existing palette of techniques was carried over into it.

At the time of our first discussions, Hoke planned the possibility of the projected solo overlapping with a large ensemble work. Discussions began with a list of seventeen numbered questions.²¹⁴ Some concerned techniques already explored; some concerned technical questions (teeth on reed, double-tonguing, fluttertongue effects, overtone multiphonic textures, embouchure manipulation) from elsewhere in the contrabass clarinet recent solo repertoire, including Richard Barrett's *interference* (1996–2000) and Evan Johnson's *Ground* (2011), both of which Hoke had heard me perform in concert at the Ensemble Musikfabrik and ELISION Harvard residencies. Some were in relation to resources from Heather Roche's blog, specifically 'double trills'²¹⁵ (note that Roche uses 'double trill' here to denote a trill with two distinct auxiliary notes, not a trill involving two different fingerings for the auxiliary note) and overblowing techniques involving the register key.²¹⁶ The latter fall into the 'zwischenblasen' category which we had already to some extent explored in *drawn, drowned, myrrh*.

After a brief exchange of emails to find particular technical questions where audio material was indispensable, I sent a relatively brief and informal recorded overview of materials. The informality of the recording was partly dictated by my own available time around other commitments (the beginning of the recording consists largely of apology), but the spontaneity dictated by the circumstances proved to have its own advantages: I wrote at the time that "I managed to surprise myself with a couple of the sounds, which I suppose is the nice thing about not having been as methodical as I would have liked".²¹⁷ This was, then, not at all a matter of simply providing audio recordings of known techniques. Despite the work occurring at a distance, there was considerable spontaneity at this stage of the process, and the results which emerged were as novel to me as to Hoke.

The sounds with which I had managed to surprise myself were, in particular, clusters of high overtones sounding simultaneously. Hoke noted: "I'm actually pretty baffled how little of it actually

²¹⁴ Justin Hoke, email to the author, 5th May 2015.

²¹⁵ <http://heatherroche.net/2014/05/11/on-double-trills-for-bb-clarinet> (accessed 11th January 2020).

²¹⁶ <http://heatherroche.net/2014/03/30/on-using-the-register-key> (accessed 11th January 2020).

²¹⁷ Email to Justin Hoke, 12th May 2015.

has anything to do with the overtone series. You get these vestiges of it, but often not much more, it seems”.²¹⁸ The observation is crucial to the interest of the technique in this context, and to its use in the eventual piece. The intervals available from these overblown techniques are indeed not precisely predictable on the basis of the theoretical overtone series, owing to various complexities introduced by the physical situation: in particular, the node introduced to the vibrating air column by opening the register key necessarily remains a constant distance from the reed. In terms of the musical applicability of these techniques, this is no disadvantage. It can certainly be argued that a consistent series of intervals on the different fundamentals would not be of greater musical interest; it would certainly lead to a harmonic resource less specific to the instrumental situation involved. Most importantly here, the inconsistency of available intervals has a particular influence on the availability of overtone ‘pedals’: high notes which remain stable while the fundamental oscillates, a phenomenon which would be one of the main technical preoccupations of *thane*.

A second round of recordings followed, dealing in particular with ‘overblown low notes plus register key’ and ‘overtone trills’. Hoke’s response was a mixture of enthusiasm and frustration: “I come away feeling like every recording, which is itself full of incredible and fruitful sounds, as per usual, is just the tip of the iceberg! Which is rather frustrating, since I of course can't explore it on my own without bothering you. The beauty and horror of collaboration, I suppose!”.²¹⁹ Given that the avoidance of unnecessary horror seemed on the whole advisable, it was clear that a more comprehensive documentation of the ‘iceberg’ was required – not only for the specific piece but for my own resources. A few days later, Hoke wrote “if you have the twenty minutes or so to just press record and plow through those finger trills + register key + overblowing (ALL THE THINGS ALL AT ONCE), simply articulating the base pitch and what finger(s) you're trilling (I can figure out any other pitch things by ear), that would be immensely helpful”.²²⁰

Twenty minutes turned out to be somewhat unrealistic: the next batch of recordings has a total duration of approximately 75 minutes. They document the results of overblowing trills on fundamentals from c to F[#], not completely exhaustively but with all reasonable trills of a single key between the fundamental and the top of the instrument (so, from R3 to the throat a' key, including the L4 c[#] and R1 e^b keys where convenient). Hoke would undertake the transcription of the result from the sound files, allowing him to make a preliminary selection purely on the basis of the sound, and thus saving me the need to decide what might or might not be of compositional interest.

It might seem (and would certainly be a neat generalisation for such a study as this) that the transmission from performer to composer of large amounts of audio material without the performer being involved in the intermediate stages of selection and notation could potentially streamline the process by allowing the composer to reject some materials purely on the basis of having heard them. (It could fairly be said that such filtering has traditionally occurred on the performer’s side during collaboration at a distance without the benefit of simple audio transfer – no performer is likely to go to the trouble of finding the notation for a multiphonic which might only work under certain highly specific conditions.) Although this was to some extent the case

²¹⁸ Justin Hoke, email to the author, 13th May 2015.

²¹⁹ Justin Hoke, email to the author, 28th June 2015.

²²⁰ Justin Hoke, email to the author, 2nd July 2015.

here, and would be to a much greater extent the case for the E^b clarinet material in *state of sunlessness* (2018), Hoke notes that the argument should not be exaggerated:

[W]hat with having a good ear and all, I tend to plow through the transcriptions pretty fast and painlessly.

I wouldn't want to overdramatize some sort of "relationship" with the material while transcribing, but I do make notes alongside the transcribed pitches: this multiphonic is particularly gorgeous, or extra noisy, might be perfect for _x_ moment in the piece; the trills overblown on this fundamental seem to be particularly stable and easy to reproduce; I definitely need to use this sound somewhere...that sort of thing. So I suppose there's a bit of an editing process going on there, not just pure transcription. So much of taste in art-making, after all, is what one artist is predisposed to select that another would reject.²²¹

There was, then, a certain independence of the transcription and selection process. Since Hoke's absolute pitch allowed him to carry out the transcription with relative ease, and thus with no practical advantage to anticipating the pruning that would, inevitably, eventually take place, he could remain relatively objective concerning the material during this part of the procedure. A further feature of this particular collaborative method is the 'tempo' dictated by the process of preparation, recording, listening and transcription, which is necessarily quite different from that which would occur in direct meetings: Hoke notes in retrospect that "[t]he extra time allows for space to come up with better and more specific questions".²²²

The commission of a duo for Haynes and me came at the beginning of 2016, and the resources already documented were repurposed for the new project. In *drawn, drowned, myrrh*, Richard Haynes had been responsible for the bass clarinet materials; for the new work, because of time considerations, I prepared the bass clarinet materials as well. This required repeating the exploration of overblown trills which I had undertaken the previous year on contrabass clarinet – to save time, Hoke asked me to concentrate on lowest few notes of the effective tremolo range and the highest few (c-e, and c[#]-g[#]). These would finally prove sufficient for the needs of the piece. (The abbreviation of the search saved no significant amount of time: the total duration of the bass clarinet recordings is just over 72 minutes.) For the bass clarinet's multiphonic palette, Hoke also drew here on resources from Heather Roche's blog, in particular her page of close dyads.²²³ Some of these are Roche's documentation of dyads used in Rebecca Saunders' *Caerulean* (2011); I provided Hoke with some further examples and a recording²²⁴, as well as again exploring overblowing phenomena from the lowest notes.²²⁵

drawn, drowned, myrrh had already combined the shimmering extreme overtones of the contrabass clarinet with high percussion instruments (stones and bells), as well as low tremolos on a drum. Hoke was able to retain these elements to some extent in the new duo: both clarinetists also play small Indian bells tied to the ankles, and the bass clarinet is 'prepared' towards the end of the work by clamping a small sheet of cardboard over the bell.

²²¹ Justin Hoke, email to the author, 8th August 2018.

²²² *ibid.*

²²³ <https://heatherroche.net/2014/08/08/on-close-dyad-multiphonics-for-bass-clarinet> (accessed 11th January 2020).

²²⁴ Email to Justin Hoke, 28th April 2016.

²²⁵ Email to Justin Hoke, 29th May 2016.

As in *drawn, drowned, myrrh* (but on a much larger scale) the different technical devices explored serve to delineate the piece's main formal sections.

The first section is in effect an introduction – both clarinets play fragile dyads between the registers, shifting emphasis between their component pitches. (These subtle shifts are not only musically attractive – they correspond very directly to the technical situation from the player's perspective, as the act of shifting the mode of vibration between registers is perhaps best understood as keeping the acoustic state 'rocking' either side of a tipping point.)

The second main section, labelled 'subduction zone', is built predominantly on the overblown trills which had formed such a large part of the audio material. The principal musical trajectory here derives from the succession of the fundamentals used. The contrabass clarinet begins the material; on the second page of the section, the bass clarinet joins it on the same sounding fundamental (B^{bb}), with the contrabass clarinet's fundamentals moving gradually down to its lowest extreme (sounding B^{bb}) before returning to the lowest written f, e and e^b as 'double trills', and finally the lowest written d[#] as a colour trill only, without overblowing. Hoke specifies four main texture types:

- 1 – The low fundamental (and the pitch with which it is trilled)
- 2 – Overblown. Sustained, stable.
- 3 – Overblown. Rising through the overtones (glissando).
- 4 – Overblown. Falling through the overtones (glissando).²²⁶

The exact order of material performed is partly left up to the players. Most of the pages of this section divide the pitched material into as many as three boxes, which the player may reorder; the entrances of the low fundamental (texture type 1 from Hoke's list) generally although not invariably serve as a cue for the bass clarinet to change material.

The tremolos cease in iii 'subduction zone [2]', which explores largely static multiphonics, including the most concentrated focus on the category of 'overblowing with register key'; articulations are superimposed, written separately on the page from the pitch material. The upper notes required of both clarinetists are frequently close neighbours, within the same absolute register (the contrabass thus written in the octave above the bass). The nature of the task involved in making the audio materials had of course led to my demonstrating the full pitch range of the techniques being explored. The contrabass clarinet part in particular employs an unusually wide pitch range of more than five octaves, supplemented by isolated teeth notes (notes above the normal playing range, performed with the reed resting directly on the lower teeth without the usual intervention of the lower lip).

The duo's conclusion foregrounds the Indian bells, as well as the buzzing preparation of the bass clarinet's bell. It also returns to the contrabass clarinet multiphonics with which our whole exploratory procedure had commenced, on the first line of the chart for *drawn, drowned, myrrh*, in a mechanical succession quite unlike the rest of the duo (see Figure 65).

²²⁶ Justin Hoke, *state of sunlessness*, (Unpublished, 2018), first page of score preface (page unnumbered).

Figure 65: Justin Hoke, *thane*, p. 61 (contrabass clarinet part only).

state of sunlessness

state of sunlessness (2018), for eighteen instruments, continues the melding of sonorities from clarinets of different sizes, but in the context of a full ensemble and with a somewhat more unlikely pair of clarinets: not the adjacent tessituras of bass and contrabass, but the contrasted ranges of contrabass and E^b clarinets, the most widely separated sizes in standard use. The commission from Ensemble Musikfabrik had already been agreed by the beginning of 2016, when Hoke commenced work on *thane*. The idea of the two clarinets playing a central role within the ensemble was present from the beginning; the idea of using clarinet in E^b alongside the contrabass clarinet came later.

While the clarinets are for the most part subsumed into the ensemble texture rather than functioning soloistically, the melding of sonorities characteristic of the earlier pieces is now carried through into the larger ensemble, through the use of similar multiphonic textures in the flute and cor anglais, and split notes in the brass instruments. (The parallel might well be drawn here with Rebecca Saunders' corresponding extension of her clarinet palette through the other wind instruments in ensemble works from *Stirrings Still* (2006) to *Nether* (2017-19), as discussed in Chapter 5.)

In October 2016, just before the premiere of *thane*, we had the only direct working session of our entire collaboration so far: Hoke arrived in Cologne a few days before the performance, giving us the chance to work on some multiphonics for the E^b clarinet. All the multiphonics here fall into the category of small-interval dyads. I had previously found a selection of these for another model

of E^b clarinet with slightly different properties, so it was necessary to revise this selection for the model I would use for the concert.²²⁷

Otherwise, audio recordings were again the primary means of exploring the instrument-specific palette. Hoke's initial question concerned two particular points:

- 1) I'm always always ready for more multiphonics for these two instruments (all available info is always for B^b and bass), especially any that can "do" things (trill, shift around, whatever); and 2) wondering how any of the sorts of things we were doing with contra (overblown trills / overblowing + register key / overblowing generally!) would be on E^b? Obviously quite different.²²⁸

There were, inevitably, more recordings. The overblowing potential of a clarinet is generally proportional to its size, and unlike the bass and contrabass clarinets the E^b clarinet has no notes available below the written *e*. However, the instrument is capable of producing interesting results from overblown trills in the low third partials, which increased the area for exploration at the upper end (our exploration on the bass and contrabass instruments had been confined to the fundamentals). In contrast to the case with the contrabass clarinet, trilling holes *below* the note being investigated also yielded results of interest (the smaller bore and tone-holes of the E^b instrument increasing the general potential for this type of 'interference' along the entire tube) and the overblown trill recordings this time had a total duration of nearly 79 minutes. The selection proved luxurious: this time, the transcription was fairly modest, Hoke making use of the advantage offered by the audio-based transmission process to transcribe only those sonorities appropriate to his needs.

Hoke was also interested in the potential of timbral trills, again inspired partly by the example of Sciarrino (this time, the B^b clarinet solo *Let me die before I wake* (1982)). These materials did not exist in a readily available chart for E^b clarinet and formed the subject of more recordings; the recorded process in any case allowed the sonic result to be more precisely communicated than would have been possible with a written chart. Of course, there can hardly be the same degree of focus on the finest details of individual timbre in a work for eighteen players that one might hope to achieve in a duo and the potential of this material is very far from being exhausted in *state of sunlessness*. There are many other compositional factors at play here and the formal outline of the work as a whole is certainly not as closely related to the detail of the clarinet writing as in the other works considered. Nonetheless, certain details of the writing do achieve prominence in the overall effect, especially in passages where the clarinets are treated soloistically. The entry of the clarinets in bar 35 (see Figure 66) is expressly marked 'soli'. The clarinets play at a unison of sorts, with the upper harmonics of the contrabass clarinet's trill in microtonal proximity to the lower note of the E^b clarinet's dyads.

²²⁷ While the B^b and A soprano clarinets are largely standardised in the parameters that affect the tuning of the small-interval dyad palette, the same is not true of the E^b soprano clarinet, on which the placement and size of the upper toneholes varies between models. From 2002 I had played a then relatively new Buffet RC Prestige model whose intonation in the low register left much to be desired; from 2011 I had various older models at my disposal, and by the time of this collaboration had changed definitively to a mid-1960s Leblanc instrument.

²²⁸ Justin Hoke, text message to the author, 26th June 2017.

Figure 66: Justin Hoke, *state of sunlessness*, bars 35–6 (clarinets only).

The other main exposed passage for the clarinets, however, is one of the few extended passages in the work relatively lacking in dyads and harmonic tremolos: from bar 4 of part 2, the clarinets play in long notes, albeit ornamented by glissandos, vocalised notes and various articulations. A favourite octave multiphonic is prominent from bar 100 of part 2, followed by a double octave in bar 104. These are among the few moments in the work where the clarinet multiphonics are heard in their own right, rather than subsumed into the tutti harmonies. Rather than being constantly to the forefront as soloists, then, the clarinets serve as a filigree thread through the texture, never quite either predominating or being entirely subsumed.

It is a feature of the recordings made during this entire process that they are almost never simply static multiphonics working through a chart. Rather, the vast majority of recorded fragments work through the musical affordances of a single technical situation, such as the various overtones available over a single trilled fingering. The materials thus have their own directionality: a quality which, in turn, is mirrored in the pieces Hoke wrote using them. (Hoke notes: “In the context of the pieces, these techniques have so far tended to evolve into a texture, rather than an isolated sound / moment”.²²⁹) In both my initial recordings and the finished pieces, the trilled tremolos are rarely sounded statically, but generally slide through the available overtones: a strategy which is indeed pursued for extended passages in *thane*. Hoke’s reaction to one early demonstration of these trilled overtone aggregates was “[t]hat’s a whole piece, there. (Damn perfect for my preferred aesthetic world, too)”²³⁰ – it is indeed noteworthy that he did not always see it as necessary to subject the natural flow of these effects to excessive mediation. The affordances of the instrument,

²²⁹ Justin Hoke, email to the author, 8th August 2018.

²³⁰ Justin Hoke, email to the author, 13th May 2015.

as discovered in the recorded explorations, thus flow directly and traceably into compositional parameters of the finished works. The sonorities found for these projects are by no means employed as self-contained ‘found objects’. The embodied context of their generation supports Hoke’s musical structures both ‘horizontally’ in their flow and ‘vertically’ in their texture.

Chapter 9: Postscript

Nothing here has in fact concluded: all these collaborations are ongoing to varying degrees, and some of them have even given rise to new works too recently for them to receive a premiere within the term of this project.

Evan Johnson's *contemptus mundi* (2020–21) for clarinet in C and piano, although complete, still awaits its first performance, as do his recent miniature *in modo esalando* (2021) for bass clarinet and his *2 Rückenfiguren* (2021) for solo voice. *contemptus mundi* shows a further increase of specificity in Johnson's clarinet writing, although it is worth bearing in mind that the requirements of a specific piece need not correspond to a fundamental change in a composer's praxis. Besides drawing on my existing dyad palette for clarinet in C, Johnson requires a technique employing embouchure manipulations so that changes in fingering do not cause a change in pitch (see Figure 67).

Figure 67: Evan Johnson, *contemptus mundi*, bars 15–17 (clarinet only).

In late 2020, Richard Barrett composed *the world long ago ceased to exist (natural causes XVI)* for solo basset horn, completing it on December 24th. We had already discussed the idea of a basset horn solo at intervals and when a gap appeared in Barrett's schedule the piece progressed quickly. Although direct working sessions were not possible, Barrett's texted questions could be answered by recorded material. I had already compiled a catalogue of dyads for basset horn and, as in *Flechtwerk*, this material flowed into the new work's pitch structures (see Figure 68: note the $g^{1/4\#}$ 'pedal'), as did overblown materials analogous to that employed by Justin Hoke and Aaron Cassidy for the contrabass clarinet (see Figure 69).

legato possibile! (the multiphonic sounds in bars 97-104 are given a fingering only at their first occurrence, after which they are identified by numbers if they occur more than once again)

Figure 68: Richard Barrett, *the world long ago ceased to exist*, bars 97–98.

in bars 151-158, all pitches are produced as overtones of the notated fundamental fingerings (adding the register key)

Figure 69: Richard Barrett, *the world long ago ceased to exist*, bars 151–152.

Aaron Cassidy has recently completed a solo work (*27. Juni 2009* (2020–21)) for clarinet in E^b, building on our researches for *Self-Portrait 1996* (2019–20). Works by these five composers currently under more general discussion include a contrabass clarinet solo by Justin Hoke, interrupted when the commission arrived for *thane*, and a work for alto voice, bass clarinet, accordion, and choir by Rebecca Saunders, originally intended for the 2021 Donaueschinger Musiktage but currently postponed.

The composers considered here are also certainly not the only composers with whom I have recently collaborated. Georges Aperghis' *Damespiel* (2011) and Chikako Morishita's *Skin, Gelatine, Soot* (2013) are two favourite works in my recent solo repertoire, but besides being the only solo works composed for me by these composers were written with no real consultation concerning their materials – which of course does not make them either less musically interesting or less personal. (I have subsequently commissioned a duo from Morishita for clarinet and piano; perhaps this collaboration might add up to a future hypothetical chapter.) With any luck, Bethan Morgan-Williams' *Gémdis* (2020) for E^b clarinet and ensemble, and her *Gémdisyn* (2020) for solo E^b clarinet, may also bring other pieces in their wake. Liza Lim and I discussed a potential solo work at regular intervals for nearly 25 years, while simultaneously collaborating on many of her clarinet parts for

the ELISION Ensemble and more recently for Ensemble Musikfabrik. My chapters here were already too far advanced to add another once Lim's *Microbiome* for solo bass clarinet arrived in August 2020, and in any case all the chapters here involve multiple works. Nevertheless, the techniques employed in *Microbiome*, particularly the use of blurred overtone arpeggios (see Figure 70), point to a potentially fruitful area for future investigation.

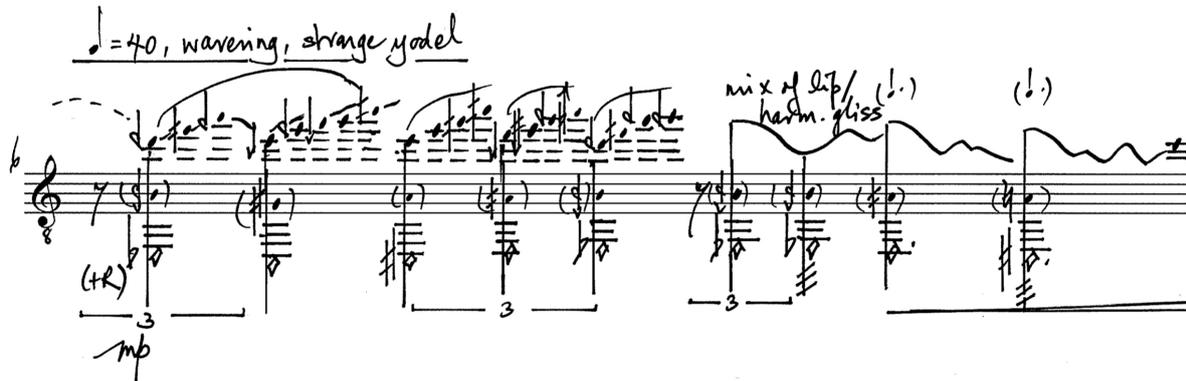


Figure 70: Liza Lim, *Microbiome*, beginning of line 6.

Several of the works composed for me in these collaborations have gone on to receive performances by other musicians. Some of the techniques developed here, particularly in the area of small-interval dyads, have gone on to become part of the repertoire of other performers (in particular, Heather Roche and Richard Haynes), and form part of the basis of collaborations in which I take no direct part.

There is no reason to suspect that this field of endeavour need be limited. It might well be possible to notate exhaustively the clarinet's potential sonic resources within a given field – perhaps in the area of small-interval dyads, this point is not so far away, especially as it is an area of interest to several current performers and composers. But even assuming it might be possible to compile an exhaustive list, it is in any case for the purposes of an emergent collaborative process not necessarily *desirable*. The situation outlined in these case studies, where I extend my own understanding of my instrument's resources in the company and with the stimulus of a composer keen to put the resources thus originated to a specific use, is to me vastly preferable to a situation in which I might come to a collaboration with the potential resources fully mapped out in advance.

The collaborative process as pursued here takes place in the context of multiple iterations of dialogue. The performer does not present the composer with their 'box of tricks' because there isn't one. The collection of resources appropriate to a genuinely emergent collaborative interaction shapes itself as part of that collaboration: an emergent collaborative palette need have neither boundaries nor centre. Playing techniques originated for these collaborations have not been restricted to those which can be produced on demand under a wide range of musical conditions. On the contrary: in many of these collaborations the process of teasing the sonorities out of the instrument has been built into the resulting works and conspired in shaping their eventual form and even their dramaturgy. A deterministic tabulation of formally neutral playing techniques is certainly one way to go about extending the instrumental palette. Another might be mutual involvement in the creation of diachronous musical situations, as described here – a role which in

certain collaborative situations, while stopping short of anything qualifying as authorship, might nonetheless go so far as to verge on the compositional.

Nothing here, then, is finished. These relationships are ongoing and, years or decades on, continue to exhibit emergent behaviours. Every one of the instrumental palettes discovered for these pieces is still capable of extension, as well as of extrapolation to other sizes of clarinet – and, as Richard Barrett showed in *Hypnerotomachia*, there is in any case not necessarily any need for new resources to create new pieces. And even without new pieces, the existing works grow; even without new pieces, the collaborations continue.

Though a piece of music is replicated each time it is performed from a disk, it is reproduced each time it is performed with an instrument [...] no performance can be repeated, yet as a work comprises the accumulating trail of its performances [...] every performance becomes part and parcel of the ever-evolving work.²³¹

²³¹ Tim Ingold, “Introduction”, in Tim Ingold and Elizabeth Hallam (eds.), *Creativity and Cultural Improvisation* (Oxford: Berg, 2007), 51.

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