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Beyond the Audible: Éliane Radigue's OCCAM works and Inter/Listening

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ABSTRACT

This article focuses on Éliane Radigue's OCCAM compositions in terms of sound, space and relationships, arguing that a new type of listening is required to fully understand the sonic world that these acoustic works create. This listening requires an understanding that sound is but a single part of a larger vibratory network. As Radigue herself makes clear, sound is not only what is audible, but one range of frequencies in the electromagnetic spectrum. Adopting this approach to sound opens up a listening practice that is wide ranging in its possibilities, inviting links to other disciplines and artforms. Using theoretical tools derived from psychoanalysis and oral history, I propose that Radigue's OCCAM works are enriched by a practice of 'inter/listening', which is inspired by Alessandro Portelli's delineation of the 'inter/view' as a place/process of mutual disclosure (Marshall 2018, 119; Portelli 1991, 31). Through inter/listening and a critical awareness of their own positionality, the listener is thus able to hear beyond the music to 'listen' to an expanded sonic attention.

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Introduction

In 1973, the American new music critic and composer Tom Johnson wrote in *The Village Voice* of his experience of listening to *Ψ 847*, one of Éliane Radigue's earliest compositions for the ARP 2500 synthesiser, at The Kitchen in New York City (Johnson 1989, 71).¹ The experience of listening to the work's magnetic tape playback left him with many questions that went straight to the heart of what he was hearing. There was, firstly, the issue of intimacy: did the music's specialness lie in its 'intimacy', Johnson asked; or was it, secondly, the 'sheer efficiency with which it accomplishe[d] so much with so little?' (Johnson 1989, 70–71). Is it, he asks, that over the course of *Ψ 847*

Radigue sustains her minimal material for 80 minutes without ever repeating herself or becoming boring, and yet without ever leaving the restricted area within which she works? (Johnson 1989)

Johnson goes on to describe a pure, acousmatic encounter by use of a resonant image that lingers long after its reading. Listening to *Ψ 847* was, he says, as if some sounds were

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oozing from the walls, while others were coming from exact locations in the ceiling. In other words, Radigue's music was seeping into the room, its origins unclear and somehow more than the sum amplitude of the array of loudspeakers diffusing the work around the hall. Johnson's report suggests a music that almost rises into being and pours itself into a container—in this case, the concert venue itself. These are valuable observations. Johnson's evocation of Radigue's music as a form of composition that is sonically uncentered, but simply there, offers a profound insight into her work and calls into focus her radical refusal of the kind of sonic hierarchies that are found in other contemporary classical works. In this article, I propose to extend Johnson's suggestion of this uncentered sound to Radigue's acoustic *OCCAM* compositions to consider these works from three different perspectives: firstly, what Radigue refers to as a 'sound before sound'; secondly, the music's interaction with space; and, thirdly, in terms of a series of dynamic relationships that interact with one another. In this latter category, I will consider three axes: the relationship between Radigue and the musician; of the musician to their instrument; and of Radigue to that instrument. By importing a concept that I refer to as 'inter/listening' (Marshall 2018, 119)—this is inspired by the oral historian Alessandro Portelli's formulation of the 'inter/view' as a place of reciprocal disclosure (Portelli 1991, 31)—to the process of both the making of, and the listening to, the *OCCAM*, I suggest that the intimacy of these compositions stems from the fact that they demand a mutual listening that unites musician and audience within the experience of a resonant space. In this way, I hope to offer new tools for beginning to write about a music and form of composition that resists exact formulation.

However, because the *OCCAM* compositions are unusual in their creation, it is useful to speak briefly about the nature of these acoustic works themselves. Begun in 2011, after Radigue shifted her compositional method from the electronic ARP 2500 to acoustic instruments,² the *OCCAM* works are conceived as an infinite series of works that are created in close collaborative relationships between Radigue herself and a group of approximately 30 other musicians (Eckhardt and Radigue 2019; Nickel 2015; Wooley 2021).

The musician Pia Palme (2017) refers to the works

[evolving] in a unique aural and oral interaction between the composer and the respective performer. The exchange is directed by Radigue in a specific way. Her method requires the performer(s) to personally meet the composer ... in Paris—her home—or in a rehearsal space. Radigue often uses expressions connected with water to describe her music. The term '*Occam*' hints at the medieval philosophic principle of Occam's razor. It was coined by Radigue and underscores her personal preference of working with sound from a focused, reduced and simple perspective, stripping away the unnecessary. In her own words, working with performers and instruments has been a tremendous discovery and enrichment of her practice.

There are no scores to the *OCCAMs*, nor is anything written down.³ Each work is created by Radigue in direct, oral dialogue with the musicians involved. An image, normally of a body of water, begins the process of the composition, and this is the case for both individual and multi-player *OCCAMs*.⁴ For Nate Wooley, a trumpeter specialising in extended techniques, the image that began *OCCAM X* was of the Columbia River, which rises in a Canadian icefield and flows out into the Pacific Ocean, close to where he grew up in Oregon, US. The work's five manipulations start at the glacial head of

the river in British Columbia and sweep downwards to its mouth: the river's force is expressed in low pedal tones and Wooley 'sweeping the audience with [his] horn', this physical movement creating a sonic arc that accentuates the near-un navigable force of the water's outflow.⁵ While Radigue gives the musician broad parameters within which to act, she is not creating any kind of fixed score, but rather indicating guidelines to the spectrum of the music, for example, its relationship to the fundamental. Aspects of the execution of each *OCCAM* can be left to a player's discretion: these might include the durations of sections and the manipulation of sounds, subtle changes to fit the nature of the performance space, the capability of the performer on the day itself. It is this broad scaffolding that sets the *OCCAMs* apart from improvisatory practice. In drawing the distinction, Wooley suggests that the *OCCAMs* are interpretative rather than improvisatory

The difference is that you are following the vision of another person. The vision is very clear—the water, the razor, the idea that you never return, that you are always moving forward. These are things that Éliane shapes. The other thing we work out is how the pitches flow with each other.⁶

On the trumpet-scored *OCCAM X*, the pitch is an F, but it has been winnowed down from many. 'Éliane will say: "This is where we start, and you have the freedom to change it to fit that space".'⁷

But if Radigue's *OCCAM* series is titled for the principle of parsimony, William of Ockham's razor being a theoretical argument against unnecessary complexity, they are also predicated on the establishment of a detailed and potentially complex relationship between composer and musician, which precedes their creation. Nickel, Eckhardt and Radigue, and Wooley (whose *Sound American* volume contains illuminating interviews between Wooley and ten other *OCCAM* musicians) have all separately drawn attention to multiple aspects of the *OCCAM* creation process. We know that each work starts with a visual image usually supplied by Radigue herself as an instigating point; we know that while the musician has a certain leeway of expression within the form the composition takes, that it is not a work of improvisation or co-composition, but a work authored by Radigue herself.⁸ We know that, in creating her acoustic works, that Radigue works with a select group of musicians that she refers to affectionately as the 'chevaliers d'OCCAM' (Wooley 2021, 5). Wooley, one of Radigue's chevaliers, is emphatic that, despite the one-to-one transmission process that is central to the *OCCAM* process, these are not conceptual pieces embodied in the virtuosity of each named musician, but compositions intended to be performed, reproduced, recombined and passed on. What separates these acoustic works from any other contemporary composition is that Radigue's music has no pedagogical history.⁹ That she is operating in such a new way of music making accounts for the sometimes understandable confusion from critics of how the *OCCAMs* are created and reproduced.

Thus, we might say that each *OCCAM* is preceded with a silence that gradually gives way to audible sound: indeed, it is this silence—or however we construct what sonic silence is—that is integral to what is sounded within the composition. This interplay between sound and silence, between feeling sound and hearing sound, plays a central role in Radigue's compositional and philosophical underpinning.

Sound Before Sound

Éliane Radigue, *OCCAM XXV*: Frédéric Blondy (organ), Union Chapel, London, 13 October 2018

The first intimation that the organist Frédéric Blondy has begun to play *OCCAM XXV* comes not through the medium of audible sound, but through a physically felt sensuality. The floorboards of the building—a Victorian gothic chapel that functions as both church and concert venue—begin to tingle. Sound waves vibrate into the feet, to the legs and then upwards, brushing my skin as they ascend. This is music for more than the ears. (I think of Pauline Oliveros's *Sonic Meditation V (Native)* from 1974 which asks us to: 'Walk so silently that the bottoms of your feet become ears.' [Oliveros 2022, 5]). As the *OCCAM*'s first sounds rise into audibility, it is as a thrumming on the edge of hearing.¹⁰ Its sounds, its harmonics, are the tip of a sonic iceberg which make us conscious of the immense spectrum of sound not only below the surface but, also, way above the audible sound itself. In separate ways, both Oliveros and Radigue ask us to recalibrate our positions as listeners: the first by extending our auditory apparatus from the ears to the full body; the second by placing us in the deep currents of sound that surrounds us and, in so doing, making us aware that space is not empty, but rather teeming with vibratory energy.¹¹

In an interview I conducted with Radigue in 2015, she told me that what she was most interested in was listening to a sound before there is a sound. She drew attention to this transformative coming into being in this way: 'There is something which is in the air, and it becomes sounds' (Marshall 2018, 123). She linked her interest to learning how to listen to, first, her childhood music teacher, Madame Roger, later, Pierre Schaeffer and John Cage, and later still, Oliveros's practice of Deep Listening. However, Radigue's idea of sound before sound opens a new range of auditory sensuousness. She again invokes Oliveros:

Deep Listening is as simple as that. Just bring your full attention and concentration of the sound, and here you get an infinity of possibilities. For me, there is no other rule than that about listening. And even though your mind sometimes is freely going here or there, you just let it go, like clouds ... in a summer ... sky, where clouds disappear, some other appear, and it's a freedom. Deep Listening, for me, is a total freedom. (Marshall 2018, 123)

At first glance, Radigue's conception of sound before sound, sound before sounding, seems to describe a paradoxical position. However, it is one that is simply solved if one considers her singular approach to Deep Listening. Radigue redraws Oliveros's formulation of Deep Listening to encapsulate the entire electromagnetic spectrum.¹² We see this explicitly illustrated in the opening pages of *Intermediary Spaces/Espaces Intermédiaires*, the book of extended interviews that Julia Eckhardt made with Radigue, by way of a double-page illustration titled 'Spectrum of Waves/Spectre des longeurs d'ondes' (Eckhardt and Radigue 2019, 26–27). Drawn up by Stéphane Roux, the owner of Shiiin, the Parisian record label that has released several *OCCAM* albums, this is a schematic diagram of the electromagnetic spectrum (Figure 1). The diagram's conceptual remit is infinite. It situates the listener inside a sensory cosmology, what Radigue has referred to as the 'immense vibrating symphony of the universe' (Eckhardt and Radigue 2019, 6).¹³ It means, too, that perceived sound is always anticipatory and valedictory. Just as a feeling of vibration gives rise to the hearing of (and therefore, the

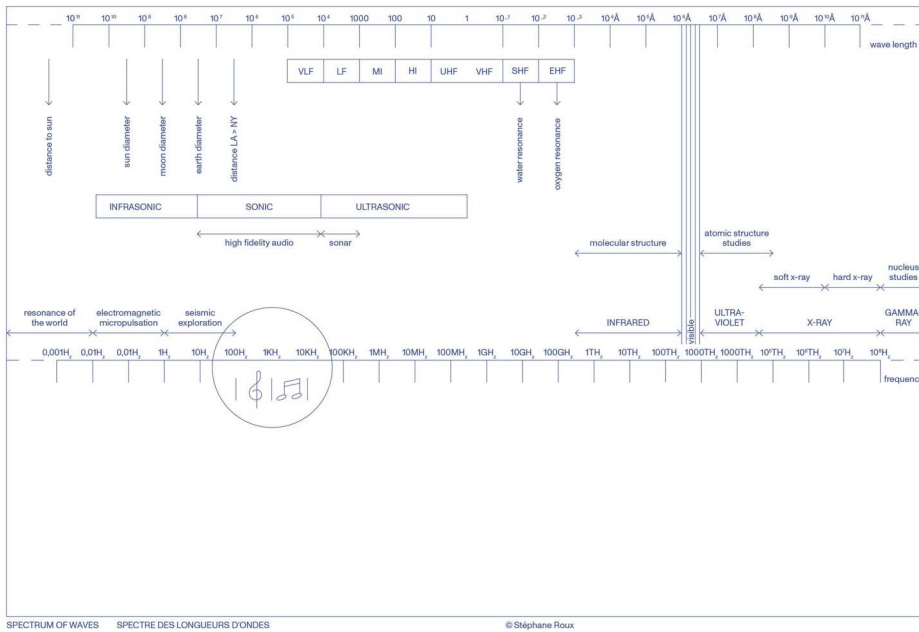


Figure 1. Spectrum of waves/Spectre des longueurs d'ondes © Stéphane Roux.

possibility of listening to) sounds, as in *Ÿ 847*, or Blondy's performance of *OCCAM XXV*, so an awareness of our limited ability to hear means that we are, forever, on the edge of bidding them adieu, as the frequencies rise above human auditory thresholds or as the shape of the sonic envelope slopes towards silence. Just because we cannot hear a sound does not mean that the sound is not there.

However, the conception of sound before sound is an arresting statement for a composer to make. Composers traditionally work within the means of audibility, and, thus, for a composer to situate their work within a vast network of vibrations, of which some will be inaudible, is an interesting one. There is, perhaps, a temptation to give this an esoteric gloss. Many sacred texts and teachings—Buddhist, Hindu, Sikh—have a focus on *nada* (Sanskrit, sound) as a primal force in the cosmology of the world.¹⁴ Sikh teachings reference the *anhad naad* (the 'unstruck sound') as synonymous with creation and being. In a book that addresses spirituality and jazz, Joachim-Ernst Berendt discusses the link of *nada* to *nadi* (river or stream): the etymological slippage between the two words takes us, he writes, '[from] the rushing river to the rushing sound' (Berendt 1988, 15), which seems an apt way to imagine the currents and vortices that flow through Radigue's music.

However, Radigue writes secular music and the fact that she is a practising Buddhist does not mean that her compositional intentions are religious.¹⁵ Radigue's interest in the gradual perception of sound, its presentation and modulation and, finally, its decay is a display of—and acceptance of—impermanence that predates her first contacts with Buddhism in the mid-1970s. And yet this concept—the sound before a sound—is central to her music. The violist and chevalier d'*OCCAM* Julia Eckhardt expresses it in a different way, saying that working with Radigue produced the realisation 'that the music is simply there' (Wooley 2021, 52).

This realisation—that sound and music are closer to us than we realise—is a keen observation in terms of Radigue’s work. It is also an acknowledgement of the subtlety with which her composition operates. In creating music that pays as close an attention to the partials and overtones as it does to complex tones, Radigue is looking at sonic structure. Crossfades give the effect of a sine wave that runs through the shifting densities of the work; at points, the frequency fades below a human auditory threshold. These silences—or near silences—are significant, for they signal a compositional approach that recognises that sound does not have to be heard to exist; it is really a matter of where one’s ears are on a Hz scale. Eckhardt describes the music well when she writes that it operates ‘on the cusp of immobility’ (Eckhardt and Radigue 2019, 29). Events take place over a long duration of time: for example, nearly four hours for the three *Adnos* works (Radigue 2013), three hours for the *Trilogie de la Mort* (Radigue 1998), both of these realised for the ARP 2500. Modulations in these works are never sudden, but rather a considerable number of transitions or microevents that are happening in a timeframe and sonic bandwidth that might be unfamiliar to listeners. Unlike the minimalist music that Johnson comes close to referencing (his article is of its time and location in terms of the historical specificity of New York’s Downtown scene in the late 1960s–70s), structure is not the fundamental point of Radigue’s music. This is not to say that it is unstructured but to indicate that her composition privileges other factors. Ψ 847 has, in this sense, a structure that cannot be described, and the language that it requires from us is a vocabulary that focuses on the experiential, the sensory, and the abstract as opposed to the solely musical. And accordingly, because the shape of the work is not the most important feature (one cannot, for example, anticipate any of the musical events that might make up a work of an understood structure, a symphony or concerto, perhaps), the listener has to adjust their own listening practice to one of being simply (and complexly) *with* the music. This means that the listener’s task is not to be on point for the familiar signposting which other, more obviously event-driven musics might display, but instead, to become sensitive to the presence of sound and the way that it makes connections with the space in which it is performed. The listener is thus inculcating an alertness to both the sounds’ appearance and its disappearance.¹⁶

This compositional strategy comes very much from a *musique concrète* aesthetic in which sound might be detached from its originating source as a way of hearing sound *qua* sound. Pierre Schaeffer and others have written at length about this acousmatic experience, and the practices one might bring to such listening.¹⁷ However, Radigue’s approach to sound calls for more than an appreciation of what Schaeffer theorised as a sound object or the practice of reduced listening. The *OCCAMs* are compositions that are as much about ‘finished’ sound as they are the shapes of the sounds as they come into the room, interact with the space and eventually dissolve. Radigue challenges her listeners (and musicians) to consider the dichotomies between sound and silence, between becoming and unbecoming, to listen to a sound before there is a sound and, indeed, to hear its absence. To do so is to ask all present to ‘inter/listen’, in effect, to acknowledge and reflect on their own resonances within the space.

Radigue’s music also challenges us to come to develop new ways of listening to hear them. Each composition is filled with huge sonic events—maybe not the spectrally complex crescendos of an orchestral piece—but events, none the less. To hear them the listener must be prepared to be *with* the music, to create the space for the music

to unfold. To attempt a reliance on any previous ideas of musical structure is to run the risk of not hearing the ceaseless activity that flows through Radigue's compositions. A full understanding of her compositions requires an interdisciplinary approach that extends beyond the vocabularies provided by traditional Western music theory. Consequently, new methodologies and vocabularies—ones which draw from the vocabularies of the sensual, experiential, physical—are required to enrich the reportage of her music and to create new avenues of research.

Space

Éliane Radigue, *OCCAM River XXVIII* (2021): Carol Robinson (birbynè), Louis-Michel Marion (viola da gamba);

Éliane Radigue, *OCCAM River XVIII* (2014): Carol Robinson (bass clarinet), Louis-Michel Marion (five-stringed double bass). The Chapel, École des Beaux-Arts de Paris. 28 November 2021

'Space is the body of the sound and ... the sound bursts out.'

Éliane Radigue to the author, 28 Nov 2021.

Speaking in 2011 of two London churches—Christ Church Spitalfields, and St. Stephen Walbrook—in which her music was to be played, Radigue told her interviewer: 'All these spaces are like conch shells in which the audience is placed—as if they are inside the body of an instrument.¹⁸ ... What we're trying to do is to surround the audience with a sound, so that when you turn your head, you hear something different, the sound is everywhere' (Schütze 2011). A decade later, in the vaulted chapel of Beaux-Arts, the first of the two *OCCAMs* begins almost imperceptibly with a single note on the string and, after a while, Carol Robinson's birbynè meets it in tone before moving apart to create an interval. The sounds vibrate within the space, describing arcs around the artworks in the chapel, mostly casts of medieval and Renaissance works, but also an installation by Leonor Antunes,¹⁹ whose work is based on the method of 'working with'. Looking at one of Antunes's works in the chapel—a pendulous column of white leather dangling from the ceiling—offers a visual corollary to experiencing the musicians' sounds come in into being and pass out of existence. For both Antunes and Radigue, 'working with' is a methodology which sees the artwork—the installation, the composition—as a multivalent work that unfolds within the space it is located within. In the case of an *OCCAM* performance, listening to the music and the space in which it resonates are inseparable.²⁰

It is striking that Radigue often speaks about her music—or her approach to sonic composition—with spatial metaphors. A cone, the conch shell (as mentioned above), a cup: a three-dimensional geometrical shape, a hollow, a made object. As I write, I think not only of Radigue's slow-moving music but of the deep colour fields of architectural spaces—the Rothko Chapel, for example, or an installation by James Turrell, the visual artist who works with light and space. In such places, the viewer adjusts their viewing to what might be called minimal conditions to appreciate the subtleties and nuances of each space. The metaphors that Radigue uses are, I submit, a way of suggesting that each space becomes a container for the sounds of the composition and that the room itself is a significant player in how each performance unfolds itself. Just as light affects a viewing of an object, so is sound affected by the circumstances in

which it vibrates. Sound rebounds from the walls of a geometric solid (the cube of a room would be another example); it moves across the space of a hollow; it is held in a container; objects in the room—bodies, chairs, instruments—are complicit in its reflections and absorptions. Sound works on multiple levels. In other words, for Radigue, space is never an absence, never an empty medium. If anything, space must be understood as a kind of vibratory presence, full of quiet disruptions, in which communications (heard as well as unheard) flow, and in which we, the listeners and musicians, alike are linked in a series of relational networks in which listening is only a single aspect.

Sound also occupies an interstice, a communicative space that both links and separates the people within it. Introducing an edited series of essays on—simply and complexly—sound, Caroline Profanter, Henry Andersen, and Julia Eckhardt write:

Sound describes a particular kind of matter-in-motion; a passage of waves propagating through carrier-materials like air and water. Sound is invisible, ungraspable, and ephemeral, giving it an unruly, mercurial character. As a medium, it can itself become a carrier for meaning that often passes under the radar, intuitively, on a gut level. In this way, sound can transport a lot of what is ‘only’ felt: meaning that it is hard to name or rebuild as an intellectual construction. With these prominent traits, sound will always involve an interaction: between inside and outside space; between materials meeting in friction, percussion, oscillation; between bodies being connected through vibration; between sound emitters and listeners. [...] This interaction is part of life, and for a large part happens involuntarily and even unconsciously. In this sense sound is extensively participative, entangled in the complicated gaps between us. (Profanter, Andersen, and Eckhardt 2019, 4)

How this communicative space is theorised is central to any theory of ‘inter/listening’. Profanter et al. are eloquent in expressing how slippery sound is: it connects people (both ‘emitters’ and listener-receivers), it respects few boundaries, it vibrates. It creates chains of associations. Often, when discussing composition, one thinks only of the structure, the form, that it might take and how these are contextualised within a larger historical canon. Radigue, on the other hand, wants us to consider the interaction of sound, music and resonance (and all the things that affect it) within a space.

While all music is spatially sensitive, not all music is conceived and executed with a sense of its spatial presence in mind. While Radigue is not a spatial composer—as we might think of, for example, Stockhausen’s experiments with stage/musician arrangements, or Maryanne Amacher or Alvin Lucier, two composers with an architectural sense of sound—her music is highly spatially sensitive. Discussing her electroacoustic work, Radigue speaks of using speaker placement and diffusing the sound to create a sonic ‘grid’ that evens the listening experience to one of equality, whatever the listener’s position (Eckhardt and Radigue 2019, 120). This was an activity that she did intuitively, ‘by ear’, rather than scientifically (Eckhardt and Radigue 2019, 131) and according to the acoustics of each room as a way of avoiding a directionality of sound that panned along a horizontal axis. It was this experience that Johnson’s described in *Ψ 847*, and it was this that gave him the experience of sound oozing into the space as it becomes audible.

Achieving this effect is relatively easy when using electronic equipment or a synthesizer—it is a matter of minute adjustments. Replicating the experience is harder when using acoustic instruments as the *OCCAM* works do. However, Radigue’s focus on bringing a sound gradually into being does exactly this, albeit with a different methodology. If, in the playback works, it is the electronic technology that ‘vibrates’ the space, in the case

of the *OCCAM* performances, it is the combination of performer, instrument, space and, lastly, the listener. The frequencies available to the organ, as I experienced in Frédéric Blondy's performance of *OCCAM XXV*, make this work closer to her earlier works for the ARP 2500. Its execution is a formidable demonstration of a process that simultaneously looks backwards to a method born out of *musique concrète* even as it anticipates new modes of composition and performance.

Ψ 847, like much of all Radigue's music, is characterised by a slow unfolding of its structural form. Radigue herself has described its abstract composition as a 'sound cone' that gradually opens to expose a 'hollow' that she likens to an 'open cup' (Eckhardt and Radigue 2019, 128). That Radigue uses a visual metaphor to talk about *Ψ 847* bears some reflection; we might link it to the images that initiate the making of the *OCCAM* works. Music, *qua* sound, also inhabits a space: its soundwaves are reflected from walls, and these ricochets are determined by air, by surface, by architecture, and much else. The sound of the *OCCAM* performances cannot be diffused in the same way as an electroacoustic work; the audience cannot be contained inside a grid of replicated sound. One way to consider the new spatiality suggested in the *OCCAMs* is to return to the image of the cup. In talking about the creation of this 'cup' by means of sound waves, Radigue is speaking not only of music but of space, and the relationship between the two. It is a truism to say that music unfolds in time and space. Any composition will unfold within the linear time it takes to perform it, and within that, the composition's basic matter—the sounds themselves—will follow its own immutable cycle of attack, sustain and eventual decay. In placing the audience within the cup—a shape that is very much the same as the conch shell that Radigue mentioned in 2011 (above)—is to situate the listener inside a resonant space which then provides an experiential encounter with sound. Because both performer and listener are alert to continual modulations of sonic pressure, the compositional process shifts to one with an acute focus on the relationship between the conceptually ephemeral nature of sound itself with the materiality of the sound waves that carry, or rather, constitute, the music.

Relationships

Éliane Radigue and Carol Robinson, *OCCAM River XXII* (2018): Carol Robinson (bass clarinet); Bertrand Gauguet, saxophone);

Éliane Radigue, *OCCAM River XIX* (2018): Yannick Guédon (baritone); Julia Eckhardt (viola);

Éliane Radigue, *OCCAM Delta XVIII* (2018): Yannick Guédon (baritone), Carol Robinson (bass clarinet), Bertrand Gauguet (saxophone), Julia Eckhardt (viola).

St Michael and All Angels Church, Clapton, London. 24 September 2019.

The configurations of instruments on this trio of works produced a series of rich multi-phonics, some of the complex ones—the bass clarinet, certainly, but also the baritone voice—meaning that we were listening in deep registers. This was staged in a church on the edges of east London, and the musicians and the space combined to create the effect of pulling sounds downwards, *de profundis*, until these sank below any audible range. The voice of Yannick Guédon—the only vocalist to perform an *OCCAM*—

hovers on the cusp of many timbres and the humanity of his expression opens a new dimension in the waves that wash the *OCCAMs*. A small group of elderly Afro-Caribbean women, in Sunday hats, had come to listen, this being their parish church and this being Hackney. They spoke of their wonder afterwards.

The *OCCAM* compositions are not only musical entities, but, because of the unique circumstances of their making, they are also records of the relationships between Radigue and any given performer(s).²¹ The process of working out what the *OCCAM* might yet be through the responses of the performer to abstract ideas suggested through an instigating image through to more personal reactions is unique to the *OCCAM* process. Each *OCCAM* is neither simply a commission, in which a composer writes for a musician; nor is it an improvisatory work, which requires a mode of playing, listening and reciprocity and co-creation that comes with many attendant parameters. As noted earlier, the compositions provide a structure that allows the players a flexibility of interpretation. While the process of making an *OCCAM* taps into traditions of both aural and oral transmissions characteristic of the passing down of music in folk and traditional cultures, or, indeed, the teachings of master to acolyte, it is nevertheless something more.²² Rather, the *OCCAMs* are relational compositions in which the composer, musician and instrument are brought into an activated network of possibilities that (may) result in a performed work.²³ They are also relationships written not only in the sound of the composition that arises from the working relationship, but the sonicity of the relationships being played out in terms of human interaction.

From the position of musicianship, Nate Wooley is very clear that it is the interplay of relationships that underpin these works. (We first spoke about his experience of *OCCAM*-making in 2021.) These include the relationship between Radigue and the musician, the relationship between the musician and their instrument (she often asks each person to find their own resonance as a starting point); and, lastly, the relationship between Radigue and the musician's instrument. Accordingly, each *OCCAM* process is different, despite the surface similarities in the framing of the meetings and the instigating images. She looks also, Wooley told me, at the way each musician engages with the instrument and its own mechanisms, the possibilities of using the instrument in new ways to create a meta-technology unique to each composition.²⁴ Wooley suggests that in so doing, Radigue is bringing an aesthetic that comes out of her early formation as a composer when working with Schaeffer and *musique concrète*, but instead in a purely acoustic context. He draws attention to the methodology of the fade-in of sound—to return to the sound before it becomes a sound, or, perhaps, the sound becoming a sound. He says: 'It is almost as if she is asking her musicians to take the faders'—on an acoustic instrument, not so much a matter of operating a sliding switch, but of adjusting pressure, breath, tactility—'up and down. It is almost as if the composition is as much about an action as it is about the performer who is manipulating the instrument and the music'.

But what of the relationship between Radigue and the performer? In considering this aspect of the making of the *OCCAMs*, I would like to suggest theoretical lenses that comes not from musicology but from psychoanalysis and oral history theory. In both instances, I shall focus on the dyad between two people. While I explore the collaborative process between Radigue and the performer through the twin lenses of psychoanalysis and oral history theory, I am not in any way suggesting that the *OCCAM* creation

process is akin to encounters that take place in either a therapeutic or an interview setting.

Following a standard psychoanalytic position, it is an axiom that, when any two people meet, a relationship of some kind is formed. This is a hallmark of any intersubjective encounter, and the relationships that result will depend on many factors. Both the practice of psychoanalysis and interviewing depend on the deployment of listening practices to glean meaning at different levels and for different reasons. Historian Michael Roper states that the interview is, 'by definition, a relationship' and thus subject to the transferential currents—in brief, the displacement of feelings from one situation to another and a normal function of psychological processing—that the interlocutors bring into the communicative space (Roper 2003, 21).

The nature of each encounter (and therefore relationship) will differ widely according to multiple factors, but for a communicative relationship to be established, each party must give something of themselves away to their interlocutor. Theorist and oral historian Alessandro Portelli frames this in terms of a 'mutual sighting' or an 'inter/view' (Portelli 1991, 31). An oral history interview involves a speaker and a listener. Their dialogue is a relationship that forms the heart of its method, and it is important to stress that the relationship is dynamic both in its overt conduct—questions are asked, responses are given—and its undercurrents. It is equally important that the dialogue between speaker and listeners, that is subject and researcher, constitutes an inter-subjective encounter. Just as relationality is integral to the creation of the *OCCAMs*, so is it to the heart of the interview encounter. Portelli writes: 'An inter/view is an exchange between *two* subjects: literally a mutual sighting. One party cannot really *see* the other unless the other can see him or her in turn' (Portelli 1991, 31; his italics): this is how he defines the dynamic meeting between an interviewer and the narrator, the process with which material is sought and narrated. His use of the forward slash accentuates the etymological breakdown of what the 'inter/view' is: it is a shared, sensed process of mutuality and ideally, equality. While Portelli concedes that equality between researcher and narrator, especially within the context of the anthropological field interview, is often a contested enterprise, he nevertheless stresses that any encounter that deals openly with power inequalities between researcher and narrator creates 'an experiment in equality' and is to be sought after (Portelli 1991, 32). A formal, spoken encounter without the promise of this 'experiment in equality' will be conducted with no possibility of 'inter/view': the process would be, at worst, an interrogation, at best, a one-sided process of disclosure.²⁵

We could, then, suggest that the intimacy of the *OCCAM* process stems from a mutual listening: not so much the 'inter/view' that Portelli speaks of, but of an 'inter/listening' (Marshall 2018, 119). In such a process, each person within the *OCCAM*—not only Radigue and musicians, but musicians with musicians, musicians with audience—becomes entwined in an expanded listening. A sonic relationship is formed. If this is the case, the relational aspect of the *OCCAM* process also becomes reciprocal, in which all parties give something of themselves to the creation of the work, its performance and its interpretation.

We have already seen how the practice of oral history—and more recent transmissions of psychoanalysis—demand an inter-subjective listening, but how does listening fit within sonority itself? Sound fills the third space between me and the narrator, just as

it joins us and separates us. We are, as philosopher Dominic Pettman reminds us, ‘born *in* and *of* sound’ (Pettman 2017, 1). This creates a paradox: we cannot stand outside of what sound theorist and artist Salomé Voegelin terms ‘sound’s ephemeral invisibility’ (Voegelin 2010, xi), meaning that a limitless reflexivity is needed to engender any critical engagement, with its immaterial material. For sound art theorist Brandon LaBelle:

Sound is intrinsically and unignorably relational: it emanates, propagates, communicates, vibrates, and agitates: it leaves a body and enters others; it binds and unhinges. Harmonizes and traumatizes; it sends the body moving, the mind dreaming, the air oscillating. It seemingly eludes definition, while having profound effect. (LaBelle 2016, ix)

Therefore, to be inscribed in the immateriality of the sonic—as we all are—is to embrace a network of relationality, what Voegelin describes as ‘an act of engaging with the world’ (LaBelle 2016, 3). But sound also resonates; it is heterochronic in the sense that it echoes backward through the sonic historiography that we each have. To use Jean-Luc Nancy’s words, sound ‘is also made of referrals: it spreads in space, where it resounds while resounding ‘in me’ (Nancy 2007, 7). Compellingly, Nancy plays (in his original text) on the word *renvoi*, and its range of meanings: the return (of a gift), a repeat (especially in a musical context), a reference, an allusion. Applied to the *OCCAM* situation, the works then become evidence of other things: of relationships, friendships, networks.

The historian Natalie Zemon Davis (1983) has written about books in the early modern period as carriers of relationships, as artefacts that embody a bundle of connections, bonds, associations. This is true, also, of the *OCCAM* works. The artefacts produced by the *OCCAM* process, being sonic, are intangible—they cannot be handled, shelved, hidden away—but they are nevertheless evidence of a network, a web—or series of them—at play. This is the network of relationships that are integral to their creation. They are a way of binding together composer, musician and finally, their listeners, in a network of listening that attends to so much more than sound itself.

Closing Remarks

Looking again at the diagram of the ‘Spectrum of Waves / Spectre des longueurs d’ondes’ (Eckhardt and Radigue 2019, 26–27), it is impossible not to be shaken by the vastness it portrays. The diagram shifts from infrasound to ultrasonics, from the resonance of the world to seismic exploration, from infrared to gamma rays. In the middle of the diagram floats a small bubble that delineates the frequency range of human hearing—approximately 20 Hz to 20 kHz—and thus the audible frequencies of sound. It is preceded by the reproduction of a text in which it first appeared, ‘The Mysterious Power of the Infinitesimal’, which Radigue originally wrote for the *Leonardo Music Journal* in 2009. In this, she poetically imagines the beginning of the world, the ‘immense vibrating symphony of the universe’ (Eckhardt and Radigue 2019, 6). ‘I dreamt of an unreal, impalpable music appearing and fading away like colours in a blue summer sky’, she writes in a passage that focuses on the elusive nature of music and sound, and its continual and often imperceptible changes. In the thrumming universe that the ‘Spectrum of Waves’ depicts, sound, and therefore the potentiality of music, is always there, alongside continual change, continual modulation. Eckhardt, interviewed by Wooley in 2020,

speaks of how, in her contact with Radigue and creating *OCCAMs*, she came to more subtle ways of listening and ‘the idea that music is simply there, and that one shouldn’t try so hard to “make it”’ (Wooley 2021, 52).

In ‘The Spectrum of Waves’, we see that audible frequencies are situated at the centre of the entire electromagnetic spectrum. This is what Radigue’s composition, and the experience of hearing her quiet and insistent music, reminds us of: that we—the listener, the musician and the music—are linked in multiple determined vibrating networks. One might say that the music is in a constant cycle of becoming and then unbecoming. In doing so, it recognises our humanity, our shifting positionalities, our own friability. These are the types of disclosure at the heart of ‘inter/listening’. In making us aware of the impermanence of sound, the way that sound exists with an absence of boundaries—what the psychoanalyst Édith Lecourt has described as ‘the sonorous experience [as] one of omnipresent simultaneity’ (Lecourt 1990, 211)—Radigue also offers us a gift. Situating us all in such vastness is more than a compositional strategy, but rather one that values and cherishes an engaged listening in all its musical, relational and ethical dimensions.

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Notes

1. Ψ 847 is included on Radigue’s boxed set of early works, *Oeuvres Électroniques* (2018). For a facsimile of Johnson’s *Village Voice* review, originally titled ‘Oozing out of the wall’, see Eckhardt and Radigue (2019, 124).
2. This shift from electro-acoustic to acoustic composition began properly in 2005 with the first (for cellist Charles Curtis) of the three *Naldjorlak* (2005–09) works.
3. A note on titles: a solo composition in this series is simply an *OCCAM*, followed by a number. *OCCAM Rivers* are duos; *Deltas* are mostly trios; with *Hexas* being quintets and *Heptas* septets. Only one *OCCAM Ocean*, for orchestra, currently exists. Wooley (2021, 17) and Eckhardt and Radigue (2019, 156–8) describe how solo *OCCAM* works can be combined to create ensemble ones, meaning that there are many possible combinations of *OCCAMs* possible.
4. The image is usually supplied by Radigue, although some musicians choose their own ones to work from. Wooley chose an image of the Columbia River for *OCCAM X*. I am indebted to Julia Eckhardt and Wooley for these details.
5. Wooley to author, 15 November 2022.
6. Wooley to author, 15 November 2022.
7. Wooley to author, 15 November 2022.
8. There are some exceptions to this norm of solo authorship in Radigue’s *OCCAM* series. The following works are co-compositions by both Radigue and woodwindist/composer Carol Robinson: *OCCAM River XXII* (2018, for bass clarinet and saxophone); *OCCAM Hexa II* (2015, for flute, clarinet, viola, cello and percussion); *OCCAM Hexa V* (2021, for alto and tenor saxophones, trombone, electric guitar, percussion and piano); and *OCCAM Hexa VI* (2022, for clarinet, alto saxophone, trumpet, tuba and percussion). There are further co-compositions planned between the two. I am indebted to Carol Robinson for this information.

9. Wooley to author, 15 November 2022.
10. A recording of Blondy's performance of *OCCAM XXV* in this atmospheric space is released by organ reframed (Radigue 2022).
11. The concert descriptions that appear at the top of the following three sections—Sound before Sound, Space, and Relationships—are excerpts from post-concert journal entries written by the author.
12. Oliveros defined Deep Listening as 'listening in every possible way to everything possible to hear no matter what you are doing'. Its many applications range from a social listening to a sonic awareness to a compositional tool (Oliveros 2010, 73).
13. See also Radigue (2009). For purposes of clarity, I cite the facsimile of this article that is reproduced in Eckhardt and Radigue (2019).
14. In addition, the *Bardo Thodol* ('Liberation Through Hearing During the Intermediate State'; usually translated as *The Tibetan Book of the Dead*), places sound and listening at the centre of the process between death and rebirth. See Coleman and Jinpa (2005); and also Lee (2017) for a reliable survey.
15. That said, there have been periods when she has written music that has an overt Buddhist theme—the mighty *Trilogie de la mort* (created between 1988–93), for example, or the works dedicated to the Tibetan yogi Milarepa.
16. This is not to suggest that Radigue's compositions do not contain musical 'events', but rather that they are expressed in different ways and the hearing of them requires an adjustment on the part of the listener.
17. For example, Kane (2014), and Schaeffer (2017).
18. *Triptych: the Music of Éliane Radigue*, 12–26 June 2011, various London venues.
19. The concert was to celebrate the finissage of Antunes's exhibition, *the homemaker and her domain*, for the Festival d'Automne à Paris, 15 October–28 November 2021.
20. Antunes's rope is a tribute to Mira Schendel's *Droguinha* (*Little Scrap of Nothing*) (1986), a rope made from knotted and braided sheets of rice paper.
21. Radigue allows the *OCCAM* process sessions to be recorded by the musicians to help their memories. Using recordings of such sessions with Radigue and Quatuor Bozzini, Emanuelle Majeau-Bettez (2017) provides an important insight into the communications at such meetings, as well as noting the composer's own stipulations around the creation of an *OCCAM* work.
22. Two chevaliers—Rhodri Davies (Prosaic 2011) and Laetitia Sonami (2017)—have explicitly compared the *OCCAM* creation process to the oral transmission of traditional musics.
23. Interestingly, Radigue herself raises the possibility of failure. Referring to her rules of engagement for working on an *OCCAM*, she states that while the 'goal of ... a collaboration is the creation of a new piece', that there is no guarantee that this result will be achieved. In this case, the resulting work is not 'signed' by Radigue but becomes a work that is inspired by her (Majeau-Bettez 2017, 51).
24. Nate Wooley to the author, London, 4 October 2021.
25. The psychoanalyst Paula Heimann goes further, suggesting that to refuse one's subjectivity in what is, like any meeting, an intersubjective encounter, risks the possibility of becoming 'inhuman' (Heimann 1989 [1959/60], 151).

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