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Tempo / Volume 69 / Issue 271 / January 2015, pp 24 - 35 DOI: 10.1017/S0040298214000904, Published online: 02 January 2015

Link to this article: http://journals.cambridge.org/abstract S0040298214000904

How to cite this article: Donnacha Dennehy (2015). OWNING OVERTONES: *GRÁ AGUS BÁS* AND SPECTRAL TRADITIONS. Tempo, 69, pp 24-35 doi:10.1017/S0040298214000904

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OWNING OVERTONES: GRÁ AGUS BÁS AND SPECTRAL TRADITIONS

Donnacha Dennehy

Abstract: In this article the Irish composer Donnacha Dennehy reflects upon the research and composition process of his 2006–07 composition Grá agus Bás, written for the Irish sean nós singer Iarla Ó Lionáird. The piece is the first to bring together this traditional Irish singing style (literally, 'old tradition') with techniques derived from spectral music. In the second part of the article Dennehy reflects on his own relationship with spectralism, his points of inspiration and points of departure from what have come to seem spectral orthodoxies.



Donnacha Dennehy. Photo by Britt Olson-Ecker. Used by permission.

Grá agus Bás

Grá agus Bás ('Love and Death') was a major new adventure for me as a composer, one that was to have far-reaching consequences on my music to follow.¹ Composed in 2006-07 after a period of research, it incorporates traditional *sean nós* singing within a contemporary music idiom. I genuinely felt like I was taking a risk in this piece. In general, Irish contemporary composers have two attitudes to their traditional music: embarrassed contempt or an opportunistic zeal to promote or exploit it for commercial gain. I understood the first emotion very clearly, as I felt something fairly close to it for quite a long time; not contempt exactly, but I did feel very unsure of incorporating any element from it directly in my music.² This was partly due to the efforts of composers firmly in the second

¹ This article is derived from material from my DMA thesis, 'Owning Overtones: The Impact Of Spectral Approaches On My Music' (University of Illinois, Urbana-Champaign, 2014). The score of Grá agus Bás is distributed by Ergodos and available from scores@donnachadennehy.com. The piece is recorded on Nonesuch Records.
² I had written folk-inspired pieces as young child. The only other time I consciously made use of such material was in a deliberately cheeky way when I quoted a dance played by the Chieftains in an early tape piece, *GUBU* (1995). (*GUBU* is an acronym coined for a political scandal in Ireland in the 1980s. It stands for 'grotesque, unprecedented, bizarre and unbelievable'.)



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camp, usually from the world of light entertainment, who exploited elements of the dance music in what seemed like a definite attempt to appeal to largely conservative native Irish and Irish-American tastes.

Nevertheless, the indigenous folk music of Ireland had a magnetic pull for me. I had played it as a child, both on the tin whistle and on the flute, and I grew up listening to the traditional unaccompanied singing, *sean nós*, when I visited my grandparents and relatives in Kerry, in the south of the country, every summer. My mother's parents used to hold all-night sessions at their house where relatives and locals came to sing and tell stories. Everybody had to perform something. Most of them were farmers or factory workers in everyday life, yet this was the magic that sustained them. It was a very powerful message for me as young child interested in music.

Even though I mainly played dance music on the flute, I was particularly drawn emotionally to the sean nós vocal tradition. 'Sean nós' translates as 'old style' and it refers to a type of highly ornamented, rhythmically free, unaccompanied singing. As it happens, both my parents grew up in an area of Kerry that was very close to two of the major centres of Irish traditional music - Sliabh Luachra (known for its virtuosic dance music) and Baile Mhúirne (renowned for its sean nós tradition).³ When I finally tackled this tradition head-on in my own mature music, it was to a leading exponent of the sean nós tradition from this small area of Baile Mhúirne that I turned for collaboration: Iarla Ó Lionáird. Although Ó Lionáird had achieved a fair amount of publicity for his work with the crossover Afro Celt Sound System, I was in fact only familiar with his solo work, after someone drew my attention to his album Seven Steps to Mercy.⁴ I became immediately enamoured not only of his open-eared curiosity (as evidenced by the bravery of some of the arrangements) but also by his wonderfully unique voice. I had listened to a lot of sean nós singers over the years, but none seemed to capture the perfect mixture of mellifluousness and rough real-world authenticity quite as Iarla did.

My first meeting with Iarla took place in my house in Dublin in December 2004. We subsequently met every few months for the next two years and then much more frequently as I was drawing to a close in writing *Grá agus Bás* in late 2006 and early 2007.⁵ In each of these meetings I recorded Iarla singing one or two songs from the *sean nós* tradition. We then discussed their meanings and origins, with Iarla very kindly offering on-the-spot translations. (Iarla is a fluent speaker of Gaelic, having grown up speaking it as his first language, whereas I, like most of the rest of Ireland, only learnt the language at school: English was, and is, my main language.)

These recording sessions were vital for me. They served as a means both of getting to know the tradition in depth, and of examining Iarla's singing style. After the sessions, I transcribed the songs by hand and then analysed them in the pitch-analysis program Melodyne. Example 1 shows an initial transcription by hand of the song *Aisling Gheal* ('Bright Vision').



³ Another taboo existed in relation to composers or others making use of folk music, and that was that one might corrupt the purity of the tradition. Indeed when *Grá agus Bás* first toured Ireland in the autumn of 2007, some commentators said as much on an arts program on TG4 (the Irish language television station).

⁴ Iarla Ó Lionáird, Seven Steps to Mercy, Real World Records, 7243 8 44647 2 1, 1997.

⁵ Although the first meeting took place in December 2004, the meetings only really became regular in 2006, as I became clearer about what I needed in order to write the piece.



Example 1: Transcription of Aisling Gheal.



In the end, I chose only two songs to serve as the inspiration for Grá agus Bás: Aisling Gheal and Táim sínte ar do thuama ('I am stretched on your grave'). Already, as I was transcribing Aisling Gheal, I knew that it was going to have a strong bearing on Grá Agus Bás, and I marked out a number of ornamentations that I intended to focus on for the principal pattern-oriented material of the piece, as can seen by the circled annotations in Example 1. Although my by-hand transcriptions were very important for my getting to know the layout of the songs instinctively, along with my memorising a number of crucial songs, the Melodyne analyses were essential to my harmonic/timbral understanding of them. Apart from the emotional significance that the sean nos repertoire had for me, the principal impetus for my wanting to deal with this repertoire compositionally was that I suddenly became aware of an artistic opportunity that was exciting to me. I was struck by all the microtonal variation that exists in any sean nós song, and was disappointed by the way that it was always removed in any commercial arrangements of the repertoire for singers and instruments.⁶ Not long before, my music had taken a decidedly spectral turn, as I started to become more and more engaged with using the overtone series in a real and practical way to create fusions of harmony and timbre. Suddenly I saw a spectral possibility for sean nós, a way of creating a context influenced by a spectral understanding of pitch and timbre that would amplify elements within these sean nós songs, previously ignored in any earlier engagement with this material. In a way, at this juncture in my compositional life, sean nós had become instantly transformed for me from something that had a deep emotional resonance to something that was also pregnant with artistic possibility - and therefore of real excitement to me as a composer. The pitch analyses confirmed my instinct about the amount of microtonal variation involved in the singing of these songs. The software also allowed me to clean up these songs, to make them entirely equal-tempered, and that experiment, if anything, proved my intuition: that too much was lost by forcing this kind of 'cleansing'. What was even more interesting to me was the way the unadulterated version of these songs resonated, luminously, when set against overtone-derived material. It was as if the overtone structure brought out elements that might have seemed only passing or secondary when the songs were presented unaccompanied. Example 2 below shows an excerpt from a Melodyne analysis of Aisling Gheal (as sung by Iarla O Lionáird, and recorded by me in 2006). This is a fairly wide view, and shows the pitch variation on long notes, in coming to cadences, and in the ornamentations. For many of the ornamentations I zoomed in, in great detail, to get a clearer understanding of the microtonal components.

In writing *Grá agus Bás*, I made use of a number of other software platforms (aside from the pitch analysis software) to construct mockups of various degrees of complexity, so that I could get as clear a handle as possible on the piece that I was trying to create, especially as I wanted to have an intuitive feel for the two approaches to tuning that

⁶ There was also a movement among some classical composers in Ireland (since it achieved its independence from Britain in 1922) to establish a kind of nationalist style for a while. A number made use of *scan nós* material in their compositions, but this use was largely based on conservative, tidied-up transcriptions made by Anglo-Irish collectors. Invariably any microtonal element was removed and these were treated as equal-tempered tunes, thus robbing them of much that made them beguiling and sonically interesting.



Example 2: Pitch analysis of *Aisling Gheal* (as sung by Iarla Ó Lionáird).

I was using in the piece: overtone-influenced just intonation and equal temperament. Basically, as I say in the preface to the score, the piece 'is usually equal-tempered when it is harmonically mobile, and just-tuned when it is harmonically static'.7 Taking the recording of Iarla singing Aisling Gheal as the principal material, I then chopped it into various sections according to the little ornamentations and snippets of phrases that I found the most interesting.⁸ This I did in either Pro Tools (which I used in the early stages for purely audio editing) or in a combined sequencing / audio editing program then called Logic Audio (now known as Logic Pro). I later made loops of several of these patterns in Logic Audio. These loops not only influenced the course of the vocal writing but also the course of the instrumental writing. Against these audio snippets and loops I constructed instrumental and electronic sustains made out of exclusively overtonederived material, and thus through trial and error I found the best constructions (filterings of the spectrum as it were) that most drew out a kind of hidden potential from the vocal material.⁹ Example 3 shows the opening page of the finished score, where it is clear that

⁷ Dennehy, Grá agus Bás, preface.

⁹ The instrumental sustains were mocked up initially using standard sampler instruments. Later I incorporated real recordings of instrumentalists playing either sustained harmonics or pulsing patterns of harmonics.



Another thing that had a very strong bearing upon my choice of 'samples' from the original song was their meaning. Already I was constructing a kind of rewriting of the story of *Aisling Gheal*, making it into a story of forsaken love in which everything emanated from the couple's act of making love, and the man's attempt to deny the consequences of that, including parentage of any child that resulted. I also added a kind of obsessive edge by taking a few lines from *Táim sinte ar do thuama* which translates as 'There is a nail on my heart; I am filled with love for you'. I was very interested in making it personal, and not an allegory for the state of Ireland, which was often the de facto interpretation of many of these songs.

Grá agus Bás

• = 80 3 2 5 7 Flute 60 mp (bas Clarinet/ Bass Clarinet •) e Trumpet (in C) 6 with harr 2°e Trombone 1 (2) 60 Vibraphone Percussion H C Sampler/ Elec Guitar 60 m (strong!) . Ger . 0 Singer séantach ghniomh in - san in - san ahn IV (199) 170 May be achieved using artifle harmonics or ordinarily. IV 60 Violin mp May be achieved using artif (subtly vary the tone quality harmonics or ordinarily. [49] 1 #2 159 1e - using bow placem through the sustain Viola Bes 111 mp Bow per bar at beginning othy but still try to sustain a high S.D Cello ,,,, $\overline{}$ 1 1 1 1 m [59] 10 0159 179 11 0 147 Bass 6e [N.B. Bass is tuned D-G-D-G] Т mp

Grá Agus Bás (revision autumn 2010)

DONNACHA DENNEHY

Example 3: Opening page of Dennehy, Grá agus Bás.

there remain many traces of this approach. For the most part the instruments are playing natural harmonics relating to a G fundamental. These played harmonics are further boosted and fused by an electronic agglomeration triggered by a Max patch operated by the percussionist, which adds a number of higher harmonics (all created by re-tuning very precisely to the recordings I made of string-sustains).

The material that the singer concentrates on is taken directly from the third verse of *Aisling Gheal*, both melodically and textually. The text ruminates over the words 'an ghníomh' which translates as 'the act', referring to when the couple made love, the start of all their troubles. The pitch material of the singer here is a kind of written-out time expansion of something that happens quite quickly in the original traditional version of *Aisling Gheal*. Although there are many instances of such samplings and distortions of material from the original *sean nós* song throughout *Grá agus Bás*, as the piece progresses those direct samplings diminish; I start to compose original material for the singer which simply emanates from the original song, complemented by two lines from *Táim sínte ar do thuama* (as detailed in footnote 8). In the end, no music from *Táim sínte ar do thuama* made its way into the final version of *Grá agus Bás*.

A number of practical approaches enforce the reliability and robustness of using overtone-derived material in this piece. First, as mentioned already, the electronics consist entirely of very precisely tuned overtones made from retuning sustained string notes. The ensemble hears the presence of these spectral aggregates and thus is encouraged to tune with them. Second, as mentioned in passing, and as can be seen already from the first page of the score, I make use of a lot of natural harmonics, especially in the string writing. In order to facilitate this, the ensemble is asked to tune to G (not A) and furthermore the bass player tunes his instrument not in the normal fashion, but as D-G-D-G. As the bass is capable of getting up to the sixteenth overtone on its lower strings, it can thus be used to assist the rehearsal process by naturally producing such higher harmonics as the eleventh and thirteenth. When initially rehearsing this piece with my group, Crash Ensemble, this is exactly what was done. The bass player would play these natural harmonics on his third string in rehearsal so that the other instruments could tune to them. For example, there are many instances where the trombone and flute are asked to play the eleventh and thirteenth harmonics artificially. In rehearsing these passages, we often stopped so that the bassist could refresh his memory of how these overtones would sound when precisely tuned. Also, as I suggest in the preface to the score: 'it is a good idea before rehearsal to tune the first 16 overtones of a G spectrum to get the sound world into your head'.¹⁰

In the development of this piece I worked not only quite closely with Iarla Ó Lionáird, but also with a number of the players from Crash Ensemble. This is one of the blessings that come from having one's own group – it is possible to draw on the expertise of the individual musicians while writing the piece. In particular, I worked closely with the ensemble's cellist Kate Ellis. I was very concerned to ensure that my idea of playing very fast patterns of natural

¹⁰ Dennehy, Grá agus Bás, preface.



overtones was possible in reality. Thus I would often write a wide variety of overtone patterns and then arrange to meet with Kate. I would subsequently amend the patterns based on what worked the most fluently, most of which I could not predict with much accuracy in advance. Finally, in constructing the elaborate mock-ups enabling my composition of the piece I incorporated the exact recordings of the overtone patterns that I eventually settled on against recordings of my singing the vocal line (rather badly, I might add). The final mock-ups for *Grá agus Bás* were strange beasts, I have to admit – a kind of motley collection of my singing, with chopped-up snippets from Iarla singing against MIDI samples and recorded instrumental lines. Most of the MIDI realisation too was through piano samples, as I could not bear the limited sounds of MIDI-controlled strings.

Example 4 gives an idea of the quite elaborate overtone writing that eventually made its way into the piece, comfortable as I was that this could be accomplished in reality after testing it through this feedback process with the ensemble's cellist. The open note-heads are used to signify notes that are natural harmonics.

One bridge between the two worlds of the harmonically static overtone harmony and the harmonically mobile equal-tempered harmony was my use of pulsed glissandi. Although initially introduced very gently, towards the end of the first section this gesture takes on a terrifying insistence in the final ascent towards the end where the singer cries out 'on mbás mé' (loosely translating as 'death takes me'). As might be garnered from this description, there is something almost romantic about the intent of Grá agus Bás. Even its title, 'Love and Death', is not a particularly standard new music title. This was a very important moment for me, one in which I felt I left some of the hang-ups of the twentieth century behind me, in particular the crazy notion that one had to be emotionally distant in order to say something new. I had come to the realisation that calling a piece Convergences or Hypothetical Structures was in fact now a much more clichéd thing to do, a comforting signal to other composers that one still believed in the rules of the club. I wanted to say something poetical as well as something that interrogated the materials and structures of music afresh. The two are not mutually exclusive.

Spectral Traditions

In a wonderfully inspiring and encouraging article from 2000, Jonathan Harvey argues that:

... the fascination of spectral thinking is that it can easily turn into melodic thinking: there is a large borderland of ambiguity to exploit. It is not a question for me of forsaking harmony and regarding everything as timbre, rather that harmony *can* be subsumed into timbre. Intervallicism can come in and out of spectralism, and it is in the ambiguity that much of the richness lies.¹¹

It is this very aspect that intrigues me, that a melody may fuse with other melodies to become a mobile spectral texture, that a pattern can lock in place to become a pulsating element of a larger spectrum, that there is a constant possibility of a to-and-fro between individual patterns and a kind of fusion that can take place upon their



¹¹ Jonathan Harvey, 'Spectralism', Contemporary Music Review, 19/3 (2001), pp. 11–14.



Grá Agus Bás (revision autumn 2010)

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Example 4: Harmonics in action in Dennehy, Grá agus Bás."

combination, which results in a new form of timbre-harmony. In the same article, Harvey argues that he finds those composers that are 'completely untouched by spectralism are at least less interesting'.¹² While I would not quite share such a generalisation, I do agree that spectral music has created a new awareness of the raw materials of pitch and timbre and that there is much fruitful territory to explore there. As Harvey says:

History seems grand, for once: spectralism is a moment of fundamental shift after which thinking about music can never be quite the same again. Spectral music is allied to electronic music: together they have achieved a re-birth of perception.¹³

In terms of perception generally, spectralism has restored a more holistic understanding of music among contemporary composers, after the extreme splintering of music into parameters encouraged by integral serialism and other subsequent structural approaches. One might also argue that to some extent the business of restoration had been started by the minimalists (who were similarly influenced by electronic music in the form of tape loops) in their desire for and execution of gradual perceptible processes. But the spectralists did not simply restore certain elements: they also, as it were, amplified certain perceptual details in their compositions, especially the connection between pitch (frequency) and timbre. It is that connection which possesses the most visceral allure for me; it is that connection that attracted me instantly to the music of Grisey when I first heard it, that aural magic when the harmony and timbre fuse into something luminous.

In his 2005 article 'Target Practice', Tristan Murail attempts to enforce some extra consequences that might attach to being a genuine spectral composer.

To properly find a place in the 'spectral' universe, it is not enough to align a few harmonic series, neatly packed; above all, one must have a certain new kind of awareness of the musical phenomenon. This stance translates into some essential precepts including:

- thinking in terms of continuous, rather than discrete, categories (corollary: the understanding that everything is connected)
- a global approach, rather than a sequential or 'cellular' one
- organisational processes of a logarithmic or exponential, rather than linear type $^{\rm 14}$

With all respect to a very important spectral composer, an original member of l'Itinéraire, I disagree with these more generalised prescriptions, even though such approaches are very common in much European post-spectral music. Murail later lays down some restrictions concerning the fluidity of rhythm and duration, for example: 'the notion of duration will become very generalised, extending from individual durations of events, to the space between events possessing similar features and precise moments of onset (which one generally calls rhythm) to tempo itself.¹⁵

But where in any study of a spectrum does one find the necessity for such an approach to rhythm? After all, a spectrum is actually made up of repeating frequencies. One could argue just as easily that the music inspired by spectral analysis needs absolutely to be pulse-driven. And

- ¹³ Harvey, 'Spectralism'.
- ¹⁴ Tristan Murail, 'Target Practice', Contemporary Music Review, 24/2-3 (2005), pp. 149–171; here p. 152.
- ¹⁵ Murail, 'Target Practice', p. 153.



¹² Harvey, 'Spectralism'.

therein lies the actual virtue of a spectral approach. It is in fact not prescriptive. And especially not prescriptive in the sense that serial technique was. Murail himself even recognises earlier in 'Target Practice' that one cannot speak of a spectral 'system'.¹⁶ In reality nothing is binding. To take a spectral approach, I contend, is to consider a collection of possibilities – to think of really interesting things in the nature of sound and to make use of them creatively in one's composition. The fact that the process of translation from sound analysis – or from an abstract contemplation of the structure of sound – to music composition is subject to so much poetic variation is a point in its favour. The fact that one can have composers producing music that sounds as radically different as James Tenney and Claude Vivier shows that a consideration of some aspect of a sound spectrum or a sonic phenomenon can influence what the composer wants it to influence.

It is certainly not my intention here to undermine the importance of what the original l'Itinéraire group did. I really believe that a spectral approach is a profound development in the way we think about, create and listen to music, and I think that Grisey and Murail produced remarkable work from considering these things. But as is argued by other commentators such as Julian Anderson, the history of what we now call spectral approaches actually stretches quite a bit back in time.¹⁷ One can definitely argue for spectral traits in the music of Stockhausen, Messiaen and Scelsi – and even in Debussy, Varèse and Wagner if one is so inclined.¹⁸

The stylistic surface of my music owes almost nothing to that of French spectral music, and the same could be said of my approach to rhythmic structure, both on the surface and on a deeper macrolevel. And yet somehow their approach to music composition has had a profound impact on me. It acted as a *stimulus*, a stimulus principally to examine the overtone series, to understand its properties and how its elements combine in the service of something else: timbre. As a composer I have no real interest in distorted spectra, in beating frequencies or in translating analogue electronic techniques into compositional procedures. But I am deeply interested in the properties of the overtone series, and will continue to apply what I have learnt from examining that in my compositions.

Although I have not to date translated the data from actual sonogram analyses into musical processes, my working with overtonederived material is very much influenced by an understanding coming from such analyses: namely the knowledge that we have gained about the vital role that overtones of a fundamental play in influencing the overall timbre, and how smaller harmonies can in some way be considered filtered bands of overtones from a larger organism. Even though a number of my pieces are influenced not only by the material of the overtone series but also by its structure – such as *Bulb* (2006), *Stainless Staining* (2007) and *Overstrung* (2010) – I also feel free as a composer to use overtones in limited ways in more multi-faceted works, such as *Grá agus Bás* and *The Hunger* (2012–14).

¹⁸ Harvey for one considers Wagner a proto-spectral composer: 'Wagner the master of harmony himself developed into a proto-spectralist; for instance in *Parsifal*, where the real vision, it always seems to me, is one of timbre: the transcendence offered by the Holy Grail is not couched in terms of developed harmony (that is reserved for suffering, by and large) but of timbre, of orchestration based on chords magically transmuted to harmonic series, to spectra'. Harvey, 'Spectralism', p. 12.



¹⁶ Murail, 'Target Practice', p. 152.

¹⁷ Julian Anderson, 'A Provisional History of Spectral Music', *Contemporary Music Review*, 19/2 (2000), pp. 7–22.

Here I believe that someone like Vivier is an inspiration for the non-conformists. He allowed himself to be open to certain strands of spectral thought in order to effect a personal, poetic and transcendent musical statement. This is something that resonates with my own approach, and in fact it was my encounter with Vivier's music that first freed me to be able to properly incorporate spectral thinking in a real and practical way in my music. It is a dangerous business to try to justify what one does. Herbert Brün remarked that 'things are what is said about them'.¹⁹ That statement was, I suppose, a kind of riff on Wittgenstein's linguistic outlook, and Wittgenstein also warned: 'whereof one cannot speak, thereof one must be silent'.²⁰ Ultimately, I would consider myself a fairly intuitive composer, and although my intuition is informed by my conceptual thinking about overtones and other things, there is much about what I do that is also unknown even to me. All I know is that, despite the influences and stimuli of other approaches, I have wanted to own overtones in my own way, and I will continue to endeavour, as Samuel Beckett advised, to 'fail better'.2

²¹ Samuel Beckett, Worstward Ho (London: John Calder, 1983), p. 7.



¹⁹ Herbert Brün, My Words and Where I Want Them (London: Princelet Editions, 1990), para-

graph/thought 138. Ludwig Wittgenstein, Tractatus Logico-Philosophicus (New York: Harcourt, Brace & Co.; London: Kegan Paul, 1922), p. 89. This line has been alternatively translated as 'What we cannot speak about we must pass over in silence'. Wittgenstein, *Tractatus* Logico-Philosophicus, trans. D.F. Pears and B.F. McGuinness (Henley-on-Thames: Routledge & Kegan, Paul, 1961).