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Challenging Creativity: Inclusive Composition

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Abstract: In this paper, I discuss processes surrounding the integration of a number of inclusive music technologies in recent composition projects, as well as adaptations to creative methods when working with individuals with Additional Support Needs[2], and my involvement with an organisation that specialises in working with musicians with disabilities – Drake Music Scotland. I will extrapolate initial compositional ideas, demonstrating how they may translate into completed musical material, detailing any alterations to working methods through experiences gained in collaborating with performers within a live context, and highlighting specific examples through score excerpts; individual sections of new work are presented, introducing musical influences, and highlighting the challenges of working with a new ensemble of musicians, playing both acoustic and digital instruments. This work has also impacted directly upon my teaching role at the Royal Conservatoire of Scotland, with the formation of a new course component (module), available to students from a wide variety of disciplines across the building. The rationale for the creation of this module will be discussed, along with the broader aims for intended student experience, learning methods and outcomes.

Keywords: Composition; inclusion; digital; technologies; disabilities

As a professional composer, I seek to create high-quality, new music for a range of instrumentalists, performers, and performance environments, with an additional aim of offering potential templates for future working practices to student musicians and other professionals. Although aspects of my work could be identified as 'Community Music' (for example, as defined by the third perspective of Higgins, 2012, p.4), this is not a principle goal, instead focusing on creating music that is largely scored, at times harmonically and rhythmically progressive, drawing on a range of ancient and modern influences, and reliant on abstract forms and structures, whilst offering a listening experience and artistic challenge for any attending audience members.

In this paper, I aim to demonstrate that high-quality, virtuosic new music can be written for new digital instruments, and that the inclusion of assistive technologies for individuals within an ensemble can inspire a professional approach to learning, rehearsing and performing new music, offering a wide variety of possibilities for musical expression, whilst extrapolating a development of working methods from the initial project introduced here – *Technophonia* – through to the creation of a definitive, live performance of *Microscopic Dances*.

Technophonia, and explorations of inclusivity through composition

In 2012, I became professionally involved with Drake Music Scotland[3] (DMS); the organisation's vision is to 'transform people's lives through the power of music' (the aim, as set out on their website), through commissioning and performing new music featuring musicians with disabilities, whilst acting as a centre of expertise in inclusive music technologies.

I had been aware of the varied work of this organisation for some time, and had collaborated on a number of music projects for deaf people with a company in Austria that designs

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[2] https://beta.gov.scot/publications/supporting-childrens-learning-statutory-guidance-education-additional-support-learning-scotland/pages/3/
[3] https://drakemusicscotland.org/

Cochlear Implants and hearing systems: MED-EL[4]. Previous projects included the Mu.S.I.C Test[5] (a music perception test for cochlear implant users, currently utilised by audiologists and clinicians around the world), and *Noise Carriers*[6] (a recorded concert of music for adults with cochlear implants). The final project I developed with the company was a music/theatre show for young children with cochlear implants, involving 2 actors and six musicians, entitled *The Farmer's Cheese*[7], which toured the UK, the USA and South Africa between 2009-2011.

DMS applied to the Performing Rights Society New Music 20x12[8] Biennial – in collaboration with a number of young musicians from The City of Edinburgh music school – for a project that would become part of the cultural Olympiad in London in 2012 (a large cultural festival, running alongside the Olympics that year): ***Technophonia***[9]. DMS were interested in utilising a number of different technologies within the project, then working with a composer to create new musical material for the instruments, as at the time, there was very little new repertoire in existence for the technologies they wished to incorporate into the final performances.

When I began to work directly with the performers involved in *Technophonia*, I began to consider the effort and control involved in producing sound, and what musicians must do to produce it. This is often not visible; musicians may be contributing to a loud orchestral chord and outwardly it may seem as if there is little physical activity involved in the production of this sound. For some individuals in particular (in this case, a number of the musicians participating in these projects), the control of finer body movements may be exceptionally difficult – if a person has been diagnosed with Cerebral Palsy, for example.

Through my working processes, and discussions with various individuals, I became acutely aware of how rarely I had witnessed people with disabilities being offered a musical challenge in performance, and being presented with activities that they might find initially difficult, requiring repeated practice and learning to complete (and thus allowing for the opportunity to improve specific, musical performance capabilities on a certain instrument). The challenge for me as a composer/musician lay in stretching not only participants' skills and abilities, but also the technologies involved, discovering what they may be capable of achieving, and what this may offer for their development and improvement within inclusive music projects, as well as for wider use in live performance.

Technology and *Technophonia*

In *Technophonia*, I composed new music for a number of digital instruments, including: **Soundbeam**[10]: this instrument has existed for a number of years (an ultrasonic beam, acting as a MIDI trigger for pre-set sounds); I experimented with a number of different hand movements to break the beam with one of the young performers, who performed using the Soundbeam and another instrument – **Roland HandSonic**[11], similar to an extended electric

[4] www.medel.com/uk/
[5] https://www.karger.com/Article/Pdf/262598
[6] http://www.medel.com/uk/show/index/id/889/title/MED-EL---s-Music-For-Adults/
[7] www.medel.com/uk/show/index/id/887/title/MED-EL---s-Music-For-Children/
[8] www.prsfoundation.com/Partnerships/Flagship-Programmes/New-Music-20x12/
[9] https://www.youtube.com/watch?time_continue=80&v=Yq0DBLz-eig
[10] http://www.soundbeam.co.uk/
[11] https://www.roland.co.uk/blog/hpd-20-handsonic-v-hpd-1015/

drum pad. As with many inclusive technologies, few composers at the time of writing have explored the sonic/expressive capabilities of such instruments within a concert-music setting.

Skoog[12] – this instrument, consisting of a pliable cube with a number of large, coloured buttons, acting as a tactile MIDI controller (the result of a research project at the University of Edinburgh, Scotland), was on this occasion played using a type of colour-coded **Skore**[13] – entitled by the company who created the instrument – realising a series of up to 5 different pitches at a time, and aiding the interpretation of musical notation for some individual performers (see Figure 1).

Figure 1 Excerpt from *Clandestine Waltz; Technophonia*

[12] http://www.skoogmusic.com
[13] http://skoogmusic.com/support/skoog-song-book/

Brainfingers[14] – detecting electrical signals from facial muscles through a headband fitted with sensors, which is then converted via software into computer controls, **Brainfingers** can be customised to control a variety of programmes. In this case, it was used to act as the conductor within **Notion**[15] software, enabling the performer to play through complex fragments of especially-composed musical material, also allowing for frequent changes of instrumentation between sections of the new piece, as called upon within the scored part; as a composer, this offers a large amount of creative freedom, in imagining any set of instrumental forces that might join or augment the existing, live ensemble.

Microscopic Dances

Considering the aforementioned issues of effort and control of musical expression, inextricably tied with the creation of sound for musicians, I initially wrote the following text as my starting concept for the composition:

> *Music psychologists tell us regularly about the fantastically complex series of procedures that your brain goes through on its way to performing music. We must interpret pitches, rhythms, dynamics and articulations from a page of music, itself a type of complex language, then begin to realise these through a number of minuscule muscle movements, making decisions about the attack and sustain of individual notes, before moving to the next one.*
>
> *With or without sheet music, we are looking at others around us, perhaps focusing on a conductor/director, using our ears to decide when to join in with other musicians, altering our pitch by the smallest of microtonal increments and balancing our sound to produce a musical performance.*
>
> *These tiny movements and processes (many of which are only barely noticeable, or often completely invisible to the human eye), seem to me to be a number of microscopic dances between our neural processes and motor skills.*

I therefore started composing a set of *Microscopic Dances*[16], within which sections of the work are inspired by fragments of dances – often disguised, hidden or warped, hence the title of each section below – which subsequently offered me the opportunity to draw on a number of musical influences, such as Ragtime, Jazz, Scottish Traditional Music, Rock, amongst others, often mixed with Classical Music forms:

Clandestine Waltz
Secluded Charleston
Secret Cakewalk
Atomic Jive
Portable Polka
Invisible Fandango
Veiled Sarabande
Concealed Reel

Microscopic Dances 2017

In 2017, I was offered the opportunity to create and develop a new set of *Microscopic Dances* (extending my knowledge and experiences of working on the previous set), for

[14] http://brainfingers.com/
[15] https://presonus.com/products/Notion
[16] https://www.nmcrec.co.uk/recording/technophonia

performance in the Edinburgh Festival Fringe[17] in August 2017, in collaboration with the DMS Digital Orchestra[18] – a newer, larger collective of performers of digital instruments – and the National Youth Orchestra of Scotland, with their dedicated new music ensemble, *NYOS: Futures*[19].

A week was spent rehearsing material with the musicians/ensemble, concluding in two performances on the final afternoon, drawing in members of the general public. I recognised that viewing the DMS Digital Orchestra performance in a live context presents a new concert experience for many of those in attendance, (not least of all that it can be challenging to identify the exact source of particular sounds/musicians in performance when newer, digital instruments are incorporated), from which we have begun to develop a best-practice habit of adding discussion between the Artistic Director of DMS and myself after an initial performance, followed by a further airing of the new work to aid clarification of the musical activity; close-up camera footage of Digital Orchestra performers has also been displayed on a large screen in the past, to encourage audience members to associate certain sounds with individual performers or instruments.

The second instalment of *Microscopic Dances* was undoubtedly a different working environment from that of before. This was my first opportunity to work with the Digital Orchestra in full (which did not exist in its present form in 2012), in the largest ensemble DMS had worked with so far in a live setting.

I began to consider a number of alterations to my collaborative processes for this latest project – what I had learned from *Technophonia* and which of the working methods might I develop?:

- **Leader of the ensemble** – I wanted to provide the opportunity for a number of individuals to take on this role (rather than relying solely upon myself as conductor/director to make musical decisions).
- **Flexibility of tempo and metre** – as a number of individuals in the Digital Orchestra find the sustaining of repetitive, pulse-driven musical material more challenging, I explored a number of ways in which a flexibility of tempo might be incorporated into ensemble performance (for example, two consecutive bars of 4/4 may not be of equal duration), whilst retaining a musical reason for such fluctuations of metre – this might offer further, musically expressive possibilities (e.g. equal to the addition of rubato).
- **Integration of digital instruments into larger ensemble** – a number of potential layouts of the overall group were considered, to avoid a situation where it may appear as if a group of digital soloists are sitting in front of accompanying, acoustic soloists (and therefore attempting to eliminate any perceived barriers/hierarchies for all musicians involved).
- **Performers controlling duration and direction of musical material** – a number of improvisatory elements existed within the work, once again encouraging the players to explore a number of methods of musical leadership; I offered a number of more open sections in the score, where performers could choose pitches from suggested

[17] https://www.eventbrite.co.uk/e/microscopic-dances-a-nyos-futures-and-drake-music-scotland-collaboration-tickets-35630778618#
[18] https://drakemusicscotland.org/what-we-do/digital-orchestra/
[19] https://www.nyos.co.uk/classical/futures/

modes/scales; there also exist a number of repeated sections, for which I have not specified an exact number of repetitions, instead requiring musicians to respond as an ensemble to any structural changes as they arise.
- **Roles of instruments and how they might change over time** – a number of different 'personalities' were explored for each performer (see below for further details), and the various roles that we find ourselves adopting as musicians.

In considering these changing roles that we may encounter as musicians, I began to make an informal list of aspects of musical performance:

- *Sometimes* you have a melody to play
- *Sometimes* you are providing a less prominent melodic line
- *Sometimes* you are accompanying someone else
- *Sometimes* you play something that contributes to a texture
- *Sometimes* you have to follow someone else's tempo
- *Sometimes* you have to play slightly quieter than others
- *Sometimes* you play something that is almost inaudible to you when everyone else is playing
- *Sometimes* you have to listen to someone across the room (occasionally at the furthest point) from you
- *Sometimes* you have to make eye contact with someone (occasionally with more than one person at a time), and be aware of what they are doing and how your part coincides with another musician's
- *Sometimes* you have to count bars rest

Arguably, these aspects are inextricably tied to an ultimate goal of achieving musical expression in performance; within this latest incarnation of *Microscopic Dances*, I believe I have allowed all musicians involved to experience each of these aspects at least once.

There was a total of 22 performers onstage for the performances:
NYOS (12 musicians): Flute, Saxophone, Bassoon, Horn in F, Trumpet in Bb, 2 Percussionists, 2 Violins, Viola, 'Cello, Double Bass

Digital Orchestra (10 musicians, each with multiple roles within the ensemble): Keyboards, iPads, Notion, Handsonic, Drumkit, Percussion, Voice

We had hoped to include as close to a 50:50 split from each organisation in the project as possible – an important goal for us – to aid our work towards equity within the performance environment; this was unfortunately not completely achieved on this occasion due to the illness of two musicians from the Digital Orchestra, shortly before the commencement of rehearsals.

A new addition to the ensemble – since *Technophonia* – was the iPad, utilising the **Thumbjam**[20] App, and allowing performers to alter a number of parameters more easily on a single digital instrument; this included setting instrumental sounds, bending pitches, altering the volume whilst playing, and setting as many or as few pitches as required for sections of the work. This expressive facility allowed me to set a series of pitches over a chord

[20] http://thumbjam.com/

sequence, then leave decisions about the direction of solo material to the discretion of an individual performer, or set small fragments to be read, copied, or extended by musicians. The iPad has arguably changed the role of a digital instrument, offering a broader range of creative and musical possibilities, with fewer limitations over the number of parameters that can be altered in real-time by performers.

As part of the rehearsal process, I relayed several musical fragments aurally to performers, as well as exploring a variety of methods of simplified notation, including some parts adapted with the use of ***Figurenotes***[21] for keyboard players (a notation system originating in Finland, which correlates pitches and rhythms to coloured shapes on an instrument). One of the challenges for the Digital Orchestra musicians arose from navigating around a complex, extended piece, with a myriad of different sections, movements and structural changes, much of which individual performers had learned by ear. The role of conductor/director was therefore also extended to include indications for changes in instrumental settings between and during sections, and careful reminders for structural 'landmarks' within the new piece as they arose during performance. Standard hand gestures and visual cues were employed to encourage performers to establish eye contact between myself and each other when beating a pulse (especially for those less experienced in watching a conductor while performing), and in sections that were intended to be less reliant upon perfectly synchronised rhythm, simple reminders of dynamic information and structure were indicated (typically with a raised/lowered hand, or an occasional downbeat to demonstrate arrival at a specific point in the score).

Microscopic Movements

In keeping with the initial concept of *Microscopic Dances*, I created a selection of new dances between February and July of 2017, some of which suggest a set form in themselves, with others having strong suggestions of style, movement, or musical starting points for me to explore in a number of ways:

Jimp Jitterbug[22] – Jitterbug[23] as a dance, seems to have appeared from the 1920s onwards, often characterised by a fast walking bass, repeated drum rhythms, regular chord changes and virtuosic solo instrumental lines. For my own purposes, I coupled this with an archaic, Scots adjective: *Jimp*[24] (the alliteration was also appealing); this term is used in relation to someone donning an item of clothing which may appear slightly too small. I had the mental image of a person attempting to dance a Jitterbug while being restricted by trousers that were too tight; this humorous metaphor and visual movement allowed me a mechanism to explore unsettled rhythms, searching for a musical means to incorporate the aforementioned aspect of a flexibility of tempo/metre.

Aside from exploring a higher tempo marking and rhythmic patterns, I also identified sudden changes in the texture/structure of a piece of music as one of the more challenging aspects for the Digital Orchestra musicians – included within this were the acts of preparing to play at a specific point, synchronising with others, or stopping at a set point. To prepare for some of

[21] https://www.figurenotes.org/
[22] https://www.youtube.com/watch?v=8QcJzameeBU
[23] https://www.britannica.com/art/jitterbug
[24] http://www.dsl.ac.uk/entry/snd/jimp_adj_adv_v2

these challenges, I presented the piece in compartmentalised fragments of musical material (that could exist in their own right, or with whatever came before/after), in sections that might be repeated/extended as required.

I was also drawn to the act of placing acoustic and virtual instruments together (the vibraphone, for example). In Figure 2, a vibraphone line on Notion software is accompanied by an acoustic vibraphone player; the drum rhythm continues at a set tempo, recognising possible fluctuations of tempo from the Notion performer, but allowing the underlying, incessant rhythmic feel of the Jitterbug dance to quietly continue throughout the movement (n.b. exaggerated differences between dynamic markings act as an indicator of the importance of various lines within the overall texture).

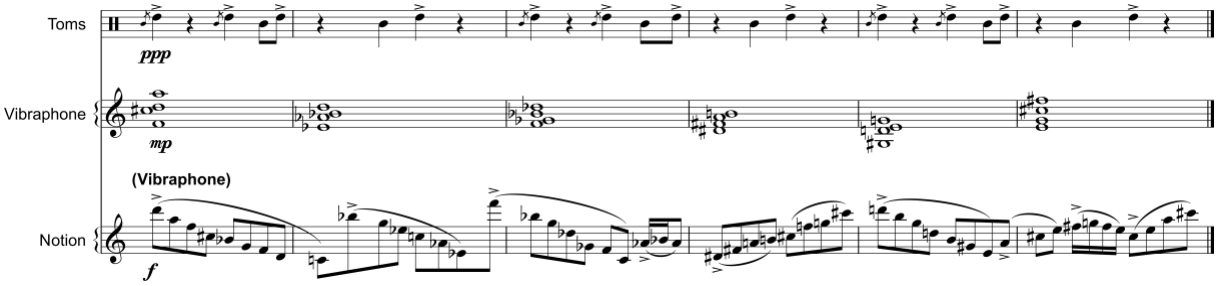

Figure 2 Extract from *Jimp Jitterbug*

As in standard orchestration practice, these sounds may combine to create something timbrally new or interesting; after meeting one of the Digital Orchestra performers who demonstrated a strong sense of rhythm and memory for the material, I included an electronic string sound on an iPad, doubling a solo violin to highlight a particular melodic line in the texture; similarly, Brainfingers/Notion provided a bassline later in the *Jitterbug* – this not only offered a rhythmic and structural challenge for the performers, but the electronically-synthesised sounds add a welcome extension to the acoustic timbres at points in the opening movement.

Infinitesimal Tango[25] – drawing on the strong stylistic and atmospheric mood of the tango, this section is coupled with the concept of an infinite cycle downwards; a repeating, descending chord sequence, which covers all twelve pitches of the chromatic scale within its bassline. As well as some opportunity for all to improvise at points (the ending is a collective decision by the ensemble, at any point during the sequence), the opening feature takes the form of another duet between acoustic/virtual vibraphone, again asking the acoustic player to follow the fluid tempo of the line played by a performer on Notion software (see Figure 3).

[25] https://www.youtube.com/watch?v=z0IpzWfyFFo

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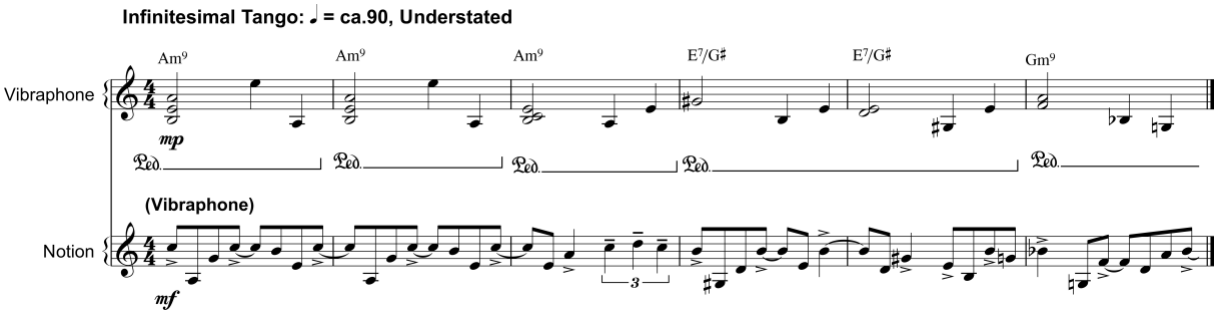

Figure 3 Extract from Infinitesimal Tango

Peerie Passacaglia[26] – Following the form of a Passacaglia – and with more than a passing reference to 1970s funk music – this movement relies on a small bassline cell of three notes (hence the Scots/Shetland Isles word: 'peerie', defined as 'small/tiny'). Rhythmically, it is grouped in 7, with phrases carrying across barlines – giving a feel of irregularity and breaking up the general rhythmic structure – but due to the repetitive bassline, the harmony is largely fixed (acting much like an extended pedal-point), albeit with a large number of chromatic lines shifting in the upper parts. Other than the challenge for all performers to carefully count in groups of 7 (and finish perfectly together on this occasion), I also included an iPad solo near the start – with a pre-set series of pitches around a chromatically-altered scale – encouraging the performer to consider longer melodic shaping in their playing, and introducing some counterpoint with the underlying rhythmic patterns (Figure 4).

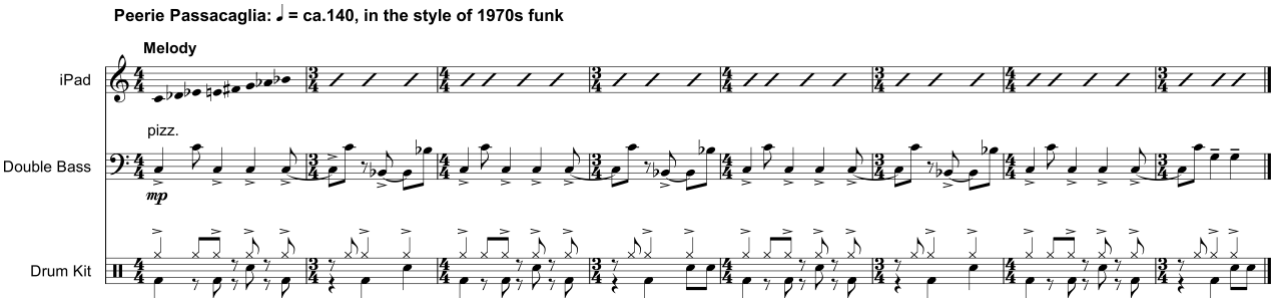

Figure 4 Extract from *Peerie Passacaglia*

Molecular Hornpipe[27] – after considering the function of a molecular sieve in chemistry (whereby the larger molecules of one substance can be separated from another), I imagined what might happen, should you carry out a similar process with some chordal fragments of G.F. Handel's famous *Hornpipe* – from his *Suite in D Major* – experimenting with the removal of a number of pitches from the original chord sequence. With a number of resultant notes, which cycle round over the remaining chord sequence (perhaps sounding like something akin to 1980s pop music), I wrote a number of **Notion** harp fragments, anticipating an element of flexibility and 'suspended' time, to allow the performer to take the lead (**Figure 5**); as well as some additional opportunities for improvised lines for the NYOS musicians, the performers add a number of repeated-note patterns to the musical texture (consciously avoiding anything that might be classed as a true solo line in the movement), exploring the

[26] https://www.youtube.com/watch?v=8oXnNV9fBLo
[27] https://www.youtube.com/watch?v=oFQkJhRbVws

collective response to music-making that might arise through the lack of any one particular musical leader.

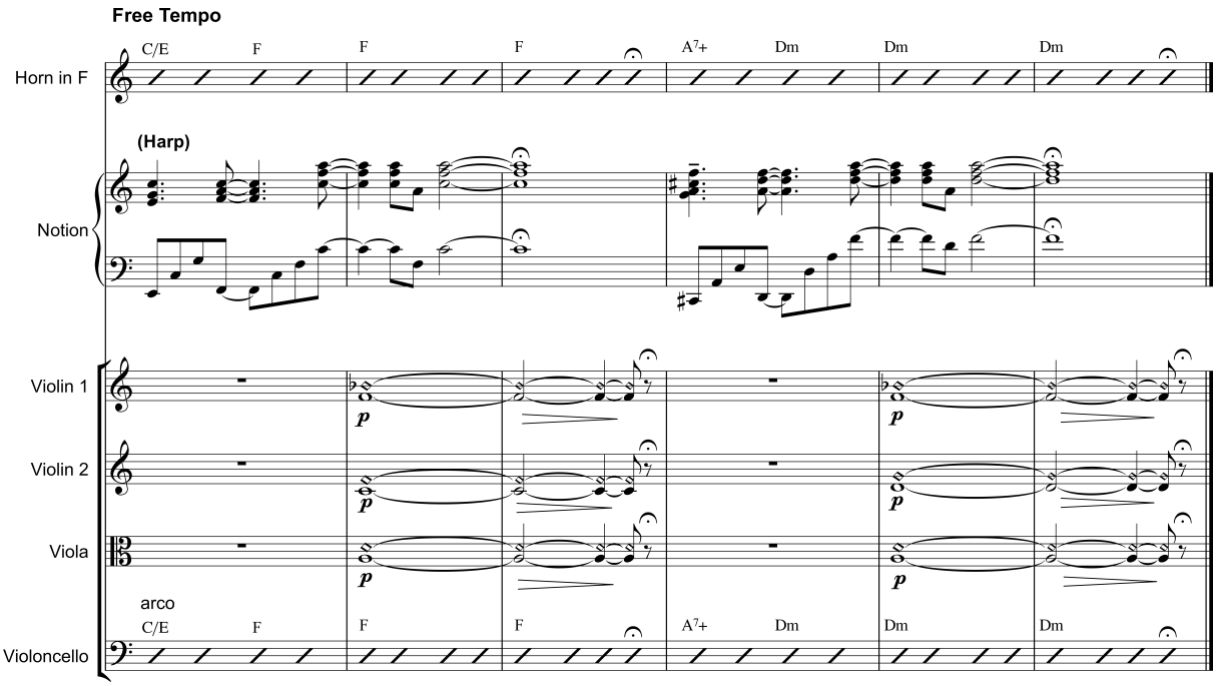

Figure 5 Extract from *Molecular Hornpipe*

Minuscule Mosh[28] – in this movement, I imagined a series of very small, rising and falling gestures by a number of tiny creatures (similar to a group of amoebas headbanging quickly, in many different tempos), without any separate, melodic elements, to give a general wash of sound. This offers the freest textures of all the movements, while still retaining a high level of structural organisation in rehearsals, with every individual fitting a number of set gestures together, and considering the integration of electronic/acoustic sonorities carefully within the balance of the overall ensemble (Figure 6). Particular challenges included asking performers to reduce their tempo marking at the same rate as others around them, rather than relying on a conductor as the sole provider/controller of tempo; this musical skill of responding directly to others was identified as being quite different to following one individual in ensemble playing, and some time was spent on practicing fragments in various combinations to achieve the eventual result in performance.

[28] https://www.youtube.com/watch?v=Mwametvl-Ro

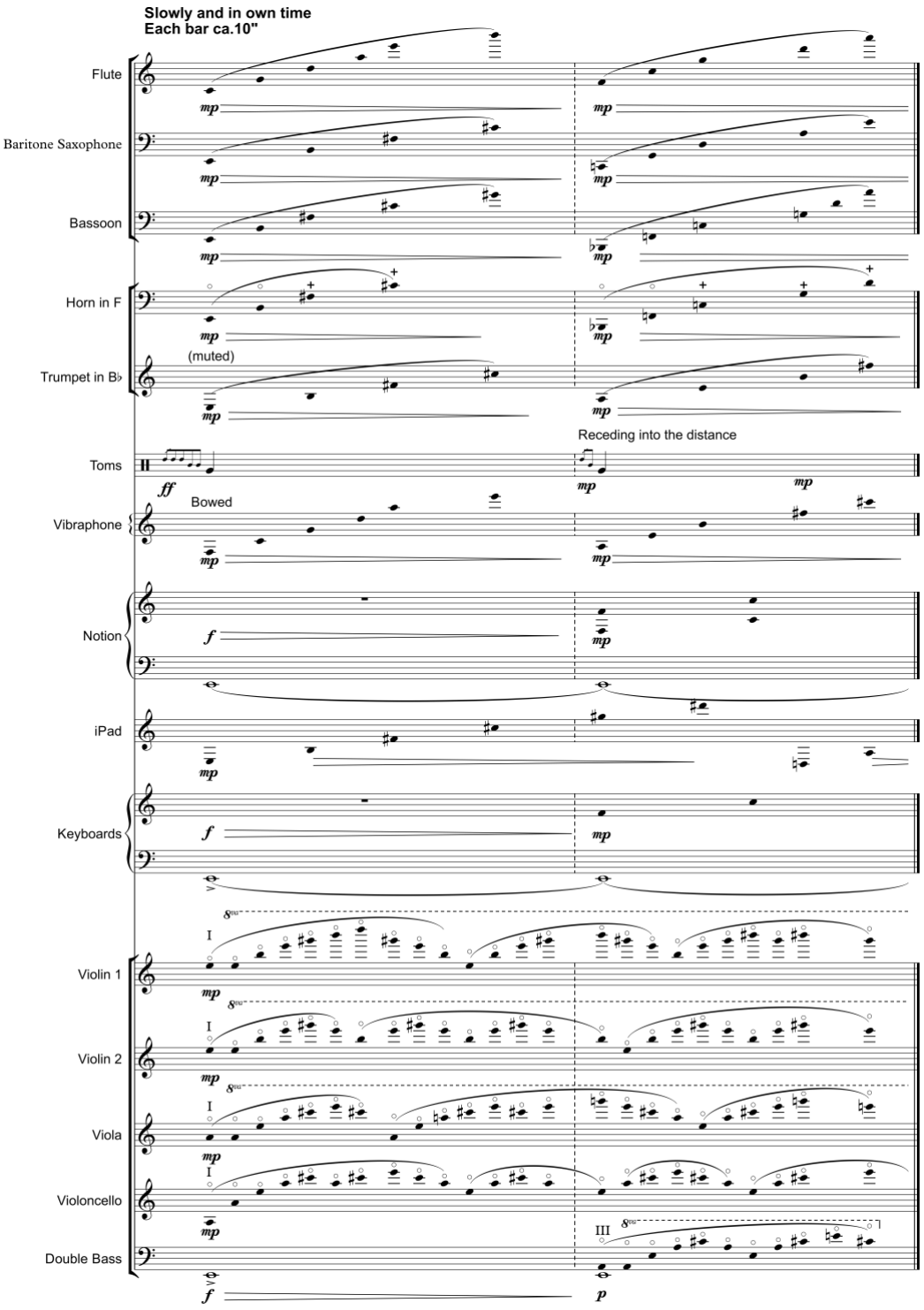

Figure 6 Extract from *Minuscule Mosh*

Skiddlie Jig[29] – 'Skiddlie'[30]: from the Old Scots language, translated as 'fleeting/small insignificant thing'. This movement manufactures a structurally-unstable environment, whereby the jig melody – see the flute/upper strings et al. in Figure 7 – settles on certain rhythmic patterns for a short, managed period of time, before a change is instigated to

[29] https://www.youtube.com/watch?v=chQdpANCCgE
[30] www.dsl.ac.uk/entry/snd/skiddle_v1_n

unsettle the underlying metre; this includes altering the melodic line to become a 'Hip-Hop' version of the original melody (notice the accents and syncopated bass-line in Figure 8), and repeatedly exploring the concept of metric modulation, whereby the 1/8th note rhythm in one bar of a compound time signature is equal to a 16th note in a following bar of 2/4. As I was working with musicians with very different levels of understanding and experience in this project, difficulties often arose in explaining and defining these rhythmic changes to facilitate comprehension for every performer. Some of the more complex alterations were more easily remembered through aural instruction, than through the notation, as demonstrated by the singer within this movement; she learnt this line entirely by ear, allowing her to couple her singing with other individuals when the melodic fragments recurred; the vocal line as written in Figure 7, also appears as a rhythmically-augmented version of the original jig melody, sitting in the middle of the texture, while the original version continues in a higher register.

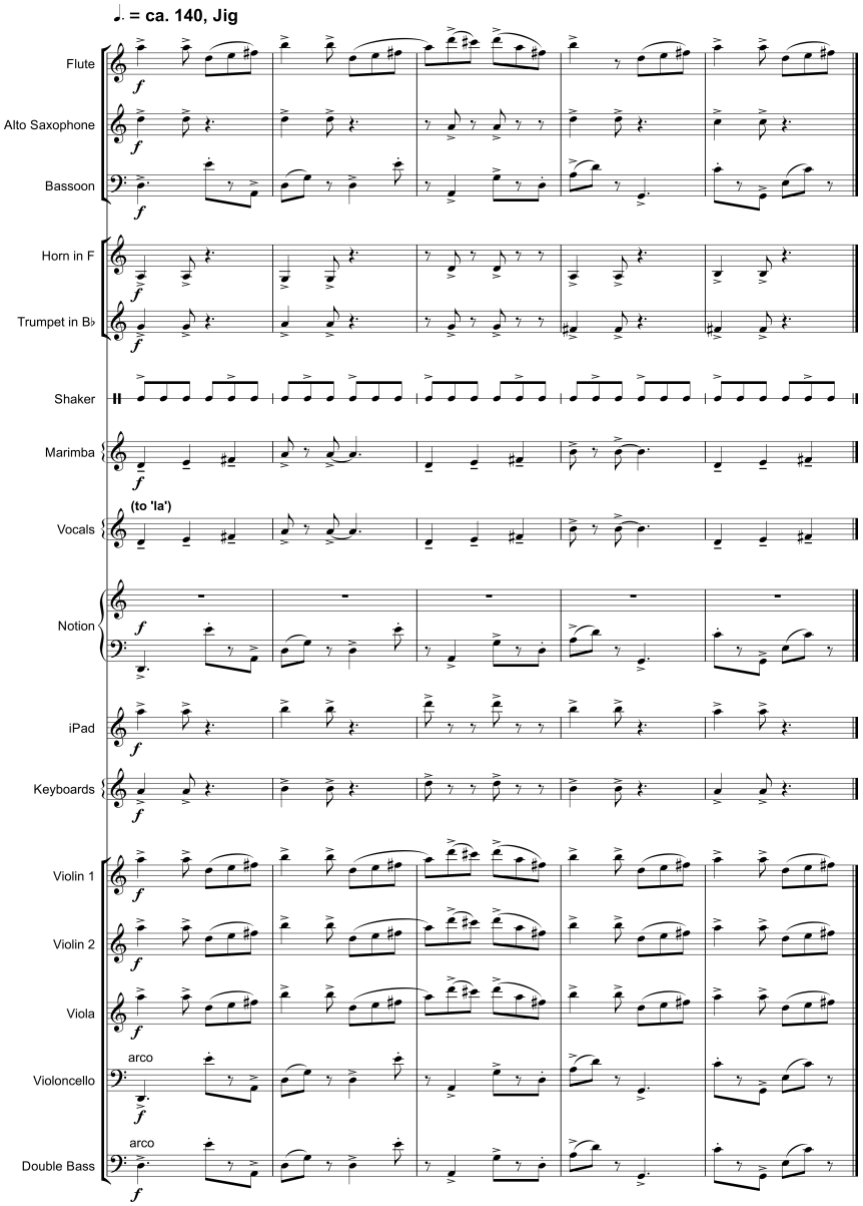

Figure 7 Extract from *Skiddlie Jig,* m.589-593

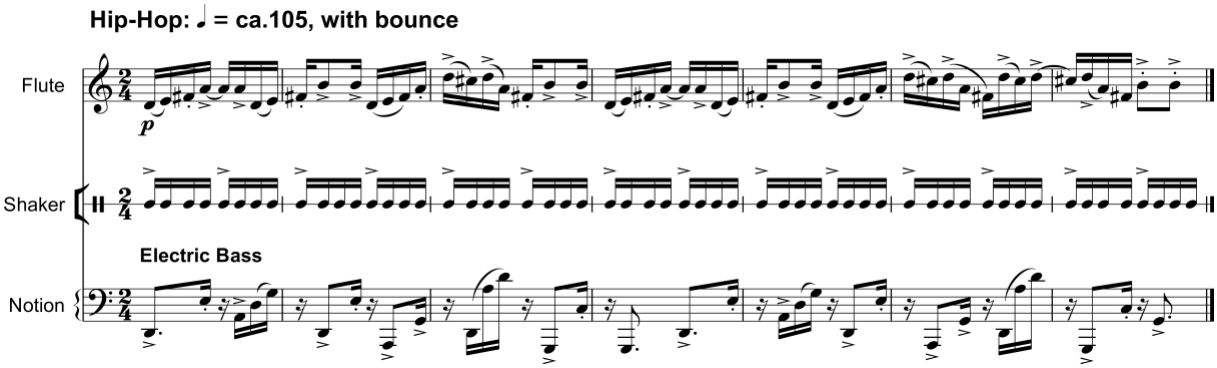

Figure 8 Extract from *Skiddlie Jig*, m.509-515

Composing and Creative Music Making

In 2012, the Royal Conservatoire of Scotland (RCS) underwent an extensive process of Curriculum Reform for all of its programmes; Inclusion and Diversity are key themes within the institution's Strategic Plan[31], encouraging staff and students to explore ways in which we might engage the Conservatoire with a larger cross-section of society. One of the developments to come from the reform process was the concept of 'Choice Modules' (since renamed as 'Options') – these can be taken by any student within the building (regardless of discipline), but are often created by individual staff members, drawing on their own personal arts practice, with the aim of sharing and involving students directly in this work.

DMS developed this module together with myself as a staff member, as an opportunity for students to learn about the technologies used by the organisation and ways to integrate these into their musical practice, whilst developing new material for the instruments, then encouraging interaction with DMS musicians and participants. One of the principle aims is to build skills and confidence in devising and leading workshops/performances with musicians with disabilities; this was identified as an area for enhancement within the RCS, which may contribute to music education more widely in Scotland and the UK, and distinct from Music Therapy as a separate discipline (which is not currently offered as a course of study within the RCS).

The *Composing and Creative Music Making* module takes place in our Intensive Learning Week, where students experience an immersive learning environment for 5 days, working with staff and peers; towards the end of the week, students work directly with musicians regularly involved with Drake Music Scotland, and share their work in an informal setting amongst fellow students and staff members.

Within this course, we explore the following areas:

Notation – We encourage students to explore a number of methods, not relying entirely upon standard Western Classical Music notation, and introducing a degree of flexibility in scores and performances. This includes the use of a **Skore**[32] (as mentioned above) for a **Skoog** performer, or studying systems such as **Figurenotes**; a number of examples of composing and performing with different forms of graphic notation are also presented to students, who

[31] https://www.rcs.ac.uk/about_us/equalityanddiversity/
[32] http://skoogmusic.com/support/skoog-song-book/

are encouraged to create their own methods of capturing and recording aspects of musical work as they develop (as much for their own future reflection as to aid with any immediate recreation of a new piece).

Additional Support Needs – through discussions, we ask students to consider their personal definitions of *Additional Support Needs*[33] (the term used in Scotland to help recognise a range of educational needs), and how this might affect our practice as musicians, or alter our approaches and methods when working with particular individuals.

Composition/Improvisation – we use improvisation as a tool to create and develop musical material within the group, discussing a range of methods for setting up musical environments in which others can more easily participate. This includes: initial exercises in musical memory, expanding on simple material (e.g. a well-known melody) and then harmonising within an agreed chord sequence; layering of simple, improvised, repetitive rhythmic cells, which are vocalised initially, then introducing instruments to build a broader range of pitches and expand the tessitura of a texture; free improvisation, using simple themes created from 3 or 4 pitches which may be separated by a certain pattern of intervals.

Technologies **–** through the module we introduce all of the technologies DMS regularly utilise in workshops and performances (including those listed within my own projects), encouraging practical engagement and consideration for integration with acoustic instruments.

Throughout, there is an emphasis on practical composition and methods for creating new musical material for people with Additional Support Needs. We assess students through observing their work with each other, the application of their musical skills, and how they implement collaborative methodologies within small groups to create new work with musicians from DMS.

A short, informal performance ends the intensive week of activities, and students have previously gained the opportunity to perform new work with DMS musicians as part of the RCS lunchtime concert series; some were also involved in demonstration workshops at the International Society of Music Educators (ISME) conference in Glasgow in 2016[34], or in the RCS new music festival, PLUG[35], in which a new work by one of our student composers, (also participating in the module), was developed in collaboration with several RCS Woodwind Department students.

Conclusion

As a composer, my work explores opportunities for new music to be included in a variety of environments and settings, attempting not to exclude any methods from the process of composition, or anyone from the performance of a new work. Consequently, I am interested in exploring how music may be included in as diverse a range of settings as possible – as well as being *inclusive* – finding ways to include my individual personality as a musician, composer or director, and encouraging younger musicians to become less concerned as to

33 https://www.thescsc.org.uk/campaigns/additional-support-needs-asn/
34 https://www.isme.org/events/32nd-isme-world-conference-glasgow-2016
35 https://www.rcs.ac.uk/plug-is-10-years-old/

whether engaging in a broader range of activity may label them as a particular sort of composer or musician – exclusively – or not.

Although some of the work within these projects is certainly exploratory (e.g. the technology and methods in *Technophonia* include a number of more rudimentary experiments, as demonstrated when compared to the more sophisticated approaches and thought processes of *Microscopic Dances*), they have both provided an opportunity for young, disabled musicians from a range of backgrounds to perform, learn and interact with their peers, (e.g. other young, non-disabled musicians performing with both acoustic and digital instruments), and the involvement of musicians with the DMS Digital Orchestra has subsequently resulted in attendance at more high-profile events nationally and internationally, raising expectations for musicians with disabilities.

As discussed, there are many creative possibilities with the technologies available, and many more await as the technology is improved and developed to allow further exploration of musical expression, both for myself as a professional composer, and for student musicians, as they consider improving their skills in developing and utilising new musical material, incorporating a range of inclusive technologies and music notation methods into their practice and future careers.

As the work of organisations such as Drake Music Scotland becomes more widespread and well-renowned, the implication is that more composers and musicians (such as myself and my future students) will become involved in working in a broader range of environments, with a longer-term outcome of raising the standard of new music being created for such settings, further exploring ways in which we can build our knowledge and understanding as musicians, and considering how we might adapt our own methods when working with inclusive technologies and individuals, whilst continuing to aspire to the highest-level of music-making.

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References

Higgins, L. (2012). *Community Music In Theory And In Practice*. New York, USA: Oxford University Press

Searle, O.I. (2011). *Technophonia*.

Searle, O.I. (2017). *Microscopic Dances.*