

Delia Derbyshire

Sound and Music

For The BBC Radiophonic Workshop,

1962-1973

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Abstract

This thesis explores the electronic music and sound created by Delia Derbyshire in the BBC's Radiophonic Workshop between 1962 and 1973. After her resignation from the BBC in the early 1970s, the scope and breadth of her musical work there became obscured, and so this research is primarily presented as an open-ended enquiry into that work. During the course of my enquiries, I found a much wider variety of music than the popular perception of Derbyshire suggests: it ranged from theme tunes to children's television programmes to concrete poetry to intricate experimental soundscapes of synthesis. While her most famous work, the theme to the science fiction television programme *Doctor Who* (1963) has been discussed many times, because of the popularity of the show, most of the pieces here have not previously received detailed attention. Some are not widely available at all and so are practically unknown and unexplored. Despite being the first institutional electronic music studio in Britain, the Workshop's role in broadcasting, rather than autonomous music, has resulted in it being overlooked in historical accounts of electronic music, and very little research has been undertaken to discover more about the contents of its extensive archived back catalogue. Conversely, largely because of her role in the creation of its most recognised work, the previously mentioned *Doctor Who* theme tune, Derbyshire is often positioned as a pioneer in the medium for bringing electronic music to a large audience. Both perceptions of the workshop and Derbyshire are problematised here, because while they seem to contrast, they are both posited upon the same underlying method of attributing positive value to autonomous music, rather than viewing them on their own specific terms within broadcast media. While it is shown that Derbyshire certainly aspired towards the role of composing contemporary classical music and had an interest in integrating its aesthetics and ideas into her work, she also had an ambiguous relation to it and was not fully able to explore her interest because of her socio-cultural circumstances. Further, the mass of difficult-to-access archived material precludes particularly firm conclusions about Derbyshire's role in any history of electronic music in Britain—which is itself still very much under construction—with much further research suggested. Thus, the selection of material here is patched together into three different themes raised by her in interview, within contextual frames of relevant aesthetics and techniques, rather than into a coherent chronological, biographical or historical narrative.

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Author's Declaration

I, Teresa Winter, declare that this thesis is a presentation of original work and I am the sole author. This work has not previously been presented for an award at this, or any other, University. All sources are acknowledged as References.

1 Introduction

1.1 The BBC Radiophonic Workshop: A Service Department

This thesis concerns the work of Delia Derbyshire (1937-2001), who has become central to the retrospective understanding of Britain's first institutional electronic music studio, the BBC Radiophonic Workshop. This was used to create music and sounds for radio and television over the course of forty years from 1958. Derbyshire worked there between 1962 and 1973, a period of time that encompasses almost her entire musical career. However, until the relatively recent (2010) publication of Louis Niebur's research into the Workshop,¹ it has largely been neglected by academics. Despite being the first institutional electronic music studio in Britain, it is usually acknowledged in order to express regret about its functional role in broadcasting. The people who worked there also express a sense of sadness about the Workshop's subsidiary status within broadcasting. For instance, during interview, Brian Hodgson, creator of one of the most recognisable sound effects in television history, *Doctor Who*'s Tardis, recalled a song that expressed the self-deprecating humour and pathos associated with the Radiophonic Workshop: 'There's a song we used to sing: Other people's babies that's my life/Always a mother but nobody's wife. [...] In a way working at the Radiophonic Workshop was that: it was other people's babies.'² This is his poetic metaphor for their service role. Not only were they asked to electronically realise other people's ideas for theme tunes, sound effects, or music, they were also often denied public credit for their work and were also denied royalties.³

The location of the Radiophonic Workshop in public service may largely explain why there has not been very much academic interest in uncovering more of its work over the years since its closure. I will first address this issue as it stands in relation to the Radiophonic Workshop and British electronic music, before moving onto Derbyshire's work in more detail. Louis Niebur's research has already explored in detail how Workshop staff weren't allowed to use the facilities to compose their own music but were employed to make unusual sounds and music for other people's projects—'other people's babies,' in Hodgson's words. Niebur's work, in addition to a large selection of folders of written documents in the BBC1 Written Archives including external and internal BBC correspondence, transcripts of

¹ Niebur, *Special Sound: The Creation and Legacy of the BBC Radiophonic Workshop*.

² Hodgson, Interview with author.

³ For discussions of credit at the workshop see: Niebur, 102; and Butler, "'Way Out of This World!'" Delia Derbyshire, *Doctor Who* and the British Public's Awareness of Electronic Music in the 1960s', 65.

meetings, scripts, photographs, catalogues, budgets, and various other miscellany, have been central to the research contained in this thesis.⁴ The extensive catalogue of the Radiophonic Workshop also resides at the BBC Written Archives, revealing that it produced thousands of commissions for television and radio during its active years, in contrast to a relatively humble collection of commercially released material selected from the complete archives.⁵ Similarly, a thick folder full of press clippings shows that it was often in the public eye as the subject of articles, reviews and interviews taken from national newspapers and magazines, suggesting public interest in its work.⁶ Despite its prolific output and large audience, Hodgson's remarks about the staff's surrogate role in aiding the creativity of others are often echoed in discussions of it. Its role as such has been interpreted in a way that seems to legitimate its neglect in histories of electronic music. Reflecting the idea that it was somehow a shame and a missed opportunity that the BBC did not allow it to be used as a place for composers to freely work on electronic music made for its own sake in the way that its foreign counterparts did, Peter Manning writes, for example:

The establishment of a Radiophonic Workshop by the British Broadcasting Corporation (BBC) in London in 1958 could have provided a major focal point for British electronic music. The unenlightened artistic policy of the Music Department at the BBC, however, was to direct otherwise, for the studio was required to serve the day-to-day needs of the radio and television drama groups, leaving little time for serious composition.⁷

Doctor Who remains a marker of the Workshop's position in the cultural landscape: it brought the staff an international reputation for a unique combination of popularity and experimentalism, but it also became like a millstone. As David Cain of the workshop recalled, '*Doctor Who* was an enormous distraction, it became the focus of the output and everything else was pushed into the background.'⁸ It overshadowed the diversity of their work, and left academics such as Manning mentioning them almost exclusively in order to lament that the only form of institutional support for electronic musicians in Britain existed as a service department within national broadcasting, rather than a unit to allow exploration for

⁴ WAC R97 Folders, BBC Written Archives Centre.

⁵ *Radiophonic Workshop Catalogue*, BBC Written Archives Centre.

⁶ WAC R97/25, BBC Written Archives Centre.

⁷ Manning, *Electronic and Computer Music*, 73.

⁸ Cain, 'Q+A with Julian House and Composer David Cain', CD Liner Notes, *The Seasons*.

independent artistic or scientific development. Until the recent research by Niebur and Butler, the role of both the Workshop and Derbyshire in music history has become fixed in a very conclusive relation to *Doctor Who*. Its location in this way has prevented discovering more about what was made at the Radiophonic Workshop. This thesis is an enquiry into some of the lesser-known, perhaps even forgotten work by Derbyshire in the BBC archives. However, discussions around the popular perception of *Doctor Who* and electronic music in Britain are also central from the start.

Approaching the subject from the perspective of musicology, it seems understandable that the position assumed by Manning is one that reinforces the theoretical, ideological, and philosophical value of autonomous music, which is made and then studied as a rarefied object for its own sake. This emphasis implies that the complex juggling of functional, institutional and economic demands of musical production are less important than the techniques, technologies and musical compositions involved. Thus the Radiophonic Workshop has been constructed more as an absence than a presence, where the reduction of music to quite a narrow and fixed set of terms is central to the decision-making process about what should or should not be included as objects of legitimate academic observation. This absence is echoed in the remark of Susan McClary, who writes, ‘traditional musicology refuses to acknowledge popular culture.’⁹ Where it has been acknowledged more recently, it is still located outside the mainstream discourse of musicology, because, as Richard Middleton suggests, ‘traditional musical analysis is a terminology slanted by the needs and history of a particular music: classical music.’¹⁰ According to Lydia Goehr, that language is centred around the concept of autonomy. Music is deemed lacking when it cannot be approached as complete, coherent, complex works that are clearly presented by easily identifiable composers as objects for in-depth musical analysis and categorisation. She writes that from around 1800, ‘musical production was now seen as the use of musical material resulting in complete and discrete, original and fixed, personally owned units. The units were musical works.’¹¹ I interpret Hodgson’s words as a call to put aside any prior assumption that Derbyshire, in her association with the Radiophonic Workshop, needs to be retrospectively reassessed to become categorised as part of a canon of autonomous electronic music in order to be attributed a valuable, legitimate, or ‘serious’ contribution to the musical culture of the twentieth century.

⁹ McClary and Walser, ‘Start making sense! Musicology wrestles with rock’, *On Record: Rock, Pop and the Written Word*, 280.

¹⁰ Middleton, *Studying Popular Music*, 104.

¹¹ Goehr, *The Imaginary Museum Of Musical Works*, 206.

This is an insight that frames the entire thesis here, as I stress that the public-service role of the Workshop is not extraneous but integral to the work that was produced there by her.

There is a gap in knowledge about the Workshop and Derbyshire, and there is more to discover still.¹² Having spent several years researching and taking care of her archive, David Butler writes, ‘the extent of Delia Derbyshire’s creativity can still not be counted in full.’¹³ This gap has much to do with the bias of traditional musicology towards post-war classical avant-gardes committed to autonomous works when discussing the development of electronic music. Recent research has only just begun to show that it is not that there was a shortage of people making electronic music in Britain, but that their work does not easily fit into already established narratives of electronic music and thus has more generally been under-researched. In addition to Niebur’s research, Nicola Candlish completed a PhD thesis in 2012 on the various thwarted attempts to establish a national studio in Britain during this period,¹⁴ while independent researcher Ian Helliwell has been publishing occasional articles in *Wire* magazine on various artists working in the field of ‘amateur’ electronics.¹⁵ These examples suggest a recently burgeoning interest in the subject of British electronic music. They also indicate that the established narratives of twentieth-century electronic music, centred on a small group of American and European pioneers with classical concerns, are being challenged to include a wider variety of contributors. Such research presents a field of enquiry that is under construction, emphasising the importance of an open approach that acknowledges the importance of continuing further research.

1.2 Approach

Although the Radiophonic Workshop’s back catalogue of thousands of items is varied and lengthy, little is known about its contents, either in wider culture, academia, or by BBC archivists. While former Radiophonic Workshop composer Mark Ayres has been custodian over it since its closure in 1998, the archive of tapes itself is not openly accessible to academics for research, standing apart from the general BBC sound archive.¹⁶ However, the

¹² See Appendix: Further Research.

¹³ Butler, “‘Way Out of This World!’ Delia Derbyshire, *Doctor Who* and the British Public’s Awareness of Electronic Music in the 1960s’, *Critical Studies In Television*, 63.

¹⁴ Candlish, *The Development Of Resources For Electronic Music In The UK, With Particular Reference To The Bids To Establish A National Studio*.

¹⁵ See: Ian Helliwell in *The Wire*, issues 336 February 2012, 343 September 2012, 354 November 2012, 362 April 2014.

¹⁶ Ayres, Personal email correspondence.

BBC sound and moving image archives contain some of the programmes for which the Workshop produced music, which allowed a convoluted route of access to research material. These archives in turn led to their own problems: while the institutional nature of the BBC meant that an extensive archive of written records was available, the ephemerality and perceived triviality of broadcasting media also meant that those archives were often incomplete and patchy in a way that could not be predicted. It also meant that the BBC was very unsure about granting rights to reproduce material for audio examples here because of the possibility that recordings could be uploaded onto the internet due to the recent move towards digitising PhD theses for public dissemination. Therefore all of the pieces discussed here are either publicly accessible in archives or commercially available.

The problem of access has had two pragmatic consequences with regard to the approach taken here. Firstly, due to its mass and length, the selection of items from the catalogue to research was often somewhat arbitrary, resulting in a fragmented collection of information. The value of researching a particular programme or piece of music depended to a large extent on how much connected information was accessible, regardless of what the thing itself was. For instance, while some of the most fruitful discoveries were stumbled upon entirely by chance, other avenues that may have seemed to lead somewhere historically or musically significant turned out not to be useful in the end. Projecting ideas about what might be considered significant in any way did not particularly aid the process of sifting through the hundreds of catalogue entries because decisions based upon prejudice often led to situations where research was simply not possible because little or no further information was available. Secondly, issues arose from difficulties in accessing research materials because so much information was necessary in order to find and access it in the BBC archives: transmission dates, catalogue numbers, producer names, anecdotal evidence. Initially extraneous information started to become integral to the research, as it contained things that led to the construction of narratives and interpretations. It was in this way that archival documents gradually sharpened into focus, from meaningless numbers and titles in a catalogue to real things with significance in the lives of the people that made them. Specific narratives did emerge from individual case studies, and these could be used to arrive at some conclusions.

As a structured representation of that research process, it became evident that the thesis as a whole would not provide the reader with a coherent narrative arc driven by a single protagonist, neither as a kind of composer's biography nor as a thread in a history of electronic music in Britain. Instead, chapters are organised according to a pattern of recurring themes and motifs that Derbyshire herself retrospectively applied to the content of the programmes she provided music for: 'either in the far distant future, the far distant past, or in

the mind'¹⁷ as well as 'music to watch sculpture by.'¹⁸ Those themes, in Derbyshire's words, describe the ways that electronic music was mostly used at the BBC and thus also how electronic music was perceived there. In this way, the structuring of this research relates directly to the manner in which the institutional setting structured and limited the kinds of music that could be made, applying a form of coherence that is not too intrusive to the texts themselves. Both Derbyshire's personal interpretation and the institutional context are emphasised with this approach to the organisation of material. While it does not provide a particularly coherent historical or biographical narrative, the structure is derived from an interpretation of her work at the BBC as she described it.

1.3 Delia Derbyshire

Derbyshire's role as the creator of the electronic realisation of the *Doctor Who* theme in 1963¹⁹ has earned her a privileged place of 'pioneer'²⁰ in common parlance. Speaking on BBC television in 2010, Stuart Maconie portrays her in this way when he describes the theme as 'the very first time the public had ever heard electronic music.'²¹ Here he expresses the idea that as a 'pioneer,' her work helped to open up a territory for electronic music as a popular medium. David Butler points out that Maconie was 'probably stretching enthusiastic appreciation to its limits' when he said this.²² Not only had the Radiophonic Workshop been producing electronic music for broadcast since the late 1950s but also the BBC had broadcast pieces by Berio and Stockhausen during the Proms.²³ However, *Doctor Who* was presented 'with a prominence and regularity (a weekly teatime show aimed at the family) which ensured that, for many people, in 1963 and 1964, it was the first time that they had heard electronic, tape-based music.'²⁴ More recent Proms have attempted to integrate the theme into a concert-

¹⁷ Derbyshire, 'Interview with John Cavanagh and Drew Mullholland', *Original Masters*, BBC Radio Scotland.

¹⁸ Derbyshire to Jo Hutton. 'Radiophonic Ladies', online article.

¹⁹ BBC Radiophonic Workshop, *Doctor Who at the BBC Radiophonic Workshop—Volume 1: The Early Years (1963-1969)*, CD.

²⁰ Hodgson, 'Obituary: Delia Derbyshire'.

²¹ *Inside Out*, BBC One.

²² Butler, "'Way Out of This World!' Delia Derbyshire, *Doctor Who* and the British Public's Awareness of Electronic Music in the 1960s', 63.

²³ *Ibid.*

²⁴ *Ibid.*

hall context, with *Doctor Who At The Proms* concerts,²⁵ in addition to a BBC-commissioned piece ‘inspired by the work of Delia Derbyshire’ performed by the Kronos String Quartet.²⁶ Programming in the Proms illustrates how much the perception of Derbyshire’s work has changed since it was first aired, being acknowledged and celebrated by the Proms as a central development in British musical culture. However, the ‘pioneering’ element of the music lies precisely in its location outside the concert hall tradition, having more to do with its regular domestic presence in the homes of millions of television-watching families. It was not the case that most people had not heard electronic music before the *Doctor Who* theme, but most British people—even those with a comprehensive knowledge of contemporary music—had probably not heard it with any strong conviction that it was to be accepted as music at all.

While Derbyshire’s work was mostly produced and heard outside the context of classical concert hall music, she did approach it with knowledge and education of classical precedents. Press cuttings from the time show Derbyshire’s public image as the team’s ‘specialist in beautiful backgrounds,’²⁷ a ‘modern classical-slanted musician,’²⁸ emphasising her interest in ‘classical’ musical composition: a ‘specialist.’ However, these descriptions of her are offset by the importance given to her public-service role. In one article she is quoted stating that her aim was ‘trying to find out what the man in the street will accept in the way of new sounds, without being upset by it,’²⁹ stressing the connection between her public-service role and her personal interest in experimentation. One *Gramophone* review of Workshop recordings from 1969 suggests that her pieces were ‘the most imaginative’ of the release, comparing one, *The Delian Mode*, to Xenakis’s *Orient-Occident* because it followed ‘the analytical approach of the more sustained electronic compositions.’³⁰ Derbyshire was also the first person to request a placement at the Workshop, whereas others had been drafted from other departments.³¹

Derbyshire’s desire to actively join the Radiophonic Workshop was unusual. As she recalled, access to it was gained not as a composer but through the BBC’s generic career ladder. At this time, the BBC’s organisational system involved recruiting large numbers of

²⁵ ‘Prom 2: Doctor Who Prom’, *BBC Events*, website.

²⁶ ‘Prom 14: The Kronos Quartet’, *BBC Events*, website.

²⁷ Last, ‘There’s Music in that Bottle’, BBC Written Archives Centre.

²⁸ ‘Square Wave, Hip Sound’, BBC Written Archives Centre.

²⁹ Last, ‘There’s Music in that Bottle’, BBC Written Archives Centre.

³⁰ ‘BBC Radiophonic Music’, BBC Written Archives Centre.

³¹ Derbyshire to Austin Atkinson-Broadbelt, ‘Soundhouse: Delia Derbyshire’, *Doctor Who Magazine*, 14.

university graduates as trainees under the umbrella term ‘studio manager’ before moving on to more specialist, higher-level roles in production or administration.³² During interview, Hodgson brought out a photograph of Derbyshire sitting amongst rows of her colleagues: it looked like a picture of a school class, offering a visual illustration of their apprentice status in the BBC hierarchy.³³ The large pool of general employees at the lowest level of the structure existed in contrast to explicitly creative individuals such as drama writers or musical composers, individually selected from outside the corporation to provide their skills. This contrast does not necessarily indicate that such people had a higher status in the BBC hierarchy, but it does show that their work, defined as such, was categorised separately from the normal method of organising labour. The Radiophonic Workshop did not consist of a dedicated creative team brought in to specialise in such a way. It had no existence other than within the very standard method of recruiting and organising staff within the corporation, and its members were seen as general service employees, rather than creative talent. Derbyshire explained: ‘the only way into the Workshop was to be a trainee studio manager. This is because the Workshop was purely a service department for drama.’³⁴ The Workshop staff’s place in the hierarchy was reflected in their job title, ‘studio manager,’ a term that emphasised their roles as service providers, indistinct from a larger pool of labour within the corporate structure.

The semantics around the Workshop as a ‘service department’ consisting of ‘studio managers’ is connected to the difficulty that the institution had in defining what they produced as music: ‘The BBC made it quite clear that they didn’t employ composers and we weren’t supposed to be doing music.’³⁵ Historical difficulties locating the Radiophonic Workshop in relation to the terms of music, musicianship, and musicality, recur throughout the research in this thesis. The ambiguity around whether or not what they produced there could be called music was embedded in the politics of the BBC, which will be discussed a little more below. Here, however, it is important to emphasise that the BBC’s stance on the matter should also be seen as reflecting the shifts in contemporary music occurring throughout the world and cannot be isolated from the greater questioning of those terms throughout twentieth-century musical culture. Derbyshire responded to the question with a

³² Brian Hodgson, Interview with author.

³³ Ibid.

³⁴ Derbyshire to Jo Hutton, ‘Radiophonic Ladies’.

³⁵ Ibid.

contrasting affirmation: ‘It was music, it was abstract electronic sound, organised.’³⁶ Here she paraphrases the words of avant-garde composer Edgard Varèse, who used the phrase ‘organised sound’ to call for a more inclusive conception of music as a medium that could be composed from any auditory material. In this context, it is not the concept of music that is being contested, but rather the idea that music is defined by exclusion, negation, and limitation: music could be composed from any kind of sound if framed as such, with no clear way of distinguishing what music is from what it is not. The question of what constitutes music is left quite open in this way, leading more to questions than clear answers. The BBC was not impervious to the changing musical culture: many documents discussed throughout this thesis show how aware many there were of the ambiguities in definitions of sound, music, and musical sound. However, its official refusal to define the Workshop as a place for ‘doing music’ was a reaction to a shift towards an indefinitely expanding definition of what that activity might encompass. Derbyshire therefore encountered many difficulties during her work at the BBC, standing in a difficult position in relation to the institution’s accompanying ideologies: it conceded enough to provide the facilities to explore the production of electronic sound and music (even if it was not officially called that), but her work was often carried out in opposition to the prevailing institutional consensus.

In contrast to the dominant culture at the BBC, Derbyshire shows how she was, to quote Hodgson, ‘*au fait*’ with the world of contemporary classical music.³⁷ She researched and toured European studios at the start of her career there, worked with figures such as Berio and Peter Zinovieff, and formed an acquaintance with Stockhausen. Derbyshire’s relation to high art music, however, was not completely aspirational. For instance, in interview, Zinovieff told of how, when he, Derbyshire and Hodgson worked together, she had little regard for his computer music research, preferring instead to stick with the hands-on approach of analogue experimentation.³⁸ Brian Hodgson also recounted an anecdote where Stockhausen chastised her for giggling during one of his concerts, illustrating that she did not take music (or at least Stockhausen’s music) entirely seriously.³⁹ Equally, details of Derbyshire’s biography revealed in interviews appear to have been chosen purposefully to construct a down-to-earth identity.⁴⁰ She explained in interviews that she grew up in a working-class family in Coventry, gaining a place at the local Grammar School, developing a passion for

³⁶ Ibid.

³⁷ Hodgson, Interview with author.

³⁸ Zinovieff, Interview with author.

³⁹ Hodgson.

⁴⁰ Also see: Hutton, ‘Derbyshire, Delia’, *Grove Music Online*.

music and mathematics, which she continued to pursue at Cambridge University.⁴¹ She was the first person at the Radiophonic Workshop to have a degree in music and had a strong interest in contemporary musical composition. Incorporating this interest into the functional demands of her work meant that she ‘quickly developed a reputation as one of the Radiophonic Workshop’s most prolific and inventive creators.’⁴² She gained a moderate amount of fame in this way, particularly after the success of the *Doctor Who* theme, and she was associated with key figures in the creative scene of 1960s London, such as Pink Floyd, Yoko Ono, and Paul McCartney. Derbyshire reported producing a soundtrack for Yoko Ono’s film *Wrapping Event*, although no music has surfaced, while Paul McCartney contacted her for an electronic version of his song ‘Yesterday’ which was never realised. She was able to pursue freelance projects outside the BBC throughout the 1960s, but only secondarily to the demands of her main job.⁴³ Below I will discuss further how Derbyshire took inspiration from ideas about experimentalism that existed in Continental approaches to electronic music. However, considering the confluence of creative activity and ideas between musicians working in jazz, popular music, and British and American experimental composers such as John Cage and Cornelius Cardew, it is also possible that Derbyshire was indirectly shaped by conceptions of experimental music from outside the European canon through the encounters of her freelance work. The emergence of a personal archive after Derbyshire’s death revealed that she was, in fact, very prolific in her freelance work, but that is beyond the scope of this research, which is focussed on the BBC. Her creative life proved to be short-lived, and after eleven years Derbyshire abandoned her musical career in the early 1970s, emotionally and physically exhausted by the BBC’s increasingly ‘petty bureaucracy’ that resulted in the Workshop becoming a ‘creative treadmill.’⁴⁴ She did return to music during the last decade of her life, developing a creative relationship with the younger musician Peter Kember,⁴⁵ but it was during this time that she became ill, leading to her death in 2001, and she was unable to pursue the projects that she had planned. Her biography has been cemented in popular culture

⁴¹ See: Derbyshire to Atkinson-Broadbelt, ‘Soundhouse’, *Doctor Who Magazine*; to Hutton, ‘Radiophonic Ladies’, online article, *Sonic Arts Network*; to Kember, *Surface Magazine*; to Cavanagh and Mullholland, *Original Masters*, BBC Radio Scotland.

⁴² Hutton, ‘Derbyshire, Delia’, *Grove Music Online*.

⁴³ For more on Derbyshire’s freelance work see David Butler, ‘“Way Out of This World!” Delia Derbyshire, *Doctor Who* and the British Public’s Awareness of Electronic Music in the 1960s’.

⁴⁴ Derbyshire to Austin Atkinson-Broadbelt, ‘Soundhouse: Delia Derbyshire’, *Doctor Who Magazine*, 16.

⁴⁵ Derbyshire, ‘Interview by Peter Kember’, *Surface Magazine*.

by biopic portraits such as the BBC radio drama *Blue Veils and Golden Sands*⁴⁶ and a 2004 stage production *Standing Wave* by Nicola McCartney.⁴⁷

1.4 Special Sound: Technology, Exoticism and Human Agency

In the 1950s electronic music had not yet been established as worthy of institutional support in its own right in Britain, largely because the BBC did not provide an appropriate space as other national broadcasters had and government organisations such as the British Arts Council showed no interest in offering financial support to its development.⁴⁸ It was the country's only institutional studio until 1967, when the University of Manchester established a very basic facility,⁴⁹ making the Radiophonic Workshop equivalent to the centres of electronic music in Paris, Cologne or Milan used by major figures such as Schaeffer and Stockhausen. Like these studios, it was situated within a national broadcasting institution. Unlike them, it was a service department for radio and television, while its continental counterparts existed in large part for composers to work on their own music. Niebur's research has uncovered extensive documents in the BBC Written Archives testifying to the conservative attitudes of their music department, which opposed the setting up of an electronic music studio.⁵⁰ They argued that it would be a threat to British musical tradition, the invasion of a foreign (specifically German) culture, and stated their opposition to it as part of their 'guardianship of rational development of musical aesthetics in this country'⁵¹. One critic, Reginald Smith-Brindle, writing for *The Musical Times* in 1956, suggests their anxieties were symptomatic of a broader debate in British music on the subject. Musicians would be put out of work, with the belief that 'no performers, conductors, or even publishers will now be needed'—and all for the sake of a new and expensive 'toy' for second rate composers 'incapable of anything better.'⁵²

Due to such hostility towards electronic music in Britain, the Radiophonic Workshop was founded with the provision that it was to have nothing to do with the domain of the

⁴⁶ Wade, *Blue Veils and Golden Sands*, BBC Radio Radio 7.

⁴⁷ 'Reeling & Writhing', *Standing Wave: Delia Derbyshire in the 1960s*, website.

⁴⁸ Candlish, *The Development Of Resources For Electronic Music In The UK, With Particular Reference To The Bids To Establish A National Studio*, 19.

⁴⁹ *Ibid*, 112.

⁵⁰ Niebur, *Special Sound: The Creation and Legacy of the BBC Radiophonic Workshop*, 39-48.

⁵¹ *Ibid*, 44.

⁵² Brindle, 'The Lunatic Fringe: I. Concrete Music', 246.

BBC's Music department: music. As already mentioned, Derbyshire spoke of how Radiophonic Workshop staff were made very aware that they 'weren't supposed to be doing music' there, and so the solution to the problem of naming what they were supposed to be doing was to call it 'special sound.'⁵³ The adjective 'special' was a concession to the potential for the electronic medium to be like music,—musical, perhaps, but not quite music. It referred to the ambiguity between music and sound effect, rather than granting it status as music proper. The circumstances of the Workshop's creation also reflect how it was first considered to function more as a studio for sound effects than music. I will discuss in the first chapter how the main impetus to set up the Workshop came from the BBC's drama department, where some producers had an interest in experimental radio and saw a need for unusual sound effects for their productions. One producer in particular, Douglas Cleverdon, became interested in the *musique concrète* of Pierre Schaeffer of the GRM studio in Paris, because his primary techniques revolved around altering recordings of traditionally non-musical sounds, lending themselves to novel methods of creating sound effects for surreal radio productions.⁵⁴ The British alignment with the French School reflects a perception that electronic music was not an autonomous art-form in its own right but rather one that was only worth exploring as long as it could be situated as a subsidiary of another medium. I will discuss in the first chapter how this situation gradually changed throughout the 1960s after the success of the *Doctor Who* theme led to an increasing demand for similarly melodic pieces. Many found it easier to identify such work as music, but little had really changed for those who worked there: the underlying reasoning remained that the studio was not there to pursue the composition of electronic music as a discrete form that existed in its own right apart from radio and television.

Within the context of narrative, the phrase 'special sound' connoted that electronic sound functioned to provide an insight into equally 'special' psychological states: warped, distorted, echoing versions of familiar sounds were designed to convey a sense of reality gone awry. In other words, special sound was a dramatic device called upon to signify otherness or exoticism. This was not a unique use of electronic sound but the development of an already established link with such themes. Producers of American Cold-War-era cinema had already set the precedent: Herrmann's soundtrack for Hitchcock's *Spellbound* (1945), for instance, contained an eerie Theremin motif to denote the Freudian neurosis of the main character.⁵⁵ The technological associations of electronic sound also came to be strongly associated with

⁵³ Niebur, 66.

⁵⁴ *Ibid.*, 3-34.

⁵⁵ Hitchcock, *Spellbound*.

the sci-fi genre, with the Barrons' soundtrack to *Forbidden Planet* (1956) providing one of the earliest enduring examples.⁵⁶ Here the association is not as simple as merely using the sounds made by electronic technology to represent the theme of scientific and technological development. They were also used in relation to what Timothy D. Taylor describes as 'ambivalence and anxiety' over the effects of such developments upon human agency.⁵⁷ He suggests that the presence of electronic sound as an element of sci-fi cinema 'articulated the linked themes of anxiety and hope' surrounding the accelerated speed of technological progress during the twentieth century, and he observes that such advanced technologies were regarded as alien, 'exotic' and 'other' than human, especially where they served to take humans into unknown and alien territories, as with space travel.⁵⁸

Taylor further suggests that 'ambivalence and anxiety' in reaction to technological developments manifested as worries over the disruption and diminishing of human agency involved in musical composition.⁵⁹ He writes that the reaction of some to this anxiety was the invention of musical techniques and systems that seemingly extended control, such as the heavy use of serialism in electronic music.⁶⁰ This was not the case for the BBC: for it, the technologies of electronic music were so disruptive to the notion of human agency in its composition that it could not even be described as music, and its practitioners not described as composers. Such negations are not necessarily destructive in themselves; many contemporary artists in different mediums have rejected traditional terminology as inadequate or limiting. In a similar way, the notion of 'special sound' inadvertently detached electronic music at the Radiophonic Workshop from musical tradition. However, those at the BBC who refused to identify the Radiophonic Workshop as a space for musical composition were not driven by aesthetic radicalism, but by an underlying conservatism. The creation of such a space would require them to support a new and risky medium that, for some, represented a threat to British musicians and musical culture.

1.5 Populist Modernism and Public Service Broadcasting

It was not just technological disruption that led to problems in defining the work of the Radiophonic Workshop. Other factors can be found in the structural and stylistic qualities that

⁵⁶ Wilcox, *Forbidden Planet*.

⁵⁷ Taylor, *Strange Sounds: Music, Technology & Culture*, 72.

⁵⁸ Ibid.

⁵⁹ Ibid.

⁶⁰ Ibid.

followed from its attachment to public service broadcasting. Abstracted from their original contexts on radio and television, individual pieces lack structural integrity because they are only fragments produced to fill the thirty-second slots allocated for theme tunes, to sit in backgrounds as incidental music, or to function as sound effects. The stylistic quality of music by the Radiophonic Workshop is similarly problematic to categorise. Louis Niebur reflects the combination of modernist progressivism and familiar tonal music that developed at the BBC by using the hybrid term ‘populist modernism’.⁶¹ He suggests that, for some, this quality may imply a ‘watered-down’, lesser version of modernism, but he argues that it should instead be considered differently, as the offering of ‘modern’, progressive and challenging music within the context of its consumption.⁶²

The term ‘populist modernism’ is useful, and it also raises larger questions about how any music considered to have the quality of the modern can ever be anything but modern in context. Perhaps the real conflict between the two terms ‘populism’ and ‘modernism’ lies in the often uncritical use of the latter term to infer that music can be considered modern regardless of context. For instance, in the ‘Prelude’ to his *Modern Music: A Concise History From Debussy To Boulez*, Paul Griffiths reflects this tendency to suggest that the ‘modern’ exists apart from historical time when he writes, ‘in the context of the arts, “modern” implies more about aesthetics and technique than about chronology.’⁶³ Seth Kim-Cohen argues that the word modernism in particular is often used to imply a heavy emphasis on the value of autonomy from social context and function.⁶⁴ In his 2009 book *In the Blink Of An Ear: Towards a Non-Cochlear Art*, he explores how the discourses that have grown up around the sonic arts and electronic music have largely absorbed and privileged this notion of autonomy from modernist aesthetics. The phenomenon can be linked to the early techniques developed in these mediums, based around gathering material by isolating sound from context through recording, in order to listen ‘blindly’ to sound ‘in-itself.’⁶⁵ In other words, the autonomy of sounds and music is highly valued in those discourses, following a call to forget what other sensory or textual associations sounds conjure in our minds, emphasising and valorising medium-specificity rather than exploring the interrelation of media. This line of enquiry also specifically affirms not only that the modern is different from media based in visual images or narrative but also that it departs from traditional music, which is based in visual notation

⁶¹ Niebur, 65-66.

⁶² Ibid.

⁶³ Griffiths, *Modern Music: A Concise History from Debussy to Boulez*, 7.

⁶⁴ Kim-Cohen, *In The Blink Of An Ear: Towards A Non-Cochlear Art*.

⁶⁵ Ibid, 12.

rather than starting from the sound in-itself. I argue that populist modernism sits in a paradoxical relation to the individual terms of modernism and populism, and not just because modernism sits atop what Andreas Huyssen once referred to as the ‘great divide’ between high and popular culture⁶⁶ and what Leigh Landy more recently categorised as ‘the “no mans land” that lies between E-Musik and U-Musik (the high art/serious and the commercial/popular)’ in electronic music.⁶⁷ Considering something ‘modern in context’ is not simply a compromise, or a watering-down that turns ‘high art/serious’ music into a more ‘commercial/popular’ form. It involves disregarding deeply embedded assumptions that listening in electronic music is an exercise that is separate or rarefied from other sensory perceptions, cognitive processes, and considerations of culture.

The division between popular culture and high art is significant here because it had a determining impact on the structure of the BBC and played a significant role in the development of the Radiophonic Workshop. It manifested materially in the BBC’s streamlining of high, middle and lowbrow content into three different radio networks during the 1940s. This differentiation stemmed from its interpretation of its public-service duties. With its running costs levied from a license fee, rather than the alternative of selling slots to advertisers,⁶⁸ the airwaves were considered as ‘public property; and the right to use them for any purpose should be subject to the safeguards necessary to protect the public interest in the future.’⁶⁹ Its first director general, Lord Reith, set out a clear definition of how the ‘public interest’ should be best safeguarded in this way: ‘As we conceive it, our responsibility is to carry into the greatest possible number of homes everything that is best in every department of human knowledge, endeavour, or achievement.’⁷⁰ Reith’s main principles were simple, but as Georgina Borne points out, his vision was ‘underpinned’ by a ‘heady ideological brew’ that resulted in a set of assumptions about what the ‘best’ meant.⁷¹ For Reith’s BBC, it translated to a commitment to provide broadcasting that would inform and educate rather than only entertaining in the way that commercially driven broadcasters often did. He considered it a ‘prostitution’ of radio’s powers and ‘an insult to the character and intelligence of the people’ to ‘have exploited so great a scientific invention for the purpose and pursuit of

⁶⁶ Huyssen, *After the Great Divide: Modernism, Mass Culture, Postmodernism*.

⁶⁷ Landy, *Understanding The Art Of Sound Organisation*, 2.

⁶⁸ Scannell and Cardiff, *A Social History of Broadcasting: 1929-1939 Serving the Nation, Volume 1*, 5.

⁶⁹ *Ibid*, 6.

⁷⁰ Reith cited in Briggs, *The BBC: The First Fifty Years*, 55.

⁷¹ Born, *Uncertain Vision: Birt, Dyke and the Reinvention of the BBC*, 28.

entertainment alone.⁷² In order to fulfil its educational potential in accordance with its service duties, therefore, the provision of art and culture that would be new, unfamiliar and even unwanted to many was central. It meant bringing people content they may never have encountered and providing listeners with unpopular programmes for which there was no pre-existing demand. In Reith's opinion: 'He who prides himself on giving what he thinks the public wants is often creating a fictitious demand for lower standards which he himself will then satisfy.'⁷³ Jenny Doctor has shown how the BBC's Music Department repeatedly broadcast what was often called 'Ultra Modern Music,' despite a deeply negative response from a large portion of its audience. There was an underlying belief that the only reason they did not appreciate music by Schoenberg or Stravinsky was because they had never heard it before.⁷⁴ The BBC's commitment to this principle of maintaining 'standards', therefore, resulted in the eventual streamlining of output into various levels of 'difficulty' with the polarising of 'serious' and 'popular' forms into high-, middle- and low-brow.⁷⁵ The Third Programme radio network was eventually established as a special radio channel to allow more broadcasting time for the former, while the Home and Light Services were designated outlets for the latter two respectively.⁷⁶ The Radiophonic Workshop, then, existed as a result of the BBC's ideological commitment to providing listeners with a taste of the 'Ultra Modern', initially providing unusual 'special' sound effects for experimental radio programmes produced for the Third Programme, before moving onto more tonal musical items that nonetheless retained some representation of the modern and contemporary through the timbres and techniques of electronic sound.

The BBC's policies stemmed from the construction of a hierarchy of cultural 'standards', based on a material division of high art and popular culture in its output. While this division was highly problematic, it was driven by an underlying commitment to removing social and cultural divisions through broadcasting, making class a less determining factor for cultural education. The Radiophonic Workshop's innovative aesthetic of 'populist modernism' was one inadvertent result of the BBC's structuring in this way. In her discussion of the concept of the musical 'work' and autonomy, Lydia Goehr argues that when musicians tend towards 'the assimilation of alien concepts into a given type of music,' such as the

⁷² Reith cited in Briggs, 55.

⁷³ Reith cited in Scannell and Cardiff, 6.

⁷⁴ Doctor, *The BBC and Ultra Modern Music 1922-1936: Shaping a Nation's Tastes*.

⁷⁵ See: Carpenter and Doctor, *The Envy Of The World: Fifty Years Of The BBC Third Programme And Radio 3*.

⁷⁶ Ibid.

concept of autonomy into music that is not within the Western European classical tradition, the result is ‘sometimes a healthy blurring of the boundaries between different types of music, a blurring that can be fostered by conceptual migration.’⁷⁷ This process can lead to ‘new and interesting musical styles,’⁷⁸ which can be seen in the use of electronic sound associated with high modernism to create popular music for broadcasting at the Radiophonic Workshop.

While blurring of boundaries can be productive in the creative arts, it also leads to problems of categorising and discussing such music academically. Goehr’s remark that where there are such problems, ‘the mainstream [...] will simply pretend that the music does not exist’⁷⁹ is certainly evident with Derbyshire and the Radiophonic Workshop generally, whose music has been largely underrepresented both commercially and academically. The first academic research into the Radiophonic Workshop was only published in 2010 by Louis Niebur, with an article on Derbyshire by David Butler later appearing in 2014;⁸⁰ most of the thousands of tapes of music by the Workshop reside in a section of the BBC Archive that is not publicly accessible; after six years at the University of Manchester, attempts to commercially release tapes of Derbyshire’s freelance music have been slowed down by copyright problems. There are, however, a few tentative signifiers of institutional approval: a 2008 entry in *Grove Music Online*;⁸¹ a significant discussion in Louis Niebur’s 2010 book; the establishment of an annual British Arts Council Funded ‘Delia Derbyshire Day’ event to celebrate her work in 2013;⁸² and the care of her archive at the University of Manchester from 2008. In contrast to her problematic relation to academia and institutions, her reputation has spread online, and she has gathered a sizeable reputation in popular culture for her work in synthesis and experimental electronic music; she even has her own *Wiki* website.⁸³ Contrasting awareness online perhaps demonstrates the increased democratisation of knowledge there, with more cultural space for more kinds of creativity to be valued than in traditional publishing outlets, such as the very national broadcasting institution that Derbyshire worked for. Thus, this thesis contributes research to a knowledge and awareness of her work that has only grown over recent years in the context of a digital culture that

⁷⁷ Goehr, *The Imaginary Museum of Musical Works*, 252.

⁷⁸ *Ibid*, 253.

⁷⁹ *Ibid*, 265.

⁸⁰ Butler, ‘“Way Out of This World!” Delia Derbyshire, *Doctor Who* and the British Public’s Awareness of Electronic Music in the 1960s’.

⁸¹ Hutton, ‘Derbyshire, Delia’.

⁸² Church, ‘Delia Derbyshire Day’, website.

⁸³ Guy, *Wikidelia*.

Derbyshire herself would not recognise, but one in which there is nonetheless more space for a wider range of creative activity considered to be of academic interest.

2 Aesthetics and Techniques

2.1 Introduction

In this chapter, I will explore the cultural and technological context surrounding Derbyshire's work at the Radiophonic Workshop during the 1960s. First I will discuss how the aesthetics and techniques of the BBC Radiophonic Workshop developed in response to both experimental broadcasting and continental electronic music. I have already discussed how the Radiophonic Workshop is typically included in academic histories of electronic music as an outsider because it made functional music for broadcasting, rather than music for its own sake. However, I argue here that the development of electronic music throughout the twentieth century was intimately connected with other media, particularly broadcasting. There were many shared concerns regarding the concepts of modernity, autonomy and medium-specificity that crossed various mediums, including both broadcasting and music, and those concerns equally had a direct impact on the development of the Radiophonic Workshop. Thus, while the Workshop certainly was unique for its particularly populist position in public service broadcasting, I stress that it was not at all unique in its interdependence with another medium.

The second focus of the chapter is on research material relating to the techniques and technologies adopted from continental European electronic music studios that Derbyshire used at the Radiophonic Workshop. It should be stressed here that my discussion of those musical and technological developments is focused on the British adaptation (or perhaps misinterpretation) of them. Specifically, written material from throughout the 1960s shows that electronic music was often written about in Britain as if it were divided into two distinct geographically determined schools, based in Paris and Cologne. The perception of this split between two ideologies was very influential in the development of a British interpretation of the medium. Firstly, German *Elektronische Musik* was presented as an example of electronic music composed as part of the historical lineage of notated music performed by orchestral instruments. Secondly, Parisian *musique concrète* was perceived as having a more experimental bias, with a greater emphasis on its differences from the Western classical tradition. As the Radiophonic Workshop moved away from making sound effects in the early 1960s and towards theme tunes and incidental music, their techniques shifted from the latter to the former, requiring a technological progression away from hands-on trial-and-error experimentation towards more precise working methods. I argue that the BBC's admission that music could be made at the Radiophonic Workshop, along with the addition of newer and more advanced technology was not, as it may seem, a sign that the perception or appreciation

of the electronic medium had particularly improved at the BBC. Specifically, in the early 1970s new synthesiser technology was not introduced for the purpose of further exploration and expansion of electronic music; on the contrary, it constrained the medium to become more like the already accepted conception of musical composition. Its use in this way was not inherent to the synthesiser itself but linked to the long-standing conservatism that had undermined the development of the Radiophonic Workshop at the BBC since the 1950s. As Derbyshire stated, ‘what I thought was a problem with synthesisers was in fact a problem with people using them and that they’re much more flexible than how people use them.’⁸⁴ Her exploratory methods were at odds with the BBC’s underlying assumptions about technological development as a way of increasing efficiency in the production process. The added emphasis on efficiency during this time created an increasingly pressured atmosphere at the Radiophonic Workshop during the early 1970s; and along with her colleagues John Baker and Brian Hodgson, Derbyshire resigned around this time.

2.2 Radiophonics and Experimental Radio

With no centres specifically for the creation of electronic music in Britain until well into the 1960s, institutional support for the medium initially only emerged during the mid-1950s because of a demand from BBC radio drama producers for unusual sound effects. Louis Niebur writes: ‘the original drive to create an electronic studio at the BBC would come not from their Music Department, but rather from the Drama and Features Departments.’⁸⁵ Not only was there little interest at the corporation in the exploration of electronic music in its own right but also its music departments ‘were decidedly against having any electronic studio associated with the BBC, for both practical and philosophical reasons’.⁸⁶ They argued that it would be a threat to British musical tradition, the invasion of a foreign (specifically German) culture, and stated their opposition to it as ‘guardianship of rational development of musical aesthetics in this country.’⁸⁷ Therefore, in Britain, electronic music’s only equivalent to a national studio was confined to serving radio and television rather than developing in its own right. As already discussed, the Workshop’s subsidiary status is often presented as an aberration in academic histories of electronic music; as Seth Kim-Cohen suggests, a modernist emphasis on autonomy is a very important part of the medium’s subsequent

⁸⁴ Derbyshire to Hutton, ‘Radiophonic Ladies’.

⁸⁵ Niebur, *Special Sound: The Creation and Legacy of the BBC Radiophonic Workshop*, 5.

⁸⁶ *Ibid*, 34.

⁸⁷ *Ibid*, 44.

development.⁸⁸ Therefore, until recently, the workshop's overt lack of autonomy and deference to broadcast mediums has been invariably portrayed unfavourably in contrast with studios dedicated to autonomous composition. However, a brief examination of the experimentation occurring in sound broadcasting will show that there was a convergence between some strands of broadcasting and what Manning calls 'serious composition,' with similar concepts and techniques determining both. For a relatively short time, then, broadcasting offered a productive context for experimentation with electronic sound and music, within which the Radiophonic Workshop developed its unique aesthetic of populist modernism.

Mark Cory suggests that, in its early days during the first half of the twentieth century, broadcast radio was an inherently experimental medium. He writes: 'in every country, [...] radio in its earliest years was synonymous with experimentation.'⁸⁹ Without already established ways of using radio, producers necessarily had to experiment with formats and techniques. Allen Weiss points out that it is difficult to reduce the development of the medium to a single history because of the rapid proliferation of broadcasters occurring globally from the 1920s. Instead, he finds 'multiple and contradictory histories of radiophony.'⁹⁰ The newness of the medium, the rapid expansion of the industry, and the rapidity of technological development meant that 'every broadcast was an experiment, every production an attempt to improve the quality of the sound, to find ways to balance music, sound effects, and voice, to create and enhance illusion.'⁹¹ Analogous to cinema, practitioners and theorists all over the world responded to what they saw as the potential for radio to open up new territories in art and culture because it demanded the creation of an art form on the particular terms of the technological reproduction of sound. This new art of sound couldn't necessarily be described as music because it was still very much forged in language, literature, and drama, but due to its aural nature, its discourse began to resemble that around music, with an emphasis on rhythm, pitch, repetition and sound colour. Its identification as a new hybrid form, determined more by radio's particular qualities as a way of reproducing sound than by any one medium in particular, is reflected in its title, with the loosely defined aesthetics of radio art coming to be associated with the term 'radiophonics.' French radio pioneer Paul Deharme's 1928 *Proposition for a Radiophonic Art* is a very early example of an attempt to formalise radio's medium-specificity as a 'truly new form of expression' in both

⁸⁸ Kim-Cohen, *In The Blink Of An Ear: Towards A Non-Cochlear Art*.

⁸⁹ Cory, 'Soundplay: The Polyphonous Tradition of German Radio Art', 333.

⁹⁰ Weiss, *Experimental Sound and Radio*, 1.

⁹¹ Cory, 333.

theory and practice.⁹² Eight years later, art critic Rudolf Arnheim published the often-cited *Radio: An Art of Sound*.⁹³ This is a theoretical examination of the social and political implications of the technology written ‘in praise of blindness,’⁹⁴ in which Arnheim proclaims the ‘exciting possibility of making an amazing new unity’⁹⁵ from sounds, music and words, where the absence of visual images is taken as its strength. Weimar Germany provided some of the best early examples of these ideas put into practice, with its distinctive ‘Hörspiel.’⁹⁶ While much of the discourse surrounding the medium focused on its rarification of aurality, it was a filmmaker that produced some of the most notable examples during this time in Germany. In 1927–8, Walter Ruttmann used cinematic montage techniques with recorded sounds to produce his ‘acoustical films’ *Berlin—Symphony of a Great City* and *Wochenende (Weekend)*.⁹⁷ While experimental radio was, by its very nature, made from sound, Ruttmann’s work exemplifies how radiophonic aesthetics were concerned with sounds that were both abstract in themselves and also had the ability to convey visual images and ideas in the minds of the listener. It is also important to note that the radiophonic medium played an important part in the early development of Pierre Schaeffer’s ideas about sound abstraction within *musique concrète*; these will be discussed later in the chapter.⁹⁸ For the producers of experimental radio, technology could be used to imbue sounds with autonomy, separating them from their usual meanings and associations. Significantly, that autonomy was not simply a way to create a purely sonic art, but a phenomenon that created new possibilities for experimentation with its relation to both image and language.

At the BBC, a contemporary interest in the autonomy of sound was intertwined with ideas about the autonomy of the artist from society. The latter materialised in the moral philosophy of the BBC to lead, rather than follow, public tastes. Paradoxically, the public service mandate contained the dual assumption that writers working within the institution should at once stand apart from society in order to lead with what they make, but also that in doing so they should be motivated by social responsibility. Some producers, such as Tyrone Guthrie, felt that without the need to satisfy advertisers or compete with those who did, they

⁹² Deharme, ‘Proposition for a Radiophonic Art’, 403.

⁹³ Arnheim, *Radio*.

⁹⁴ *Ibid.*, 176.

⁹⁵ *Ibid.*

⁹⁶ Cory.

⁹⁷ Ruttmann, *Weekend*, CD.

⁹⁸ Dack, ‘Pierre Schaeffer and the Significance of Radiophonic Art’.

were free to pursue greater experimentation.⁹⁹ However, the liberation from commercial pressure that allowed greater experimentation was offset by the fact that it was motivated by a belief in moral responsibility to provide audience enlightenment:

in Great Britain at all events, it [radio] is free from the anxieties of commercial competition. As a result of this the BBC has subordinated the question of Popular Appeal to a Principle of Moral Philosophy; but has, none the less [*sic*], been moderately adventurous and quite encouraging to technical experiment.¹⁰⁰

Angela Frattarola argues that the BBC's early experimental radio output not only shares qualities with modernism's emphasis on formal artistic innovations but also is 'a neglected part of the modernist movement.'¹⁰¹ As she suggests, modernism's relation with mass media is traditionally seen as being an antagonistic one, but the 'Moral Philosophy' of the BBC overcame this by defining an apparent common enemy in the form of mainstream culture's increasingly industrial commodification. The very etymology of avant-gardism and the Reithian philosophy of public service broadcasting share a fundamental imperative that cultural producers have an assumed authority to lead society, in contrast to the commercially driven model of supply and demand. When Derbyshire said that her aim was to expose the 'man in the street' to new sounds without upsetting him, she was expressing a similar belief in the idea that artistic experimentation could serve a genuinely useful purpose in society, rather existing simply for personal gratification.

There was far-reaching precedent for technological experimentation with sound in BBC radio. Even thirty years before the establishment of the Radiophonic Workshop, engineers there developed a technological response to enable greater experiment with sound in radio drama with 'the dramatic control panel.'¹⁰² Before its introduction, programmes could only be recorded live from a single studio, making sound effects difficult. This piece of equipment was designed to make highly stylised sound on the radio a practical possibility, giving producers the ability to cut, mix, fade, wipe and superimpose between different studios, all from a single control panel.¹⁰³ Lance Sieveking wrote several plays that were all made possible by the dramatic control panel, and the complex manipulation of sound it

⁹⁹ Guthrie cited in Rodger, *Radio Drama*, 22.

¹⁰⁰ Ibid.

¹⁰¹ Frattarola, 'The Modernist "Microphone Play": Listening in the Dark to the BBC', 450.

¹⁰² Niebur, *Special Sound: The Creation and Legacy of the BBC Radiophonic Workshop*.

¹⁰³ Ibid.

allowed led him to compare it to a musical instrument: ‘My fingers knew well enough, even if my head did not. Just as they do on the piano or ‘cello. Without conscious reading the directions on my script I faded the tiny football matches out off the horizon, and wiped the narrator off the map with the singer, and then cut the music off sharply. Now play it, play, *play* the instrument if ever you did anything in your life.’¹⁰⁴ Importantly, his work, and his relation to the dramatic control panel, emphasise the links between sound, music, technology and language that were consistently central to the direction of work at the Radiophonic Workshop. As Sieveking’s account shows, it wasn’t just that sound broadcasting could become a more complex literary form with the aid of new technology. He conceived of experimental radio as a medium that went beyond the sequential nature of narrative to take on some of the more oblique spatial and temporal qualities of music. Tyrone Guthrie also wrote of radio drama using explicitly musical terminology, suggesting that instead of just trying to give the listener a ‘series of mind pictures,’ radio drama should ‘explore the purely symphonic possibilities of the medium; to make more use of rhythm in the writing and speaking; more deliberate use of contrasting vocal colour, changing tempo, varying pitch.’¹⁰⁵ Here, music appears to represent a quality that allows the artist to ‘express what cannot be rationally articulated’¹⁰⁶ in any medium. For Frattarola, it is a similarly vague notion of music, stretching beyond the boundaries of a single medium, which gives early BBC radio drama an affinity with canonic modernist literary figures such as Joyce and Woolf. With their emphasis on the formal characteristics of language, its ability to access emotions outside the rational is emphasised as much as its communication of narrative.¹⁰⁷ A seemingly unlikely link between modernist aesthetics, experimental electronic music, and British public service broadcasting was forged early on in the BBC’s history, and this link is integral to understanding the later developments at the Radiophonic Workshop.

2.3 Electronic Music And BBC Radiophonics

The BBC Radiophonic Workshop was established in order to supply sound for experimental radio programmes. The Workshop moved away from experimental radio during the early 1960s in order to provide more musical themes for television programmes, but there was still a small demand for experimental radio during this time. One producer in particular, Douglas

¹⁰⁴ Sieveking cited in Drakakis, *British Radio Drama*, 6.

¹⁰⁵ Guthrie cited in Rodger, *Radio Drama*, 22.

¹⁰⁶ Ibid.

¹⁰⁷ Frattarola, ‘The Modernist “Microphone Play”’: Listening in the Dark to the BBC’, 450.

Cleverdon, became interested in the *musique concrète* of Pierre Schaeffer during the late 1950s, because his primary techniques revolved around altering recordings of traditionally non-musical sounds—something that naturally lent itself to potentially novel methods of creating sound effects for surreal productions.¹⁰⁸ While various reports regarding the establishment of the Workshop contain large amounts of information about the facilities and techniques used in studios other than Schaeffer's set-up at French National Broadcasting in Paris, the GRM, Niebur concludes that ultimately 'the British chose to ally themselves with the French School of *musique concrète*.'¹⁰⁹ The British alignment with the French 'School,' as Niebur puts it, reflects a perception there that electronic music was not an autonomous art-form in its own right but one that was only worth exploring as long as it could be employed as a subsidiary of another medium such as sound broadcasting. Other methods of exploring the electronic music medium, specifically those associated in Britain with the Cologne studio at the German National Broadcast Service, the WDR, could not be so easily appropriated for the purpose and thus were not pursued or supported as much.

While *musique concrète* sat on one end of a spectrum in the collective imagination of British listeners in the 1950s and 60s — as borderline sound-effects because of the real-world connotations of its sound sources — the German 'School' sat at the other end of the spectrum, consisting of sounds so 'abstract' that they were deemed incomprehensible and inhuman. British listeners and producers of electronic music certainly seemed to perceive a binary opposition between two main 'schools' of electronic music, and Niebur's research also suggests that 'the subject was widely discussed and debated in the media.'¹¹⁰ A preliminary 'historical outline' written in 1957 before the institution of the Radiophonic Workshop summarises the aesthetics of two 'movements in Cologne and Paris,'¹¹¹ with their primary difference located in the origin of the sounds used. It states that *musique concrète* 'comes from acoustics rather than from any electronic generator.'¹¹² The latter, then, remained the domain of 'electronic music', which was 'entirely concerned with artificial i.e. electronic manufacture of sounds built up from sine wave forms' with 'no orchestral instruments of acoustics [sic] noises.'¹¹³ In his 1960 book, *Musique Concrete and Electronische Musik*, F.C.

¹⁰⁸ Niebur., 17.

¹⁰⁹ Ibid., 20.

¹¹⁰ Niebur, *Special Sound: Electronic Music in Britain and the Creation of the BBC's Radiophonic Workshop*, 40.

¹¹¹ 'A Report on Radiophonic Music at the Features Department Conference 1957', BBC Written Archives Centre.

¹¹² Ibid.

Judd warns against confusion between the two: ‘Musique Concrète is often confused with electronic music, which originated in Germany and which is concerned with the electronic manufacture of sounds built up from basic forces.’¹¹⁴ In contrast, ‘Musique Concrète makes use of real *everyday sounds* which are modified by tape manipulation and electronic treatment.’¹¹⁵ He summarises by emphasising the notion of two conflicting aesthetics: ‘electronic music and Musique Concrete [sic] composers have differing ideas as to composition, creation and interpretation. There are conflicting opinions, too, as to whether concrete [sic] sounds only should be used or whether both electronic and concrete sounds should be combined.’¹¹⁶

Whether a reflection of reality or an exaggeration, this perception of a split between two opposing schools of electronic music now appears integral to the way that the medium developed in Britain at the BBC. I will show how, in the first instance, it proved to be very limiting for those interested in pursuing experimentation with electronic sounds, as the BBC studio chose to ‘ally’ itself with one—the French—over the other, thus arbitrarily limiting the kind of work that was undertaken for several years. The ambiguity over musique concrète’s status as music in Britain is perhaps illustrated by the historical developments that unfolded from the early 1960s: during this time, the workshop was called upon for more melodic, tonally centred items such as theme tunes, and started to use more electronic sound in combination with concrète sources. Thus, as the Radiophonic Workshop moved away from its original role as sound-effect producer, towards something that was more easily recognised as music for many, it also moved away from its musique concrète origins. Derbyshire was central to this development, combining electronic synthesis and concrète recording, blending intuitive and analytical approaches, and helping to shift the popular perception of electronic music away from its image as clinical and inhuman, towards a more accepted and popular form. Below I will briefly clarify how the aesthetics and techniques of what were perceived in Britain as the two ‘schools’ of electronic music affected musical composition at the Radiophonic Workshop.

2.3.1 Musique Concrète and Bricolage

Originated by French radio engineer and musician Pierre Schaeffer in the late-1940s, musique concrète was appropriated by the Radiophonic Workshop as a novel method of making sound

¹¹³ Ibid.

¹¹⁴ Judd, *Electronic Music and Musique Concrete*, 69.

¹¹⁵ Ibid.

¹¹⁶ Ibid., 71.

effects. As already discussed, it offered British radio drama producers such as Cleverdon an appropriate set of techniques for this purpose because it was primarily developed from the creative use of traditionally non-musical sounds such as field recordings. Schaeffer's notion of the 'concrète'¹¹⁷ was much more abstract than the British adaptation of it in this way. Rather than dismissing this adaptation as simple misinterpretation, it is more useful to consider how Schaeffer's initial concept, with its many nuances and ambiguities, evolved and operated within British popular culture. Schaeffer explained that he used the term 'concrète'¹¹⁸ to denote the corporeal, objective quality of sounds, their 'matter',¹¹⁹ rather than associating them with their implied causes, as may be the case with sound effects in drama. However, this did not make his work at odds with the role of sound effects within experimental radio drama: quite the contrary. Schaeffer's notion of the concrète very much relates to key ideas in experimental sound broadcasting about the abstract, musical dimension of any sound when contextualised and organised as such:

I have coined the term *Musique Concrète* for this commitment to compose with materials taken from 'given' experimental sound in order to emphasise our dependence, no longer on preconceived sound abstractions, but on sound fragments that exist in reality and that are considered as discrete and complete sound objects, even if and above all when they do not fit in with the elementary definitions of music theory.¹²⁰

While he related the idea of the concrète explicitly to music, his application of the term to the medium presupposed questioning its 'elementary definitions' and implied a shift in the boundaries between musical and non-musical sound. The Radiophonic Workshop's term 'special sound,' already discussed, reflected a similar ambiguity in the differences between the two, lying somewhere in between music and sound effect. However, while the British term 'special sound' suggested uncertainty about the musical status of *musique concrète*, Schaeffer's words suggest that the latter definitely was music, 'even if and above all' it was difficult for listeners to accept it as such. This can be seen as the primary difference between the 'concrète' and the British interpretation of the concept: the concrete.

Schaeffer's ideas had a large impact on working methods at the Radiophonic Workshop. His concept of the concrète in music directly related to an experimental approach

¹¹⁷ Schaeffer, *In Search of a Concrete Music*, 13.

¹¹⁸ Ibid.

¹¹⁹ Ibid.

¹²⁰ Ibid.

to techniques, technologies and musical composition. Specifically, for Schaeffer the ambiguity between music and sound manifested in the idea that musical sounds could be made from sources not intended for the purpose after recording, rather than musical instruments specially honed to produce them as ‘abstractions,’ distinct from ordinary everyday sounds. This idea led to an explicitly experimental way of working based around ‘bricolage’. Schaeffer used this term to designate the technique of sourcing musical material, not only from outside traditional musical instrumentation, but from whatever happened to be available in one’s environment. He described it as ‘the idea of improvising new uses for things originally meant for something else.’¹²¹ This meant that mundane, ‘everyday’ objects or situations could be recorded and given ‘new uses’ as new kinds of musical sounds. Schaeffer began his experiments with the idea of creating a ‘symphony of noises’ by collecting materials for creating sound effects, such as glasses, bells, wood, gongs and iron.¹²² Experimenting with recording them onto shellac discs, he used very basic techniques to disguise them. He wrote that removing the attack from a bell sound using a volume fader turns it into ‘an oboe sound’ and generalised the principle to suggest, ‘if I cut the sounds from their attacks, I get a different sound.’¹²³ Similarly, he noticed that playing a sound backwards ‘already doubles, at least a priori, the number of known instruments.’¹²⁴ Perhaps the most significant illustration of his ideas about listening can be found in his writing about how repetition of sounds seemed to transform them. His first composition, *Etude Aux Chemins de fer*¹²⁵ (1948) was composed from disc recordings of sounds made by steam trains. He did not use techniques to disguise the sounds, instead leaving them recognisable and repeating them using a locked groove, writing that ‘repeating it makes you forget it’s a train.’¹²⁶ His use of repetition to change sounds from non-musical to musical sounds emphasises how Schaeffer saw electronic technology: not as directly transformative in itself, but as a way of placing listeners in a position where they are encouraged to ‘forget’ their preconceptions in order to listen to sounds in a way that they did not before. For Schaeffer, as with the Radiophonic Workshop, then, it was also explicitly electronic recording technology that enabled the right context for listening to sounds and music in a different way than previously. The shift did not

¹²¹ Schaeffer to Hodgkinson, ‘Interview’, *Recommended Records Quarterly Magazine*.

¹²² Schaeffer, *In Search of a Concrete Music*, 4.

¹²³ *Ibid.*, 9.

¹²⁴ *Ibid.*

¹²⁵ Schaffer, *L’Œuvre Musicale*, CD.

¹²⁶ Pierre Schaeffer, *In Search Of A Concrete Music*, 13.

have to be about changing the sounds themselves, but about shifting the position of the listener in relation to the sound.

Because of its experimental basis, Schaeffer suggested that *musique concrète* diverged from ‘ordinary music,’ which is ‘initially conceived in the mind, then notated theoretically and finally executed in an instrumental performance.’¹²⁷ In contrast, ‘an experimental method in music means *listening*’¹²⁸ and ‘relies on the instinctive ear’¹²⁹ as an ‘empirical’¹³⁰ approach beginning with hands-on practicality. This emphasis on the ‘instinctive ear’ translated into a technique of essentially playing with ‘pre-existing elements, taken from any sound material, noise, or musical sound’ and letting music develop from the results of experimentation.¹³¹ A piece of *musique concrète* begins ‘experimentally by direct montage, the result of a series of approximations.’¹³² Importantly for Schaeffer, *bricolage* meant an emphasis on intuition and listening: composition did not have to begin with ‘abstract’ systems such as traditional music theory, harmony or serialism, but with finding a music that was primarily sensual rather than intellectual: ‘a process that is shaped by the human, the human ear, and not the machine, the mathematical system.’¹³³ This idea suggests that result of the experiment is measured primarily in the surface sensory experience, which was very relevant to the concerns of the Radiophonic Workshop, creating music for a domestic broadcast audience, many of whom may not have been particularly interested or knowledgeable about the conceptual nuances of continental art music. As Louis Niebur writes, *bricolage* was also ‘particularly useful’ to the Radiophonic Workshop composers, short on money and time, who adapted the technique and made it central to their practices.¹³⁴ Schaeffer’s ideas can be interpreted as a kind of desire to find *jouissance* in the experience of sound, centring around the revision of preconceptions in both composer and listener, in order to access new ways of perceiving sounds. The composer works out of a childlike curiosity to play and discover sound and music anew, rather than crafting sounds into a preconceived structure as with traditionally notated music. However, the latter approach was not ruled out

¹²⁷ *Ibid.*, 25.

¹²⁸ *Ibid.*, 169.

¹²⁹ *Ibid.*

¹³⁰ *Ibid.*

¹³¹ *Ibid.*

¹³² *Ibid.*

¹³³ Schaeffer to Tim Hodgkinson, ‘Interview’.

¹³⁴ Niebur, *Special Sound: The Creation and Legacy of the BBC Radiophonic Workshop*, 24.

altogether, as Schaeffer explored the idea that *concrète* methods could be used to compose traditionally notated music, asking: ‘should these new concrete music materials, presuming they finally become more malleable, be incorporated into a musical form?’¹³⁵ He did not offer any definite conclusions on the matter, keeping the question open and writing that ‘classical music values still have meaning while at other times they no longer do.’¹³⁶ Thus, the significance of technological development in electronic music here is not in the specific actions, conveniences or artistic achievements that the new tools enable, but in the way that they disrupt accepted techniques and therefore encouraged producers to revise their preconceptions about the creative process.

2.3.2 Elektronische Musik

As already mentioned, the developments in Germany were initially deemed less relevant to the demands of the Radiophonic Workshop at the BBC, with the former having less practical use within drama productions. They were more of a collaborative effort than those in France, but they started around the same time with the work of figures such as Karlheinz Stockhausen, Herbert Eimert, and Pierre Boulez at the national radio station in Cologne. In contrast to *musique concrète*, electronic sound generators were used as the primary source of compositional material. They were deemed to expand control over musical composition because of the nature of what they produced: the sine tone. This was seen as the most pure, basic kind of sound, ready to be made into musical sounds: ‘they are, as it were, the simplest tones imaginable, elementary models.’¹³⁷ Herbert Eimert wrote that ‘all sound phenomena may be reduced to it.’¹³⁸ The sine tone is composed from only one frequency, in contrast to other sounds, which result from the combination of different frequencies. Their timbres and textures depend upon the combination of frequencies contained within each sound. Composers at Cologne based their techniques on the mathematical theories of Charles Fourier, who suggested that it was possible to distinguish the individual frequencies in complex sound waves. Conversely, this also meant that sounds could be constructed by adding together sine waves of different frequencies. By combining ‘sinus tones’ in different ways, the composer could control the perception of timbre, ‘the psychic reaction to a

¹³⁵ Ibid., 23.

¹³⁶ Ibid., 116.

¹³⁷ Koenig, ‘Studio Technique’, 52.

¹³⁸ Eimert, ‘What Is Electronic Music?’, 3.

mathematically described relationship of overtones'.¹³⁹ This was in contrast to traditional orchestral musical instruments, which were insufficient for continuing the serial tradition because they were 'like painter's tubes, delivering ready-made timbres.'¹⁴⁰ This idea also contrasted with musique concrète, because the sine tone was seen as already abstract in itself, without any need to reframe it in order to perceive it as such.

Timothy D. Taylor suggests that 'human agency in the face of technology' was an important issue for the musical aesthetics of Elektronische Musik.¹⁴¹ He writes: 'The Elektronische Musik musicians attempted to preserve control over the work by devising the most complicated and abstract modes of formal organisation ever.'¹⁴² With fewer restrictions based on live performance and traditional concert instruments, such methods can be contrasted with Schaeffer's adopted ideas about musique concrète because of their heavy emphasis on the use of pre-compositional systems (serial procedures) to decide the musical material in advance, before realising it in production. It provides an example of the classical values of the 'abstract' emphasis on the intellectual that Schaeffer contrasts with the concrète prioritising of the sensual. In this way, discussions around the aesthetics of their electronic music were focused less on the exploratory philosophical questions of listening and subjectivity that Schaeffer addressed, and instead on the technical aspects of compositional procedure.

Despite this ideological distance from the kind of experimentalism espoused by Schaeffer, available technologies could hardly offer the German composers the kind of accuracy needed to actually achieve what they set out to do in theory. As Eimert wrote, the available equipment was not particularly specialist: 'The composer's equipment consists of a sound generator, a loudspeaker, tape recorder and filter; all this apparatus is to be found in any well equipped radio station. No especially expensive equipment is required, as has been generally suggested.'¹⁴³ Koenig describes the potential problems with the method during the processes of creating a 'musical tone with a timbre' from combining five sine tones onto one piece of tape: 'in fact we do not have five generators in the studio, but only one. Thus we must help ourselves out by recording each of the five sinus tones separately and uniting them by the method of synchronisation.'¹⁴⁴ The mass of theoretical literature and the cultural

¹³⁹ Koenig, 53.

¹⁴⁰ Ibid.

¹⁴¹ Taylor, *Strange Sounds: Music, Technology & Culture*, 53.

¹⁴² Ibid.

¹⁴³ Eimert, 3.

positioning of the Cologne studio within a notation-based tradition does not reflect the amount of deeply manual labour involved—work that would not necessarily yield the expected results due to the limitations of technology and knowledge about psychoacoustics. Thus, another reason why the technique was not pursued as readily at the BBC was because it was so time-consuming. However, in practice the boundaries between the different ‘schools’ were less pronounced than may have been perceived in Britain at the time. In reality, electronic music studios were very limited to only a few techniques; differences between them came more from culturally specific interpretations and discourses around what were essentially the same methods.

2.3.3 Application of Aesthetics and Techniques at the BBC Radiophonic Workshop

Below I will provide more details about the particular application and development of the available electronic music techniques at the Radiophonic Workshop, based upon writings and reports on the subject at the time. Due to the position of the Workshop in broadcasting, working methods were made relatively transparent to the listening public, with pedagogical articles in magazines, newspapers and broadcast programmes detailing many elements of their methods. This transparency can be seen as integral to the Radiophonic Workshop’s music, placed as it was within public service broadcasting. Technology, with all its cultural associations of anxiety and hope about the future, was central to their audience’s perception of the musical texts they produced.

At the BBC, the application of electronic music aesthetics and techniques was directly related to the culture there: electronic sound was only accepted as a part of drama and not as music in its own right. I will show below that as views began to change, so did their techniques, and as electronic sound became more accepted as music rather than sound effect, a greater emphasis on electronic synthesis began to be seen, until it became the dominant technique in the mid-1970s with the adoption of the commercial synthesiser. Derbyshire had an important place in this development, helping to change the negative public perception of electronic music in Britain with an exploratory approach that challenged the perceived opposition between electronic synthesis and concrète collage techniques. She also blended the analytical techniques necessary to produce music using tape with her own, highly intuitive approach, which contrasted with electronic sound’s popular associations with inhuman, dystopian sci-fi imagery. Through appearances in national broadcast and print media, she became one of the most visible members of the Radiophonic Workshop, contributing to the

¹⁴⁴ Koenig, 52.

public discourse on electronic music. Despite her central role at the Workshop, she found her approach marginalised when the adoption of the commercial voltage-control synthesiser to increase efficiency at the Workshop displaced her favoured method of hands-on experimentation.

2.3.3.1 Splicing

All electronic music at this time rested primarily on the technique of tape splicing: cutting out sections of a length of tape in order to isolate, change, and combine particular segments of time in recordings. Importantly, the principle that inches corresponded to seconds could be applied to the rhythmic units of music, such as crotchets or quavers, with each unit of length equating to an amount of time calculated through bpm. Whole phrases could be constructed from pieces of tape correctly measured and joined together. For composers working in studios elsewhere, such as Paris or Cologne, tape splicing enabled them to work with tiny fractions of seconds, freeing musical composition from the traditional constraints of musical instrument performance. In contrast, the Radiophonic Workshop did not use the technique for this purpose, instead working out measurements to splice together conventional rhythmic units from recorded sounds.

The instructional writing of F.C. Judd explains the highly tactile nature of the process; he explains that finding the correct section of the tape is ‘best done by turning the tape spools by hand and moving the tape slowly past the tape heads. It is then quite easy to cut the tape accurately at the beginning and end of the actual sound.’¹⁴⁵ Alternatively, he suggests simply listening for the start of the sound, stopping the recorder as quickly as possible, and then marking the tape with a pencil. In this way, a time segment in a recording could be directly mapped into a location along a length of tape, with the placement of cuts onto tape manually selected by finding the two points along the tape where a segment began and ended. A splicing block was used in order to clamp the tape in place while actually cutting it, with some containing automatic blades for easier splicing.¹⁴⁶ Otherwise, separate, non-magnetised scissors or razor blades could be used. Brian Hodgson instructed: ‘You will need to hold the tape with a razor blade using a splicing block that holds the tape in a beveled channel.’¹⁴⁷ For more detailed splices, different angles of cut could be made to produce various speeds of attack or decay. For instance, a long angle provided a more gradual attack

¹⁴⁵ Judd, *Tape Recording For Everyone*, 76.

¹⁴⁶ Ibid.

¹⁴⁷ ‘Brian Hodgson 1967’, BBC Written Archives.

or decay than a right angle.¹⁴⁸ Once spliced, sounds were edited together into montages by joining the pieces of tape at their cuts with specialist sticky tape.¹⁴⁹

The special, tactile nature of splicing was very much emphasised in the Radiophonic Workshop's public image, perhaps as a way of making electronic music seem a less cerebral, abstract activity. As a young attractive woman, Delia Derbyshire provided a convenient face for this task, and she can be seen in archive footage from a 1965 episode of *Tomorrow's World* demonstrating the construction of a rhythm from the sounds of a woodblock and a zither. She explains 'all we have to do is cut the notes to the right length.'¹⁵⁰ According to Desmond Briscoe, the addition of jazz pianist John Baker, educated at the Royal Academy, to the Radiophonic Workshop in 1963 was significant because he developed standardised techniques to measure and splice together varied and syncopated rhythms as 'a swift way from the Royal Academy training and jazz techniques to electronic music.'¹⁵¹ He 'eventually worked out systems which are still know as "Baker techniques" to people here today.'¹⁵² Thus, from quite an early point in the 1960s, the Workshop's development of techniques and technologies was directed towards adapting electronic music to become more like already established methods of musical composition, rather than exploiting the new and unique way that measurements of musical time could be made through tape splicing.

2.3.3.2 Tape Loops

The specific potential of tape splicing to expand musical language was not utilised at the Radiophonic Workshop. However, the Workshop did embrace the ability of tape to easily produce musical repetition. In this way, the technology did have a great impact upon the music produced at the Radiophonic Workshop. The production of music with spliced tape as its primary medium naturally lent itself to repetition, and the sound of the mechanically repeating tape loop significantly determined the development of the Radiophonic Workshop's aesthetic. Making loops of tape by sticking two ends of a spliced length of tape together was a key technique because it meant that repetitive rhythms were relatively easy to construct. An article from *Electronics Weekly* explains: 'The production of rhythmic effects is important in

¹⁴⁸ Judd, *Electronic Music and Musique Concrète*, 58.

¹⁴⁹ *Ibid.*, 66-7.

¹⁵⁰ *Tomorrow's World*, BBC1.

¹⁵¹ Briscoe, *The BBC Radiophonic Workshop: The First 25-Years*, 80.

¹⁵² *Ibid.*

the Workshop, and interesting techniques have been developed. It may be done simply by recording the output of a loop of tape containing one unit of sound.¹⁵³

As mentioned earlier, repetition was important to Schaeffer's musical and philosophical development of *musique concrète* because, to him, it showed how a sound did not necessarily have to be altered in order to change the listener's perception of it. Repetition played a greater role in shaping the actual stylistic tendencies of the British studio, less as an ideological commitment to high modernism and more as a functional method to please a large audience. Schaeffer's observation was very relevant and useful to the Workshop's populist take on modernist aesthetics, with limited time and resources available to create variation in their work.

Convenience was not the only factor that made the technique central to the practices at the Radiophonic Workshop. Louis Niebur suggests that the development of the rhythmic tape loop was very important there because it was one of the techniques that allowed the Workshop to move from the more abstract sound effects of the late-1950s and towards theme tunes and interval signals that started to resemble pop music of the time.¹⁵⁴ Music of indeterminate length was needed for interval signals, which were used to fill gaps between programmes. Tape loops were useful because they could be used to compose pieces of music without closure, which could simply be faded out when needed. For instance, the use of Maddalena Fagandini's 1960 'Music for Party Political Conferences' was originally composed to introduce speakers during a series of televised political debates but was thereafter used as an interval signal.¹⁵⁵ It consisted of a simple two bar tonic-dominant ostinato repeated indefinitely.¹⁵⁶ Importantly, the link between the music of the Radiophonic Workshop and pop music was emphasised when the rights to the track were bought by George Martin in order to use it as a backing for a Shadows-style guitar melody renamed 'Time Beat.'¹⁵⁷ Another instance of commercial appropriation occurred when Brian Hodgson and Dick Mills composed a rhythmic backing for Ron Grainer's brass-band theme tune for the 1963 television documentary *Giants of Steam*.¹⁵⁸ This was also rerecorded for the purpose of a commercial single release on Decca, although it was never released in this form.¹⁵⁹

¹⁵³ 'Electronics Weekly', BBC Written Archives Centre.

¹⁵⁴ Niebur, *Special Sound: The Creation and Legacy of the BBC Radiophonic Workshop*, 83.

¹⁵⁵ *Ibid.*

¹⁵⁶ *BBC Radiophonic Workshop: A Retrospective*, CD.

¹⁵⁷ Niebur, 84.

¹⁵⁸ *Ibid.*, 93-6.

Finally, it was Derbyshire's theme tune to *Doctor Who*, discussed further in the next chapter, which became the most enduring example of a Radiophonic Workshop theme adopted into popular culture.

2.3.3.3 Speed Alterations

Altering the speed of a tape recorder could change the tempo of a piece, but it was also used to control musical pitch. Its use in this way contributed significantly to the Radiophonic Workshop's ability to produce tonally defined musical themes. A press statement from the opening of the Workshop suggests that pitch control was really the primary purpose of speed alteration: 'tape recorders are provided to change the pitch of a recording.'¹⁶⁰ As the Workshop moved further into tonal music during the 1960s, accurate speed control became more important, and adequate tape recorders for the purpose were eventually required.

As with splicing, the measurement of the length of tape was key because speed was measured in inches per second.¹⁶¹ Thus, playing a tape back at twice the speed it was recorded would double the speed of the recording, but it would also double the frequency, therefore raising the pitch up an octave. Tape recorders used in electronic music studios were often variable speed: their speeds could be continuously adjusted along a scale. They were relatively versatile in this way, and allowed speed alterations of many different fractions and multiples. Using the ratios of equal temperament to determine the speed of playback, one spliced recording could be used to create pitches from different kinds of scales. For instance, instead of doubling speed to produce an octave interval, it could be multiplied by 1.5 to get a fifth above, or divided by 3, each affecting the pitch to create different intervals.

As with tape splicing, John Baker is largely credited with bringing systemised methods to working out pitches from speed alterations. For this he notated music in order to 'go through his score recording all the different pitches of the notes he wanted.'¹⁶² Baker favoured the various uses of bottles to derive sounds in this way to write 'more or less conventional music but with unusual sound qualities.'¹⁶³ For instance, his theme tunes for the consumer television programme *Choice* and the radio comedy *Hard Luck Hall* consisted of sounds made by striking the open end of an empty bottle with the palm of the hand and the

¹⁵⁹ Ibid.

¹⁶⁰ Hardwick, 'BBC Press Service 'B.B.C. Opens Britain's First Radiophonic Workshop'', BBC Written Archives Centre.

¹⁶¹ Judd, *Tape Recording For Everyone*, 24.

¹⁶² Briscoe, 80.

¹⁶³ Ibid, 79.

sound of the intake of air produced by a pneumatic bottle opener.¹⁶⁴ His introductory tune for a segment on *Woman's Hour* called 'Reading Your Letters' was made from one sound spliced from a recording of water being poured from a cider bottle.¹⁶⁵ In one episode, broadcast on 18 September 1967 at 2.15pm,¹⁶⁶ the segment is replaced by John's explanation of his compositional process after a listener in Tring wrote in asking how the music was produced: 'by taking just one of these sounds, all the notes that were wanted were made by playing the tape back at various speeds. [...] All the notes were measured and cut together in the right order [...].'¹⁶⁷ All accounts show that the production of even the simplest of tunes was a very tricky, time-consuming process and Judd emphasises the tactility of the technique when he writes: 'A whole composition may consist of hundreds of pieces of tape so that the task of producing a complete work can be quite a formidable one.'¹⁶⁸

The Radiophonic Workshop faced technical difficulties that made the task even more 'formidable.' Most of their equipment was not designed for musical composition but rather acquired from the 'redundant plant'¹⁶⁹ where discarded equipment from other BBC departments was kept. Accurate pitch control was not entirely important when purchasing tape recorders because the Workshop was explicitly not used for music in its first few years, but for sound effects. This role is reflected in its equipment; but the BBC Written Archives show that throughout several years there were those at the workshop who consistently pushed against its original mandate in order to acquire better equipment for the production of more precise results.

Money had been requested for a specially designed variable speed recorder when the Workshop first opened, but its price significantly exceeded the entire £2000 budget of the Radiophonic Workshop in its first year,¹⁷⁰ and the expensive request evidently came to nothing, with no mention of it in later documents.¹⁷¹ A BBC report written as early as 1959 reveals that the Workshop tape recorders were not particularly useful for composition at this

¹⁶⁴ *BBC Radiophonic Workshop: A Retrospective*.

¹⁶⁵ Baker, *The John Baker Tapes Volume I*.

¹⁶⁶ 'Radiophonic Workshop Catalogue', BBC Written Archives Centre.

¹⁶⁷ Baker.

¹⁶⁸ Judd, *Electronic Music and Musique Concrète*, 70.

¹⁶⁹ Hawkeswood to Head of Equipment Department, BBC Written Archives Centre.

¹⁷⁰ Porter to Head of Central Programme Operations, 'Extension of the Radiophonic Workshop and Studios', BBC Written Archives Centre.

¹⁷¹ Head of Engineering, 'Notification of Scheme Approval: Radiophonic Effects', BBC Written Archives Centre.

point. The author compares the shoddy equipment at the BBC to the studios elsewhere on the continent, stating: ‘They are useless except for monitoring purposes.’¹⁷² By 1962 the Workshop still did not have any decent variable speed recorders, but they did acquire six new hi-fidelity tape recorders to replace what were described as the ‘very obsolete’ ones in use before then.¹⁷³ Their customised variable speed tape recorder was eventually bought between 1962 and 1964, with the earliest mention of it appearing in F.C. Judd’s 1964 article for *Amateur Tape Recording*. This states that the tape recorder was specially designed for the BBC to run between 0 and 40 ips with stable running speeds to allow more versatility and accuracy with the amount of pitch control it provided.¹⁷⁴

The significance of the acquisition of a good quality variable-speed machine lay in the fact that it enabled more precision in the control of pitch. A report by Desmond Briscoe from May 1963 shows that the Radiophonic Workshop had gradually arrived at a point where it was, indeed, being asked to create more ‘musical’ material in comparison to the ‘more simple sound effects’¹⁷⁵ of their earlier years. He wrote: ‘the work which the unit is called upon to create has steadily become more sophisticated, more precisely designed and shaped and above all more musical in nature.’¹⁷⁶ The use of speed alterations on reliable machines was therefore important for the Radiophonic Workshop in order to accomplish the ‘more precisely designed’ work that they were expected to produce by this point.

2.3.3.4 Multiple Recording, Synchronisation, Superimposition, Copying

The techniques discussed so far differ from traditional musical performance because they do not take place in real time, but the production of electronic music with tape recorders did require some elements to be performed in real time. For instance, John Baker’s theme for *Woman’s Hour* is quite a typical example of its genre, with two very clear layers: a melody, and a walking bass line. They combine to make the traditionally notated ‘conventional music but with unusual sound qualities’ that Baker was known for. Previously discussed splicing and editing techniques were used to make individual layers, with each one edited into a single tape loop. However, in order to combine them into a single piece of music, techniques of

¹⁷² ‘Report on Electronic Studios’, BBC Written Archives Centre.

¹⁷³ Deputy Director of Engineering to Director of Engineering ‘Proposal for Increase in Expenditure’, BBC Written Archives Centre.

¹⁷⁴ Judd, ‘F.C. Judd Talks About Radiophonics at the BBC’, BBC Written Archives Centre.

¹⁷⁵ Briscoe, ‘Location of the Radiophonic Workshop’, BBC Written Archives Centre.

¹⁷⁶ Ibid.

multiple recording, synchronisation and superimposition were used: the two loops were played in synchronisation on two tape machines in order to be combined onto a single tape recording on a third machine. The variable speed eight-track was also potentially useful for this purpose, although using it in this way did not yield audio of very high quality.¹⁷⁷

Derbyshire can be seen demonstrating this technique with three tape machines during her 1965 appearance on *Tomorrow's World*.¹⁷⁸ She stands by several tape machines while carefully timing the play buttons of the plays, tapping her feet, conducting the tapes with her hands, and altering the speed and volume dials to keep the tapes synchronised as they play. The footage emphasises how manual synchronisation resembled traditional real-time performance, in contrast to the more oblique processes leading up to it. It was evidently a skill that required much concentration and practice, and the tape machines of the early 1960s often made the task even harder because they were likely to slightly falter from their set speeds, preventing accurate synchronisation.¹⁷⁹ This flaw was addressed with the purchase of the six Philips tape recorders in 1962, which were better at staying within speed, contributing towards the progression of the Radiophonic Workshop towards products that were 'more precisely designed and shaped and above all more musical in nature.'

In addition to the practical and technical difficulty of synchronising tapes for multiple recording, this technique also produced a build-up of tape hiss that came from combining the sound of several tapes at once. F.C. Judd warns against damaging the quality of the final product in such a way: 'Remember also that a recording already on a tape may become distorted by re-recording unless proper precautions are taken. It is essential too that no 'noise' is gathered during recording and re-recording processes, and for professional work only the highest-grade recording and amplifying equipment must be used.'¹⁸⁰ Brian Hodgson explains how the attempt to remove noise through filtering affected the products of the workshop during the early 1960s: 'Making sounds took a very long time in those days. The copying process involved making concrete [sic.] music built up a tremendous amount of hiss, and we had to keep putting 'top cut' on to such an extent that the Workshop had the reputation of never producing anything above Middle C!'¹⁸¹ The six Philips machines helped to solve this problem because they were much higher fidelity than the previous machines used. More machines also meant less noise because the process could involve less copying. Derbyshire

¹⁷⁷ Judd, 'F.C. Judd Talks About Radiophonics at the BBC', BBC Written Archives Centre.

¹⁷⁸ *Tomorrow's World*, CD, BBC One.

¹⁷⁹ 'Brian Hodgson 1967', BBC Written Archives Centre.

¹⁸⁰ Judd, *Electronic Music and Musique Concrète*, 48.

¹⁸¹ Briscoe, *The BBC Radiophonic Workshop: The First 25-Years*, 48.

was responsible for creating the first ‘hi-fidelity’ theme tune with her 1962 music for the television programme *Arabic Science and Industry*.¹⁸² It was a special edition of the show, ‘at the time when the Arabs were realising the importance of their oil, and the BBC wanted to have a special signature tune for this programme, rather than the usual theme.’¹⁸³

While synchronisation related more to traditional manual performance than other electronic music techniques, this was the part of the process that enabled the use of interventionist techniques such as speed alteration to take place outside of real-time. Briscoe explained that alterations to sounds took place after recording: ‘We change the nature of the sounds by the changes we make between recording sound and reproducing it again [...]’.¹⁸⁴ This process also added yet another layer of difficulty resulting from the manual, tactile nature of the medium, as well as increasing the amount of noise present on the final recording. As Briscoe continues, referring to *Arabic Science And Industry*, ‘though the tune actually lasts only 22 seconds, the mechanics of making such a piece were long and involved.’¹⁸⁵ While the difficult and time-consuming methods of tape music could be seen as an inconvenience in the way of realising a composition, it can also be argued that the extra level of time and difficulty involved created space for experimentation and unexpected results.

2.3.3.5 Echo, Feedback, Reversing; Dynamic Alterations, Filtering; Reverb; Modulation

Some of the most common methods of altering sounds did not require any additional equipment apart from the tape recorder itself. For instance, tape echo and feedback were made by using tape recorders with more than one head: the recorded sound is picked up by the additional head a fraction of a second later, creating a duplicate (an echo) of the original sound. The other head then picks up the second signal again and the process continues on and on. If the volume is increased then feedback occurs, an effect that was also used creatively for what Judd describes as ‘some fascinating “journey-into-space” sounds.’¹⁸⁶ Another simple tape effect could be achieved by playing tapes backwards in order to reverse the sound of the

¹⁸² *BBC Radiophonic Workshop: A Retrospective*, CD.

¹⁸³ Briscoe, 48.

¹⁸⁴ Duff, ‘BBC Radiophonic Workshop’, BBC Written Archives Centre.

¹⁸⁵ Briscoe, 48.

¹⁸⁶ Judd, *Tape Recording For Everyone*, 84.

recording. As Schaeffer pointed out earlier, the reversed sound can often be very different from its original, thus ‘doubling’ the amount of possible sounds available.

Further techniques involved controlling dynamics in order to shape the attack or decay of a sound by manually altering the level of volume faders during recording. For instance, the original attack of a note could be completely cut off to make a very sudden attack, or a gradual fade up and down applied to create a softer shape. Various kinds of filters at the workshop were also used to emphasise or attenuate certain frequency bands in a track.¹⁸⁷ An artificial acoustic could be added to a sound with reverberation, with various methods available for the creation of the effect. A tape recording could be played inside a large studio or concert hall, combining the original recording with the acoustic of the room;¹⁸⁸ or a plate reverberation unit could be used, which created the sound of a recording resonating on a large plate of vibrating metal.¹⁸⁹ Sounds could also be electronically modulated using oscillators and the technique of ring modulation. For instance, the famous voice of the Daleks was produced by modulating a voice with a sine tone of 30 hz.¹⁹⁰ Importantly, all these effects required very hands-on manual techniques. While technicians could roughly calculate what might happen when a certain sound was played into a reverberation plate, or fed into a tape echo loop, the effect would only be known once they tried it out in practice. Thus, such techniques formed an important part of the experimental bricolage adopted from musique concrète. While bricolage made it difficult to plan a piece of music before recording, it did mean that there was much room for unexpected results through experimentation.

2.3.3.6 Oscillators and White Noise Generators

Electronic sounds were less common than concrète sources during the first decade of the Radiophonic Workshop, but they were still used during this time, and they became increasingly common through the 1960s. Sine-tone oscillators and white-noise generators were the main sources of electronic sound there until later in the decade, when synthesisers became more predominant. The British use of electronic sounds was influenced by earlier German work in the field, with the technique centring upon the idea of building complexity of timbre from sine tones. As F.C. Judd explained, sine tones were often perceived to lack the

¹⁸⁷ Niebur, *The Creation and Legacy of the BBC Radiophonic Workshop*, 49.

¹⁸⁸ Hardwick, ‘B.B.C. Opens Britain’s First Radiophonic Workshop’, BBC Written Archives Centre.

¹⁸⁹ Briscoe, ‘The Radiophonic Workshop—1963 Report’, BBC Written Archives Centre.

¹⁹⁰ Hodgson, ‘Clipping from unknown magazine’, 1967, BBC Written Archives Centre.

familiarity of a traditional musical instrument's complex timbres, producing a 'tone practically devoid of harmonics [...] which sounds strange and ethereal.'¹⁹¹ Daphne Oram also explained a common view:

A sine wave is a fundamental note without overtones [...]. Musically it is not very interesting [...]. Who wants to hear just sine waves? It would be rather like eating watery porridge, together with ginger snaps, for every meal!¹⁹²

White noise, containing a full spectrum of harmonics, was conversely 'strange' sounding because of its sonically chaotic makeup. Both sine tones and white noise were viewed as raw material to be made into musical sound using the same tape techniques that transformed concrète sounds into music. The former could be made more musically 'interesting' with what Oram describes as 'recipes' of additional harmonics from superimposed sine tones,¹⁹³ along with extra modulations and effects; the latter was usually reduced to a smaller spectrum with filters.¹⁹⁴

The increasing emphasis on electronic sound was reflected in the changing ways that the workshop was equipped, with more machinery brought in as demand increased. Two oscillators were initially purchased by the Radiophonic Workshop: one accurate Muirhead Decade oscillator,¹⁹⁵ so-called because the frequency control allowed it to be tuned only to frequencies in multiples of ten;¹⁹⁶ and another that produced two intermodulating sine waves, nicknamed the 'Wobulator' due to the vibrato effect that often resulted.¹⁹⁷ A square-wave shaper was also available to add more overtones to the sine tone,¹⁹⁸ and one white-noise generator was also acquired.¹⁹⁹ Without the long periods of time needed to complete work using the specific techniques associated with electronic sound generators, however, only limited work could be undertaken with the equipment. This is reflected in the lack of

¹⁹¹ Judd, *Electronic Music and Musique Concrète*, 17.

¹⁹² Oram, *An Individual Note of Music: Sound and Electronics*, 23.

¹⁹³ *Ibid.*, 23.

¹⁹⁴ Judd, 17.

¹⁹⁵ George to McWhinnie, BBC Written Archives Centre.

¹⁹⁶ Hardwick, 'BBC Press Service: BBC Opens Britain's First Radiophonic Workshop', BBC Written Archives Centre.

¹⁹⁷ Briscoe, *The Radiophonic Workshop: The First 25 Years*.

¹⁹⁸ George to McWhinnie, BBC Written Archives Centre.

¹⁹⁹ *Ibid.*

electronic sounds that can be heard in the workshop's early output. In 1962, however, the workshop expanded to include a total of 22 oscillators in two rooms. A report from February that year by Desmond Briscoe states that 'we have increased our equipment, having twenty two generators with two associated keying units, as compared with two generators when most of our work was special effects.'²⁰⁰ Studio 2, which came to be known as 'Delia's Room',²⁰¹ included a bank of twelve oscillators, wired up to a keyboard controller custom-built by BBC engineer David Young 'which gated the sound, turning it on and off at a prescribed rate, thus providing an attack and decay to each note.'²⁰² The circuit allowed the twelve oscillators to be tuned to an equally tempered scale, which meant that a melody could be played on the keyboard. The installation of the equipment at that time, then, reflected the increasing amount of commissions the Radiophonic Workshop received for melodic music.

The fact that Derbyshire chose to pursue electronic synthesis in the early 1960s shows that she displayed a large amount of independence from the predominant attitudes at the BBC, especially considering the institutional aversion to such work: the Radiophonic Workshop's initial focus on *concrète* techniques largely stemmed from its function servicing the BBC drama department with sound effects. Oscillator sounds had little narrative connotations outside sci-fi and horror, and archival documents suggest that most of the people at the Radiophonic Workshop were evidently not curious about exploring them further. A 1957 report on the potential of the Radiophonic Workshop states that 'there can be no doubt that concrete [sic] music has considerable possibilities as an ingredient in sound radio programmes, particularly in association with speakers or singers.'²⁰³ In contrast, the author suggested that 'it may be that electronic music does not lend itself to dramatic effects as powerfully as does concrete [sic] music.'²⁰⁴ The early aversion to electronic sound was strongly linked to the workshop's role producing sound effects rather than music. Significantly, it reflects the attitude of even those in favour of the Radiophonic Workshop: in Britain *musique concrète* wasn't music proper, but a way of producing novel sounds.

The aversion to electronic synthesis had already led the workshop's co-founder, Daphne Oram, to leave the BBC. Oram was especially dismayed that the Workshop was developed as a tool for drama, rather than music, and that consequently *musique concrète* was the primary focus of BBC attention:

²⁰⁰ Briscoe, 'Location of the Radiophonic Workshop', BBC Written Archives Centre.

²⁰¹ Briscoe, *The BBC Radiophonic Workshop: The First 25-Years*, 47.

²⁰² Ibid.

²⁰³ 'A Report on Radiophonic Music at the Features Department Conference 1957', The BBC Written Archives Centre.

²⁰⁴ Ibid.

Alas the drama department got interested that something was happening and they also now heard a little about Pierre Schaeffer in Paris playing discs the wrong way around and things like that.²⁰⁵

She was especially insistent on pursuing research into electronic synthesis, carrying out her own makeshift attempts after working hours at Maidavale with 78rpm test recordings of sine tones. However, her multiple proposals during the 1950s to do so at the BBC were persistently rejected, causing her to leave the Radiophonic Workshop to set up her own studio for musical composition and electronic synthesis.²⁰⁶ Subsequently, she was largely written out of histories of the Radiophonic Workshop, such as Desmond Briscoe's *The BBC Radiophonic Workshop: the First 25-Years*, with documents at the BBC Written Archive charting her dispute with Briscoe surrounding the book. Oram's complaints appear to further reinforce the link between the BBC's aversion to electronic synthesis and the prohibition on musical composition at the Radiophonic Workshop. Her comments also suggest that the clichéd cultural associations of electronic sound with sci-fi and horror compounded the imposed limitations:

I thought it very sad because it rather set the tone of radiophonics for ever more, that it was 'out of space' and nightmareish'... we could have started [the Workshop] in this country as being something beautiful and we could have tried to achieve beautiful sounds but alas we were pushed into this and it was this drama department.²⁰⁷

Not only was it damaging for the Radiophonic Workshop to be absorbed into drama, but its work was also limited by the specific way in which electronic music was pigeonholed in Britain as spacey and 'nightmareish'. In Oram's words, the use of electronic music in this way seems implicitly tied to its lack of aesthetic autonomy—'pushed into this and it was this drama department'—in contrast to its development into 'beautiful sounds.' With its associations, it couldn't be seen as a new and interesting way to make music that could even be found 'beautiful' in its own right. Once the Radiophonic Workshop began receiving commissions for more 'musical' work, in Briscoe's previously cited words, the techniques of

²⁰⁵ Oram cited in Candlish, *The Development of Resources for Electronic Music in the UK, with Particular Reference to the bids to establish a National Studio*, 56.

²⁰⁶ Ibid.

²⁰⁷ Candlish, 105.

electronic synthesis began to be used more frequently and extensively. Derbyshire explained that she made her early theme tunes for sci-fi television, such as *Time On Our Hands* and *Doctor Who* ‘from nothing’ using the very limited electronic sound generators available to her, but in the course of doing so she helped to change ‘cynical’ perceptions about electronic music as unattractive and unappealing to a larger broadcast audience. She was later able to pursue more complex and extended work with electronically synthesised pieces such as *The Dreams* and *Blue Veils And Golden Sands*, distancing the music from explicitly sci-fi theme but retaining some of the associations with exoticism and fantasy. The shift towards more complex work in this area can clearly be seen in the Workshop’s purchase of equipment specifically for the purpose, whereas before this time they had only a very limited array of makeshift electronic sound generators.

2.3.3.7 Synthesisers

Above I discussed how the Radiophonic Workshop gradually shifted away from musique concrète in the early 1960s and towards melodic music made with synthesised electronic sounds. Despite changing its output in this way, the studio setup itself did not change very much: it remained based upon the European studios of the 1950s, with a few in-house augmentations, until the end of the decade. Changes were limited to the gradual acquisition of more of the same simple oscillators that had been in use from the start in 1958. It wasn’t until almost a decade later that newer technological advances began to have a material impact upon the Workshop, when the voltage-controlled synthesiser began to be commercially available. As Niebur argues, the synthesiser in this context was not revolutionary: it merely facilitated easier and quicker production of the kind of melodic music that was already coming to dominate their output.²⁰⁸ It did, however, leave less room for experimentation, improvisation and bricolage, as those techniques were deemed surplus to requirements, rather than as integral to the production process.

As earlier discussed, synthesis at this time involved massive amounts of time-consuming, highly intricate work, precluding the possibility of real-time performance. This situation changed when American engineer Robert Moog developed and began commercially distributing voltage-control synthesisers in the mid-1960s.²⁰⁹ The changes linked to the introduction of the voltage-control synthesiser can be linked to the qualities of the technology itself, because it added a level of convenience to the production of electronic music that previous technologies could not rival. With voltage-control synthesis, the whole process of

²⁰⁸ Niebur, *Special Sound: The Creation and Legacy of the BBC Radiophonic Workshop*, 121.

²⁰⁹ See Pinch and Trocco, *Analog Days: The Invention and Impact of the Moog Synthesiser*.

synthesising, composing and performing could potentially be condensed into one relatively compact, portable and cheap piece of equipment, which could also be performed on using a keyboard. Where before a whole studio was needed, the timbre of sounds could be controlled manually using knobs on an on-board interface that changed the parameters of several oscillators and filters inside one machine. Effectively for the Radiophonic Workshop, it meant that their work took considerably less time and effort, but only as long as one considered the hands-on production element to be a separate mechanical operation from musical composition, rather than an integral part of creative practice.

With Peter Zinovieff manufacturing and distributing the first British model, the VCS3, in 1969,²¹⁰ the BBC were typically slow to take up the new technology. Brian Hodgson revealed that he and Derbyshire owned one each because of their earlier affiliation with Zinovieff, and so brought their own models into the studio until the BBC purchased two in 1970.²¹¹ Initially the Workshop were planning to buy one of the American Moog synthesisers, but instead it decided to support the British manufacturers, which was also conveniently the far cheaper option: ‘The BBC had decided to buy a Moog, but I said, “This was madness, we ought to support the British industry,” and so we bought our first synthesiser.’²¹² Later, Zinovieff had plans for a much larger synthesiser designed and built bespoke for larger institutions, the Synthi 100,²¹³ and in 1972 the Radiophonic Workshop bought one of these. With each model custom-built, it was given its own individual name—this one was called the Delaware after a street nearby the workshop.²¹⁴

Their purchase brought a large amount of publicity for the Workshop, and it was Derbyshire who was asked to showcase the new instrument in 1972 with a high-profile commission. Her work was to be played during a concert in commemoration of the 100-year anniversary for the Institute of Electrical Engineers, with the Queen in attendance.²¹⁵ The anecdotal evidence around this event illustrates her dissatisfaction with the technology. She composed the piece *IEE 100* in her typical manner, basing it on the idea of using the Morse code for rhythm. According to Hodgson, she found the work very difficult, and by the night before the concert she was still working on finishing it. Derbyshire was so unhappy with the results that she destroyed the master tape. Luckily Hodgson requested that an engineer

²¹⁰ Ibid.

²¹¹ Hodgson, Interview with author.

²¹² Hodgson cited in Chadabe, *Electric Sound: The Past and Promise of Electronic Music*, 151.

²¹³ Pinch and Trocco.

²¹⁴ Ibid.

²¹⁵ Hodgson, Interview with author.

working with her hide a spare copy, and this was eventually played in the concert.²¹⁶

Similarly, a version of the *Doctor Who* theme made on the Delaware was scrapped after being used for only one episode.²¹⁷

The introduction of the commercial synthesiser and the set of assumptions about creativity that accompanied it created a working environment in which Derbyshire was very uncomfortable, thwarting her creative trajectory based around hands-on experimentation. Her methods became *passé* as new technology was developed that seemingly disposed of the need to use it as a springboard for exploratory activity, and her reaction, along with John Baker and Brian Hodgson, was to leave the Radiophonic Workshop. Their departures proved to be extremely prescient, because it was the use of commercial equipment in this way that eroded the Workshop's uniqueness that had justified its existence in the first place. With such accessible technological developments stimulating the opening of more University studios—more dedicated to exploring and expanding the medium—the Radiophonic Workshop no longer lay at the forefront of British electronic music.

²¹⁶ Ibid.

²¹⁷ For a comprehensive history of the theme in all its incarnations see: Ayres, 'A History of the Doctor Who Theme'.

3 Inside the Mind

3.1 Introduction

In this chapter I will discuss several examples of Derbyshire's BBC work that explore one of the themes posited by Derbyshire to categorise her BBC work: music used to represent unusual or difficult-to-convey psychological, subjective or imaginative states. The title refers to Derbyshire's observation that much of her music and sound was made to accompany images and narratives that were supposed to represent something that happened 'inside the mind',²¹⁸ in contrast to the outward or objective focus of realism. In actuality, the programmes discussed here concern the ambiguity between mundane realism and inner fantasy. *Doctor Who* is fantastical, but it contains references to everyday life that link it to realism; *Blue Veils and Golden Sands* is a documentary, but Derbyshire's music conveys Orientalism, with the East as a locus of fantasy in the West; *Inventions for Radio* uses documentary recordings as source material, but these are shaped into an exploration of spirituality and fantasy; her work with Angela Rodaway contains autobiographical elements that are structured as surrealist narratives.

Electronic music was used in these programmes in order to convey the fantastical themes that they contain, reflecting its common connotation of exoticism. As previously discussed, this association was linked to a sense of 'ambivalence and anxiety'²¹⁹ about the effects of technological progression on human agency. Similarly, the programmes discussed here derive from an ambiguity between fantasy and ordinary reality. Derbyshire was called upon to negotiate this tension, not only in the music that she produced for these programmes but also in the working environment at the Radiophonic Workshop. In the examples discussed below, the familiar is reflected in the use of conventional melodic, harmonic and rhythmic material for the more musical items and in the use of recordings of recognisable sounds for those closer to sound effects. She constructs the association between strangeness and electronic music with unusual timbres, exotic harmonies, and processing of recordings. I will also show how different interpretations of the effects of technology on human psychology and agency co-existed at the Radiophonic Workshop, affecting its internal professional relations and working processes.

²¹⁸ Derbyshire, 'Interview with John Cavanagh and Drew Mullholland', *Original Masters*, BBC Radio Scotland.

²¹⁹ Taylor, *Strange Sounds: Music, Technology & Culture*, 72.

3.2 *Doctor Who*: ‘Banality and Difference’ (1963)²²⁰

As the longest running sci-fi television programme in history, *Doctor Who* is one of the most discussed examples of the medium, and the same is true of its theme tune. In his 1983 study of the show, John Tulloch writes that it is ‘something of an institution within British cultural life’²²¹, a statement that still applies to both the programme and the theme tune recorded by Derbyshire.

Doctor Who emerged at a key point in the history of the BBC. After its monopoly over broadcasting ended with the arrival of independent, commercially funded television in the late 1950s, its ratings had been declining. The programme was a result of their plans to gain back a larger share of the audience without sacrificing the central principles of public service broadcasting to educate and enlighten.²²² Tulloch shows that BBC producers responded to the objective of attracting popularity while maintaining the integrity of their public service remit by designing *Doctor Who* to exploit the unique qualities of television to represent contemporaneity and reality while also offering something novel, exciting and entertaining. This concept manifested in a duality between narrative elements grounded in the present, in normal everyday surroundings, and those that portrayed the fantastical adventures of sci-fi. Tulloch suggests that the duality created a ‘tension between banality and difference’ in the programme.²²³ For example, its hero, the Doctor, is a ‘mysterious exile from another world and a distant future’ but his first adventure is set in the incongruously located contemporary London of 1963.²²⁴ The theme of ‘familiar but different, normal and uncanny’²²⁵ is equally present in his time traversing spaceship, The Tardis, which manifests in the form of a police box, a familiar sight in London at the time. Importantly, as Tulloch also suggests, this motif largely determined the resulting electronic theme tune that Derbyshire produced at the Radiophonic Workshop.

²²⁰ Selected published recordings: *BBC Radiophonic Workshop: A Retrospective* (2008); BBC Radiophonic Workshop 21 (1979); *Doctor Who At The BBC Radiophonic Workshop – Volume 1: The Early Years* (1963-1969).

²²¹ Tulloch and Alvarado, *Doctor Who: The Unfolding Text*, 1.

²²² Ibid.

²²³ Ibid., 18.

²²⁴ Ibid.

²²⁵ Ibid., 16.

3.2.1 Verity Lambert: a ‘Way Out and Catchy Sound’²²⁶

The producer of the show, Verity Lambert, was responsible for many of the ideas about how the theme tune should reflect the programme’s main concepts. She brought her previous experience in independent, market-influenced broadcasting at ITV, which is significant considering the commercial success of the theme tune. Lambert was a young television producer recruited from the independent sector specifically in order to use her expertise in the commercial field to attract higher audience figures to the show.²²⁷ Derbyshire recalls: ‘Verity Lambert, the first producer, had just come over from ITV. She struck me as very high powered even then.’²²⁸ From all accounts of the theme’s creation, it seems that Lambert had a very definite notion about the sound world she wanted the theme to occupy, and her experience in commercial television was a significant factor in her ideas. As media theorist John Ellis argues, the theme tune of many television shows acts as the most significant part of its introductory title sequence, which is a ‘commercial’ for the programme itself.²²⁹ The purpose of the theme tune is to attract the attention of the audience by providing a synoptic aural image of the programme’s main themes: it is designed to help sell the programme as part of an advertisement.

Lambert closely related the theme tune to the main themes and selling points of the show as an exploration of ‘tension between banality and difference.’²³⁰ A *Daily Mirror* article from December 1963 describes the ‘28-year-old producer’ walking into the Radiophonic Workshop and saying: ‘I want a new sound... way out and catchy.’²³¹ The article also cites her stating that the finished product was ‘just what I had in mind’²³² emphasising Lambert’s role in developing the concepts embedded in the music. Further, her vision of a theme tune that was both ‘catchy’ and ‘way out’ was not simply a clever way to summarise and reflect the content of the programme it headed. It was also a way of communicating what was conceived as its main selling points: the balance between ‘way-out’ ‘difference,’ attracting attention and publicity, and the already established conventions of television as a window to the everyday

²²⁶ ‘Verity’s tune is way out—of this world!’, BBC Written Archives Centre.

²²⁷ Ibid.

²²⁸ Derbyshire to Atkinson-Broadbelt, ‘Soundhouse: Delia Derbyshire’, *Doctor Who Magazine*.

²²⁹ Ellis, *Visible Fictions: Cinema, Television, Video*, 119.

²³⁰ Tulloch and Alvarado, 18.

²³¹ ‘Verity’s tune is way out—of this world!’, BBC Written Archives Centre.

²³² Ibid.

here-and-now, using the sound of ‘catchy,’ radio-friendly pop music. In keeping with the drive to accumulate ratings, Lambert wanted a piece of music that would be popular with audiences by being ‘catchy’, but also unusual and new enough to stand out and gather some wider attention. Thus, her influence as a producer with experience in more commercially driven television is evident in the key concepts behind the theme.

Lambert also had some definite ideas about how the ‘way out and catchy’ sound might be musically manifested. These ideas did not originally include the use of electronic sound made by the Radiophonic Workshop. While accounts vary as to exactly why and how she ended up settling for that rather than her original choice, it seems that she was clear about the kind of sound she wanted regardless of where it came from. Lambert originally wanted a French group of musicians called *Les Structures Sonores* to perform the theme tune.²³³ The ensemble performed on a set of glass rods to produce an ethereal sound comparable to a musical saw or a theremin: Lambert described it as ‘a very curious sound.’²³⁴ She recounted that she couldn’t use them because they were too busy;²³⁵ Derbyshire said that it was because they were too expensive²³⁶; while Desmond Briscoe remembers that Lambert was told to go to the Workshop by her boss before even speaking to *Les Structures Sonores*.²³⁷ Whether electronic or not, her wish for instrumentation with an unusual timbre can be interpreted as the musical element that would provide ‘way-out’ connotations, in contrast to other musical elements of harmony and melody that would sound more familiar. Her envisaged sound did not necessarily have to be made electronically, but this method of production was seen as the most effective alternative available to achieve it.

In contrast to the unusual timbres produced by the glass rods of *Les Structures Sonores* or the electronics of the Radiophonic Workshop, she felt that that the ‘catchy’ element of the music could be achieved musically through melody: ‘I had wanted to use music—whether electronic or by some other means—that had a melody, rather than just musique concrete [sic].’²³⁸ The timbre, the ‘curious sound’, then, can be interpreted as the ‘way-out’ element of the tune that Lambert wanted. In keeping with the ideas about electronic music discussed in the previous chapter, she was not entirely certain whether or not it was

²³³ Briscoe and Curtis-Bramwell, *The BBC Radiophonic Workshop: The First 25 Years*.

²³⁴ Tulloch and Alvarado, 19.

²³⁵ Ibid.

²³⁶ Derbyshire to Atkinson-Broadbelt.

²³⁷ Briscoe and Curtis-Bramwell.

²³⁸ Tulloch and Alvarado, 19.

music or ‘just’ musique concrète, i.e. sound effect. She speaks of it as an element distinct from the catchiness of the melody. What Lambert commissioned from Derbyshire was a piece of music that would have to very consciously be located as simultaneously popular and experimental, but with each element of the two terms reduced to very clearly separate musical elements: a conventional melody corresponding to the familiar realm of popular music, and a strange timbre corresponding to experimental electronic music.

3.2.2 The Division of Labour Between Composer and Technicians, and Differences of Opinion on the Matter

If the division between the popular and experimental aspects of the theme appeared musically for Lambert as a division between timbre and melody, then it also manifested in a division of labour between the composer of the melody, Ron Grainer, and the technicians responsible for realising it electronically, Delia Derbyshire and Dick Mills. Grainer was responsible for making a ‘catchy’ melody; Derbyshire and Mills were responsible for making a ‘way-out’ sound. As with accounts of Lambert’s decision to use the Workshop for the theme, there are discrepancies in the accounts of how Grainer came to compose the theme and the amount of work he put into its creation.

Derbyshire recalls that Briscoe recommended Grainer because of the success of his work with Hodgson on the television documentary *Giants of Steam*.²³⁹ Mills claims that he and Derbyshire recommended Grainer to the director Warris Hussein because he was ‘a composer who was coming quite into vogue’ after his memorable tunes for very popular programmes such as *Steptoe and Son*.²⁴⁰ Finally, Briscoe suggests that Lambert already knew that she wanted Grainer to write the tune when she came to the Workshop: ‘not only did she want radiophonic music, something with a beat and something different, but she would really like it to be written by Ron Grainer, one of the most successful television composers of the time.’²⁴¹ These varying accounts offer different perspectives on the input coming from various individuals, but they all suggest that Grainer was chosen to write the theme because he specialised in catchy and popular theme tunes for successful television shows.

In contrast, differences of opinion become more marked in recollections about the amount of work undertaken by Grainer. This is understandable given the way that the division of labour between the composer and technicians begins to appear particularly hierarchical when considering the inverse relation between the amount of work and the amount of credit

²³⁹ Derbyshire to Atkinson-Broadbelt.

²⁴⁰ Mills to Marshall, ‘The Story of the BBC Radiophonic Workshop’, *Sound On Sound*, online article.

²⁴¹ Briscoe and Curtis-Bramwell, 101.

and money received by each. As already mentioned in this thesis, the Radiophonic Workshop was considered as a service provider, rather than a team working in a creative discipline. They ‘weren’t composers’ and they ‘weren’t supposed to be doing music.’ In contrast, composers such as Grainer were specially commissioned from outside the BBC to write music. This case highlights how much material value the distinction between the different roles carried. There are varying accounts of how little effort Grainer—credited as the composer, and receiving royalties—put into writing the theme, in contrast to the combination of concentrated physical and mental work exerted by Derbyshire and Mills who received no individual credit or royalties at the time. Everybody agrees that Grainer did less and gained more than Derbyshire and Mills, but the specific details and implications of this observation differ between the accounts.

According to Derbyshire, her first meeting with Grainer was when he came to the Radiophonic Workshop to view the visuals for the title sequence with Lambert and Hussein. She claims that he ‘went away to his private beach in Portugal and wrote the score.’²⁴² She also remembers he ‘worked his tune very carefully to fit in with the graphics,’ exclaiming: ‘What a talent!’²⁴³ Rather less favourably, Mills recalls that Grainer first ‘handed Delia one foolscap sheet of manuscript paper and said off you go! Then he cleared off to Portugal for a fortnight.’²⁴⁴ He continues: ‘All we got from Ron Grainer was one sheet of paper. He did the tune with a theme right the way through it and the bass line. We just filled in the gaps.’²⁴⁵ Finally, Brian Hodgson recalls an even sloppier work ethic from Grainer: ‘He scribbled a few bars on a piece of manuscript paper he’d torn from something else he was working on, leaning against this filing cabinet.’²⁴⁶ He also remarks in contrast to Derbyshire’s choice of terminology that ‘it wasn’t a proper score [...] it was a scribble on the top of a piece of manuscript paper’.²⁴⁷

The difference of opinions regarding Grainer’s compositional process could be attributed to the different attitudes held by each Workshop member. Derbyshire was probably very pleased to have been given a relatively large amount of creative freedom because of her artistic aspirations. Mills and Hodgson were much more committed to their roles as service

²⁴² Derbyshire to Cavanagh and Mullholland, *Original Masters*, BBC Radio Scotland.

²⁴³ Derbyshire cited in Briscoe and Curtis-Bramwell, 102.

²⁴⁴ Mills to Marshall.

²⁴⁵ Mills to Atkinson-Broadbelt ‘Soundhouse: Dick Mills’, *Doctor Who Magazine*.

²⁴⁶ Hodgson in *Doctor Who: Thirty Years*, BBC Radio 2, from *Doctor Who at the BBC: A Time Travelling Journey Through the BBC Archives*, CD.

²⁴⁷ Hodgson in *Archive on 4: Sculptress of Sound*, BBC Radio 4.

providers, and so it is understandable that they would view his minimal input not as an opportunity but as an inconvenience. Whether or not Derbyshire's recollection of Grainer retreating to a private beach in Portugal to 'carefully' write his 'score' is true or not, it is a much more positive narrative than Hodgson's remembrance of Grainer scribbling out a few bars leaning against a filing cabinet.

While there are disagreements about whether the vagueness of Grainer's 'score' was a positive thing or not, they all agree that it provided only a skeletal structure. It consisted of two basic elements: a melodic theme and a bass line, worked into a structure to correspond to the length and imagery of the original visual title sequence. This consisted of camera feedback created from pointing a camera at its own monitor.²⁴⁸ John Tulloch notes that the final effect resembled 'an upward shooting probe, similar in a schematic way to conventional representations of space craft taking off', before appearing to disperse into abstract, moving cloud-like formations.²⁴⁹ As with the music, Lambert explained that she wanted the sequence to 'look familiar but odd,'²⁵⁰ with only hints of sci-fi imagery. Derbyshire remembered that Grainer included some descriptive instructions based on the title sequence such as "sweeps", "swoops"...beautiful words... "wind cloud", "wind bubble."²⁵¹ As Mills described, they were left alone to 'fill in the gaps' from only those words, and Grainer's basic two-line theme, without any more input from him. Mills added that 'he had great confidence in us [...] he just handed Delia one foolscap sheet of manuscript paper and said off you go!'²⁵² Brian Hodgson describes a situation where Mills and Derbyshire were 'sort of secreted away and we were hearing things coming through doors,'²⁵³ further emphasising their isolated working processes.

3.2.3 Bricolage and Synthesis as Realisation of 'Normal but Uncanny'

Derbyshire and Mills produced their interpretation of Grainer's 'score', adapting the kinds of additive synthesis techniques they associated with German Elektronische Musik. While there

²⁴⁸ Tulloch and Alvarado, 21.

²⁴⁹ Ibid.

²⁵⁰ Ibid., 22.

²⁵¹ Derbyshire to Cavanagh, 'Delia Derbyshire: On Our Wavelength', online article.

²⁵² Mills to Marshall, 'The Story of the BBC Radiophonic Workshop', *Sound On Sound*.

²⁵³ Hodgson in *Archive on 4: Sculptress of Sound.*, BBC Radio 4.

are only three layers—bass, melody, and rhythmic white noise—each one consists of several sounds combined together. While the additive synthesis technique was derived from their knowledge of its use on the Continent, Derbyshire’s application of it was characterized by a much more intuitive way of combining sounds. This approach is evident in the combination of electronic and *concrète* sounds derived from Radiophonic Workshop detritus: the latter suggests a typical workshop bricolage technique, improvising with whatever happened to be at hand. Further, her adoption of the technique is connected to Lambert’s brief that, while the theme had to sound strange, it still needed to reach popular appeal through a sense of familiarity. Experimental synthesis here was a way of making strange electronic sounds appear less so by mirroring some of the psychoacoustic complexity of sounds from traditional musical instruments.

While initially making an electronic tune could be relatively straightforward—albeit time-consuming and fiddly—the main work lay in giving the electronic sounds this apparently more appealing and organic quality. Mills explained: ‘It soon became quite obvious that we could make a science fiction signature tune using sound equipment that didn’t need to be played in an acoustic over a microphone. There was a certain robotic quality, a sterile atmosphere, and no colouration...’²⁵⁴ First, the bass sound has two elements blended together: a plucked string sound blended with a portamento rising into the grace notes that lean into each bar. Second, the main melody line was also made from two different sounds blended together: sine tones, and a melodica pitched up a couple of octaves to sound like an organ.

Explanations of how these sounds were constructed are typically varied. According to one interview with Mills, the plucked string sound of the bass was created from a recording of a ‘19-inch jack-bay panel’ which was ‘slightly flexible, so Delia found one that made a good musical twang, and played it with her thumb.’²⁵⁵ Mills gives a different account in another interview for BBC news, explaining that it was made with an actual plucked string attached to a ‘piece of metal channelling that we twanged.’²⁵⁶ Mark Ayres gathered from listening back to the archived makeup tapes that the string sound was made from a plucked string attached to a wooden box.²⁵⁷

According to Derbyshire, the main melody line was made ‘mostly on the Jason oscillators’²⁵⁸, while the ‘Wobulator’ was used to create what she described as her ‘oo-oo-

²⁵⁴ Mills in Tulloch and Alvarado, 20.

²⁵⁵ Mills to Marshall.

²⁵⁶ Mills to Geoghagen, ‘Four Sound Effects That Made TV History’, *BBC News*, online article.

²⁵⁷ Ayres in *Alchemists of Sound*, BBC4.

oos'²⁵⁹—presumably the vibrato of the modulated sine tones. Mills explains in one account that, 'someone had connected it [the bank of Jason oscillators] to a little keyboard, one for each note'.²⁶⁰ However, Derbyshire points out the discrepancy in his account, asserting that 'one couldn't use them all at once.'²⁶¹ In other words, the melody could not be performed live using oscillators even though they had a keyboard that could be used to control them like a musical instrument. Instead, the melody was spliced together. It is the portamento effect on the sine tone that makes it sound as if the whole melody has been performed live because these elements had to be created manually by continuously altering the frequency dial on the oscillator.²⁶² Derbyshire's description of the process as 'difficult' and 'tedious'²⁶³ contradicts the sense of gestural spontaneity that these touches add. While they were performed manually, she explained that they were not performed in real-time: 'The swoops were done and recorded at half speed.' In fact, nothing was: 'not one thing was done in real time.'²⁶⁴

3.2.4 Synchronisation: Humanity, Technology and Agency

Perhaps the most interesting discrepancies occur in accounts of the tape synchronisation process, which reveal varying attitudes towards human agency when working with music technology. The duality of 'normal and uncanny' here recurs, with notions of humanity and technology as the opposing concepts. As with ideas about the timbre of electronic music, discussed earlier, discourse about the medium centred on feelings that it could be so perfect that it would seem mechanical and alienating—the sine tone was too perfect, an ideal sound wave unattainable in nature. With synchronisation, this idea was related to rhythmic regularity. As I will show, tape players were seen by some to play too perfectly in time, in contrast to the faltering performances of human beings. However, Derbyshire's memories of the working process offer another view of the interaction between humans and technology.

According to Mills, he and Derbyshire made the three tape machines run slightly out of sync with each other in order to add a touch of human imperfection to an otherwise too

²⁵⁸ Derbyshire to Hutton, 'Radiophonic Ladies'.

²⁵⁹ Derbyshire to Cavanagh and Mullholland, *Original Masters*, BBC Radio Scotland.

²⁶⁰ Mills to Marshall.

²⁶¹ Derbyshire to Cavanagh, 'Delia Derbyshire: On Our Wavelength'.

²⁶² Mills to Marshall.

²⁶³ Delia Derbyshire to Austin Atkinson-Broadbelt, 'Soundhouse: Delia Derbyshire'.

²⁶⁴ Derbyshire to Atkinson-Broadbelt.

mechanical rendering that was perfectly in time. This passage is worth quoting at length in order to more fully illustrate the point:

If you were to write a piece of music, and realise it just in physical terms by cutting tape and joining them together, there's no reason why it shouldn't be perfect. It would be so predictable that the rhythm and the happenings in the music would perhaps be uninteresting. It's very easy to listen to musicians—they bring a piece of music to life by putting their own performance on it. And although they are in rhythm 99% of the time, it is the little 1% that makes it a human being playing it and not a machine... So when we did the Doctor Who music we tried to creep in one or two, not wrong notes, but imperfections, like a little bit of tremolo in the tune. We may have shifted the beat slightly just to make it sound as though it was played by somebody with feeling, rather than a stitched together music job.²⁶⁵

Mills expresses the notion that tape machines of the early 1960s were capable of playing in 'perfect' time, a factor that made the music sound less 'human', but one that could be corrected by adding slight 'imperfections'. Mills' interviewer, John Tulloch, then maps Mills' account onto his textual reading of *Doctor Who*: 'the mark of "mechanical" similarity versus "human" difference which... became a defining theme of *Doctor Who* was inscribed in the signature tune at that stage.'²⁶⁶ Louis Niebur agrees, citing the same quote from Tulloch's interview with Mills: 'One of the composers' concerns was that it would sound too inhuman, which was something they didn't want. Although the signature tune was supposed to sound 'different' (i.e. alien) it was also supposed to have a touch of fallibility. To achieve this, they added tiny imperfections to the realisation.'²⁶⁷ Thus, according to this interpretation of history, the electronic theme presented a kind of uncanny reflection of the main concerns of the programme.

In this instance these views seem to be retrospective projections of interpretations of *Doctor Who* onto the construction of the theme tune, revealing how powerful preconceptions can be in shaping both perceptions and recollections. Derbyshire recalls in detail how it was in fact the tape machines at the Radiophonic Workshop that kept going out of time during the production of the theme tune.²⁶⁸ The idea that electronic music was too perfect and therefore not human enough rests in the first place on what are the humanly constructed notions of

²⁶⁵ Mills to Tulloch and Alvarado, *Doctor Who: The Unfolding Text*, 20.

²⁶⁶ Tulloch and Alvarado, 19.

²⁶⁷ Niebur, 100.

²⁶⁸ *Ibid.*

human perfection. If the machines keep time too accurately it is because humans have programmed them in accordance with the values they find important, such as rhythmic regularity in music. Derbyshire expresses a different view of human agency in her recollection, because she describes the inaccuracy of the tape machines as an undesirable trait, but one that unintentionally became an integral part of the composition. Her ‘human’ agency in the process is not necessarily synonymous with intention, and is not diminished by this acknowledgement. Perhaps more importantly, such an acknowledgement erodes the distinction between human and technological agency in musical composition.

Derbyshire remembers that the problem with the tape machines was that they kept going out of time; they were too imperfect. Tulloch didn’t interview Derbyshire, and Niebur doesn’t mention that her description of the theme’s slight timing imperfections offers a very different view:

At that time there weren’t two machines that ran at exactly the same speed, so synchronising soundtracks became very complicated. Our main recording machines were the BTR2 and the TR90, both of which ran at fifteen inches per second. There were two other machines: the Ferrograph and the Reflectograph. Both of these machines ran at seven point five inches per second: half normal speed. It was very hit and miss, in fact it was a nightmare! That’s why I’m so fond of the original version of the *Doctor Who* title music, because of the way it’s never quite in synch. It’s almost as if there’s one dimension of time dragging against another. The bassline works like two notes together.²⁶⁹

Regardless of the machines used, even the most accurate tape recorders run out of sync, and the job of the producer in this situation would be to get them running *in time*, not the other way around. Thus, the binary posited by Tulloch, between mechanical similarity and human difference, is reversed: it is the machine that does not conform to a humanly conceived notion of rhythmic perfection, and the latter has to intervene in order to enforce that notion rather than intervening to add ‘imperfections’ to an otherwise perfectly timed computation.

Derbyshire’s recollection reflects a more open view of her authorship, which is not completely synonymous with intention or ego. Her agency in the process is not diminished by the fact that what has been interpreted as one of the significant musical elements of the theme was not strictly composed by her but was an accidental consequence of the unreliability of the best available technology. She also reflected this when she said in interview that she ‘didn’t

²⁶⁹ Derbyshire to Atkinson-Broadbelt.

know how it was going to sound.²⁷⁰ In hindsight she, Mills, and countless discussions of the theme have framed this accident of technology in contrasting ways to make it an integral part of the text.

3.2.5 Reception

Mystification of technology in electronic music was expressed in the numerous press reports about the *Doctor Who* theme when it was first made. It gathered a large amount of press attention at the time, and there are many press cuttings in the BBC Written Archives that show this. Nothing produced by the Workshop throughout its whole history received more media attention than the theme to *Doctor Who*. The previously cited *Daily Mirror* article about ‘Verity’s Tune’ states that it was ‘rapidly becoming the most talked-about TV theme.’²⁷¹ Other articles from 1965 onwards exclaimed that it was Workshop’s ‘best-known opus,’²⁷² and that ‘the credit titles would virtually steal the thunder from the starts of the serial.’²⁷³

The factor that caused so much attention to be given to the theme was invariably located in its technological origins, in particular in the surprise that a ‘recognisable tune’²⁷⁴ could be created with electronics: ‘The remarkable thing about the *Dr Who* music, written by Ron Grainer, is that although it has a vaguely orchestral sound, no orchestra played it!’²⁷⁵ The *Daily Mirror* described Briscoe, a ‘noise expert’, ‘and his team’ making the tune ‘without using a single musician or musical instrument.’²⁷⁶ It continues to state that the Radiophonic Workshop was usually used to make ‘odd noises’ for *The Goon Show* and ‘weird effects’ in the *Quatermass* television series: ‘But this is the first time electronics have been used to produce a recognisable tune that’s way out and catchy.’²⁷⁷ Cold-war imaged of technology as inhuman, futuristic and space-aged form a large part of the discussion, which describes the processes as ‘pure magic’²⁷⁸, with the Workshop located in ‘a room which looks a bit like the

²⁷⁰ Ibid.

²⁷¹ ‘Verity’s tune is way out—of this world!’, BBC Written Archives Centre.

²⁷² Last, ‘There’s music in that bottle’, BBC Written Archives Centre.

²⁷³ Mulcaster, ‘Weird Noises, But They’re All in a Day’s Work’, BBC Written Archives Centre.

²⁷⁴ ‘Verity’s tune is way out—of this world!’.

²⁷⁵ Foster, ‘Workshop makes strange music for science fiction’, BBC Written Archives Centre.

²⁷⁶ ‘Verity’s tune is way out—of this world!’.

²⁷⁷ Ibid.

inside of a space ship'.²⁷⁹ One press cutting in Derbyshire's archive reassures the reader that, despite its electronic origins, it was not 'picked up by radio telescope from outer space, nor was it beamed directly onto the recording tape as electronic waves from the brain of its composer Ron Grainer.'²⁸⁰ This is further emphasised in the earliest reports regarding it, which don't refer to the individual workshop 'technicians' that made it, describing instead a piece of music made 'without the use of any live instrumentalists whatsoever'²⁸¹ by an anonymous team headed by their 'noise expert' Briscoe.

However, from around the mid-1960s, discussions gradually stop emphasising the image of anonymous robotic scientists working behind closed doors and start to reflect the mundane reality of electronic music produced by average human beings. One clipping describes Derbyshire as 'a tall girl with a mixed mathematics and music degree [who] fiddled with some knobs, made a few calculations and produced the sounds which made one five-year-old wet the bed the first time he heard it.'²⁸² Another article is a dedicated biographical profile of her titled 'Delia Makes a Hit With *Dr. Who*', which describes the novelty of her presence at the Radiophonic Workshop: 'Here in this almost wholly male scientific preserve works 27 year old Delia, from Cedars Avenue.'²⁸³ It reads: 'Looking up from a tape-deck, Delia said: "In the three years I have been here I suppose my most popular accomplishment was doing the electronic setting to Ron Grainer's theme music for *Doctor Who*."' ²⁸⁴ Moreover, even the earlier articles about the theme contain pedagogical aspects regarding the production of electronic music and sound that belie the more entertaining images of it as a sci-fi fantasy-come-true. The article from *The Daily Mirror* about Verity Lambert explains that 'the secret behind the title music' is nothing more than a tune put together using 'three basic pieces of electronic equipment: an oscillator, a "white noise" generator, and another machine similar to an electric guitar.'²⁸⁵ It then continues explain in simple terms that 'each device produces electric currents which put on a loudspeaker become sounds.'²⁸⁶ The later

²⁷⁸ Foster.

²⁷⁹ Mulcaster.

²⁸⁰ 'DR. WHO: title music by Ron Grainer with the BBC Radiophonic Workshop', Papers Of Delia Derbyshire.

²⁸¹ 'Verity's tune is way out—of this world!.

²⁸² Mulcaster.

²⁸³ 'Delia makes a hit with "Dr. Who"', BBC Written Archives Centre.

²⁸⁴ Ibid.

²⁸⁵ 'Verity's tune is way out—of this world!.

²⁸⁶ Ibid.

reports that focus more on Derbyshire further allow her to explain some basic technical principles, such as the use of tape recorders to ‘take down the sounds we make from the equipment we have around us. Then they are mixed, selected, dissected, and finally put together in a sequence which we hope is acceptable and which qualifies as music.’²⁸⁷ The information in these articles suggest that the popularity of the television show and its theme tune opened up a space for public dialogue about electronic music by moving the surrounding discourse away from imagery derived in the fantasy world of science-fiction and towards a more normalised conception of music.²⁸⁸

3.3 *Inventions For Radio* (1963-5)²⁸⁹

During the same year that she worked on the *Doctor Who* theme, Derbyshire began working with British playwright Barry Bermange on a set of four experimental radio programmes collectively known as *Inventions For Radio: The Dreams, Amor Dei, The Afterlife, and The Evenings of Certain Lives*. Conceived as experimental sound broadcasts specifically designed to explore the radio medium, they were produced for and broadcast on the Third Programme over the course of two years. Louis Niebur includes an extended discussion of *Amor Dei* in his *Special Sound*,²⁹⁰ and here I will explore *The Dreams*.

All of the *Inventions For Radio* were composed from two elements: first, collaged recordings of ordinary interviewees talking around different broad existential and spiritual themes (dreams, God, death and the afterlife); second, ambient electronic music composed by Derbyshire. In this way, the programmes explicitly related to the inner psychological lives of the various narrators, and the electronic music serves as a soundtrack that highlights this subject matter. It fulfils the remit of ‘special sound’ to help convey the poetic or subjective parts of narrative that are difficult to convey; but unlike the very stylised sound effects in experimental radio dramas that the term was originally used to designate, it is much more like a musical accompaniment to the voices. Like the *Doctor Who* theme, it can therefore be seen in relation to the move away from ‘special sound’ towards music.

As with *Doctor Who*, the element of fantasy is underpinned by a sense of kitchen-sink realism. In this case, the realism of the *Inventions* comes from the documentary source of

²⁸⁷ ‘Composers Without Crotchets’, BBC Written Archives Centre.

²⁸⁸ Butler, ‘Way Out of this World! Delia Derbyshire, *Doctor Who* and the British Public’s Awareness of Electronic Music in the 1960s’.

²⁸⁹ Bermange, *The Dreams*, *Youtube*;
Archival recordings of all programmes accessible at The British Sound Archive, The British Library.

²⁹⁰ Niebur, 102-111.

the material, rather than imagery written into a fictional script. However, the Radiophonic Workshop's combination of familiar tonality with 'unusual' timbres and sounds is presented as before. As with *Doctor Who*, the use of this duality is based in the BBC's public service remit, exposing a broad audience to a vaguely modernist, forward-looking sound world while also anchoring it in everyday life and the widely shared musical language of tonality. Derbyshire was given much creative freedom and scope in these productions, compared to most Radiophonic Workshop commitments, but Bermange's authorship is still emphasised, with credits attributed to him and the Radiophonic Workshop, rather than to her in particular.²⁹¹

3.3.1 Barry Bermange

In his 1981 article 'British Radio Drama Since 1960', David Wade includes Bermange's name among an impressive list of contributors to radio drama around the early 1960s: 'Samuel Beckett, Harold Pinter, James Saunders, Giles Cooper, Louis MacNeice, Henry Reed, Barry Bermange, Tom Stoppard.'²⁹² He presents this list to '[suggest] that in many respects [radio's] condition was exceedingly healthy', and that a 'Golden Age of Radio—that term which is rather loosely applied to some of the more brilliant output of the late forties and the fifties—seemed to be continuing with undiminished splendour.'²⁹³ Bermange (b.1933) was a young British playwright at the time, known mostly for his radio plays, such as *No Quarter* (1962)²⁹⁴ and *Nathan and Tabileth* (1962)²⁹⁵. Described as 'comedies of menace',²⁹⁶ his plays focus on themes like death and old age, as well as the fear of darkness and water. Such existential preoccupations invited comparisons to Beckett, Ionesco, Marguerite Duras and the Theatre of the Absurd,²⁹⁷ although Bermange's work is generally much more naturalistic, exemplified by his use of documentary material in the *Inventions for Radio*. In this way it can perhaps be related as much to the kitchen-sink realism developing in broadcast

²⁹¹ 'The Dreams', *Radio Times*, 19.

²⁹² Wade, 'British Radio Drama Since 1960', 225.

²⁹³ *Ibid.*

²⁹⁴ Bermange, 'No Quarter', The British Library Sound Archives.

²⁹⁵ Bermange, *Nathan and Tabileth [and] Oldenburg*.

²⁹⁶ Bermange to Craig, *Interview with H.A.L. Craig on His Inventions For Radio*, The British Library Sound Archives.

²⁹⁷ Vinson, *Contemporary Dramatists*, 88.

dramas of the decade, such as *Play For Today*,²⁹⁸ as to the surrealism of those more institutionally feted names. As already seen with *Doctor Who*, the power of broadcasting was rested in its ability to offer a window into contemporary reality, so realistic or documentary shows were ways of exploring its medium-specificity. The *Inventions* provide only the earliest example of Bermange's interest in doing this. His later 1969 television play *Invasion*, broadcast as part of the BBC's '30-Minute Theatre' series, was a live, improvised piece in which a dinner party is gradually submerged by television images of Vietnam flickering across the screen.²⁹⁹ Later, his 1977 BBC radio production, *S.O.S*, was 'scored' for eleven voices, with spoken material drawn from distress signals from the international code of signals.³⁰⁰ Bermange, in conjunction with the Radiophonic Workshop again, used audio collage and vocal processing such as distortion with radio waves, feedback, echo, layering, and filtering. The result is very eerie, resembling the sound of radio distress signals going in and out of range, and the effects are so often confusing that the announcer introduces the programme with the following warning: 'it contains a number of unusual, sometimes disturbing sound effects: voices distorted by radio waves, and sudden dead silences, suggesting a breakdown in transmission. These effects are intrinsic to the production and you should make no adjustment to your radio while you're listening.'³⁰¹

Bermange's early reputation for exploratory writing is not matched by a proportionate amount of writing on him in Britain, despite being renowned elsewhere in Europe. He is one of several examples discussed in this thesis that hint towards a pattern of hostility towards experimental artists in Britain compared to elsewhere, one that may be related to the number of those discussed here who retreated from public life. An anthology volume, *Contemporary Dramatists*, suggests that 'no other writer can rival him for controlled daring and insight into the potentialities of experimental drama,'³⁰² confirming Bermange's role as a young, emerging talent. With reference to the *Inventions*, Bermange is described as having 'invented a new form of radio and theatrical experience,' with Berio's work for Italian radio offering 'the only possible contemporary parallel.'³⁰³ From BBC motion and sound catalogues, it appears that he ceased writing for British broadcasting in the late 1970s. However, he continued to work in German and European broadcasting, where his work had

²⁹⁸ Cooke, *British Television Drama: A History*.

²⁹⁹ 'S.O.S', *Radio Times*.

³⁰⁰ Bermange, 'S.O.S', The British Library Sound Archives.

³⁰¹ *Ibid.*

³⁰² Vinson, 88.

³⁰³ *Ibid.*

long received acclaim.³⁰⁴ In 1998, his *Mirage Kino* won the Prix Ars Acustica, and his work continues to be celebrated in Germany, with a rebroadcast of *The Dreams* scheduled to celebrate his 80th birthday November 2013.³⁰⁵ Bermange stated that he was, in fact, happier to receive recognition from abroad than from home, remarking ‘they can’t reach me from Germany.’³⁰⁶ He stated that he enjoyed anonymity: ‘I tend to hug the shadow. I don’t care too much for being out in the open; continually got-at by newspapers or journalists and people like that.’³⁰⁷ His aversion to recognition from his home country may partly explain his later, mysterious absence in British media, in contrast to the other names on Wade’s list of radio dramatists.

3.3.2 *The Dreams* (1963-4)

*The Dreams*³⁰⁸ was the pilot *Invention* in the cycle, broadcast in prime time at 7:15pm, Sunday, January 5, 1964, and repeated ten days later.³⁰⁹ It is forty-five minutes long and contains five sections: ‘Running Away’, ‘Falling’, ‘Landscape’, ‘Underwater’ and ‘Colour’.³¹⁰ Each section consists of Bermange’s collaged recordings of interviewees talking around the themes of the sub-titles, which are based on their recollections of dreams. Derbyshire helped to create and edit the collages using tape splicing, and she composed ambient electronic musical settings to accompany the voices.

3.3.2.1 Medium-Specificity

The title of the series, *Inventions For Radio*, reflects Bermange’s interest in medium-specificity. Here he explores the ability of radio to encompass a mixture of mediums that include poetry, documentary, narrative and music. Spoken words are central, but the individual sections in each programme (‘Running Away’, ‘Falling’, etc.) are described as ‘movements’ in its *Radio Times* listing,³¹¹ suggesting a structure to be considered musically

³⁰⁴ Bermange to Craig.

³⁰⁵ ‘Barry Bermange 80 – 08.11.2013 *The Dreams* von Barry Bermange’, *WDR 3*, online article.

³⁰⁶ Bermange to H.A.L. Craig.

³⁰⁷ *Ibid.*

³⁰⁸ Bermange, ‘*The Dreams*’, The British Library Sound Archives.

³⁰⁹ ‘*The Dreams*’, *Radio Times*.

³¹⁰ *Ibid.*

³¹¹ *Ibid.*

as well as dramatically or poetically. The term ‘movement’ suggests a link to Western art music, in particular, placing the shows in that frame of cultural reference.

As with previous examples of experimental radio at the BBC, Bermange implies that Western art music has extended beyond its traditional boundaries, based around harmonic structures, and is now working in the looser framework of organised sound. However, his application of the term to narrative suggests a conception of music that is even broader and more oblique. In a 1964 interview with H.A.L. Craig, Bermange explains, ‘I think that all my plays are conceived musically, I think a sense of music is running through them all.’³¹² Louis Niebur’s suggestion that the division into ‘movements’ invites comparison with the symphony more than any other form perhaps glosses over the abstract dimension of Bermange’s thinking.³¹³ A note regarding *The Dreams* in Delia Derbyshire’s manuscripts further indicates that Bermange’s conception of the ‘musical’ dimension has more to do with an emphasis upon narrative pacing: ‘The whole is to be formally organised in a musical sense. [...] Time scale – the inverse logarithmic half way in a 30 minute programme (for placing of climax) is 17 ½ mins.’³¹⁴ For Bermange a ‘musical’ conception of dramatic structure leads him to think about the ‘placing of climax’ as an event occurring in a specific space in time, rather than as part of a chain of causality in a narrative.

3.3.2.2 ‘Working in Reverse’: the Experimental Approach

Bermange had an exploratory approach to mixed media, starting out without a definite idea of the desired end product apart from a general concept of pacing. This made his approach compatible with the experimental techniques that Derbyshire used at the Radiophonic Workshop. Bermange started by recording five hours of interviews, giving no further guidance to his interviewees apart from the very broad theme of dreams.³¹⁵ He explains that there was little idea before the interviews what material he might gather: ‘There was no plan in fact, the thing was spontaneous. It was an invention in the sense that things happened which gave rise to new ideas and the one thing set the other off.’³¹⁶ For him, the creative process involved delineating a space for inspiration to happen organically.

³¹² Bermange to Craig.

³¹³ Niebur, 103.

³¹⁴ ‘Mid-century Attitudes: Dreaming’, Papers Of Delia Derbyshire.

³¹⁵ Bermange to Craig.

³¹⁶ Ibid.

Bermange described how he used interview recordings and collage techniques, collecting ‘raw material’ from ‘the world at large’ and letting the external stimulus of his interviewees guide the substance of the work to be composed.³¹⁷ He said that he was ‘working in reverse from the normal way of working.’³¹⁸ Instead of starting with the idea, composing a script and then engineering its materialisation, ‘you’re taking the raw material and you’re using it, you’re making it into something artistic, this raw material, instead of working the other way around.’³¹⁹ Bermange’s description of ‘working in reverse’ can also be applied to many of the working methods employed at the Radiophonic Workshop during that time. The ‘raw material’ was often taken from domestic or non-musical, non-‘artistic’ sources and made into something ‘artistic.’

While parallels between the approaches of the Radiophonic Workshop and Bermange appear clear in retrospect, this was not the case at the time of the broadcast in 1964. The often ad-hoc nature of production at the Radiophonic Workshop was not commonly publicised at this time. The listing of *The Dreams* in the *Radio Times* contains a description that reflects its public image as a mysterious scientific laboratory, contrasting it with the more human sources of speech: ‘all the voices were recorded from life and arranged in a setting of pure electronic sound’.³²⁰ The electronic source of the music is not considered to be ‘from life’, but is ‘pure’, clinical, abstract. In actuality, while the voices do betray their documentary origin, they are also cut up and collaged in a manner that juxtaposes realism with a sense of artifice. H.A.L. Craig suggested that they articulate ‘the simple and common description to a number of very profound themes,’³²¹ functioning as both documentary and poetry. Both he and Bermange agree the latter has used his ‘skill perhaps as a dramatist or as a writer in editing the material in such a way that it gives the impression of a written work.’³²² Thus, the documentary material is framed according to his own ideas, even while the uncontrived tone of their voices emphasises that the speakers are not actors and that they are not reading from a pre-written script.

³¹⁷ Ibid.

³¹⁸ Ibid.

³¹⁹ Ibid.

³²⁰ ‘The Dreams’, *Radio Times*.

³²¹ Bermange to Craig.

³²² Ibid.

3.3.2.3 Words: Taxonomy and Narrative

In accordance with his method of ‘working in reverse,’ Bermange did not start with predetermined ideas about how the different sections of *The Dreams* should be categorised, instead using the recurring themes that he noticed emerging during interviews.³²³ He illustrated the interchange between chance and time-consuming work by comparing the process to ‘boiling five gallons of water and catching the steam as it drops from the ceiling.’³²⁴ However, notes from Derbyshire’s archive suggest that he did not work alone on the second part of the process. Both she and Bermange selected forty-five minutes of material, using these tropes to separate and categorise it into the five ‘movements’ and creating a taxonomy for each one.³²⁵

The same notes show that throughout August 1963, the recordings were first transcribed into ‘scripts,’ which were initially going to be categorised into five ‘colours.’³²⁶ However, the end result was organised into the most common themes that repeatedly appeared in conversation, with only the final movement invoking colours. Using these scripts, the two of them listened back to the recordings, splicing and organising the tapes into the five taxonomies on 19 August.³²⁷ One typed document suggests that the next day they listened to the categories to ‘plan, shape, order’ and roughly edit, before fine editing at the end of the month.³²⁸ There are also notes in her handwriting regarding the detailed editing of the voices. Bermange’s description of ‘boiling five gallons of water and catching the steam’ reflects the careful selection and editing of hours of recordings into a dream-like narrative. However, he was probably aided considerably in the process by Derbyshire, who seems to have played a much more active role in this process than he recognises in interview. In a note Desmond Briscoe writes: ‘we need to discuss Delia’s contribution to *The Dreams* apart from the obvious electronic track,’³²⁹ further demonstrating the likelihood that she worked extensively on editing the voices together.

³²³ Ibid.

³²⁴ Ibid.

³²⁵ ‘Mid-Century Attitudes: Dreaming’, Papers Of Delia Derbyshire.

³²⁶ Ibid.

³²⁷ Ibid.

³²⁸ Ibid.

³²⁹ Briscoe, ‘Handwritten Note’, BBC Written Archives Centre.

In addition to the attribution of single themes to each movement, more specific recurring motifs or images are also edited together within them, creating smaller taxonomies within each theme. This organisation results in sections that approach narrative in their structure, with certain images leading logically into others. For instance, accounts of running up hills lead to descriptions of people arriving at the tops of cliffs before falling off them into the sea. ‘Running’ begins with several people introducing the movement with general remarks about running and being chased. These are also edited together into short phrases and interjections, giving the section a fast pace:

I was running and I was being chased,
 I was running down the street, into a house, through the house...
 ...down the stairs,
 ...out the back,
 And I was being chased,
 ...faster and faster³³⁰

After this initial section, the pace slows down, with longer strands of speech about more specific images, as well as more pauses. The voices of two women talking about running down corridors and up stairs are interpolated:

So I run along the corridor and I run up the stairs,
 And some great monstrous shape walks towards me in the corridor.³³¹

The dialogue established between the two women is interspersed with the voices of two men talking about being chased by animals, interpolated in a similar manner:

There was a crocodile chasing me,
 I was running,
 There was a crocodile chasing me. I swam as fast as I could to get away from the crocodile, but the crocodile suddenly changed into a lion, and then that changed into a tiger,
 The animals really don’t mean to chase me but because I’m frightened and I run they follow me up!³³²

³³⁰ Bermange, ‘The Dreams’, The British Library Sound Archives.

³³¹ Ibid.

After more speech about the subject of running up stairs, the final section of the ‘movement’ leads on from the images of running upwards with a series of descriptions of reaching the edge of cliffs:

I can see this corridor stretching into the distance, the perspective of it just fading into absolute nothingness.

...I couldn’t remember anymore.

I was running very very fast, somehow I couldn’t stop running. I came to the edge of a great big cliff.

And just as I was getting to the edge of the cliff, and just as I was getting to the edge of the cliff [sic].³³³

Finally, the voices describe themselves falling off the edge of the cliff:

Then I sort of felt myself falling over the cliff,

I was falling,

Falling over the cliff,

[silence]

Falling over a cliff, [with echo]³³⁴

Not only does this signal a logical narrative directed towards the end-point of the movement—from running down streets, corridors, up stairs, up a cliff, and then falling over it—it also leads into the beginning of the next movement, ‘Falling’. The organisation of the recordings is created according to a fragmented narrative: there is not one narrator, or protagonist, but rather several anonymous voices often talking about different things. There are, however, narrative links running through their accounts, continuing throughout all five movements. During ‘Falling’, the motif of descent into a dark void is established by means of repetition:

Sinking, sinking into this great black void,

Reeling down into a sort of chasm; reeling down into a sort of great big hole,

Was a long way down,

³³² Ibid.

³³³ Ibid.

³³⁴ Ibid.

And I felt myself falling; I couldn't do anything about it; fell off the edge of the mountain; it was very dark; seemed to go down and down and down [...] ³³⁵

The next movement, 'Underwater,' is prefigured early on in 'Falling' with a description of falling underwater:

Sinking and sinking into this great black void, I see no clouds at all, I was falling through this water; it was all around me this water, I didn't like it [...].

All I can remember is falling through the water; it was very dark and very deep, Floating downwards through this water, all going downwards all the time [...]. ³³⁶

Similarly, 'Underwater' follows a similar pattern: the drowning motif is quickly established, before land, the theme of the next movement, is introduced, and the sense of floating in a dark void is cut off by the image of having landed on ground:

I go into the sea, and I go right down into the bottom and there is some land there, the land at the bottom of the sea. ³³⁷

Finally, 'Landscape' contains a similar prefiguring of the following movement, 'Colour', among descriptions of different landscapes seen by people in their dreams. One woman talks about a landscape 'like the moon because its all dried up; it's a very funny red,' ³³⁸ while the final line in the movement is spoken by another woman talking about a 'very deep blue sea,' ³³⁹ also harkening back to the previous movement. The final movement, 'Colour,' acts as a full stop to the whole programme without any forward momentum leading anywhere. It begins with a section describing a variety of colours, giving the impression of a multicoloured spectrum:

All coloured; All coloured,
I remember my dreams by the colours they are,
The colours that you see in churches: bright blues and yellows and reds,

³³⁵ Ibid.

³³⁶ Ibid.

³³⁷ Ibid.

³³⁸ Ibid.

³³⁹ Ibid.

Blue and yellow and green,
 Red and green and blue and orange [...]³⁴⁰

The mention of the church may have purposefully prefigured the next programme, *Amor Dei*, or perhaps it acted as an inspiration, or perhaps there is no link at all; regardless, by the end of the movement the colours have become saturated into white, black and silver—from all colours to no colours—providing a very definite end-point:

Black
 White
 Silver, the glasses are silver, white glittering silver: There seems to be no colour at all.³⁴¹

It is clearly evident upon listening that the speech has been organised according to themes, after careful sorting of the collected material. The cuts from one voice to another, along with the narrative structure that emerges, are signs of authorial construction. For Bermange, this was ‘working in reverse from the normal way of working’ because the structure of his work had to emerge from the given ‘raw material’ to be organised into ‘something artistic.’ However, for Derbyshire this was entirely consistent with her ‘normal’ way of working: composing in response to other people’s ideas, and making non-‘artistic’ materials into something ‘artistic.’

3.3.2.4 Music: ‘Working in Reverse’ and Authorship

Although she was still working to order, Derbyshire composed her music for *The Dreams* with little more than basic instructions from Bermange. This gave her an unusually large amount of freedom to experiment. He explains:

I don’t actually manufacture the basic music. I go along and I ask for certain basic sounds to be produced for me, and from these, as with the voices, I make a selection of the kinds of sounds that I think would suit the particular movement that I’m engaged on.³⁴²

³⁴⁰ Ibid.

³⁴¹ Ibid.

³⁴² Bermange to HAL Craig.

Bermange refers to the music as having a similarly serendipitous origin to the voices that he uses, making no strong authorial claim upon either. Working notes show that Derbyshire had to have ‘basic sound elements’ finished before meeting with Bermange to edit them.³⁴³ If Bermange requested these ‘basic sound elements’ to be finished before his editing began, he may have been intending to base his editing decisions upon the music with which he was presented, entrusting Derbyshire with a significant amount of creative input into the programme.

With Bermange’s minimal input into the electronic music, Derbyshire was therefore allowed relative freedom to compose a significant amount of music according to her own ideas. This freedom allowed her to pursue her interest in creating experimental electronic synthesis that was based upon both intuitive and analytical processes. She had already begun to do this with the *Doctor Who* theme earlier in the year; and as Derbyshire remarked, this combination helped make the medium more acceptable to a popular audience: ‘In those days people were so cynical about electronic music [...]. It proved them all wrong.’³⁴⁴ A link can be traced between *Doctor Who* and *The Dreams*. Her earlier theme tune was first of all a melody, realised by means of electronic tones; the basic material of the piece is the progression of the melody and harmony from beginning to end, representing the element of the ‘normal’ and everyday in the programme. In contrast, the electronic timbre helped to convey the ‘uncanny’ through its association with exoticism and otherness. The theme to *Doctor Who* presents these characteristics within the frame of a widely understood musical form: a simple melody grounded on a bass line having a clear harmonic progression and resolution. Her music for *The Dreams* was much more distant from established conventions, exploring timbre in more detail than melody and harmony. It didn’t present the latter two clearly at all, but rather concerned the development of more complex timbres through time, with the movement of overtones being the main focus of the music. In contrast to the *Doctor Who* theme, timbre and harmony are not created as distinct musical elements. The opposition between electronic sounds (representing the ‘other’ or the unfamiliar) and Western harmonic language (the familiar) is made ambiguous by composing in way that emphasises the link between harmony and timbre. Jean Claude Risset, in talking about his use of synthesis using similar principles later in the same decade, described the way that harmony could be ‘prolonged’³⁴⁵ to become timbre, while timbre ‘can become harmonically functional.’³⁴⁶

³⁴³ ‘Mid-Century Attitudes: Dreaming’, Papers Of Delia Derbyshire.

³⁴⁴ Derbyshire to Hutton.

Using this bridge between functional harmony and unusual timbres, Derbyshire continued to explore the problem of producing electronic music for large audiences that would not elicit ‘cynical’ responses. Importantly, the previous distinction between ‘normal’ melody and the ‘exoticism’ of timbre in electronic music is eroded when the two are made to overlap in this way.

In *The Dreams* there are several layers of electronic sounds that contain specific pitches chosen from a major triad. These are constructed from sine tones that loop with different lengths to create a shifting texture. However, they appear to emerge from a single spectrum, like the extended ringing partials of a bell sound. The use of frequencies from triadic harmony means that the collection of tones can be heard both as a chord and as an intermingled, evolving timbre. Each individual note is still evident, but the varying dynamics for each creates a sound that is more ambiguous than, for instance, the same pitches reproduced on a piano, where there is less control over that parameter. Most of the sounds in this section fade in and out, blending and bleeding into one another, with only the occasional strong attack on a tonic/fundamental, suggesting a bell-like chime with very long decays. The shifts of amplitude in each tone could only have been produced by manually altering dynamics in real-time using volume controls on a mixing console, making the combination of live performance and analytical editing integral to the structure and effect of the piece. Below I will discuss how Derbyshire continued to explore a similar technique in her later piece *Blue Veils And Golden Sands*, expressing a sense of what she described as ‘disembodied humanity’,³⁴⁷ which further complicates the discourse about the human relationship with technology.

3.4 *Blue Veils and Golden Sands* (1968)³⁴⁸

In 1968 Derbyshire used a very similar approach to synthesis to make incidental music for an episode of the long-running natural-history documentary series, *The World About Us*, titled ‘The Blue Veiled Men.’³⁴⁹ The show was produced by John McFadin and was broadcast on

³⁴⁵ Risset, ‘Computer Music Experiments 1964’, 13.

³⁴⁶ Ibid

³⁴⁷ ‘Sound in Mind: An Exploration of the Aural Stimulation of the Imagination produced by Desmond Briscoe, Radio 3, 21st Anniversary of Radiophonic Workshop’, BBC Written Archives Centre.

³⁴⁸ *BBC Radiophonic Music; Music From the BBC Radiophonic Workshop*, CD; *Doctor Who at the BBC Radiophonic Workshop – Volume 2: New Beginnings 1970-1980*, CD.

³⁴⁹ ‘Radiophonic Workshop Catalogue’, BBC Written Archives Centre.

BBC2 Sunday, 30 June, at 7.25pm.³⁵⁰ The programme is a documentary; but as with the *Inventions for Radio*, its place in the documentary genre can be seen as ambiguous. First, *The World About Us* was commissioned in order to showcase new colour-television broadcasting, suggesting an emphasis on stylistic creativity within the medium. Second, the Middle Eastern setting conjures up Orientalism, with the East represented as a fantasy of exoticism and otherness. Both points relate to the incidental electronic music composed for the programme: like colour television it was a new and technological medium that showcased the BBC's ability to present something fresh and exciting; and moreover, electronic music was a medium that represented qualities of otherness and exoticism for many.

3.4.1 Showcasing Colour: Television Aesthetics

The World About Us was commissioned in 1967 by David Attenborough (Controller of BBC2 at the time) to help promote the new colour television service.³⁵¹ It was launched in December 1967 to coincide with the first full evening of colour television in Britain.³⁵² Regular producer Barry Paine described it as a 'series designed to sell colour television sets.'³⁵³ It was one of the show's functions to advertise colour television, and this resulted in striking and impressive images chosen to showcase the new medium. Media theorist John Ellis notes that creative explorations of the televisual image allowed by technological developments have rarely been matched in sound, with the quality of speakers generally regarded as less important.³⁵⁴ Still, the soundtrack would also have helped showcase the audiovisual medium, even if the emphasis was on image rather than sound.

The importance of colour indirectly led to an emphasis on individual contributors. It was difficult to source colour stock films at this time, so the show had no regular format or fixed subject matter, with an unusually broad remit ranging over geography, anthropology and natural history.³⁵⁵ According to series editor Peter Jones, 'the idea was to give the audience a surprise each week. It was as far from the contemporary concept of formatted television as you could get.'³⁵⁶ Each episode existed as a separate film, emphasising the role

³⁵⁰ 'The World About Us', *Radio Times*, 13.

³⁵¹ Parsons, *True to Nature*, 254.

³⁵² *Ibid.*

³⁵³ Paine to Parsons 'Oral History: Barry Paine'.

³⁵⁴ Ellis, *Visible Fictions*, 128.

³⁵⁵ Parsons, 254.

of individual contributors more than a more coherent series would. This is evident in Derbyshire's work for 'The Blue Veiled Men' because she is credited with making its music, in contrast to the usual anonymity of the Workshop in credits.³⁵⁷ Such an emphasis translated in practice to rich visual documentary material to which she could react creatively.

3.4.2 Music: Disembodied Humanity

Derbyshire carefully produced her music to fit the pacing, mood and imagery of the programme. This particular episode was billed as the story of the Lazoune tribe, who walk 900 miles across the Sahara every year. It was an appropriate subject matter to explore the new colour medium, providing a some striking visual images: the men of the tribe wear bright blue veils, which contrast with the image of their golden coloured camels treading across the desert sands. As the *Radio Times* says, 'to us it is a remarkable journey,' providing some 'remarkable' images.³⁵⁸ Derbyshire's piece *Blue Veils and Golden Sands* accompanied the fade from the title credits to the programme's cinematic opening shots of a camel train across the desert. She described it as a sequence of 'stunningly beautiful images,'³⁵⁹ which were evidently 'beautiful' enough to provide ample inspiration for imaginative interpretation.

In the 1973 Radio 3 documentary about the Radiophonic Workshop, *Sound in Mind*, Derbyshire spoke about the idea of introducing a 'disembodied humanity' for a soundtrack to the 'middle of the desert.'³⁶⁰ Her sounds are carefully placed, timed and conceived in relation to the images, 'embodied' in the clear physical reality of the recorded image. But like soundtracks more generally, they are also 'disembodied' and disconnected from the realistic space represented in the visuals—a projection of inner psychological and metaphysical themes onto an 'embodied' space. She also implies that electronic sound achieves this in a different way than does traditional music: 'If one's using an orchestra, one's always conscious of 'What's that violin doing in the middle of the desert?''³⁶¹ Her example suggests

³⁵⁶ Ibid.

³⁵⁷ 'The World About Us', *Radio Times*.

³⁵⁸ Ibid.

³⁵⁹ Briscoe, *The BBC Radiophonic Workshop: The First 25-Years*, 83.

³⁶⁰ 'Sound in Mind: An Exploration of the Aural Stimulation of the Imagination' produced by Desmond Briscoe, Radio 3, 21st Anniversary of Radiophonic Workshop', BBC Written Archives Centre.

³⁶¹ Ibid.

that she viewed the ‘special’ electronic sounds of the Workshop as more adaptable to associations with images than were traditional orchestral instruments, which already contained many ‘human’ associations. The violin is already ‘embodied’ in the image of the instrument and its human cultural context; in contrast, electronic sound was taken to be abstract and therefore ‘disembodied’, without the preconceived physicality evoked by the sounds of traditional musical mediums such as the orchestra.

In her discussions of the piece Derbyshire revealed that she made musical motifs corresponding to the visual images on screen. These comprise four simple loops of different lengths that repeat to create independently shifting layers, fading in and out at different points: an ambient layer of complex synthesis; another background layer of high-pitched feedback resembling the ambient sound of crickets at night; a very high, thin, reedy sound slowly oscillating around three pitches; and a melody of three pitches using an oboe-like timbre. There is a sense of regular pace, but no time signature, with freely drifting rhythms. She uses her musical material economically, with only a few short loops, but creates a surface impression of more complexity with the relations between the layers changing as they move at different paces. Even though all of the separate layers are discrete and repetitive in themselves, there is no perceived repetition in the overall texture. Further, the shifting layers create a sense of weightlessness and disembodiment, lacking a time signature and with no single part grounding the piece harmonically or rhythmically to act as a frame of reference for the other layers.

Derbyshire explained that she imagined ‘the thin line of a camel train crossing the desert in the heat of the sun’³⁶² as a ‘very high, slow reedy sound.’³⁶³ For her, the sound was designed to ‘indicate’ the onscreen image of ‘the strand of camels seen at a distance, wandering across the desert.’³⁶⁴ She took a characteristically analytical approach and used the pacing of the camel’s feet to dictate the rhythm of this motif: ‘I measured out the pace of the camel’s feet on the film and made my music to fit them exactly.’³⁶⁵ Thus it is not a regular time signature that dictates the pulse and meter of the piece, but the movement on screen, embodying the sound in the imagery.

The melody has a similar reedy timbre, but less harsh than the camel train motif. While the latter hovers around a perfect fifth, minor sixth, and minor second, the melody centres around a tonic and a minor second and third, giving it a clichéd sense of exoticism, matching the Middle Eastern location of the programme. There is a sense that it is vaguely

³⁶² Briscoe, 83.

³⁶³ Derbyshire to Cavanagh.

³⁶⁴ Ibid.

³⁶⁵ Briscoe, 85.

rooted in a tonic of some sort, but it is not based around a Western classical triad. Rhythmically, it slips between phrases: one with ornaments, giving a faster sound, and one without. Both are simple repetitive loops, but it is difficult to tell where each begins and ends, giving the whole an impression of modernist complexity and exotic harmony, which is offset by the familiarity developed by repetition. The atmospheric background texture was also inspired by specific visual images, such as ‘the distance of the horizon and the heat haze’ and a ‘beautiful’ image of a man with a billowing blue cloak against the desert sand: ‘At the end of the Tuareg sequence there is a most beautiful shot of one man with his blue cloak billowing out, and my thought was to find a beautiful sound and then make it swirl.’³⁶⁶ She creates a spectral, bell-like timbre of extended harmony, comparable to the one already used in *The Dreams*, but with more inharmonic spectra that was present in the triadic harmony of the previous piece, adding to the exotic otherness of the piece.

3.4.2.1 Artificial Acoustics and Synthesis

Derbyshire uses a combination of techniques; some were standard in the Radiophonic Workshop, while some were unique to her. Standard Workshop techniques were used in the melodic line, where she used a single spliced note taken from a recording of her own voice and edited it into a melodic line. She explained in interview: ‘The rhythm that you hear is not me singing the tune. I recorded just one note and cut it up and speed-changed it, and then cut it into an obligato rhythm.’³⁶⁷ One makeup tape reveals her process very clearly.³⁶⁸ It starts with the sound of her singing three notes tuned to a piano. The notes have already been slowed in speed and pitched down:

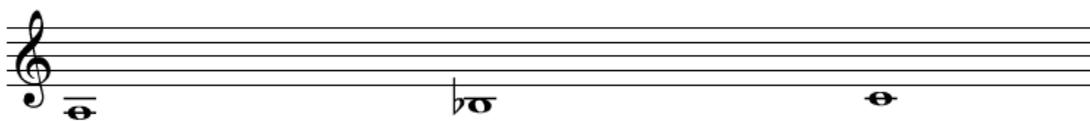


Figure 1: Transcription based on makeup tape for *Blue Veils And Golden Sands*.

When these notes appear again on the tape, they have been extended. Derbyshire could have done this by trimming their starts and ends in order to remove their attacks and decays. The remaining parts would have had a relatively flat dynamic, making it possible to use each one

³⁶⁶ Ibid.

³⁶⁷ Ibid.

³⁶⁸ ‘Blue Veils Camels’, Tapes Of Delia Derbyshire.

to create a tape loop that would sound like one continuous note when played back. The output of these loops could be recorded onto another tape, and then the resulting recording could be cut up to create notes of different desired lengths, corresponding to different measurements of tape. A rhythm may then have been made by sticking together those sections of tape to make another loop. The next part to appear on the makeup tape is the latter stage in that process, with two versions of a similar melodic line:



Figure 2: Transcription based on makeup tape for *Blue Veils And Golden Sands*.



Figure 3: Transcription based on makeup tape for *Blue Veils And Golden Sands*.³⁶⁹

These extracts have a dry, perhaps mechanical sound, without any audio effects or processing, and without any apparent envelope shaping. Typically, however, Derbyshire didn't stop at straightforward splicing and multitracking. The makeup tape shows how she prepared several versions of the same melodies, using different treatments to add a variety of artificial acoustics to the line. During the course of the final piece, the acoustic of the melody subtly changes as she fades these different versions in and out. There are versions with added reverberation and varying levels of tape echo, while one is reversed after those treatments. In the final piece, and on another makeup tape, this reversed version can be faintly heard in the background.³⁷⁰

This piece exemplifies Derbyshire's remarks about 'disembodied humanity.' She reflects but also subverts earlier presumptions that electronic sounds are made more 'naturalistic' by making them more complex. While reverberation and tape echo make reference to a naturalistic sense of space by emulating the way that sounds reflect off objects and surfaces, they also add more movement and activity to sounds that may otherwise seem

³⁶⁹ Ibid.

³⁷⁰ 'Blue Veils Copy Masters', Tapes Of Delia Derbyshire.

too dry or dull. I have already shown how electronic sound was often regarded in this way. Derbyshire adds extra interest to a sound that is originally rather plain by using reverberation and tape echo creatively. She also produces a sense that the sounds are happening in a space other than the studio environment in which they were actually recorded. The reversal of an echoing sound precludes that sense of space from appearing realistic, instead presenting a combination of naturalism and artificiality. This combination applies her thinking about the ‘disembodied humanity’ that electronic music techniques can be used to create, dislocating and subverting expectations based upon the norms of musical language and the natural way that sound behaves in different spaces.

The techniques for the ambient textural layer are characteristic of Derbyshire’s interest in synthesised bell-like drones, already illustrated by *The Dreams*. Both pieces reflect the same duality by combining semi-recognisable sounds with the otherness of electronic processes. She described creating the synthesis in *Blue Veils and Golden Sands* using the same technique she had used before in *The Dreams*. However, here she takes a recording of a ringing sound from a metal lampshade as the starting point. She explains:

My most beautiful sound at that time was made by a tatty green lampshade which was lying around the studio. [...] I hit the lampshade, recorded that, and then faded up the sound into the ringing part without the percussive start. I analysed the sound into all its partials and frequencies. Then I took the twelve strongest partials and reconstructed this sound on the Workshop’s famous twelve oscillators to give a whoosing sound.³⁷¹

The resulting sound has a strong attack and long decay, which is reminiscent of the complex patterns of partials found in large resonating objects such as a bells or chimes. However, it is not simply an imitation of the behaviour of the object she chose to base it on, just as her use of reverb and echo in the melody are not intended to simply imitate natural acoustics. While the frequencies she uses are taken from the sound of the resonating lampshade, the very long decay of the sound creates a drone-like effect, rather than retaining the kind of decay that could normally be expected from such instruments.

³⁷¹ Ibid., 86.

3.4.3 Reception and Legacy

This piece soon became an important and well-known part of her oeuvre, extending her reputation for complex and nuanced electronic music. It was renamed as *Blue Veils and Golden Sands* and included on a commercially released BBC compilation in 1968. One reviewer from *Gramophone Magazine* contrasted it to the rest of the music on the release, suggesting that it showed how she ‘follows the analytical approach of the more sustained electronic compositions.’³⁷² Reviews from the time show that her music attracted more interest than the other contributions on the compilation, with one reviewer writing: ‘notably the works of Delia Derbyshire have enough interest to exist in their own right.’³⁷³ Another wrote: ‘“Blue Veils” and “Delian Mode” are probably the finest music here... If her best pieces seem the most imaginative here—and they are—it is because she more fully explores the implications of her material.’³⁷⁴ Her considered and analytical approach, showcased with the commercial release of *Blue Veils*, gained her a strong reputation as a leading figure in British electronic music. However, it also made it difficult for her to work at the BBC, where her way of working became harder to sustain as the corporation moved towards a culture of austerity and conservatism in the 1970s. She explained that the techniques she used in this piece and others like it required so much equipment that she had to work through the night: ‘That is one of the main reasons that I always seemed to end up working at night. I used so much equipment that I had to wait until everyone else had gone so that I could borrow it.’³⁷⁵ Her tendency towards complex ideas and techniques, requiring an exploratory approach, created results that gained her a reputation as the Workshop’s most creative voice; but it also stretched the resources available at the Radiophonic Workshop, in addition to her wellbeing.

3.5 Radio Drama Collaborations With Angela Rodaway (1964-5)

3.5.1 Angela Rodaway

Derbyshire collaborated on several radio plays with the author Angela Rodaway (1918–2012), with whom she had an occasionally fraught relationship. Derbyshire made electronic music and effects for Rodaway’s three BBC Third Programme drama productions: *The Death*

³⁷² ‘Review of BBC Radiophonic Music’, BBC Written Archives Centre.

³⁷³ ‘BBC Radiophonic Music’: Review: Hi-fi News’, BBC Written Archives Centre.

³⁷⁴ ‘Review of BBC Radiophonic Music’, BBC Written Archives Centre.

³⁷⁵ Briscoe, 85.

of *the Jellybaby*,³⁷⁶ *Gravel*,³⁷⁷ and *The Flame*.³⁷⁸ As with the previous examples, these dramas explore familiar notions of reality, juxtaposed with the surreal and uncanny. At least one of the plays is based upon autobiographical events, grounding the narrative in a strong sense of reality. However, much of the material concerns memory and subjective experience rather than documentation or realism. The electronic sound and music reflects this subject matter, with the extensive use of sound effects and field recordings edited and treated in a way that detaches them from straightforward realism without removing their link from reality altogether.

Rodaway gained fame as an author when she published her 1960 autobiographical novel, *A London Childhood*, which told the story of her childhood and adolescence living in poverty in Islington.³⁷⁹ She began writing drama for the BBC in 1964 with *The Death of the Jellybaby*, but stopped writing for ten years in 1967 when her son was convicted of stabbing a man in a Bristol library. In 1976, her son committed suicide, marking the end of a decade without writing.³⁸⁰ Derbyshire and Rodaway had much in common and remained close friends until shortly before Derbyshire's death, when they fell out over her alcohol consumption.³⁸¹ Brian Hodgson explains, 'they were both intellectuals; they both communicated on that level.'³⁸² Both women came from working-class backgrounds and aspired to creative careers, but Rodaway was older and grew up in much poorer circumstances, going to school before the 1944 ROSLA (raising of school leaving age).³⁸³ Nevertheless, they were two similarly 'strong'³⁸⁴ personalities, and Derbyshire did not get many opportunities to collaborate with women in the male-dominated world of electronic music. While Derbyshire never identified herself as a feminist, Rodaway was very active in the movement, co-founding the Bristol Women's Centre, among other projects.³⁸⁵ They even attended together the first Women's Liberation rally in London 1970, showing that

³⁷⁶ 'Radiophonic Workshop Catalogue', BBC Written Archives Centre.

³⁷⁷ Ibid.

³⁷⁸ Ibid.

³⁷⁹ Rodaway, *A London Childhood*.

³⁸⁰ Rodaway to Steedman, *Writing Lives: Conversations Between Women Writers*.

³⁸¹ Hodgson, Interview with author.

³⁸² Ibid.

³⁸³ Rodaway, *A London Childhood*.

³⁸⁴ Hopkinson, Personal Email Correspondence.

³⁸⁵ Ibid.

Rodaway's feminism had some impact upon Derbyshire.³⁸⁶ The two surviving broadcast plays also explore complex relationships between women.

3.5.2 *Gravel*³⁸⁷ and *The Flame*

Of the three plays, one is lost with no surviving copies, and another was never fully produced or broadcast, with only a fragment of Derbyshire's music remaining. *The Flame* was produced by Bennett Maxwell and Michael Bakewell and was broadcast July 16, 1965, repeated August 1.³⁸⁸ Very little remains of the play: while there is no copy in the BBC Sound Archive, one reel in the Radiophonic Workshop Archive is not digitised and is in an unknown condition.³⁸⁹ It is listed in the Radiophonic Workshop Catalogue, with no information about it apart from Derbyshire's musical credit. Rodaway's authorship was only discovered after chancing upon a review in *The Listener*, July 22 1965 during archival research.³⁹⁰ As already mentioned, a *Radio Times* entry lists it as a work concerned with the 'conflict between two women [...] and the power of evil generated in each by the other.' It also suggests that the play has quite an experimental structure, 'composed in a free time sequence of interlocking November the Fifths.'³⁹¹ It is the Radiophonic Workshop, rather than Derbyshire, that is credited with 'special sound' in the *Radio Times*, but she is named for her work on it in the Radiophonic Workshop Surviving Works Catalogue.³⁹²

For *Gravel*, Derbyshire and Rodaway created music together, but the play was never recorded or broadcast. According to Hodgson: 'there were all sorts of problems [...]. Angela was having a nervous breakdown at the time and she was giving the producer of the programme a nervous breakdown as well and so the whole project was cancelled by Head of Drama, so it was never broadcast and the programme was never recorded. [...] All that exists is a fragment of the music.'³⁹³ During research, access to the surviving music was problematic. There were two tapes of inserts called *Gravel* in the Radiophonic Workshop

³⁸⁶ Ibid.

³⁸⁷ 'Angela's Ballet', Tapes Of Delia Derbyshire.

³⁸⁸ 'Radiophonic Workshop Catalogue', BBC Written Archives Centre.

³⁸⁹ Ayres, Personal Email Correspondence.

³⁹⁰ 'Radio Criticism', BBC Written Archives Centre.

³⁹¹ 'The Flame', *Radio Times*.

³⁹² 'Radiophonic Workshop Catalogue'.

³⁹³ Hodgson.

Surviving Works Catalogue³⁹⁴ ‘sadly not digitised and in unknown condition’,³⁹⁵ according to Radiophonic Workshop archivist Mark Ayres, but there was also a tape labelled *Angela’s Ballet*, with the descriptive label ‘Early Version Gravel’ in Delia Derbyshire’s archive at the University of Manchester.³⁹⁶ David Butler initially believed that the tape had not been digitised, but during one visit he came across two digital files labelled with the corresponding catalogue number. These consisted of recordings made from Derbyshire’s tape—the same tape played at two different speeds, as archivists had been unsure of which one was right while digitising the original reel. The tape contained a surprising piece of music of around twenty minutes, consisting of a very strong, regular, driving proto-techno pulse, a siren-like sound, and a melody centring on a major triad. It is difficult to know quite what to make of this piece without the context of the play, except to acknowledge an initial impression of puzzlement and confusion. This is possibly because it is incomplete—or perhaps the disorientating effect is intentionally meant to signify some kind of internal turmoil. After finding a published interview with Rodaway, conducted by author Carolyn Steedman, the piece became less obscure. Rodaway explained that the musical material for it had been made by wiring herself up to an EEG machine, reading the script, and then using the frequencies gathered from the process. In this way she suggested she could ‘get the emotional shape of the thing’, because the fluctuations in frequencies reflected fluctuations in physiological responses to emotions.³⁹⁷

While the play was never broadcast, the music did not simply disappear into the archives straight away. An eight-minute extract was played at the 1964 Congress for Experimental Music in Berlin, suggesting that, along with her music for *The Dreams*, it was chosen to represent the Workshop to this audience. A letter dated 11 September 1964, from Desmond Briscoe to Professor Dr. Ing. F Winckel of Academie der Euenste, states that:

Miss Delia Derbyshire will be taking part in the Congress for Experimental Music [...]. I am now able to inform you which compositions from the BBC Radiophonic Workshop we should like to have performed:

³⁹⁴ TRW 6064/A ‘Gravel Speech Chords’ TRW 6062 two bands of inserts, then ‘Master’ in ‘Radiophonic Workshop Catalogue’, BBC Written Archives Centre.

³⁹⁵ Ayres, Personal Email Correspondence.

³⁹⁶ ‘Angela’s Ballet’, Tapes Of Delia Derbyshire.

³⁹⁷ Rodaway to Steedman, *Writing Lives: Conversations Between Women Writers*, 200.

Extract from ‘The Dreams’ an invention for radio by Barry Bermange [radiophonic music by Derbyshire]

8 mins.

Extract from the electronic score for the radio play “Gravel by Angela Rodaway

8 mins.

The two extracts formed the centrepiece of the Workshop’s contribution to the Congress, and Briscoe chose them as exceptional examples of their most experimental work. From everyone at the Workshop, Derbyshire was deemed the most qualified to liaise with and speak at the congress. In addition to the two experimental pieces, Briscoe lists ‘four short examples of lighter work for sound and television’, two of which were also by Derbyshire: 10 seconds of Major Bloodnoch’s ‘Exploding Stomach’ (comedy—sound)’ from *The Goon Show*; Derbyshire’s 2-minute theme for *Dr. Who*; a 40-second theme for an adult education television show; and a 1-minute theme for ‘Family Car,’ also by Derbyshire. Along with recordings, Briscoe sent of section of the *Gravel* ‘score’ to be exhibited, evidently whetting the appetite of some attending radio producers, because according to the Radiophonic Workshop Catalogue, a German language version of the play was also produced in 1969 by J. Best and John Harris.³⁹⁸

3.5.3 *The Death of the Jellybaby*³⁹⁹

The Death of the Jellybaby was Rodaway’s first radio play.⁴⁰⁰ It was produced by BBC Head of Plays Michael Bakewell, broadcast May 29 1964 at 20:45-22:00 on the Third Programme, and repeated a couple of weeks later on June 14.⁴⁰¹ Derbyshire’s soundtrack consists of concrete sounds taken from library sound effects and carefully edited into soundscapes that occupy an ambiguous place between sound effect and music.⁴⁰²

³⁹⁸ ‘Radiophonic Workshop Catalogue’.

³⁹⁹ Rodaway, Angela, *The Death of the Jellybaby*, The British Library Sound Archive.

⁴⁰⁰ Ibid.

⁴⁰¹ ‘The Death of the Jellybaby’, *Radio Times*, 61.

⁴⁰² *The Death of the Jellybaby*, The British Library Sound Archive.

3.5.3.1 *A London Childhood* and *The Death of the Jellybaby* as Autobiography

The Death of the Jellybaby continues Rodaway's earlier autobiographical narrative told in *A London Childhood*, so it is necessary to explain an element of this narrative in order to contextualise and understand Rodaway's writing for radio and the radiophonic sound design within it. While the events certainly seem to be based upon Rodaway's real-life experiences, like the previous examples cited, there is an ambiguous relation between an inner reality of memories, fantasies, thoughts and emotions, and an outer, objective reality. Events are not presented in a realistic fashion, with a non-linear narrative and radiophonic sound helping to represent subjectivity, internal emotions, and memory.

In part of her autobiographical novel, Rodaway tells the story of her intense close friendship with a young girl called Sonia, whose privileged upbringing is contrasted with her own poverty during childhood. The two remained close friends throughout adolescence and young adulthood until Sonia's premature death. The loss is only mentioned in *A London Childhood* and never explained, apart from Rodaway's guilt that her success in writing may have contributed to causing the death.⁴⁰³ The cause itself, however, is never revealed. In *The Death of the Jellybaby* it is not Angela and Sonia, but Annabel and Nadia who play out the events leading to Nadia's death, which is revealed to be a suicide.⁴⁰⁴

In *The Radio Times*, the work is not billed as autobiographical, but Sonia and Nadia are similarly troubled and are similar in both smaller character details and more general characteristics: their mothers are successful musicians; their fathers died in World War 1; they share the habit of biting their nails 'to the quicks'; both girls have a cripplingly 'difficult temperament.'⁴⁰⁵ Equally, Angela and Annabel are both aspiring writers with an inquisitive nature, although little is revealed of Annabel in the radio play. While both texts are narrated by the Angela/Annabel characters, *The Death of the Jellybaby* can be contrasted with *A London Childhood* because it is not a conventional autobiographical narrative with a clear singular voice of personal confession, but a much more experimental treatment of the narrator's subjectivity.

⁴⁰³ Angela Rodaway, *A London Childhood*.

⁴⁰⁴ *The Death of the Jellybaby*, The British Library Sound Archives.

⁴⁰⁵ Ibid.

3.5.3.2 Experimental Narrative

The Death of the Jellybaby unfolds as a non-linear narrative and is less conventional in form than the earlier *A London Childhood*, which is a memoir with a clear narrator and linear structure. The radio play is a collage of different scenes, with details of the events leading to Nadia's death gradually revealed in a jumbled order. It is learned that she drowned herself in a hotel bath four months after her husband's sudden death; that her friendship with Annabel was fraught with jealousy, with the latter's success in writing success contributing to her suicide; and that she was troubled since childhood. Unlike an ordered narrative, where events are linked by a single chain of causality, here they are pieced together as stream-of-consciousness memories. For instance, Nadia's death is already described in the second scene by a hotel night porter:

Mrs Gregson was in the bath. I saw she was dead. Her nose and mouth were under water. [...] An empty bottle of sleeping tablets was on the floor, and a little brandy bottle, a little flat one that was still half full of brandy.⁴⁰⁶

The listener already knows the logical end-point of the narrative from the start. Having started with Nadia's suicide, the memories that follow are not linked by time and causality but thematically as triggers for associated memories to come.

Rodaway creates her stream-of-consciousness effect through motivic, thematic links: the most pronounced themes are water and aquatic biology, which provide a source of images linked to Nadia's drowning. For example, after the description of Nadia's drowned body, Annabel remembers a conversation with her husband about the death of Nadia's husband as she prepares a fish for their supper. During the conversation, she is distressed by its air bladder, and the scene moves to a memory of the girls' biology classes at school regarding the importance of the air bladder in the evolution of aquatic creatures. This is followed by a musical interlude of just over one minute: her school girls' choir singing the Christmas Carol *Christ is Born This Christmas Morning*. A chain of reminiscences about Nadia's unstable temperament is precipitated when she is introduced in the next scene as a school child, where her teacher is harshly telling her off. The narrative continues in this way throughout. The air bladder motif recurs throughout the play: its homology to the human lung and its gruesome physicality makes it a resonant piece of imagery linked to Nadia's death by drowning. Importantly, motifs such as this allow Rodaway to link fragmentary scenes together with emotional, rather than sequential logic, creating the impression that they are linked in

⁴⁰⁶ Ibid.

Annabel's mind as triggers, each for the others. Like *The Inventions for Radio*, a narrative does unfold. However, it is not laid out in the order according to temporal logic, but with a taxonomy ordered through stream-of-consciousness associations, in the way that scenes might appear in somebody's thoughts or dreams. Similarly, as with *The Inventions for Radio*, the movement of the narrative could be described as 'musical', with the placement of events based more on an abstract sense of pacing, rhythm and proportion than on logical cause-and-effect.

3.5.3.3 Radiophonic Sound And Music: Ambiguity Between Fantasy And Reality

The entirety of Derbyshire's contribution is made up of montages of realistic sound effect recordings, with one commercial music recording, using few or no tape effects to disguise the identity of the sounds. The careful processing and organisation of sound effects suggests a similar approach to Bermange's notion of the radio play as 'musical.' The music in the play appears simultaneously as digetic sound, thus obscuring the difference between representative sound effects and music, as well as that between fantasy and realism.

Derbyshire's main electronic cue, recurring in different versions throughout, consists of minimal material: a collage made from the sounds of sea waves, a military band playing the march 'The Captain General,'⁴⁰⁷ and a moving train edited into a rhythmic tape loop. It is used whenever Nadia's death is evoked, and there are also four radiophonic interludes composed from the material. The action of the play never takes place near the sea or in the presence of a brass band, and a train only appears in one scene. Thus the materials are not simply realistic sound effects, nor is the musical recording simply incidental music. Like the sound of the sea and the train, the music evokes a memory of a distant scene. The sound of the sea is primarily imbued with significance through the cause of Nadia's death, rather than its representation as a setting; the military march is equally never explained but recalls mentions of the military death of Nadia's father; the train only takes on significance towards the end, when Nadia departs from Annabel and travels to the destination of her suicide. Sound effects here, then, work as music while retaining their function as representative sound effects, and music is used as a sound effects that do not occur in the action of the play. Thus the line is blurred between the imaginary, emotional emphasis of incidental music and the representative role of realistic sound effects.

⁴⁰⁷ Listed as 'Commercial recordings (dubbed): Captain General (Dunn) HMV CLP 1492 'Band of the Royal Marines (Portsmouth) in the BBC Radio Broadcast Archive.

3.5.3.4 Ambiguity Between Audio and Visual Elements

The ambiguity between sound effects and music in the play challenges the distinction between audio and visual components of the radio medium, further confusing the distinction between reality and fantasy. While they are perceived as sounds, sound effects have the ability to stimulate the listener's visual imagination by suggesting and representing objective causes: the sounds of the sea, a train, and a brass band suggest definite visual sources. As the radio medium is entirely sound-based, sound effects are relatively visual in emphasis, in comparison to other kinds of sounds such as music. Here, however, the aural is not overly emphasised in the music used because there are no clear distinctions made between music and sound effect. Further, the distinction between the aural and the visual normally corresponds to the distinction between the real and the imaginary: without apparent logical cause, music stands outside the space of dramatic verisimilitude; the realistic sound effect normally lies firmly within it.

This opposition is not upheld in the music or sound used in *The Death Of The Jellybaby*. The girls' choir appears throughout, but it is as the school choir, rather than as purely incidental music: it is usually heard within the dramatic action of scenes. Similarly, the classroom scenes are often accompanied by sentimental piano music, but this is an echo of Nadia and Annabel's childhood piano duets portrayed in the play. Derbyshire's concrete sounds are edited to function as musical sound: they have no direct dramatic causation, and they are carefully edited and placed within the soundscape for emotional effect. However, while they deny the listener visual realism, they also retain their visual representative effect because there is no attempt to disguise them. For instance, the opening scene starts with the sound of waves mixed so high that they verge on white noise, locating it as both abstract noise and sound effect. After a few seconds, this fades a little and a monologue starts; a woman is declaiming a passage of poetic prose flatly and quietly: 'The sea turns as though in a fever, but it remains cold. Water swells, waves overhang like the walls of a room that come bellying inwards.' The monologue is neither poetry nor straight prose: like the earlier use of sound effect, the voice is a conveyer of semantic meaning but is also placed in the soundscape as a sonorous object. After the first two sentences of this monologue, and 48 seconds into the scene, a recording of military band playing the march 'The Captain General' fades up during a small pause in the script, forming a collage with the other two elements. The setting is surreal: the military band and the sea could be indicators of a realistic location by the sea, but the dynamic balance between the three elements denies the listener the singular perspective needed in order to create a sense of visual realism. The same cue appears in the next scene, set during the coroner's investigation, while the night porter describes the scene of Nadia's death. When the dialogue ends, the sound fades up, with the addition of a train moving in a

regular rhythm. The sea and brass band sounds fade out leaving only the train, which cuts off suddenly after a few seconds. Electronic sound here communicates the intrusion of an aural imaginary realm, as often presented in a musical soundtrack, into visual realism, preventing the two elements from being straightforwardly distinguished.

4 The Distant Future and the Distant Past

4.1 Introduction

In this chapter I will discuss several programmes for which Derbyshire made electronic music and sound and that are set ‘either in the far distant future’ or ‘the far distant past.’⁴⁰⁸ These programmes expressed complex ideas about history and technological progress, many of which relate to the same combination of optimism and ‘ambivalence’⁴⁰⁹ that shaped discourses and techniques around electronic music in Britain. The chapter title is also linked to some ideas discussed in the previous chapter, including fantasies, mythologies and projections of historical progress. As already mentioned, perceptions of electronic music often reflected fantasies about the role of accelerating technological progress in driving social and cultural change. The programmes discussed below show that technology was a source of both hope and anxiety, as it simultaneously enhanced and eroded belief in human agency. While it furthered humanity’s ability to control its world with ever more sophisticated means, it also stimulated fears of a dystopian future resulting from increased technology. In this way, electronic music in Britain formed a prominent and public part of a media discourse about history and technology throughout the middle of the twentieth century.⁴¹⁰ Its public position in culture allowed it to convey often complex and conflicting emotions about humanity’s role in its own construction and demise. As such topics became common themes in many broadcast programmes, the Radiophonic Workshop’s place in public service broadcasting placed their work into a uniquely direct relation with the contemporaneous public discourse about technology and historical progress in Britain.

Such cultural concerns about the disruptive effect of technology upon human agency are also relevant because they had a material impact upon the structure of the Radiophonic Workshop. While, as Taylor suggests, that anxiety manifested elsewhere in the construction of systems such as serialism, which seemingly extended human control over musical processes,⁴¹¹ members of the Radiophonic Workshop were expected to publicly surrender their claims to authorship in the creative process by taking on the role of service providers who used their technical skills to interpret the ideas of others. The two situations seem very different, but they can be seen as reactions to similar feelings of ‘ambivalence and anxiety’

⁴⁰⁸ Derbyshire, ‘Interview with John Cavanagh and Drew Mullholland’, *Original Masters*, BBC Radio Scotland.

⁴⁰⁹ Taylor, *Strange Sounds: Music, Technology & Culture*, 72.

⁴¹⁰ See also: Hayward, *Off The Planet: Music, Sound And Science Fiction Cinema*.

⁴¹¹ *Ibid.*

about the effect of new electronic technologies upon human creativity and agency. Both reactions reflect a situation in which the role of the human author has become uncertain, decentred or destabilised, due to the use of unfamiliar technologies to produce music. Further, both imply that the technologies involved must be mastered in order to regain control over the process. However, in the Radiophonic Workshop, control was regained through an imposed distance from technology: authors (either writers or producers of the broadcast programme or commissioned composers) required a Workshop technician to mediate between their ideas and the technology. Thus, as Derbyshire pointed out, Workshop technicians were not called ‘composers’ and were not there to make ‘music,’ even though there are many examples that prove the contrary. For her, this created a situation which required her to negotiate between her individual artistic ambitions to compose and the institutional perception that an electronic music studio was not an appropriate space for musical composition, because the technologies it contained were incompatible with such a historically embedded, and fundamentally human practice. The discussion of the programmes below is contextualised by the reality of work at the Radiophonic Workshop for Derbyshire. Many of the ideas she was asked to convey in her music directly related to and impacted upon her experiences of the environment within which she worked. They suggest a time of acute historical awareness; and as with programmes already discussed, there are blurred lines between reality and fiction. *Towards Tomorrow* is a documentary but it is centred on theories and predictions about the future of society; *Crash!* is a video essay by novelist J.G. Ballard, concerned with the car’s role in exposing dystopian facets of the present.

4.2 *Towards Tomorrow* (1967)⁴¹²

Towards Tomorrow, a show produced by Max Morgan-Witts that ran from 1967 to 1969, was a documentary series that captured the oscillation between optimism, fantasy, and fear of the future. The programme focused on science and technology, discussing the ethical problems of progress in those fields, with each episode containing the heading: ‘Your future is being created now: for better or for worse?’⁴¹³ The series opened with an episode on genetic engineering called ‘Assault on Life?’⁴¹⁴ and its following instalments covered several subjects related to similar questions about the impact of technology on human life that skirted both science-fiction and reality. Science-fiction author Isaac Asimov explored artificial

⁴¹² Published recording: *BBC Radiophonic Music*, CD.

⁴¹³ ‘Towards Tomorrow: Assault on Life’, *Radio Times*.

⁴¹⁴ *Ibid.*

intelligence;⁴¹⁵ ‘World in a Box’ centred on the prescient possibility that television sets might be able to provide infinite information on demand, asking ‘will the “world box” become “big brother” making us “nothing but sponges?”’;⁴¹⁶ ‘Utopia’ explored a variety of views on the title subject, ‘the ultimate human folly or human hope.’⁴¹⁷ To contextualise the technological themes of the programme, most episodes of which are mostly lost in the BBC Archives, the ‘Utopia’ instalment was unearthed, and the experimental documentary maker, Adam Curtis, found it relevant to his work, featuring footage from it in his 2011 series *All Watched Over By Machines Of Loving Grace*.⁴¹⁸

4.2.1 The Theme Tune: Interrupted Ascension

Derbyshire reflects the subversion of technological optimism contained in the subjects of the programme in her theme tune, which couples a driving rhythm track with an eerie electronic melody. Overall the effect is one of forward direction interrupted and optimism tinged with menace and melancholy. This mood is created with some very simple musical devices that are employed effectively from the opening bars of the piece.

4.2.1.1 Rhythm

First, rhythmic ambiguity is set up in the underlying beat, which drives the piece forwards with a regular pulse while also obscuring the location of that pulse. The expected sense of forward momentum provided by a strongly accented start to the bar is present, but it also masked by a slightly confusing rhythm. This rhythmic loop establishes the motif during the four-bar introduction:



Figure 4: Transcription of rhythmic motif based on recording of *Towards Tomorrow* theme tune.

⁴¹⁵ ‘Towards Tomorrow: Robot’, *Radio Times*.

⁴¹⁶ ‘Towards Tomorrow: The World in a Box’, *Radio Times*.

⁴¹⁷ ‘Towards Tomorrow: A Utopia’, *Radio Times*.

⁴¹⁸ Curtis, *All Watched Over By Machines Of Loving Grace: The Use And Abuse Of Vegetational Concepts*, BBC2.

While the rhythm has a driving pulse, accented with the longer final note on the first beat of the bar, the anacrusis at first obscures the emphasis, without enough context to suggest where in the bar the longer note actually occurs. Indeed, before any other parts come in, there is nothing to prevent a listener from hearing the stress as falling on the last beat of the bar. The tempo also helps to establish the uncertainty. There are around three seconds of silence between each statement of the motif during the introduction, adding to the confusion about where the emphasis lies. The motif is presented at the slow speed of around 70bpm—a tempo that Derbyshire specifically planned before production, with her working notes revealing the necessary calculations. She wrote out that the duration of a crotchet beat was $1 \frac{1}{6}$ seconds, which equated to $17 \frac{1}{2}$ inches of tape, or $52 \frac{1}{2}$ inches for a whole bar.⁴¹⁹ A regular pulse is implied, giving the hint of the familiar sense of forward motion that comes with it, but the listener is denied the certainty that comes with knowing exactly where the pulse falls. The rhythm sounds more complex than it really is because of this implied irregularity.

The tape effects add to the sense of confusion; they have been combined in order to give a sound that is partly quite alien and partly quite naturalistic. The pulse has a low, thudding, percussive quality, and sounds as if it has been reversed because of its very long attack. It is hard to tell what it could be immediately, but when reversed again, it sounds like it was originally a recording of a heartbeat. A reverberation effect has also been added, with the final note ringing out for a couple of seconds. The reversal sounds strange and unnatural, but the reverberation creates a more natural acoustical effect. The reversal obscures a sound like a heartbeat, which might not be completely recognisable but is still vaguely familiar. The order in which the effects were applied is important: the recording has been made to reverberate after the sound has been reversed because, if it were the other way around, the reverberation ringing out afterwards would become a strangely sounding reverse attack at the beginning, potentially transforming the sound. This rhythmic cell forms the first layer and foundation of the piece and is repeated throughout underneath the melodic development.

4.2.1.2 Melody and Harmony

The melody continues to musically reflect the thematic content, suggesting optimism underpinned by a sense of something darker underneath. This is created with an ascending melody interjected with downward steps; the whole gives the impression of upwards momentum interrupted. Derbyshire wrote a small score for this part, which reveals her

⁴¹⁹ ‘Score: “Towards Tomorrow”, Papers Of Delia Derbyshire.

working process. The first part of it shows her notation of a rough series of eight pitches ascending, but with one downward step:⁴²⁰



Figure 3: Transcription based on manuscript notes for *Towards Tomorrow* theme tune.

The interruption of the ascending whole tone scale with a downward step of a minor third reflects the main idea behind the television programme: moving ‘towards tomorrow’, building the future, is not a case of straightforward progress. While this series of pitches is not strictly a serial approach to composition, it does suggest a borrowed and adapted version of the technique. The fact that the step down between f-sharp and e-flat is notated at this seemingly early stage in the process suggests that these notes are not just a serial pitch palette but also a sketch of a melodic shape. It is easy to imagine her sitting at a piano and improvising a combination of pitches to find a desirable melody, but the way the sketch is written also implies that a musical interpretation of the concept behind the programme was an important part of the compositional process from an early stage.

The motif is further developed throughout her notes, as they progressively come to resemble the final recording. Below she writes the original set of pitches again, but without the final A-flat. This is then followed by its transposition up a major third, and then an augmented fourth:⁴²¹



Figure 5: Transcription based on manuscript notes for *Towards Tomorrow* theme tune.

With the final transcript of the full melody included below, it seems evident that the main idea behind the piece was to construct it from various transpositions of that same pattern of pitches. In the final version, however, the pitch series does not move upwards, but downwards, giving it a much more melancholy feel. The upward momentum becomes a more general movement, with each statement of the melodic motif transposed up a third from the last:⁴²²

⁴²⁰ Ibid.

⁴²¹ Ibid.



Figure 6: Transcription based on manuscript notes for *Towards Tomorrow* theme tune. This differs from the recording, where the final bar slides up to a g#.

The whole melody is based upon the very limited material Derbyshire sketched out in her initial pitch rows. The first half of the motif (bars 1-2) is a reversal of the first row of sketched pitches; the second half (3-4) begins with a repetition of bar 1 transposed down a tone, but then proceeds in a different direction with an ascending whole tone scale composed from the major third transposition of the original pitch series. With the change of direction, the last bar leads up to the next statement of the motif, which is transposed up a major third. The last bar is also in 4/4, rather than 3/4, continuing the sense of rhythmic irregularity in the underlying percussion loop.

The theme is composed from three repetitions of this same four-bar motif transposed up a major third each time, creating a general sense of upward momentum. This, however, is at odds with the melancholy downwards direction of the cells from which the theme is composed. Thus, while the piece generally ascends, the details pull against the overall direction by descending. As with the first underlying loop, the rhythmic structure of the motif is very simple, but its simplicity and repetition is obscured by irregularity, with repeating 3/4 bars interrupted by a bar of 4/4. With the final statement of the motif landing on an augmented fifth (bar 9 onwards), rather than the perfect fifth of the major triad, the conventional expectation of the listener to hear the familiar tonic resolution is acknowledged but altered. Similarly, in the last bar the top F-sharp leads to a G, suggesting a conventional tonic resolution but without the supporting harmony, thus denying the sense of arrival that is normally given a listener and echoing the theme of interrupted progress.

⁴²² Ibid.

4.2.2 Pre-Production: Representing a Critical View of Progress

Remarks by the producer of the show, Max Morgan-Witts, show that he deliberately chose electronic music for the theme tune in order to reflect the futuristic topics of the show. His choice was made not simply to suggest a theme of the future but also informed by the critical and ambiguous stance towards those topics.⁴²³ Thus, electronic music was seen not simply as a straightforward way of making a futuristic theme; it also had more complex cultural connotations that critiqued that theme. This point was illustrated when he contrasted the theme with the tune for his previous production. He had already produced the light-entertainment show, *Tomorrow's World*, which was concerned with technologies shaping the future of society. This programme had a very different, much less critical perspective than *Towards Tomorrow*. For *Tomorrow's World* he wrote that he had 'opted for a "safe" jazz tune by Johnny Dankworth, rather than something more "avant-garde" from the workshop.'⁴²⁴ For *Towards Tomorrow*, he wrote, he wanted a tune that was 'tomorrowish', and 'avant-garde',⁴²⁵ and for him it was mostly the electronic elements that imbued it with those qualities. However, his thinking was not a naïve reflection of the show's focus on technologically orientated societies of the future; it also embraced a critical angle taken in addressing this issue. Being 'avant-garde' did not mean merely being futuristic; it also implied being challenging, rather than simply optimistic and entertaining.

4.3 *Great Zoos of the World* (1969)⁴²⁶

While the theme tune for *Towards Tomorrow* was designed to convey the element of serious social criticism contained within the programme, Derbyshire was also known for composing music that could be described as 'witty'⁴²⁷ in order to express humour for more light-hearted programming. She created a contrasting theme tune for *Great Zoos of the World*, a natural history documentary series first broadcast Saturday, July 5, 1969, at 6.45pm on BBC2 in colour.⁴²⁸ Described as a 'grand tour'⁴²⁹ of zoos with presenter Anthony Smith, the

⁴²³ Morgan-Witts, Personal email correspondence.

⁴²⁴ Ibid.

⁴²⁵ Ibid.

⁴²⁶ *BBC Radiophonic Workshop: A Retrospective*, CD.

⁴²⁷ Briscoe, *The BBC Radiophonic Workshop: The First 25 Years*.

⁴²⁸ 'Great Zoos of the World', *Radio Times*.

programme was an exploration of progress in the field across the world. In the *Radio Times*, Smith explained that the main emphasis of the programme was the speed of progress: ‘My main impression was the pace at which everything is moving. Someone breeds a gorilla for the first time, and suddenly it seems anachronistic if all other gorillas are not breeding.’⁴³⁰ The electronic theme tune—made from the sounds of animals, edited and spliced into a melody—reflects the programme’s focus on the tension between nature and human technology, which is central to its discussion of scientific, technological and cultural changes in the care of animals. Further, while the piece is humorous, it also illuminates the previously explored discourse around the shifting boundaries between music and sound in musique concrète.

Derbyshire explained that she composed the piece from twenty-four spliced and edited sounds which she sorted into ‘rhythmic’ and ‘tuneful’, providing another example of her use of taxonomy to organise sounds, as already seen in *The Dreams*.⁴³¹ ‘Rhythmic’ sounds were ones with an indefinite pitch that could be used to form percussive parts, while ‘tuneful’ sounds had more definite pitches that could form melodic and harmonic elements. The sounds are organised into those two layers to form a theme by means of the standard Radiophonic Workshop technique of making more-or-less ‘conventional’ music from concrète sounds, as was already mentioned in connection with John Baker. As with Pierre Schaeffer’s conception of the concrète in music, the recognisable associations of the animal sounds with their traditionally non-musical sources does not preclude them from being heard as music. The sounds do not necessarily need to be disguised in order for the piece to be acknowledged as music, because the listener’s perception of the track as music, rather than sound effect, originates from the way in which the sounds are framed. By organising them into a taxonomy of pitched and unpitched sounds, and then placing them in relation to other sounds to make rhythms, melodies and harmonies, they are framed as music even though their associations are left intact.

4.4 *Crash!* (1970-1)⁴³²

Examples in the previous chapter illustrated a mid-twentieth-century emphasis on the dramatic exploration of life ‘inside the mind,’ which became integral to notions of humanity. Conversely, much sci-fi literature of the time represented fears around the loss of that

⁴²⁹ ‘Great Zoos of the World’, *Radio Times*.

⁴³⁰ Ibid.

⁴³¹ Derbyshire to Atkinson-Broadbelt, ‘Soundhouse: Delia Derbyshire’.

⁴³² Cokeliss, *Crash!*, *Youtube*.

humanity due to technological developments. *Crash!*, written by J. G. Ballard, is one such example, with electronic music and sound by Derbyshire to help convey the troubling loss of humanity it portrays.⁴³³ It was broadcast on BBC2 on 12 February 1971 at 8.30pm, for 17 minutes, as part of a longer magazine format programme, *Review*, containing several other unrelated segments that included an interview with French writer and diplomat Romain Gary and a film of a jewellery exhibition at the Victoria Albert Museum.⁴³⁴ The magazine format of the programme places the film somewhere between journalism, documentary and science fiction. It contains a typically Ballardian set of concerns—violence, modernity, desire, technology:

For science-fiction writer J. G. BALLARD, the key image of the present day is the man in the motor car. The image that represents the dreams and fantasies that can easily turn into nightmares. BALLARD explains the beauty & fascination of the car.⁴³⁵

Ballard's film shares its title with his short story and novel (which, however, lack the exclamation mark).⁴³⁶ Derbyshire produced several cues for the film, although her contribution did not warrant a mention in the credits.⁴³⁷ Consistent with the established conventions of Radiophonic Workshop special sound, these serve to highlight the sense that the narrative is occurring inside the narrator's mind. I will very briefly consider below the context of Ballard's work relevant to *Crash!* in order to further explore and understand the film and Derbyshire's soundtrack for it.

Crash! was based on a short story contained in Ballard's 1970 publication, *The Atrocity Exhibition*,⁴³⁸ in which he engages with disturbing, controversial themes and images common in his work, positing links between sex, death, technology, celebrity obsession and violence in contemporary culture. As he writes in his *Radio Times* blurb on *Crash!*, he uses the sci-fi genre to explore the dystopian qualities of the immediate present, rather than the future. While the decade during the 1960s represented a time of optimism and positive change for many, his work explored darker undercurrents: 'the viciousness of the Vietnam War,

⁴³³ 'Radiophonic Workshop Catalogue', BBC Written Archives Centre.

⁴³⁴ 'Review', *Radio Times*.

⁴³⁵ Ibid.

⁴³⁶ Ibid.

⁴³⁷ *Crash!*.

⁴³⁸ Ballard, *The Atrocity Exhibition*.

lingering public guilt over the Kennedy assassination, the casualties of the hard drug scene, the determined effort by the entertainment culture to infantilise us.’⁴³⁹ Ballard’s literary attempt to ‘make sense of’⁴⁴⁰ the time is also reflected in structural and formal experimentation throughout his work. In *The Atrocity Exhibition* he experiments with non-linear, fragmented structures. Calling them ‘condensed novels’, with a much higher ‘density of ideas and images’⁴⁴¹ than traditional novels, there is no particular narrative, although each ‘story’ contains several unconnected paragraphs often simply discussing a particular theme. In particular, both the story and the film of *Crash!* are centred around the idea that the experience of the car crash causes an upsurge of libido and ‘perverse behaviour’ in both surviving victims and witnesses.⁴⁴² This was evidently an idea he was fascinated by, and explored it in several mediums, including the full-length novel, *Crash*, which was adapted for the cinema by David Cronenberg. It is remarkable to consider today how both the audacious ideas and the structural fragmentation of his work were translated not just to television but also to pre-watershed BBC2.

The director of the BBC version of *Crash!*, Harley Cokeliss, recalled that the film came about after he thought of the idea to produce a film about Ballard for *Review*, where he was working as a freelance director and producer.⁴⁴³ After proposing it to the show’s main producer, James Mossmann, they decided to centre the piece on Ballard’s fascination with car crashes.⁴⁴⁴ After approaching Ballard about it, Cokeliss and he used excerpts from *The Atrocity Exhibition* in its script, working on it together. Cokeliss also found footage of crash-test dummies from research laboratories to cut into the film, and Ballard agreed to act in it.⁴⁴⁵

Cokeliss said that it was only after the film was shot and cut that he thought about music.⁴⁴⁶ However, the script consists only of Ballard’s narration—his internal voice—with no dialogue, so the soundtrack is a very prominent element in the end result. In order to correspond with the themes of technology and modernity running throughout the film, Cokeliss asked the Radiophonic Workshop to produce an electronic soundtrack, and through

⁴³⁹ Ballard, *Miracles of Life: Shanghai to Sheperton: an autobiography*, 235.

⁴⁴⁰ Ibid.

⁴⁴¹ Ballard, ‘Notes from Nowhere: Comments on Work in Progress’, *New Worlds*. 147-51.

⁴⁴² Ballard, *The Atrocity Exhibition*, 76.

⁴⁴³ Cokeliss, Personal telephone correspondence.

⁴⁴⁴ Ibid.

⁴⁴⁵ Ibid

⁴⁴⁶ Ibid.

this he was referred to Derbyshire. He remembers little about their professional encounter: when I initially contacted him via email, he had forgotten that she did the sound at all, and instead thought that another member of the Workshop had made it.⁴⁴⁷ Cokeliss did, however, remember meeting Derbyshire, even though he did not at first know why, recalling her as an ‘eccentric’ snuff addict ‘in her own world.’⁴⁴⁸ He also explained that the film—despite the prominent role that the soundtrack plays in it—was already completed apart from the music when Derbyshire was approached to create a soundtrack. In the end she was not given enough time to make anything that either of them could be particularly happy with.⁴⁴⁹

Following a similarly fragmented, stream-of-consciousness structure as Ballard’s ‘condensed novels,’ his monologue considers the human relation to technology exhibited in the design and usage of cars, as well as the high emotions stirred by when they are wrecked in car crashes. It could be considered as a hybrid of a magazine opinion piece and a short art film. According to Cokeliss, the images of cars and crashes are intended to appear as if ‘happening inside Ballard’s head,’⁴⁵⁰ and the piece remains simply a series of contemplations on its subject by the narrator. There are clips of research footage of crash test dummies; he walks around a car showroom; drives around a motorway; wanders through a scrap yard of wrecked cars; and stands around in a multi-storey car park looking moody. With the piece predominantly portrayed from the perspective of Ballard, the only other actor involved is Gabriella Drake, who is almost portrayed as a figment of Ballard’s sexual imagination: she appears and disappears beside him inside his car, and she plays the victim in a car crash towards the end of the film. Cokeliss explained that the woman is made analogous with the car as an object of desire.⁴⁵¹ Thus, the film includes more than one instance of images of Drake’s sexualised or nude body intercut with images of a car: in one sequence Ballard luridly describes the movements of a woman’s body as she climbs into a car in slow motion, while Drake acts it out on screen. In another scene, close-ups of her naked body in the shower are intercut and faded into close-ups of car parts as Ballard explains his principle that technologies appear as projections of the human psyche. Here the sense that everything onscreen is ‘happening inside Ballard’s head’ is made explicit in the script.

The role of Derbyshire’s sound here, then, is integral to convey the message that the film is supposed to be ‘happening inside Ballard’s head,’ in a part of his mind where some

⁴⁴⁷ Ibid.

⁴⁴⁸ Ibid.

⁴⁴⁹ Ibid.

⁴⁵⁰ Ibid.

⁴⁵¹ Ibid.

dark, violent, forbidden desires reside. This role is established in the opening shots, which consist of close-ups of Ballard and Drake's facial profiles accompanied by a piercing electronic screech: at this point, his 'head' is very literally emphasised, and it is made clear that whatever is occurring inside it is unpleasant. For pre-watershed BBC Ballard has toned down the suggestion that the violent encounter between cars is an erotic one, but it is still made very clear that the 'fascination' of the car-crash has sexual overtones. For instance, the aftermath of a car crash is shown with Drake lying bloodied at the wheel. With a close-up on her thighs, 'skirt heavy with blood,' her sexual objectification visually implies the narrator's gaze is tied as equally to the carnage of the situation as to the female body contained within. Then an electronic drone that sounds similar to a broken car horn accompanies a close-up of Drake's face covered in blood. The message that the action onscreen is 'happening inside Ballard's head' is conveyed by a sound that is not simply abstract, but a variation of a recognisable sound effect—a very typical use of the Radiophonic Workshop's 'special sound.' As Drake pulls herself out of the car seat, she falls out of the door onto the floor to the sound of another very piercing, high, screeching sound. Then she is shown raising herself from the ground as Ballard watches; the soundtrack changes to a fragmented, ascending atonal sequence that sounds like the car-horn effect spliced and pitched down. The general effect of the sounds in conjunction with the images is not of shock or confusion, but one of psychological, bodily horror. The very dissonant and aggressive stabbing gestures in the electronic sounds is almost like a futuristic Bernard Herrmann/ Hitchcock score, while the voyeuristic stare of Ballard towards the mangled attractive young woman mirrors that of a horror-film viewer.

Reflecting the stream-of-consciousness style of the original story, Cokeliss follows this sequence with slowed-down footage of car-crashes from research laboratories, which also contains a very prominent electronic soundtrack. Here again, this involves the transformation of sounds that could easily be associated with the images on screen—this time screeching metal and booming, banging noises. Derbyshire's makeup tape reveals some of the process behind the sound, including a recording of the scraping and rasping of metal against metal.⁴⁵² This is a moderately resonant sound, so it seems likely that she used a metal drum kept at the Radiophonic Workshop as the source for this sound. The tape also contains speed transformations of the original metal scraping sounds, as well as what sounds like metal hand chimes, all slowed down to create the sound of metal on metal for the sequence depicting a slowed-down car crash.⁴⁵³ Hearing the final version on the film, it sounds like Derbyshire mixed the various recordings at different speeds to create a massive, incomprehensible din,

⁴⁵² 'Effects: Ballard', Tapes Of Delia Derbyshire.

⁴⁵³ Ibid.

with occasional recognisable metallic screeches piercing above the rest. This effect, again, quite clearly fits the remit of ‘special sound’ that defined the workshop’s output from its earliest origins in the late 1950s.

The use of special sound to convey an internal psychological landscape, however, is here not necessarily that straightforward. Ballard paints a bleak picture of an Orwellian dystopia, where an internal life is not permitted but is drowned out by the continuous drone of the technologies that once were hoped to improve life, writing: ‘We’re surrounded...by a huge invisible technology. Increasingly we live on its own terms rather than our own: everything becomes more and more stylised, more and more cut off from ordinary feeling.’⁴⁵⁴ In its reflection of these thoughts, the soundtrack contrasts with earlier Radiophonic Workshop work that experimented with how recording technologies may augment and extend the sound of humans singing, playing, reciting poetry, even lamenting. Here there are instead the sounds of technology crashing and breaking down, the sounds of humans annihilating themselves in metallic carcasses. The electronic soundtrack here emphasises the sounds from the car over Ballard’s voice, reflecting the notions of technological sovereignty over humanity explored in the film.

4.5 *I Measured the Skies* (1970)⁴⁵⁵

Programmes exploring science and technology were not limited to those set in contemporary or future times. In 1970 Derbyshire made incidental music for an episode in the BBC2 series *Biography*, which dramatically portrayed the sixteenth-century astronomer Johannes Kepler, with the subtitle, ‘I Measured the Skies,’⁴⁵⁶ Produced by John Glenister, it was broadcast Wednesday, 4 November, on BBC2 at 9.30 in colour and lasted almost ninety minutes.⁴⁵⁷ One piece of music for the programme, ‘Music of Spheres,’ later appeared on a promotional disc released by Zinovieff’s EMS to advertise their VCS3 synthesiser.⁴⁵⁸ Echoing Derbyshire’s previous composition for Angela Rodaway’s *Gravel*, the piece consists of a slowly oscillating electronic tone produced on the synthesiser. However, the tone sounds more like a war siren than in the earlier piece for Rodaway, giving it a significance that relates to Derbyshire’s biography. In an interview, Derbyshire explained that she had heard the sounds of sirens

⁴⁵⁴ ‘Crash!’, *Radio Times*.

⁴⁵⁵ Various, *EMS LPI*.

⁴⁵⁶ ‘Radiophonic Workshop Catalogue’, BBC Written Archives Centre.

⁴⁵⁷ ‘I Measured the Skies’, *Radio Times*.

⁴⁵⁸ *EMS LPI*.

during her childhood in World War Two and that the experience provided her with her earliest memories of fascination with ‘abstract electronic’⁴⁵⁹ sound. This account parallels some ideas discussed earlier regarding Pierre Schaeffer’s writings on *concrète* sound: the concrete, above all, is a situation for the listener, rather than an inherent quality. The situation she recounts here is one that allowed for the perception of an electronic sound with no obvious single source or location. Derbyshire observed that it seemed ‘abstract’ because she was in a position where it appeared to have no obvious origin. Equally, the purpose of the siren is to signify immediate but unknown danger. Here that purpose is reinterpreted: the siren still connotes a signal towards an unknown or unseen domain, in this case outer space beyond Earth, but it signifies a source of scientific wonder, rather than fight-or-flight anxiety.

4.6 *The Anger of Achilles* (1963-4)⁴⁶⁰

Electronic sound from the Radiophonic Workshop was also used to conjure mystical imagery from the ‘distant past’ in *The Anger of Achilles*. Here ancient mythology, rather than scientific discovery or dystopian technocracy, is the subject matter. The programme was a radio version of the first part of Homer’s *Iliad* adapted by poet and translator of classics Robert Graves with incidental music by Spanish composer Roberto Gerhard and electronic sound by Derbyshire.⁴⁶¹ The BBC broadcast *The Anger of Achilles* in three one-hour parts, originally airing as the weekly ‘Sunday Play’ on the Home Service throughout three weeks in May 1964.⁴⁶² Additionally, in 1965 a shortened 90-minute version, reduced to a single part, earned its creators the RAI *Prix Italia*.⁴⁶³ The second version was repeated on the BBC Third Programme in 1965.⁴⁶⁴ Currently it is unpublished, with recordings available in Roberto Gerhard’s tape archive at the University of Cambridge⁴⁶⁵ and at the BBC sound archive.⁴⁶⁶

⁴⁵⁹ Derbyshire to Cavanagh, *On Our Wavelength*, online article.

⁴⁶⁰ Graves, *The Anger of Achilles*, The British Sound Archive, The British Library; The Roberto Gerhard Archive, University of Cambridge Library.

⁴⁶¹ ‘The Anger of Achilles’, *Radio Times*, 24.

⁴⁶² *Ibid.*

⁴⁶³ Black to Gerhard, Roberto Gerhard Archive.

⁴⁶⁴ Raikes to Gerhard, Roberto Gerhard Archive.

⁴⁶⁵ Gerhard, *The Anger of Achilles*, Roberto Gerhard Archive.

⁴⁶⁶ Graves, *The Anger of Achilles*, British Library Sound Archive.

Gerhard was asked to write ninety minutes of incidental music (thirty minutes per episode) for the BBC Welsh Orchestra and ‘radiophonics.’⁴⁶⁷ In other words, the music for *Anger of Achilles* was written for orchestra and tape, and Derbyshire worked with Gerhard on the realisation of the latter. Gerhard’s orchestral score is not overtly modernist or avant-garde; it stays well within the bounds of tonality, but it does display some of Gerhard’s tendencies toward modernism, and the electronic part is one of its unusual features. Out of 45 main musical cues, ten are scored to include ‘radiophonics’: Q6 ‘Athene’; Q9 ‘Appearance of Thetis’; Q9a ‘Thetis to Olympu’; Q10 ‘The Divine Nod’; Q11 ‘Nightfall on Olympus’; Q16 ‘Athene Descends’; Q28a ‘Aphrodite in Disguise’; Q29a ‘Athene Descends’; Q38 and Q38a.⁴⁶⁸ Not all radiophonics made the final cut: Q16, Q28a and Q29a are missing from the recorded version for broadcast,⁴⁶⁹ giving a total of seven Radiophonic Workshop cues lasting six and a half minutes altogether in the final production.

Derbyshire, with her musical education and growing recognition from the success of the tuneful *Doctor Who* theme, was given the project of assembling a tape part to be integrated into an orchestral score. Despite not receiving credit for her work on the programme, Gerhard recognises her in his correspondence with Hugh Davies as having made a contribution worth noting:

Everything is produced in my own private permanent studio except for the final assembly (montage) of the ingredients that went into the examples for ‘ASYLUM DIARY’ and the contributions for ‘THE ANGER OF ACHILLES’, these were planned and discussed, in a few instances I intervened actively, with Deliah Darbisher [sic] of the BBC Radiophonic Workshop who executed them.⁴⁷⁰

Typically for a time when there were no British institutional electronic music studios, Gerhard refers to the studio he built at his home in Cambridge (“the Home Office”) from 1954.⁴⁷¹ He avoided electronic synthesis altogether in his own studio, which was very basic, containing only tape recorders and a microphone, with none of the electronics used for

⁴⁶⁷ Raikes to Graves, The Roberto Gerhard Archive.

⁴⁶⁸ *The Anger of Achilles* [Score], Roberto Gerhard Archive.

⁴⁶⁹ *The Anger of Achilles* [Recordings], Robert Gerhard Archives.

⁴⁷⁰ Gerhard to Davies, Roberto Gerhard Archive.

⁴⁷¹ Garcia-Karman, ‘Roberto Gerhard’s Tape Collection’, *Proceedings of the 1st International Roberto Gerhard Conference*.

synthesis in the 1950s and early 1960s.⁴⁷² Gerhard's use of electronic sounds such as white noise or sine tones, along with tape processing such as reverb, filtering, or ring modulation, was achieved through access to the Radiophonic Workshop.⁴⁷³ He was one of the only freelance composers allowed access to the BBC facilities because, as one of the first composers in Britain to experiment with electronic music, Gerhard received frequent commissions from the BBC to provide incidental music for radio and television.⁴⁷⁴

Most electronic cues are simple tape treatments of small ensembles such as harp, vibraphone and strings used for scenes set on Mount Olympus or involving deities, in sharp contrast to the grand orchestral *tuttis* of the battle scenes on Earth.⁴⁷⁵ Some contain synthesised sounds on tape added to similar small-scale orchestrations, with only Q38 and Q38a as 'radiophonics only' cues—low-frequency drones to accompany the anger of Zeus at Hera's betrayal.⁴⁷⁶ The use of sound effects such as thunder claps, sea waves, swords brandishing and flames are considerably located within the overall soundscape of the play, and actors' voices are also treated with reverberation. A narrative association is drawn between the otherworldly, supernatural dimensions of the myth and the clichés of electronic processing and synthesis, used as a shorthand for otherness. However, their inclusion as a narrative device in this way does not contrast with the orchestra's (perhaps also equally clichéd) ties to tradition; there is no overt opposition between the two soundworlds. The radiophonic sounds, whether concrete or synthesised, are all very sensitively intersected and integrated into the overall texture of sounds.

For example, Q9 and Q10 show a particularly nuanced soundscaping, with points of intersection between orchestral and radiophonic sounds, which then blend together into a single texture. Q9, the 'Appearance of Thetis', accompanies the introduction of 'the silver-footed sea-goddess' and is a recording of harp and vibraphone in an ascending arpeggio with added tape delay.⁴⁷⁷ The tape effects add to the impression that the sounds inhabit a dimension where everyday laws do not apply without overly changing the sound of the instruments. Q9a, 'Thetis to Olympus,' is very similar to Q9, except it is a recording of only the vibraphone. The speed and pitch of the tape-delay feedback incrementally increases as

⁴⁷² Ibid.

⁴⁷³ Briscoe, *The BBC Radiophonic Workshop: The First 25-Years*.

⁴⁷⁴ Ibid.

⁴⁷⁵ Graves, *The Anger of Achilles*, The British Sound Archive, The British Library; The Roberto Gerhard Archive, University of Cambridge Library.

⁴⁷⁶ Ibid.

⁴⁷⁷ Ibid.

Thetis travels to Mount Olympus.⁴⁷⁸ The feedback of Q9a continues for seventeen seconds and intersects with a similarly noisy, spectrally complex, roar of thunder signalling Q10, 'The Divine Nod.' The feedback fades into the thunder sound effect, creating an impression that one sound has transformed into another. After a short break for dialogue, another thunder sound effect is followed by the same feedback, repeating the same transformation effect with the two sounds, which leads into a cue orchestrated for low strings, wind and timpani playing a slow oscillating minor third. While it is not pitched like the rest of the instrumentation, the tape feedback blends quite well with the orchestra perhaps because it is made from the same material, originating simply from recording of instruments.

Not all of the radiophonic sound is derived from the orchestra: two main cues use electronically synthesised sounds, which Gerhard was not equipped to make at his home studio. In these cases, the cues are composed in a more traditionally musical way than Q9 and Q10. Q6a, 'Athene,' consists of a single chord, which is also scored for a small ensemble of strings, harp, vibraphone '+radiophonics.' It lasts around one minute and accompanies Athene's appearance on earth as a messenger to Achilles.⁴⁷⁹ The synthesised part is an inharmonic bell-like drone probably constructed from additive synthesis using the sine and square wave oscillators in the Radiophonic Workshop. With a definite pitch, it sits in a lower register to the rest of the orchestra, which is almost all above middle C apart from the descending harp glissando in bar 2. Rather than marking them out as very separate entities, the difference in register between orchestra and electronic sound creates a balance between the different sounds, with the electronic drone acting as a bass note. While its pitch does not change, its fluctuating spectra provides quite an unstable harmonic foundation and contrasts with the sharpness and stasis of the long pure tones of the strings. This contrast is offset by the harp glissando, which is to be 'let ring,' and the vibraphone, with a similar ringing timbre, effectively providing a bridge between the two sound domains of strings and inharmonic drone. Drones are also used in two other main cues, in much sparser textures, in order to underpin tense scenes involving Zeus. Q11, 'Nightfall on Olympus,' consists of a low-frequency drone and rising cymbals, both with sparse rhythmic content, while Q38 consists of the same drone on its own intersecting with a low, long brass note of similar register, stasis and timbre.

Where there is music for ensemble and tape, whether electronic or concrète, the different parts are integrated into a cohesive sound very effectively. This is not apparent from Gerhard's score where Gerhard does not notate the radiophonic element. There are no notes

⁴⁷⁸ Ibid.

⁴⁷⁹ Ibid

or instructions apart from the adjunct ‘+radiophonics’ or ‘radiophonics only,’ implying an extraneous relation to the orchestra. However, in listening, the ‘radiophonic’ part does not sound at all like a supplementary addition to the orchestra; rather, it has been treated as if the two were integral parts of a whole. Gerhard’s involvement in this project highlights the significance of this compositional outcome, because he was quite unique in his approach to tape and orchestra for the time in Britain, bringing this with him to the BBC. Hugh Davies suggests that Gerhard was not only one of the first British composers to make electronic music but also probably the first to create a score with a tape part, with his music for the theatre production, *The Prisoner*, in 1954.⁴⁸⁰ It was not until several years later that Gerhard integrated tape and orchestra with his *Symphony No. 3—Collages* (1960), for which he used the Radiophonic Workshop to make the tape part.⁴⁸¹ He integrated the tape part into the orchestra in a very material way by placing four speakers inside the orchestra during performances.⁴⁸² Similarly, Gerhard himself suggested that composing with electronics was significant not just in itself but because of the new perspective on composition with orchestral instrumentation that it gave him. He writes, ‘The electronic medium, in effect, makes possible new modes of action with sound which have greater freedom of tonal movement, of configuration and of textural weaving than those which our traditional instruments permit.’⁴⁸³ Gerhard was aware that, in turn, the addition of the electronic component altered the way that he wrote for instruments, not because it was a separate realm altogether but because it changed the way that he conceived of sound as a whole by shifting the basic perceptual unit of music away from the note and towards abstract gesture and texture: ‘the operative word is *behaviour*, it will be noticed, not colour; colour is never of decisive importance. Instead of “behaviour” I might have used the term *sound-activity*.’⁴⁸⁴ Rather than specifying a new perceptual component, such as ‘colour,’ to replace the historically favoured ‘note,’ his use of the terms ‘behaviour’ and ‘activity’ seems purposely broad, encompassing both electronic and concert-hall instrumentation. The use of electronics in this way in *The Anger Of Achilles* can be seen as a contrast to the way that they were used to signify anxieties about technological progress in productions that were concerned with the future. Electronic sound still signifies

⁴⁸⁰ Davies, ‘The Electronic Music’, *Tempo*, 35.

⁴⁸¹ Gerhard, *The Third Symphony: Collages*, CD.

⁴⁸² Briscoe.

⁴⁸³ Gerhard, ‘Concrete music and electronic sound composition’, *Gerhard on Music: Selected Writings*, 194.

⁴⁸⁴ *Ibid.*

otherness and exoticism in relation to the mythological narrative set in the ‘distant past,’ but the electronic sounds are more integrated into the familiar sound of the orchestra.

4.7 *Tutankhamun’s Egypt* (1972)⁴⁸⁵

In 1972, Derbyshire created music for the documentary series *Tutankhamun’s Egypt*.⁴⁸⁶ Produced by Paul Johnstone, this was a huge, high-profile series: twelve colour episodes were broadcast between April and June 1972 on BBC2.⁴⁸⁷ The series was broadcast at the same time as a large Tutankhamun exhibition was installed at the British Museum, and it was introduced from there by Cyril Aldred.⁴⁸⁸ Documents in Derbyshire’s archive, as well as Brian Hodgson’s recollection, suggest that she created a significant amount of music through the whole series. One short piece from the series, ‘Tutankhamun’s Trumpets,’ is included on a BBC compilation, *Music of Africa*.⁴⁸⁹ This is made from sounds taken from a 1939 recording of trumpets found in Tutankhamun’s tomb, which are then edited into an atmospheric texture similar to *Blue Veils and Golden Sands* and combined with tribal drumming, representing Orientalist themes in a way similar to the previous programme. However, according to Brian Hodgson, it was during her work on the 1972 series that the pressure of the working environment at the BBC became too much for Derbyshire.⁴⁹⁰ He revealed that *Tutankhamun’s Egypt* had a significant place in Derbyshire’s biography because it was the pressure from this show that contributed to the stress that caused her to leave the BBC:

I’d say probably, the pressure built up when she was doing ‘Tutankhamun,’ where she’s spent a long time—because it was 20 episodes or something or 12 episodes—on a concept for the whole music and she was part way through it all, and they suddenly said: ‘episode 2 is going to be episode 1 now’ and they started changing everything around and she got in such a state that she was still making music while they were dubbing the beginning of the film. So things arrived literally in the nick of time. So that sort of pressure was not good for her and she was slowing down, and quite

⁴⁸⁵ Various, *The Music of Africa*, LP.

⁴⁸⁶ ‘Radiophonic Workshop Catalogue’.

⁴⁸⁷ ‘Tutankhamun’s Egypt’, *Radio Times*, 23.

⁴⁸⁸ Ibid.

⁴⁸⁹ Various, *The Music of Africa*.

⁴⁹⁰ Hodgson, Interview with author.

frankly...Delia never drank a lot. What she did was drink a little almost continually.⁴⁹¹

Documents in Derbyshire's archive confirm Hodgson's recollection. One script contains the title 'episode 2' which has been crossed out in biro and changed to '1.'⁴⁹² Notes on the script in Derbyshire's handwriting seem rushed, and vague, unlike the earlier plans for pieces such as *Inventions For Radio*. One memo suggests that she had been asked to produce new cues at the last minute for the show, having to enlist the help of another studio manager. In contrast to pieces such as *Inventions*, where she was able to explore ideas through longer ambient sections of ten minutes, it seems that she was asked to make many smaller cues. Makeup tapes for the programme also contain recordings of Derbyshire introducing cues, sounding displeased: 'I'm afraid you'll have to choose your bit because I've given you about 3 minutes for this cue, which should only be about 1 minute 7 seconds so choose your bit.'⁴⁹³

Given her tendency to try and invent a different concept for each new piece, rather than accepting the restrictions of her role and reusing material, it is understandable that this project would have contributed towards the stress and ill health that made it difficult for her to continue with creative work. This particular programme illustrates well the direction that the Workshop took during the early 1970s, away from the experimental bricolage techniques that Derbyshire found so integral to her working processes and towards the use of the synthesiser as a labour-saving device. Her concerns about the use of synthesisers in this way could be interpreted to mirror anxieties about the loss of human agency in the creative process caused by technological development. However, I think that her views were actually a more subtle reaction against the prevailing expectation that technology should be used to attain more control over the process of realising musical compositions.

⁴⁹¹ Ibid.

⁴⁹² 'Tutankhamun's Egypt', Papers Of Delia Derbyshire.

⁴⁹³ 'Egypt', Tapes Of Delia Derbyshire.

5 Music to Watch Sculpture By: Poetry and Art

5.1 Introduction

Here I will discuss five BBC radio and television programmes centred around poetry and art that feature electronic music and sound by Derbyshire. As already discussed, beginning in the mid-1950s the BBC produced several experimental radio programmes that included poetry and electronic sound and explored how the two mediums may be combined. This initiative continued through the next decade, with those involved expressing the idea that electronic sound could be used as a useful bridge between music and language, using techniques to make sounds and voices appear abstract. For instance, *Sono-Montage* is a 30-minute programme of nine ‘straight’ poems accompanied by electronic sounds and vocal processing.⁴⁹⁴ The creator of the programme, Rosemary Tonks, suggested that she sought electronic sound because it could accompany poetry without dominating it in the way that music usually does in classical opera. *ABC In Sound*⁴⁹⁵ and *Laut Und Luise*⁴⁹⁶ are both examples of sound poetry in which the voices of the poets are the sole source of sonic material and are electronically edited and processed.⁴⁹⁷ Electronic sound and music was associated with abstraction, but with these examples the tape recorder is used as a way of manipulating the voice of the poet to achieve various levels of linguistic obscurity. I will further discuss how these poetry programmes explore the concept of abstract sound, but in contrasting ways, to contrasting degrees, and within the unique remit of the Radiophonic Workshop’s aesthetic of populist modernism.

In this chapter I will also explore the importance of the pedagogical function of artistic experimentation in public broadcasting. Two of the programmes discussed here were intended to educate about art through factual documentary or biography. They incorporate the same aesthetics that they are trying to educate the viewer about. In the 1968 BBC2 documentary, *Henry Moore: I Think in Shapes*, Derbyshire provides a kind of acoustical frame for Moore’s bronze sculptures. Her music is especially composed from the sound of knocking on bronze and is played back while the camera moves around the pieces at the

⁴⁹⁴ Tonks, *Sono-Montage*, The British Library Sound Archive.

⁴⁹⁵ Cobbing, *An ABC of Sound*, The British Library Sound Archive.

⁴⁹⁶ Jandl, *13 Radiophonic Texte*.

⁴⁹⁷ *Sono-Montage* and *ABC in Sound* remain unpublished. *Laut und Luise* was published, but not by the BBC; it is available on a rare 1977 German cassette release.

Tate's exhibition. In contrast, *Goya: The Performers*, broadcast as part of a 1972 edition of the arts strand in *Omnibus*, is a biographical portrait of the artist, in which her electronic sound is used to convey the emotional reality of his life. The programme is explicitly part of a fact-based series about art, but it is also interpretive and artistic in itself. In this way, there is an ambiguity between programmes designed to inform the public audience about art through documentary and programmes intended simply to *be* art. There is a reminder of this pedagogical function in the long introductions before the poetry programmes discussed here, explaining and justifying the main ideas behind the seemingly strange combination of electronic sounds and poetry. The BBC sound archives even contain a recording of a whole panel show discussing the subject, *Poetry and Sound*, from 1968.⁴⁹⁸ Equally, the creative use of electronic sound in the documentary programmes discussed below highlights the ambiguous divide between pedagogy and art within the context of public service broadcasting at this time.

5.2 Sound Poetry: *ABC In Sound* and *Laut Und Luise*

Below I will discuss how programmes of sound poetry produced for radio offer examples of the way that both experimental and modernist aesthetics were presented in British public service broadcasting as a way of edifying audiences. Like the radio programmes discussed previously, these are explorations of the medium-specificity of sound broadcasting, with an emphasis on the relation between language, music and sound. Derbyshire's electronic sound is integral, because the only materials it contains are electronic treatments of the poets' voices. Both programmes were created by adding tape effects to a recording of a performance, but with very different results.

5.2.1 Sound Poetry

Sound poetry emerged from several historical avant-gardes of the early twentieth century, such as Futurism, Dadaism, de Stijl, and Lettrism.⁴⁹⁹ The main feature of sound poetry is an emphasis on experimentation with vocal sounds, above and beyond the semantic meaning of words. Emphasis on sound could be achieved with different methods. Non-verbal, vocal sounds such as cries or coughs could be performed, thus communicating imitatively or indexically rather than symbolically: the Italian Futurist F. T. Marinetti used onomatopoeia in

⁴⁹⁸ *Poetry And Sound*, The British Library Sound Archive.

⁴⁹⁹ McCaffrey and Nichol, *Sound Poetry: A Catalogue: For the Eleventh International Sound Poetry Festival*.

his 228-page extended poem *Zang Tum Tum*,⁵⁰⁰ and Dadaist ‘noise concerts’ included performances of whistling, grunting and coughing.⁵⁰¹ Familiar language could be reordered into quasi-abstraction: Russian Futurist Khlebnikov described his method as ‘chopped up words, half-words, and their fantastical, clever combinations’⁵⁰²; Kurt Schwitters’s monumental sound recording of *Ursonate* consists of words broken apart into guttural vocal sounds.⁵⁰³ Units of vocal sounds could also be conceived away from conventional language through the invention of words or alphabets: Isadoure Isou and Maurice Lemaitre of the Parisian Lettrist movement created their *Lexique des Lettres Nouvelles* as an alphabet of sounds for vocal performance.⁵⁰⁴ With a shared interest in abstraction, a clear link can be found between modernism and sound poetry.

Sound poetry was often created by artists driven to challenge, expand, reject and transcend not only the current conventions of poetry but also conventional language itself. Part of this boundary-challenging drive was experimentation with mixed media and intermedia: practitioners worked on visual manifestations of their poetry, experimenting with typography and collage. With sound poetry, sound was one way of a potential multiplicity of ways of manifesting a poem: by its very definition, sound poetry was both an exploration of medium-specificity and a form of mixed media. The preoccupation with sound formed part of a larger movement towards mixed media work that defied categorisation, rather than being an attempt to draw all kinds of sound under the umbrella of music. As such, it forms a confluence in the histories of several mediums—literature, electronic music, visual art, and film—with artists often practicing in several fields.

This confluence is reflected in the terminology: around the mid-1960s, the phrase ‘concrete poetry’ emerged as an umbrella term for visual, sound, and kinetic poetry, thus showing that the concept was not just limited to sounds was applied more generally.⁵⁰⁵ A 1968 overview by poet Mary Ellen Solt entitled *A World Look At Concrete Poetry* shows that these experiments were taking place all over the world.⁵⁰⁶ Solt characterises the broad

⁵⁰⁰ Solt, *Concrete Poetry: A World View*.

⁵⁰¹ Tzara, *Seven Dada Manifestos and Lampisteries*.

⁵⁰² Stapanian, ‘Universal War "Ъ" and the Development of Zaum’: Abstraction toward a New Pictorial and Literary Realism’, 19.

⁵⁰³ Schwitters. *Ursonate*.

⁵⁰⁴ McCaffrey and Nichol.

⁵⁰⁵ See Weaver, ‘Concrete Poetry’, *Lugano Review*, 100.

⁵⁰⁶ Solt, *Concrete Poetry: A World View*.

aesthetic of concrete poetry as the reduction of language to its noumenal, sensory, ‘concrete’ dimension:

Emotions and ideas are not the physical materials of poetry. If the artist were not a poet he might be moved by the same emotions and ideas to make a painting (if he were a painter), a piece of sculpture (if he were a sculptor), a musical composition (if he were a composer). Generally speaking the material of the concrete poem is language: words reduced to their elements of letters (to see) syllables (to hear). Some concrete poets say with whole words. Others find fragments of letters or individual speech sounds more suited to their needs. The essential is reduced language. The degree of reduction varies from poet to poet, from poem to poem. In some cases non-linguistic material is used in place of language.⁵⁰⁷

It is not clear whether the term ‘concrete’ was intentionally borrowed from Pierre Schaeffer; but regardless, like Schaeffer’s *musique concrète*, many practitioners clearly expressed the view that the tape recorder enabled vocalised language to be ‘reduced’ to abstract sound in ways that were previously impossible. According to sound poet Steve McCaffrey’s 1978 survey of the form, the availability of the tape recorder and the development of tape techniques—‘considered as an extension of human vocality’⁵⁰⁸—played a large part in its revival during the 1950s and 60s. The recorder was often used as a means of extending already existing ideas and techniques. Through splicing, the technique of fragmenting and recombining words could be further explored; changing the speed of recordings, delay, feedback, amplification and envelope shaping could all obscure words more extensively than vocal techniques alone; and sounds used in poems need not be limited to vocal sources nor words. Many sound poets had strong links to electronic music studios with the facilities to realise their ideas. French sound poet Henri Chopin (1922–2008) created the earliest prominent examples of post-war sound poetry. He created his sound poetry entirely by tape editing of his own ‘audiopoems’ from around the mid-1950s, and he was invited to work in studios such as the RTF, WDR, EMS Stockholm, and IRCAM throughout his long career.⁵⁰⁹ Much of his poetry makes no use of words at all, improvising with the sounds of his body and laryngeal, buccal sounds such as breathing, wheezing or hissing: for his poem ‘La Digestion’,

⁵⁰⁷ Solt, 7.

⁵⁰⁸ McCaffrey and Nichol, 10.

⁵⁰⁹ Chopin, *Audiopoems*, LP.

he swallowed a microphone, montaging his internal sounds into the final piece.⁵¹⁰ Chopin expressed the idea that sound poetry, as realised with the tape recorder, offered the liberation of human expression from words. He wrote, ‘I have abandoned the idea of a poet as messenger,’⁵¹¹ calling for the abandonment of ‘the Word’ as an inadequate and restricting means of artistic expression, a source of deep alienation making ‘slaves of rhetoric, prisoners of explanation.’⁵¹² In the mid-1960s, The Fylkingen Group for Linguistic Arts in Sweden became an international hub for sound poetry, holding festivals and inviting sound poets from all over the world to work in their facilities in conjunction with the electronic music studio EMS Stockholm. They supported explorations in what became known as ‘text-sound-composition’ combining music, poetry and technology, particularly emphasising interdisciplinarity: ‘Text-Sound Composition is an artistic hybrid standing midway between poetry and music; it can be either a poem in which the actual speech-sounds and voice are just as important as the meaning of the words (if not more so), or a piece of music in which the human voice and the music inherent in the language for the artist’s sequence of sound.’⁵¹³

In contrast, only a few isolated sound poets practiced in Britain. Brion Gysin created ‘permutational poetry’ made from all the different potential combinations or permutations of words. For instance, ‘I am That I am’ begins: ‘I AM THAT I AM/ AM I THAT I AM/ I THAT AM I AM’ and so on.⁵¹⁴ Douglas Cleverdon invited Gysin to the Radiophonic Workshop in 1960 to edit his performance of the poem.⁵¹⁵ The most active sound poet in Britain was Bob Cobbing, whose innovative work in mixed media and publishing is further discussed below in relation to his contact with the Radiophonic Workshop in 1965. However, sound poetry was first brought to a large audience in Britain not by Cobbing or Gysin but by the Austrian poet Ernst Jandl at the International Poetry Incarnation at the Royal Albert Hall earlier in the same year, documented in Peter Whitehead’s film of the event.⁵¹⁶ It was hyped as the first British happening:⁵¹⁷ a gathering of poets mostly from America and the UK at a

⁵¹⁰ Chopin, *Les Mirifiques & Compagnie*, LP.

⁵¹¹ Chopin, ‘Why I Am The Author of Sound Poetry and Free Poetry’ in McCaffrey and Nichol.

⁵¹² Ibid.

⁵¹³ Various, *Fylkingen Text-Sound Festivals: 10 Years*, LP.

⁵¹⁴ Gysin, *Recordings 1960-81*, CD.

⁵¹⁵ Briscoe and Curtis-Bramwell, 115.

⁵¹⁶ Whitehead, *Wholly Communion*, DVD.

⁵¹⁷ Ibid.

sold-out Royal Albert Hall. Whitehead's film, *Wholly Communion*,⁵¹⁸ featured American beat poets Allen Ginsburg, Gregory Corso, and Lawrence Ferlinghetti, along with Michael Horowitz, Harry Fainlight, and Adrian Mitchell from the UK. Poetry was read to an excited audience of thousands; heckling and jeering erupted at points, with one intervention from the police after a man on LSD interrupted Fainlight's performance with cries of 'Love! Love! Love! Love!', causing an uproar. R. D. Laing can also be seen during Ginsberg's performance, sitting next to one of his patients, a young woman who dances and sways to the poetry before throwing flowers at Ginsberg. Ernst Jandl performed his sound poetry, eliciting both joy and bewilderment from both his audience and his fellow poets, both of which felt inspired to participate with sounds of their own. His performance of 'Ode auf N', 'Shützengraben' ('The Trenches') and Kurt Schwitters's 'Fury of Sneezing' delighted his audience, prompting spontaneous outbursts of approval that highlight the genuine novelty of his approach in comparison to the Beat poets who formed the bulk of the evening's entertainment. These poems showcased the elaborate wordplay and deep intertextuality that characterises Jandl's poetry: 'Ode auf N' is based upon improvisations around letters and syllables from Napoleon's name, while 'Shützengraben' is composed from explosive sounds taken from the title, accompanied by the clapping and cheering of the audience. Jandl's performance at International Poetry Incarnation is important to this discussion because, according to *The Radio Times*, it was the positive audience reaction to his poetry at this event—attended by thousands—that acted as a catalyst for the BBC to produce experimental broadcasts of sound poetry made in the Radiophonic Workshop.⁵¹⁹ This illustrates the way that broadcasts were produced in relation to the Reithian public service values of the BBC, bringing a popular, but geographically determined, event to a broadcast audience across the country. The producer of the programmes discussed here, George Macbeth, repeatedly cited the success of the Royal Albert Hall event as a way of legitimating their production by the BBC, because he presented them as informing and enlightening the audience about a significant event in the cultural landscape of Britain.

⁵¹⁸ Ibid.

⁵¹⁹ 'ABC in Sound', *Radio Times*, 58.

5.2.2 *ABC In Sound* (1966)⁵²⁰

The first of Macbeth's sound poetry programmes was a 25-minute poetry cycle, *ABC In Sound*, written by British experimental sound poet Bob Cobbing, with electronic sound by Derbyshire.⁵²¹ It was broadcast January 7, 1966, on the Third Programme at 10:25pm.⁵²² The cycle was composed from 26 short sound poems, one for each letter of the alphabet, originally published as *Sound Poems* in 1965.⁵²³ The Radiophonic Workshop version was created by adding effects to a tape recording of a performance, such as speeding up and slowing down, multiple recording, echo and feedback⁵²⁴

5.2.2.1 Bob Cobbing

Cobbing worked primarily as a sound poet from the mid-1960s onwards, and he was a central figure in London's literary scene throughout the 1950s and 60s. He worked across media and set up a forum and publishing organisation for experimental poetry in London. This 'Writers Forum' was created with an emphasis on creative freedom, enjoyment, and artistic autonomy, offering a contrast to the working environment at the BBC, with its complex organisational system, strict deadlines and public service duties. The most important value in art, for Cobbing, was enjoyment for all involved, rather than judgement, and he was opposed to institutions that served to reinforce the latter notion. This opposition led Cobbing directly to founding the Writers Forum Workshop. His permissive, inclusive ethos allowed anyone to come along to their meetings and to read work without judgement. He said: 'The point about criticism is that it is frequently wrong. I think one can dispense with it and learn through example. Today, people read their work out loud and they learn by performing it whether it's any good or not...[W]e at Writers Forum just enjoy reading the work.'⁵²⁵ His approach to publishing can also be contrasted to the authoritarian structure of the BBC, as he favoured the idea of indiscriminately publishing everything sent to him in order to 'let the reader decide whether it's any good or not.' He based this practice on the idea that 'it's best to get stuff out

⁵²⁰ Cobbing, *ABC in Sound*, The British Sound Archive.

⁵²¹ 'Radiophonic Workshop Catalogue'.

⁵²² 'ABC in Sound', *Radio Times*.

⁵²³ Cobbing, *Sound Poems*, CD.

⁵²⁴ Cobbing, *An ABC in Sound*, The British Library Sound Archive.

⁵²⁵ Cobbing to Sutherland, 'Interview with Bob Cobbing', *Queen Street Quarterly*, 51.

and that way it can be discussed and evaluated, rather than judging it before hand.⁵²⁶ Thus Cobbing's encounter with the monolith of public broadcasting, with all its ideological baggage, hierarchical organisation, and bureaucratic conservatism, was an uncomfortable one, and his statement that 'it was not entirely successful'⁵²⁷ can be understood in this context. It is remarkable that the institution would provide a forum for the voice of such an outsider, but it is understandable, given the extensive precedents for experimental radio at the BBC.

5.2.2.2 The BBC Version

The BBC programme was just one version of Cobbing's poem, which was first performed early in 1965 without electronics and performed by Cobbing throughout his life. According to him, the Workshop interpretation came about after he performed the poem at a 1965 poetry reading at the Institute of Contemporary Arts in London and an audience member connected to the BBC, himself a famous poet named Anthony Thwaite, recommended him to Macbeth.⁵²⁸ A 2009 CD of Cobbing's early recordings released by the British Library includes the recording of this performance, and this appears to be the version altered by the Radiophonic Workshop for the programme.⁵²⁹ The BBC's recording is unpublished and is available only in their sound archive, although there are excerpts available on a German compilation of sound poetry, *Phonetische Poesie* released in 1971.⁵³⁰

As already mentioned, Macbeth justifies it for public service broadcasting in the *Radio Times* by recounting the previous performance by Austrian sound poet Ernst Jandl to a large British audience: 'Since the success of Ernst Jandl's reading at the Royal Albert Hall last June considerable interest has been aroused in attempts to develop an art of pure sound.'⁵³¹ Macbeth had already worked on similar programmes of sound poetry; and Cobbing, unlike German or Scandinavian equivalents, stood out among the few British sound poets to choose from. A folder of working documents in the BBC Written Archives reveal that the team were not given very long to make the programme, with general plans for the programme beginning around October 1965, just three months before its broadcast—a tight deadline considering the hundreds of commissions the Radiophonic Workshop received that

⁵²⁶ Ibid.

⁵²⁷ Ibid., 55.

⁵²⁸ Ibid., 50.

⁵²⁹ Cobbing, 'Sound Poems', *The Spoken Word: Early Recordings 1965-1973*, CD.

⁵³⁰ Various, *Phonetische Poesis*, LP.

⁵³¹ 'ABC In Sound', *Radio Times*, 58.

year. Macbeth sent a memo to Briscoe at the beginning of the month detailing the beginning of his plans with Cobbing to create the programme, along with details of another sound poetry project that he had already underway, *Sono-Montage*, directed by Rosemary Tonks.⁵³² The two projects were being produced almost simultaneously, and are often mentioned together in archival written documents,⁵³³ along with sharing space on the same BBC sound-archive tape.⁵³⁴ By the end of the month, Derbyshire received from Macbeth a recording of the poem along with a book of Cobbing's poetry, and she was invited to attend the November 9 meeting with Cobbing to discuss sound treatments.⁵³⁵

In contrast to the time constraints and bureaucracy in the BBC hierarchy, Cobbing describes a characteristically idiosyncratic, chance-driven working method while originally writing *An ABC in Sound*:

The ABC in Sound came about through Writers Forum workshops. I did three poems for three successive meetings and it suddenly occurred to me that one began with the letter A, one began with the letter B, and one began with the letter C. I thought I should simply carry on and do the rest of the alphabet. Then in December 1964, I had a bad attack of the flu... I had a very high temperature and all sorts of strange sounds were buzzing in my head, I was definitely hearing sounds and in that sort of state I finished off the ABC in Sound.⁵³⁶

The poem was not Cobbing's first sound work, but, in his words, 'it was the first of any importance.'⁵³⁷ It is a pivotal poem in his catalogue, his 'signature piece,'⁵³⁸ presenting a refinement of his aesthetic. He continued to develop the poem until the end of his life, with different performance versions, as well as graphic interpretations in *Six Sound Poems* (1968).⁵³⁹ In answer to the question 'why publish sound poems in visual form [?]' Cobbing responded: 'the poem exists in many forms aural and visual and becomes perhaps many

⁵³² Macbeth to Briscoe, 'Bob Cobbing and Rosemary Tonks', BBC Written Archives Centre.

⁵³³ R97/47, BBC Written Archives Centre.

⁵³⁴ 'Radiophonic Workshop Catalogue', BBC Written Archives Centre.

⁵³⁵ Macbeth to Derbyshire, 'Poems by Bob Cobbing', BBC Written Archives Centre.

⁵³⁶ Cobbing to Sutherland, 'Interview with Bob Cobbing', *Queen Street Quarterly*, 53.

⁵³⁷ *Ibid.*

⁵³⁸ *Ibid.*

⁵³⁹ Cobbing, *Six Sound Poems*.

different poems.⁵⁴⁰ Cobbing's attitude towards art was holistic; he believed that creativity was best pursued as an interdisciplinary exercise, and his poetry therefore bled into an interest in electronic sound as a method of altering recordings of his own voice. He remarked, 'I commenced as a painter; later wrote poetry; studied music; began to realise all three were one activity.'⁵⁴¹ For him the poem was an ongoing project that was never finished and was not confined to one medium. An electronic rendering of his recording meant another way of exploring the poem; but for Macbeth, in the midst of producing a series of sound poetry programmes for the BBC, *ABC In Sound* was more a way of exploring what could be done with the electronic medium itself.

In interviews and writings Cobbing explained that his interest in electronically affecting his voice developed into an interest in the possibility of turning words into 'pure sound'.⁵⁴² Through its 'ability to amplify and superimpose, and to slow down the vibrations'⁵⁴³ of the voice, the meaning of words and the sound of the voice are atomised. We remember that 'poetry is a physical thing,'⁵⁴⁴ in contrast to the metaphysical realm of semantic meaning. In a statement reminiscent of Pierre Schaeffer, he wrote that the tape recorder helped a return to 'a more primitive form of language, before communication by expressive sounds became stereotyped into words, when the voice was richer in vibrations, more mightily physical.'⁵⁴⁵ To him, escaping the order of language through an emphasis on the formal element of sound meant a more authentic route to artistic expression, unabated by intellect.

Cobbing's use of an alphabetic sequence as a basis for poetry reflects his fascination with the 'primitive,' and his use of 'ABC' as a title both emphasises the idea of a starting-point and implies a naïve form of colonialism. 'ABC' is colloquial for a beginning, the point at which children start to be able to order their world through language and the point at which a standardised semantic ordering system is normalised for the child, often through sound and song. Cobbing further evokes childishness in his absurdist word play, making it clear that the alphabet is an arbitrary way of ordering sound. Instead of using sounds in the context of play to teach the alphabet, Cobbing uses the alphabet in order to play with words and sounds. He embeds the idea that enjoyment and pleasure are the reasons for this poem's existence in both

⁵⁴⁰ Ibid.

⁵⁴¹ Cobbing to Mayer, 'An Interview With Bob Cobbing', *Bob Cobbing and Writers Forum*, 55.

⁵⁴² Cobbing, 'Some Statements on Sound Poetry', in McCaffrey and Nichol.

⁵⁴³ Ibid.

⁵⁴⁴ Ibid.

⁵⁴⁵ Ibid.

the narrative of the text's inception and in the poem itself: he enjoyed making it, and he hopes that the audience will too. Near the centre of the 25-minute work appears 'J' for 'jouissance' and 'jubilation.'⁵⁴⁶

Cobbing found sound poetry to be a space where 'we escape our intellect,'⁵⁴⁷ but the escape is evidently carefully calculated. He slips between different languages—'adventure' becomes the French 'aventure',⁵⁴⁸ he uses palindromes, puns, permutations, acronyms, and repetitions. In 'S' he lists a selection of words beginning with the letter, but from the beginning it is clear that they are carefully chosen as concepts applied to language itself: 'sign, sound, sense, signal, speech, symptom, syllable, semiosis, structure, semantics, semiotics, synchronic, syntactics, sign-system, sign-aggregate, sign-inventory'.⁵⁴⁹ Cobbing's critical stance towards language as a system that imposes order on perception and is utilised as such politically appears towards the end of the poem with 'supporting redundancy, socially institutionalised systematic whole speech sound' rounded off by 'shit.'⁵⁵⁰ The critical aspects of this section are perhaps highlighted in the Radiophonic Workshop version, where all the words are treated with reverberation, thus creating a sharp sibilance that does not appear in the original recording.⁵⁵¹ Similarly, 'W' is centred on the word 'word,' ending with the statement 'drown word,' and receiving a suitable wet radiophonic treatment with plenty of reverb.⁵⁵² 'M' is a monotonous chant composed from words that begin with the prefix 'Mac'; in the Radiophonic version, a bagpipe drone effect is created by layering the same effect in parallel fifths, thus playing on an association with the Scottish instrument.⁵⁵³ In other sections, words are linked by the phonetic sound of the letters: 'N' is 'endure, endemic, ended.'⁵⁵⁴ 'R' is composed neither of words beginning with the letter nor from its phonetic equivalents; instead it contains the instruction 'repeat' applied to a seemingly random

⁵⁴⁶ Cobbing, 'Sound Poems', *The Spoken Word: Early Recordings 1965-1973*, CD.

⁵⁴⁷ Cobbing in McCaffrey and Nichol.

⁵⁴⁸ Cobbing, *Six Sound Poems*.

⁵⁴⁹ Ibid.

⁵⁵⁰ Ibid.

⁵⁵¹ Cobbing, *ABC in Sound*, The British Library Sound Archive.

⁵⁵² Ibid.

⁵⁵³ Ibid.

⁵⁵⁴ Cobbing, *Six Sound Poems*.

selection of words beginning with different letters.⁵⁵⁵ Layering tape loops asynchronously extend the repetition of the words in the BBC version.⁵⁵⁶

There are several examples of chant-like verses: ‘H’, ‘I’, ‘K’ and ‘M’ are all similar and have similar reverb and layering effects added by the Radiophonic Workshop staff.⁵⁵⁷ The letter ‘T’ is performed in a monotonous, chant-like manner; at the start the Radiophonic version includes added reverb, perhaps in order to emphasise the quasi-religious connotations of the chant. The transformation of the text continues by layering several lines at once, adding to the dynamic range.⁵⁵⁸ Significantly, the poem itself is based upon permutation and alteration of parts of words: ‘tanán’ becomes ‘tanare’ becomes ‘tandita’.⁵⁵⁹ It seems like the same word is repeating, but it is gradually being changed and twisted into something else in the manner of variations on a single musical motif. The Radiophonic treatment extends this technique, adding to the sense that each new word has somehow grown out of the last, simply by adding changes that can be gradually altered: changes of speed; multitracked layers that can be removed and added; echo that can be increased or decreased in intensity.

Cobbing doesn’t use any extended vocal techniques in this reading of the poem, and there is little evidence of his stated desire to experiment with sound. Compared to continental sound poets of the time such as Ernst Jandl or Henri Chopin, there is very little emphasis on sound itself, and most of the reading is rather ordinary. Perhaps this can be attributed to the enduring importance of communication in broadcasting, in contrast to the more autonomous areas of experimental poetry and art. At some points there seems to be nothing connecting the words apart from their first letter, which is not manifested in the sounds of the words. ‘Q’ is simply the letter repeated over and over again; ‘Z’ is a list of words beginning with the letter; ‘O’ is a selection of acronyms that include the letter.⁵⁶⁰ While these sections function within the original poem as simply nonsensical diversions, echo, speeding up and multilayering of each seems redundant, with little relation between the effects used and the vocal performance or the sounds or meanings of the words.⁵⁶¹ Cobbing even wrote of his dissatisfaction with the piece:

⁵⁵⁵ Ibid.

⁵⁵⁶ Cobbing, *ABC in Sound*.

⁵⁵⁷ Ibid.

⁵⁵⁸ Ibid.

⁵⁵⁹ Cobbing, *Sound Poems*.

⁵⁶⁰ Ibid.

⁵⁶¹ Cobbing, *ABC in Sound*.

I think it was not entirely successful. The big problem was that I had my ideas about the poem and the Radiophonic Workshop people had their own ideas about the poem. The project really didn't jell.⁵⁶²

Along with Derbyshire and Macbeth, Dick Mills and Bridget Marrow also helped out with the electronic effects. It is impossible to know how much each person did, but all the correspondence on the programme is addressed to Derbyshire and she is the only person credited for the programme in the Radiophonic Workshop catalogue. Without underplaying the work of the other participants, then, it can be inferred that she was the primary contributor from the Workshop. Difficulty in identifying authorship, however, only highlights the problem that Cobbing had with the project. With more time and resources it would not have been necessary to use so many people, and the collaboration between writer, producer and technician would not necessarily have suffered from as much miscommunication.

In contrast to Cobbing's complaints, after the programme was broadcast Macbeth sent a congratulatory memo to Derbyshire suggesting that its success was very much due to teamwork:

I should have written before to say what a great success I thought this programme was, and to thank you, Dick [Mills] and Bridget [Marrow] for all the hard work you put in on it. I think it was a case of a programme working entirely through a group effort, and I hope in future we can do more things together of a similar kind.⁵⁶³

If Macbeth's memo is sincere, then his satisfaction with the programme could be attributed to two factors. First, as producer, he lay further up the BBC hierarchy than Cobbing or Derbyshire; his ideas about the poem were the ones that won out in the end. Second, artistic 'success' meant something very different for BBC employees, used to compromise and contingency, and for the self-funded, freelance experimental sound poet. There appear to be some surviving notes from Derbyshire's meeting with Macbeth and Cobbing that may confirm the precedence given to Macbeth's ideas. She writes in quotation marks that either Macbeth or Cobbing has told her that he 'likes white noise—linking in Permutated Poems. Private Dreams—on the whole too romantic and too serious—but likes some things. Likes toppy f/b [top end, or soppy feedback?].'⁵⁶⁴ The reference to an earlier BBC programme,

⁵⁶² Cobbing to Sutherland.

⁵⁶³ Macbeth to Derbyshire, 'Bob Cobbing', BBC Written Archives Centre.

Permutated Poems, makes it more likely that she is quoting Macbeth because, as a BBC employee, he was more likely to have had knowledge of BBC radiophonic programmes from the late 1950s. Cobbing would not have been accustomed to the amount of compromise involved in creating art within a large broadcasting institution. ‘Success’ for Macbeth, and indeed Derbyshire, meant getting away with as much experimentation as possible within a much more conservative environment, while keeping audience expectation and reception very much in mind, in contrast to Cobbing’s normal approach, which was based around personal enjoyment in the creative process.

5.2.3 *Laut Und Luise* (1966)⁵⁶⁵

Laut Und Luise was a 1966 set of concrete poems by Austrian experimental poet Ernst Jandl. The 30-minute programme was based on a selection of thirteen poems by Jandl, most of which appeared in his 1966 volume.⁵⁶⁶ It was broadcast Tuesday, 13 December, on the Third Programme at 10:05pm.⁵⁶⁷ The Radiophonic version was created by Derbyshire adding effects to a tape recording of a performance, such as speeding up and slowing down, multiple recording, delay, reverb and ring modulation.⁵⁶⁸

5.2.3.1 Ernst Jandl

Jandl was one of the world’s leading figures in concrete poetry; in the year before his death he was named one of the ten most important German-language poets of the twentieth century by the journal *Das Gedicht*.⁵⁶⁹ He created sound and visual poetry as well as experimental radio plays, playing a major part in the mid-1960s revival of the form called in German *Neu Hörspiel*.⁵⁷⁰ Like his British contemporary, Cobbing, Jandl was a strongly oppositional voice, stating that he said that he wrote his poetry as ‘an act of protest against traditionalism.’⁵⁷¹

⁵⁶⁴ Ibid.

⁵⁶⁵ Published recording: Jandl., *13 Radiophonic Texte*, cassette.

⁵⁶⁶ Jandl, *Laut Und Luise*.

⁵⁶⁷ ‘Laut Und Luise’, *Radio Times*, 36.

⁵⁶⁸ Jandl., *13 Radiophonic Texte*.

⁵⁶⁹ Pace, ‘Ernst Jandl, 74, Viennese Poet of Many Moods’, *New York Times*, 8.

⁵⁷⁰ Klaus, *Neu Hörspiel*.

⁵⁷¹ Jandl in Solt, *Concrete Poetry: A World View*, 20.

Unlike Cobbing, however, he found a precedent for his writing in his home city of Vienna in the Wiener Gruppe, an avant-garde poetry collective active between 1954 and 1964. He followed their objectives to ‘move as far as possible from traditional poetry,’ evidently seeing concrete poetry as the best means to do so because of the way it challenged linguistic precepts.⁵⁷²

Jandl’s poetry is underpinned by this ‘act of protest,’ a conscious attempt to reject tradition. As with Cobbing, however, he did not reject words altogether in his poetry; he created his own form of sound poetry based mainly upon wordplay. Jandl called this style *sprechgedichte* or ‘poems to be spoken,’ which he considered a form of ‘modified’ sound poetry ‘using words rather than pure sounds.’⁵⁷³ For example, his poem ‘schtzngrmm’⁵⁷⁴ is based on modifications of the German word for ‘trenches,’ ‘schutzgraben’:

schtzngrmm
 schtzngrmm
 t-t-t-t
 t-t-t-t
 grrmmmmmm
 t-t-t-t
 s-----c-----h
 tzngrmm
 tzngrmm
 tzngrmm
 t-t-t-t
 t-t-t-t⁵⁷⁵

Here, the vowels are removed, leaving only consonants, to create a harsher, harder sound without the sinuosity of the complete word. Dense clusters of letters are followed by strings of them, imitating the sound of explosions followed by strings of bullets. The poem works both visually and aurally in this way. ‘schtzngrmm’ is a word stripped of its cushioning vowels, cutting its syllables and leaving a skeletal structure. Later it appears shortened as

⁵⁷² Ibid.

⁵⁷³ Ibid.

⁵⁷⁴ Jandl can be seen performing the poem in Peter Whitehead’s documentary film on the 1965 International Poetry Incarnation *Wholly Communion*, and heard with adjustments in the BBC programme.

⁵⁷⁵ Jandl, *Laut Und Luise*, 38.

‘tzngrmm’ and then again as ‘scht’. It is distorted, with the final consonant ‘n’ replaced with ‘mm’, as if the poet had lost the power of articulation. The poem, then, is not simply onomatopoeic because, while there are recognisable words, they only appear as traces. On the other hand, it is not simply a collection of imitative sounds because there are still recognisable words.

Jandl’s comments on sound poetry reflect this ambiguity between words and sounds, and the notion of the concrete situated therein. He suggested that the emphasis on aurality or visuality of language ‘produces objects from language itself.’⁵⁷⁶ Thus attention is drawn to the linguistic in a ‘closed system of relations’ rather than striving to transcend it altogether by abandoning the use of words in poetry.⁵⁷⁷ He wrote that his ‘poetry is measurable neither on a world conceived apart from language nor on the conventions of a language whose purpose is practical communication.’⁵⁷⁸ Thus, for Jandl, it is not by abandoning it, but by making language an ‘object’ of contemplation by playing with its conventions and showing that it is easily subjected to changes that possibilities beyond the present are suggested and ‘protest’ is enacted.

5.2.3.2 The BBC Version

The BBC’s production of Jandl’s poetry came about after the positive reception to Jandl’s performance at the International Poetry Incarnation 1965. George Macbeth explained in his introduction to the programme:

At the great poetry reading in the Albert Hall on June 11 1965, the most popular event of all was a reading by the Austrian poet Ernst Jandl of a number of his sound poems. This success was in large part due to the outstanding quality of Ernst Jandl himself as a performer. But it also indicated the very intense emotive power of language used in the border area between poetry and music.⁵⁷⁹

The surprise success of Jandl’s participation in an evidently emblematic cultural event was enough mandate to invite him to record a programme of poetry for broadcast, despite the likelihood that such a programme would appeal only to a small minority. Macbeth remarks

⁵⁷⁶ Jandl, ‘POETRY’, *The Literary Review*, 232.

⁵⁷⁷ Ibid.

⁵⁷⁸ Ibid.

⁵⁷⁹ Macbeth in Jandl, *13 Radiophonic Texte*.

that the power and popularity of Jandl's work lay partly in his charismatic performance but was also due to its location 'in the border area between poetry and music.' Macbeth summons and simplifies the recurring trope of sound poetry's liminality between two mediums, but the trope is relevant here: Jandl both resisted and engaged with linguistic convention through experimentation with sounds and wordplay. The 'musical' side of Macbeth's 'border' appears as the resistance towards traditional meaning and an emphasis on sound; the poetic side of the border appears in the recognisable language. Thus, from the perspective of the BBC producer, Jandl's work could fulfil the objective of the Third Programme to present something that could challenge and expand the consciousness of many listeners by stretching the limits of the language used, while retaining its familiarity as language and its ability to communicate successfully.

Nothing remains of *Laut Und Luise* in the BBC's Written Archives or in Jandl's written archives, but the recording of the broadcast is available on a 1977 German cassette release.⁵⁸⁰⁵⁸¹ According to the sleeve notes for this, the programme was made in only five days, between the 11th and 15th of June 1966, in the Radiophonic Workshop.⁵⁸² Credit for the radiophonic work is typically ambiguous. The Radiophonic Workshop catalogue credits only Derbyshire.⁵⁸³ However, Macbeth wrote Derbyshire in a memo: 'I wanted to thank you, John (and Dick) for all the work that you did on the programme.'⁵⁸⁴ 'John' could be Baker or Harrison, but that the memo was addressed to Derbyshire and the inclusion of Mill's name only in brackets imply that she was the main contributor to the piece. Similarly, in an annotated version of the BBC Radiophonic Workshop catalogue from 1997 in Derbyshire's archive, she notes next to the entry, 'he didn't give a bouquet to Dick'⁵⁸⁵—perhaps a piquant remark correcting any excessive attribution of credit given to Mills in a past catalogue draft.

It appears unlikely that Jandl had any significant input into the electronic treatments of his poems. The sleeve notes to the commercially released recording state that all the sounds in the piece are from Jandl's performances, but they imply that he had little input into the

⁵⁸⁰ Ibid.

⁵⁸¹ It is also worth noting that due to the cult status of the Radiophonic Workshop in the music blogosphere, the cassette has also been digitised and uploaded to filesharing sites. Most notably it was featured on the now-defunct 'Continuo's Weblog', which specialises in uploads of rare experimental music. <<http://continuo.wordpress.com/2010/07/07/ernst-jandl-13-radiophone-texte-2/>> [last accessed 8/10/2013].

⁵⁸² Jandl.

⁵⁸³ 'Radiophonic Workshop Catalogue'.

⁵⁸⁴ Macbeth to Derbyshire, 'Poems By Ernst Jandl', BBC Written Archives Centre.

⁵⁸⁵ 'Annotated Radiophonic Workshop Catalogue, 1997', Papers Of Delia Derbyshire.

editing process, simply choosing from a selection presented to him: ‘The poet’s voice is the sole source of acoustic material, estranged in various ways by technical apparatus, but always in a manner appropriate to the text. The author selected from among the various offerings provided by the virtuosic work of the studio technician.’⁵⁸⁶ Unlike other concrete poets, Jandl himself was not interested in creating concrete poetry using electronic sound treatments, and he did not pursue the technique before or after the BBC programme. Previous treatments of poetry by Cobbing and Tonks provides evidence that too many ideas from too many people were counterproductive to the end result. This appears to be less of a problem in *Laut Und Luise*, with a far more integrated set of treatments. From the available evidence, it seems likely that the unity of the programme stems from the fact that one person, probably Derbyshire, undertook the majority of the radiophonic work on it.

The electronic treatments of Jandl’s poetry differ quite considerably from the previous programmes discussed because the radiophonic techniques do not serve to extend or enhance vocal techniques. Perhaps this is due to Jandl’s lack of interest in the use of electronics in the development of his poetry, which is already complete without electronic enhancement. Instead, where there are significant changes to Jandl’s vocal performance, the recordings are used as raw material for the ‘technician’ to create something quite new. This can be seen throughout the programme, beginning with Jandl’s ‘impressionist’ poem ‘In The Country.’⁵⁸⁷ The original poem is composed from two-line stanzas containing the name of farmyard animals in German and the noises that those animals make. Patterns are created from these words through the extension of the middle syllables:

rinininininininDER

brüllüllüllüllüllüllüllüllIEN

schweineineineineineineineinE

grununununununununZEN⁵⁸⁸

Importantly, there is a very strong sense of temporal direction and consistency in the poem created through the repetitive patterns used. Cattle roar, pigs grunt, and so on. Though repetitive, the poem has a sense of forward momentum because each couplet is different. It

⁵⁸⁶ Jandl, *Sleevenotes, 13 Radiophonic Texte*.

⁵⁸⁷ Originally published 1966 as ‘Auf Dem Land’ in *Laut und Luise*, 109.

⁵⁸⁸ Jandl, *Laut Und Luise*, 109.

makes a very effective nursery rhyme, with its balance of repetition, difference and surreal humour. There is no confusion when it comes to the structure of the poem; one couplet ends, the next one begins. Even though we may be left guessing as to which animal will appear in the next couplet, we know when the current one will end and when the next one will begin.

With the use of tape splicing, multiple layering and looping—three very basic, though manually time-consuming, techniques—the radiophonic version distorts the temporality at the heart of the original poem. The poem is split into three definite sections: a) 00:07- 01:24: the middle syllables of the animal sounds (e.g. üllüllüllüllüllüllüllüll etc) are repeated in the order they appear in the poem, but are also overlapped and layered; b) 01:24- 02:38: the original poem is layered over the same abstracted animal sounds; c) 02:38-03:54: a freer layering of the animal sounds. In this way, the original vocal performance of the poem is structurally central to the poem, embedded between two reworkings that use it only as a starting point for creative tape music. The distortion of the very strong sense of forward direction in the original poem can be heard in section a). While the abstracted animal sound syllables occur in the same order as the poem, they overlap so much that it is difficult to tell when each line ceases. The perception of change, then, appears as a gradient:

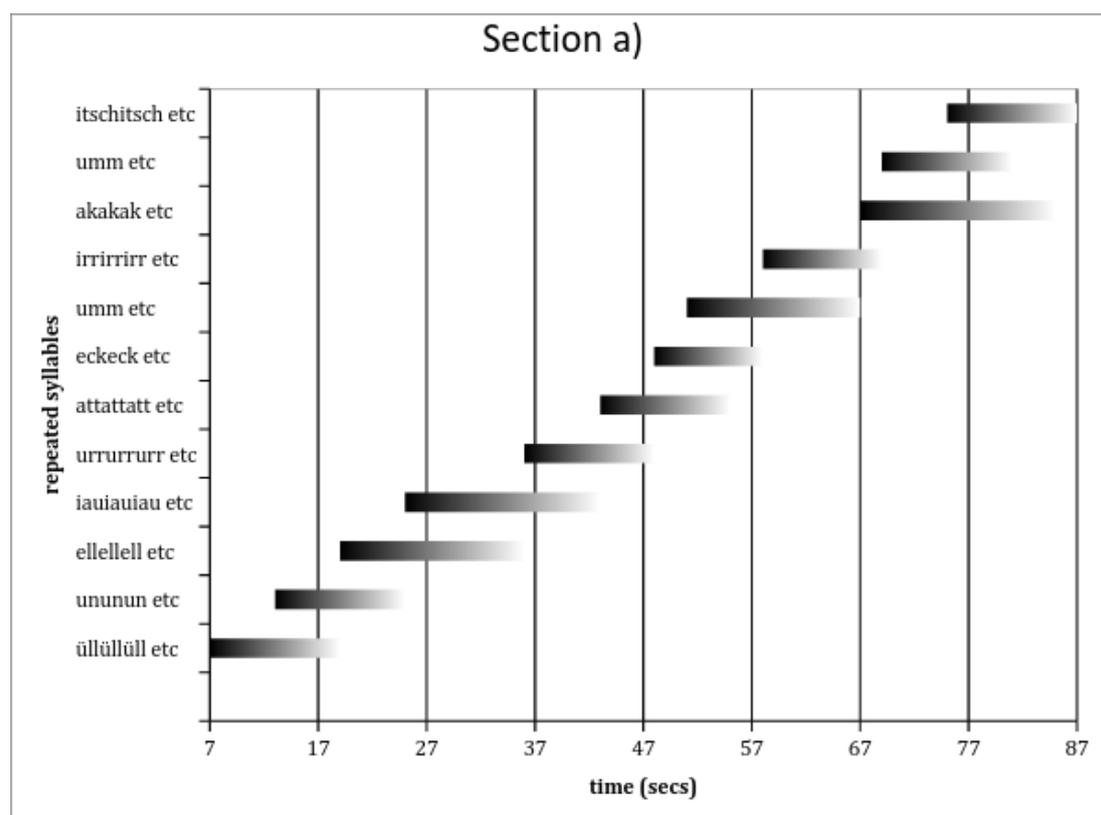


Figure 7: Diagram of overlapping layers in *In The Country*.

It is clear when each new line starts, but the layering and overlapping of the lines remove the consecutive logic central to the original poem, instead presenting a single complex sound that gradually changes. In this way, the poem is adapted in a way that explores the medium-

specificity of tape itself, rather than using electronic effects in order to extend and represent the poem. The written medium (and its reading aloud) traditionally presents words and phonemes as separate and successive, thus adhering to a common sense perception of time. In contrast, tape splicing serves to abstract several distinct lines from one sound wave, and multiple recording reduces several lines into a single complex waveform; thus elements that previously existed at consecutive points in time become simultaneous.

5.3 Visual Art

5.3.1 *I Think In Shapes* (1968)⁵⁸⁹

As already discussed, a concern with materiality and medium-specificity as a way of overcoming assumptions from the past and asserting the individuality of the artist has come to be identified as a defining characteristic, in very broad terms, of twentieth-century modernism across the arts. In the populist modernism of the BBC Radiophonic Workshop, that aesthetic was transferred to the context of public service broadcasting, where it was presented for the purpose of edifying a very large audience. This creates a paradoxical situation: populist modernism borrows signifiers from high modernism in order to be considered ‘modern in context,’ when modernism by definition is a discourse that begs to be considered as autonomous from contexts. Programmes more explicitly presented as documentaries about art are more transparent in their informative role, but here the paradox lies in the way that information is sometimes presented in the attempt to convey the specificity and materiality of one medium—sculpture, through another surrogate one—television.

I Think In Shapes was a documentary made for BBC2 on the semi-abstract British sculptor Henry Moore that arose from the large retrospective exhibition held at the Tate that year on the occasion of his seventieth birthday.⁵⁹⁰ Produced by John Gibson, it was broadcast Tuesday 27 August in colour, with the *Radio Times* explaining that the programme consists of Henry Moore as he ‘walks amongst his creations, he talks about them and his words help to heighten understanding of the work of this great artist.’⁵⁹¹ Derbyshire’s radiophonic music here accompanies images of his bronze sculptures during a long sequence in which the camera moves around them, without any dialogue, as if the television screen were providing the viewer with a surrogate view into the gallery. The music is not just incidental, however,

⁵⁸⁹ ‘I Think In Shapes: Henry Moore’, *BBC Archive Website*.

⁵⁹⁰ ‘I Think In Shapes: Henry Moore’, *BBC Archive Website*.

⁵⁹¹ ‘I Think In Shapes’, *Radio Times*, 19.

because it reinforces the surrogate role of the screen by incorporating sounds that are taken from the bronze material from which the sculptures are made. The Radiophonic Workshop catalogue even names the piece ‘Bronze Knocking,’ relating it to Moore’s sculptures, which are mainly cast in bronze. This name reflects the emphasis on materiality and physicality that the sculptures themselves suggest, conveying a level of meaning that is difficult to present only through reproduced images of them. The piece is a fairly abstract, ambient piece consisting of the very heavily reverberating sound of the knocking; this again emphasises that the music is there to underline the use of the camera as a surrogate window into the exhibition, providing a sense of artificial space. Importantly, such a use of radiophonic music exemplifies in a very oblique way the service role of the workshop employees there, to realise and enhance the ideas of others rather than their own. The sound acts as a kind of acoustical frame within which the artist’s work is presented and explained. It also reveals the strangeness of the whole idea that an artistic discourse based around the idea of abstraction and autonomy can be reconstituted and represented by service providers for the general public in order to educate them about that discourse.

5.3.2 *Omnibus: Goya: The Performers* (1972)⁵⁹²

Documents in the BBC Archives are littered with examples of programmes that were proposed but never made. One edition of *Omnibus*, about the visual artist Goya and called *The Performers*, had been unsuccessfully proposed previously, by director Leslie Megahey in 1969. A memorandum in the BBC Written Archives shows that he originally wrote to Desmond Briscoe early in the year to ask about electronic music for the ‘film,’ which was going to be directed and written by David Sylvester. Megahey wrote that it was David who was ‘keen to experiment radiophonically with the music.’⁵⁹³ Their original idea was to ask Roger Smalley ‘of King’s Cambridge’ to ‘deal entirely with the musical side.’ This was a little ambitious, with a significant chunk of around twenty minutes of music, and so Megahey asked if there was a possibility that Smalley could work with one of ‘his’ people around the time of the start of filming in July that year.

A later memo in Derbyshire’s archive shows that the idea for this original programme was to use variations on Beethoven quartets.⁵⁹⁴ It also shows that the programme was never made, but that Megahey still wanted to make a film on Goya, only ‘without Sylvester or

⁵⁹² ‘Goya’, Tapes of Delia Derbyshire, The Delia Derbyshire Archive.

⁵⁹³ Megahey to Lesley, BBC Written Archives Centre.

⁵⁹⁴ Derbyshire, ‘Correspondence late 1960s’, Papers Of Delia Derbyshire.

Beethoven,' although it does not explain why the original programme never went ahead. Megahey was also still keen to use someone from the Radiophonic Workshop to provide some 'original sound,' and he was asking for an 'early discussion' with them but not specifying whom exactly he wanted to work with on the project.

It was Derbyshire who composed the music when it was finally made.⁵⁹⁵ It was broadcast 26th October 1972 at 22:35 on BBC1.⁵⁹⁶ The name of the programme is elaborated in the *Radio Times* description, where the theme of performance within Goya's work and biography as a starting point for a docu-drama is made explicit:

Goya's etchings suggest the theme of a performance where the actors' roles change from day to day, selected by a force beyond their control. [...] The violence, the politics, the sexuality in his work, the ambiguities in his own personality, are all part of this Masquerade.⁵⁹⁷

It also explains the interpretive scenario for the programme: made 'during a fiesta in modern-day Spain,' it is part 'fact, part fiction, rumour, and contradiction.'⁵⁹⁸

A short tape in Derbyshire's archive contains some intriguing makeup for a sequence of stock sound effects, electronic sounds, and treated baroque music edited together, which do cumulatively reflect the psychologically tense fiesta atmosphere suggested by the *Radio Times*.⁵⁹⁹ This begins with a stock sound-effect recording of some church bells which, after a minute or so, gradually fade out while two piercing sine waves creating difference tones fade up. This is then gradually faded out while there fades up the sound of some baroque-type music, with a short section looped and echoed. This short piece of music is suggests the themes that the Radiophonic Workshop was called upon to represent by BBC producers: deafening church bells submerged under the sound of tinnitus-inducing sine tones, the echoing music that emerges evoking a sense of music remembered rather than heard by the painter who went deaf in his forties.

⁵⁹⁵ 'Radiophonic Workshop Catalogue'.

⁵⁹⁶ 'Goya', *Radio Times*, 28.

⁵⁹⁷ Ibid.

⁵⁹⁸ Ibid.

⁵⁹⁹ 'Goya', Tapes Of Delia Derbyshire.

5.4 *Sono-Montage* (1965-1966)⁶⁰⁰

Like the previous poetry programmes, *Sono-Montage* was presented as an object in itself, but the BBC's principle of public service edification was also inherent to it. This is illustrated by the introduction to the programme spoken by Tonks, which explains the purpose of the programme as an experiment in the combination of poetry and electronic sound. Further, the autobiographical content of *Sono-Montage* emphasises the ambiguous status of these programmes, designed for public service broadcasting, as artistic entities in themselves while also being documents about the populist modernist aesthetic that they present to the audience.

Sono-Montage was a 30-minute Third Programme poetry feature, arranged, directed and introduced by British poet Rosemary Tonks, produced by George Macbeth, and broadcast on June 16, 1966.⁶⁰¹ As with the sound poetry features already discussed, the impetus for their production came from a live performance, this time at the Hampstead Festival of the Arts, 1965, accompanied by an exhibition of kinetic art.⁶⁰² It was billed as an experiment in enhancing spoken poetry with electronic sounds for dramatic effect.⁶⁰³ The radio version is composed from recordings of four poets reading their writings aloud: Michael Baldwin, Peter Redgrove, Paul Roche, and Tonks herself. Nine poems read in sequence were set to accompaniments of electronic music, with occasional use of splicing and tape echo to repeat and emphasise certain sections of each poem.⁶⁰⁴

5.4.1 Rosemary Tonks

Much of Tonks' writing contains autobiographical elements, presenting her insights into the reality of the creative environment in London during the 1960s. She had a short but successful career between the early 1960s and 70s, writing two slim volumes of Symbolist-inspired poetry along with several short novels. She regarded herself primarily as a poet, describing her novels as 'mud' that she wrote only for money.⁶⁰⁵ Her career ended when she converted to a form of Fundamentalist Christianity, fleeing London and cutting contact with family,

⁶⁰⁰ Tonks, *Sono-Montage*, The British Sound Archive.

⁶⁰¹ 'Sono-Montage', *Radio Times*, 34.

⁶⁰² 'Display Advert—Hampstead Festival of the Arts 1965', *The Guardian*, 6.

⁶⁰³ 'Sono-Montage', *Radio Times*.

⁶⁰⁴ *Sono-Montage*, The British Library Sound Archive.

⁶⁰⁵ Coleman, 'Rosemary For Remembrance: Terry Coleman Talks to Rosemary Tonks', *The Guardian*, 8.

friends and the media.⁶⁰⁶ Tonks was very critical about British poetry and about cultural life in general. She expressed her dissatisfaction in several interviews: in one for the British Council, she says that British poets are a ‘lost set, you know, here in London. They form movements’ and are ‘quite ready to pick up trivialities, but are terrified of writing of passions.’⁶⁰⁷ Rather than deeply examining their interior lives and ‘passions’ as a source for poetry, Tonks felt that contemporary literary life was too focused on attaining group acceptance, and that this was a very ‘English’ trait in comparison with the Continental writers she admired. Terry Coleman, writing in *The Guardian* newspaper in 1970, noted while interviewing her that ‘it is difficult to name anyone writing in English, except Lowell, that she admires.’⁶⁰⁸ Even when asked about the success of her own novels, Tonks replied: ‘It just proves the English like their porridge.’⁶⁰⁹ Her bemusement at the middlebrow state of much British literature appears throughout her writing. In the poem ‘The Sofas, Fogs and Cinemas’ she laments:

All this sitting about in cafes to calm down
Simply wears me out. And their idea of literature!
The idiotic cut of the stanzas; the novels, full up, gross.⁶¹⁰

The dissatisfaction at life amongst London artists expressed in such poems also emerges in her satirical novels *The Bloater* (1968) and *Business Men As Lovers*, which mock upper-middle-class bohemianism by portraying characters (including herself) as petty, chattering and pretentious.⁶¹¹

⁶⁰⁶ *Lost Voices: Rosemary Tonks: The Poet Who Vanished*, BBC Radio 4.

⁶⁰⁷ Tonks to Orr, ‘Rosemary Tonks to Peter Orr’, *The Poet Speaks: interviews with contemporary poets conducted by Hilary Morrish, Peter, John Press and Ian Scott-Kilvert*, 257.

⁶⁰⁸ Coleman, ‘Rosemary For Remembrance: Terry Coleman Talks to Rosemary Tonks’, *The Guardian*, 8.

⁶⁰⁹ *Ibid.*

⁶¹⁰ Tonks, *Iliad of Broken Sentences*, 5.

⁶¹¹ Tonks, *The Bloater; Businessmen As Lovers*.

5.4.2 *The Bloater*, Biographical Parallels With Derbyshire, And Dissatisfaction With British Cultural Life

Given the autobiographical nature of her writings, it appears likely that Tonks based one of the characters from *The Bloater* on Derbyshire herself. Jenny, who appears in *The Bloater*, is a ‘temperamental’ young woman working in an ‘electronic sound workshop.’⁶¹² She is a good friend of the narrator, Min, based upon the real-life Tonks: a very bourgeois writer with gout. Jenny talks about nothing but her love life, which often disrupts her professional work in the studio: ‘When Jenny is hunting, her tea-break is a thirty-minute phone-call and her lunch-hour is interminable. [...] She moves listlessly. Good heavens, the way her strength leaves her is a reproach to the Creator. A moment ago she was snapping switches on and off, now she can hardly press down on that little black lever which brings up the mains electricity.’⁶¹³ The two women work together on a poetry setting and drink alcohol while Jenny, ‘de haut en bas, keeps her informed on current sex customs.’⁶¹⁴ Although they are friends, Min/Tonks describes her working experiences with Jenny/Delia with frustration: ‘This afternoon, for instance, she’s so lackadaisical, I tried to cheer her up by playing through the Orestes poem and saying loudly “That’s good” every time we came to a piece of sound she’d made, but she wouldn’t respond.’⁶¹⁵ Her descriptions of the workshop lack the romanticised futurism that normally accompanies images of electronic music from the time:

Inside the workshop no one moves. The walls are blocked in solidly with machinery, and there are free-standing machines on wheels. The light is so bright you don’t even look ugly. You simply look like yourself. Fred is brooding over piece of paper. Jenny is sitting in front of a dashboard of dials and switches. [...] ⁶¹⁶

There’s no air in the workshop, we’re sealed in like tinned shepherd’s pie. The clock is silent but the hands go round fast with that railway station stutter. [...] ⁶¹⁷

⁶¹² Tonks, *The Bloater*, 20.

⁶¹³ Ibid.

⁶¹⁴ Tonks, *The Bloater*, Sleeve note.

⁶¹⁵ Ibid., 91

⁶¹⁶ Ibid., 20.

⁶¹⁷ Ibid.

And this studio is so brown, brown carpet, speakers with brown woven radio-set material over their mouths.⁶¹⁸

Partly in jest, the characters bicker about Boulez with Fred the engineer, ‘a left-wing bureaucrat with no imagination,’⁶¹⁹ and compare their experiences in their own provincial studio with idealistic images of electronic music on the European mainland:

‘On the continent in electronic music studios enthusiastic young people with ideas work together as a team.’ My chin lifts as I speak.

‘And look what they produce!’

‘And the hoo-ha they talk about it.’

We both have a picture of flashy continental composers in white macs, young, clean-shaven, and curt in speech, arriving at London Airport with pamphlets and lectures in bison-skin dispatch-cases. Whereas here we are, sitting about, waiting for a left-wing bureaucrat with no imagination to make a heart-beat.⁶²⁰

Tonks, then, felt that there was a spiritual and formal poverty, a conservatism, in British culture that she referred to as a love for ‘porridge’, which caused apathy. For a time it came as a source of inspiration as something to oppose, but eventually she made a radical break from the world of writing and the culture around her to pursue solitude, spirituality and religion.

Rather than with the poetry of her English contemporaries, Tonks identified with the continental Symbolist poetry of Baudelaire, similarly emphasising psycho-sexual life expressed in linguistic fluidity and symbolic imagery. The *Guardian* interview with Terry Coleman tells of her love for Joyce and Baudelaire, describing a visit to the latter’s grave in Montparnasse where she lay on a life-sized effigy placed on his grave: ‘Once you have Baudelaire in mind, comparisons keep cropping up. [...] [B]oth love the city and the life of the now, but see what both, I think would call its filthy grandeur.’⁶²¹ Tonks was fascinated

⁶¹⁸ Ibid., 91

⁶¹⁹ Ibid., 95.

⁶²⁰ Ibid., 95.

⁶²¹ Coleman, ‘Rosemary For Remembrance: Terry Coleman Talks to Rosemary Tonks’, *The Guardian*, 8.

with spirituality in modernity and ‘city life—with its sofas, hotel corridors, cinemas, underworlds, cardboard suitcases, self-willed buses, banknotes, soapy bathrooms, newspaper filled parks; and its anguish, its enraged excitement, its great lonely joys.’⁶²² Her writings portray an urban literary underworld full of hedonism, decadence and ennui. She felt that such subject matter, particular to modernity, called for a ‘visionary modern lyric [...] an idiom in which [she could] write lyrically, colloquially, and dramatically.’⁶²³ This was evidently an idiom she found little inspiration for in contemporary British poetry, and hence she turned to early modernist literature of the nineteenth- and early-twentieth-century from elsewhere.

Reviews from the decade show that Tonks was considered to be an original talent, but she was not consistent enough to be anything more than a poet with great potential. Fellow poet and critic A. Alvarez wrote of *Notes and Cafes and Bedrooms* in 1963: ‘Miss Tonks has a real talent of an edgy, bristling kind. Her difficulty is in separating the poems in which this shows from those in which she is merely beating around, waiting for the muse to strike.’⁶²⁴ In a far harsher review of 1967 called ‘Women’s-eye Views,’ Ian Hamilton of *The Observer* writes of Tonks’s feminine triviality: ‘There are lines here and there that compel more than cursory attention, but most of it is mere noise and vanity.’⁶²⁵ Bad reviews are perhaps unsurprising, given Tonks’s publicly expressed disdain for other British poets. They are, however, unfortunate when considering Coleman’s observation that he had ‘never met anyone who was so hurt by critics.’⁶²⁶ Mirroring the career of Derbyshire, Tonks’s reaction to her creative environment was to flee it altogether, leaving any further creative potential unfulfilled. Similarly, as with much of Derbyshire’s music, Tonks’s work has never been reprinted because her publishers were unable to contact her to ask for permission to do so before her death.

Personal correspondence from Derbyshire’s manuscripts also shows that she and Tonks were friends and refers to their work together with poetry and electronic sound.⁶²⁷ There is no suggestion, however, that Derbyshire was acquainted with her before their BBC work together. It can be concluded, then, that it is unlikely that Derbyshire was involved in

⁶²² Tonks to Orr, ‘Rosemary Tonks to Peter Orr’, *The Poet Speaks: interviews with contemporary poets conducted by Hilary Morrish, Peter, John Press and Ian Scott-Kilvert*, 257.

⁶²³ Ibid.

⁶²⁴ Alvarez, ‘Poetry of the super-ego’, *The Observer*, 25.

⁶²⁵ Hamilton, ‘Women’s-eye views: New Poetry’, *The Observer*, 20.

⁶²⁶ Coleman, ‘Rosemary For Remembrance: Terry Coleman Talks to Rosemary Tonks’, *The Guardian*, 8.

⁶²⁷ ‘Correspondence late 1960s’, Papers Of Delia Derbyshire.

the conception and planning of *Sono-Montage* for the Hampstead Festival. Brian Hodgson also recalls that Derbyshire did not take part in the original stage show.⁶²⁸ The piece was originally aired as a ‘poetry reading with Electronic Sounds’ Tuesday 23 May at 8pm at the London Central School of Speech and Drama.⁶²⁹ It was also accompanied by an ‘Exhibition of Kinetic Art’, giving it a strong visual element.⁶³⁰ Producer George Macbeth refers to witnessing the event with ‘visual sculptures’ in a 1968 Radio 3 programme Poetry and Sound.⁶³¹ The festival was not an academic or niche event: other music programming consisted of Monteverdi, Bach, Mozart, Schubert, Faurè, Liszt and Elisabeth Lutyens.⁶³² Lutyens and Tonks supplied the only two instances of contemporary music, with *Sono-Montage* appearing as the only example of electronic music. Thus, organisers deemed it viable to include the more experimental mixed media work of Tonks within a relatively general programme of the arts.

Significantly, the combination of music and poetry was proving to be a popular kind of artistic event during the mid-1960s, and it occurred again at the Hampstead Festival, with a contrasting night of Poetry and Jazz in Concert.⁶³³ That event was one of many performances organised by Jeremy Robson and which occurred throughout Britain from 1961 forward.⁶³⁴ Poets including Dannie Abse, Ted Hughes, Spike Milligan, Adrian Mitchell, Stevie Smith and Laurie Lee read their own poetry with interludes of jazz music by the Michael Garrick Quartet.⁶³⁵ By including music and poetry in the same concert, Robson’s aim was to bring ‘straight’ poetry to a wider audience, using jazz interludes to provide a ‘relaxed and unpretentious atmosphere,’ rather than experimenting with a symbiosis of the two art forms.⁶³⁶ He complained that poetry readings were either too conservative, ‘deadly dull’ elitist affairs, or, like the International Poetry Incarnation, ‘orgies of exhibitionism’ that dissuaded many people from attending: ‘Although we have worked for the opposite, the journalist’s image of long-haired, ranting, beatnik poets, of beer-spilling, drug-taking, key-pounding

⁶²⁸ Hodgson, Personal email correspondence.

⁶²⁹ ‘Display Advert—Hampstead Festival of the Arts 1965’, *The Guardian*, 6.

⁶³⁰ *Ibid.*

⁶³¹ *Poetry and Sound*, The British Library Sound Archive.

⁶³² ‘Display Advert—Hampstead Festival of the Arts 1965’, *The Guardian*, 6.

⁶³³ *Ibid.*

⁶³⁴ Robson, *Poems From Poetry and Jazz in Concert*.

⁶³⁵ *Ibid.*

⁶³⁶ *Ibid.*

musicians is not easily shaken.⁶³⁷ While Robson's words are critical of British literary culture, his Poetry and Jazz in Concert events contrast with *Sono-Montage*; the Robson events are designed to serve as 'an introduction to the written word, a valuable extension of it,' rather than aiming to experiment with anything new in itself.⁶³⁸ Nevertheless, they show that there was general curiosity about and public appetite for experimental mixed media that included music and poetry. As Robson wrote in 1969: '[P]oetry readings, in whatever form, have become a regular and accepted part of the London—and not only the London—scene.'⁶³⁹

The growing prevalence of poetry performances in Britain provided a justification for Macbeth to produce such an experimental programme for the BBC, and Tonks' long explanatory introduction to the programme also emphasises its public-service origin. Macbeth's attendance at the performance of *Sono-Montage* suggests that he was very likely responsible for the idea to produce a Radiophonic Workshop version for the BBC. In a memo to Briscoe dated October 4, 1965, Macbeth writes of his previous contact with Tonks about the programme.⁶⁴⁰ According to him, she initially wished to make new recordings of the poets reading their works, using the same electronic sounds made by Stage Sound. The new recordings could be 'adjusted to fit the sounds—e.g. by the introduction of varying acoustics and so on.' Meanwhile, she thought that Stage Sound would be 'quite agreeable [...] to our making adjustments to [the sounds].'⁶⁴¹ A receipt from Stage Sound to 'Miss Delia Devonshire [sic]' dated October 29, 1965, shows that the sound materials had been handed to Derbyshire by this point.⁶⁴² There is further correspondence dated January and May 1966 regarding the programme's scheduling and cataloguing, and this too suggests that Derbyshire was responsible for the handling of the piece.⁶⁴³

Tonks's introduction to the final version explains how the sounds for the programme were made: 'What you are going to hear are in fact sound collages, or sound illuminations, and they've been made in two different studios. The actual sounds were composed by Stage Sound Ltd. for the Hampstead Festival, and the next step, the transformations, in which the

⁶³⁷ Ibid., 12.

⁶³⁸ Ibid.

⁶³⁹ Ibid.

⁶⁴⁰ 'Out of the Unknown', The BBC Written Archives Centre.

⁶⁴¹ Ibid.

⁶⁴² Ibid.

⁶⁴³ Ibid.

sounds were immersed in the text of the poems, this was done in the BBC Radiophonic Workshop.⁶⁴⁴ Derbyshire's official role in the creation of the piece was to edit and arrange recordings of ready-made electronic sounds around recordings of poets reading their writings. She also added some editing and effects to the poems. In actuality, it is difficult to discover how much work Derbyshire did on the project, although there are notes in the BBC Written Archives that suggest she did more than this, designing some of her own electronic sounds for it.⁶⁴⁵ Further, Tonks' fictional account of their working process in *The Bloater* suggest that more work was carried out at the Radiophonic Workshop, but it is difficult to discern how much that narrative is based upon real experiences. Unfortunately there are no records kept by the engineers at Stage Sound, which supplied sound effects and equipment to theatres around the south of England, although its activity in this field is significant enough for it to appear in Hugh Davies's electronic music catalogue.⁶⁴⁶ Furthermore, there is no recording of the original version produced for the Hampstead Festival, so it is impossible to discern what changes Derbyshire made to the original from a comparison with the surviving recording of the radio programme in the BBC Sound Archive. The lack of clarity around this matter again emphasises the perceived difference of electronic sound as a medium in this context. The fact that Derbyshire's name is not specifically attached to the project publically, either in Tonks' introduction or in the *Radio Times*, shows that, regardless of the amount of work carried out, an electronic composer was not seen as an author in the way that a traditional composer or writer would be.

5.4.3 Analysis: Poetry, Music and Sound

As broadcast, the programme included six poems by other poets and three written by Tonks: 'Poet As Gambler' from *Notes on Cafes and Bedrooms* (1963),⁶⁴⁷ and 'Badly Chosen Lover'⁶⁴⁸ and 'Orpheus in Soho' from *Iliad of Broken Sentences* (1967).⁶⁴⁹ The latter present aspects of the world that Tonks creates in her poetry: the lonely, precarious existence of the poet ('as gambler'), equally fascinated and repelled by the 'dark city'; the aftermath of a

⁶⁴⁴ *Sono-Montage*, The British Library Sound Archive.

⁶⁴⁵ 'Out of the Unknown', The BBC Written Archives Centre.

⁶⁴⁶ Davies, *International Electronic Music Catalogue: Répertoire International des Musiques électroacoustiques*.

⁶⁴⁷ Tonks, *Notes on Cafes and Bedrooms*, 27.

⁶⁴⁸ Tonks, *Iliad of Broken Sentences*, 11.

⁶⁴⁹ *Ibid.*, 23.

deceitful lover who was ‘badly chosen’; and a sad Orpheus who stalks the ‘bitch-clubs’ of ‘Europe’s old blue Kasbah’ pleasure-seeking and searching for an absent Euridice because he knows ‘there is so little risk of finding her.’

As in the examples of poetry programmes discussed previously, the relations between poetry, music and sound were posed as issues ripe for public debate. Specifically, the idea that all three existed on a continuum between abstract sounds and language was a central motif in discussions of the subject. The poetry in this programme, however, is all lyrical (rather than sound) poetry, and Tonks spoke of how she sought to write musicality into her poems: ‘[T]here are poems of mine which are quite difficult, but which I have put an awful lot of trouble into making musical, and the music has come over. “Poet As Gambler”, in which I laboured over the music, is difficult to read, but, in fact, it is successful, I think.’⁶⁵⁰ For this reason, Tonks said that some of her poems were better spoken aloud than read, and draws a clear distinction between poetry in written and aural form: ‘Some poems, the eye can see nothing in them, literally, until they are read aloud. Basically, it would be fine if a poem could do both, but there are certain poems which never will do both, and are great poetry anyway.’⁶⁵¹ Tonks felt that ‘Poet as Gambler,’ among other poems, is not equally ‘successful’ in visual and aural forms. For her it is more effective when heard as spoken sound than when seen on the page. Tonks concedes that the same poem can be interpreted by different senses, but the results are more or less successful versions of the same poem. Those that work best in spoken form, like music, can be read on the page but benefit from realisation in performance.

In the introduction to *Sono-Montage*, Tonks says that the use of poetry and electronic sound in the programme contrasts to settings of operatic libretto.⁶⁵² In opera, the libretto ‘is of relatively small importance [...] the music’s poor relation,’ as it becomes subsumed by song. In *Sono-Montage*, the collage of poetry and electronic sound places more emphasis on the former: ‘in the case of these sound collages, the libretto, the poem is the dominant partner and is all important.’⁶⁵³ The electronic sounds in the piece are produced in order to accompany the poems in a way that emphasises them and allows the listener to focus on the spoken words. This is most clear in ‘Poet As Gambler,’ where a consistent simple texture of low timpani-like rumbling and a modal melody on a plucked zither usually plays beneath the poem, often increasing in volume when there are pauses. Unlike sound poetry, the electronic sound does not become a timbral extension of the voice because the two elements are not brought

⁶⁵⁰ Tonks to Orr, ‘Rosemary Tonks to Peter Orr’, *The Poet Speaks: interviews with contemporary poets conducted by Hilary Morrish, Peter, John Press and Ian Scott-Kilvert*, 257.

⁶⁵¹ Ibid.

⁶⁵² *Sono-Montage*, The British Library Sound Archives.

⁶⁵³ Ibid.

together on equal terms. The lyrical form of the poetry here leads to a construction in which the sounds form a secondary layer within which the poems are foregrounded and ‘immersed.’

Tonks says that she chose electronic sound rather than ‘ordinary musical composition’ to accompany her poems to get away from ‘the feeling that two strong art forms were fighting for my attention, and that they were mutually exclusive.’⁶⁵⁴ She suggests that the combination ‘was much more equal’ than the relation between instrumental music and poetry.⁶⁵⁵ She argues that this equality arises because electronic sound isn’t quite music but is rather material still to be made into music: ‘One of the good things about using electronic sound is that it’s still in the category of musical raw material.’⁶⁵⁶ Tonks’s comment can be understood as a reflection of the position of electronic music in Britain at the time, with the Radiophonic Workshop, the country’s most established studio, still producing it mainly for incidental pieces in broadcast programmes. Evidently to her it had not yet developed into a medium in itself, but was still ‘raw material,’ somewhere between music and sound. In *Sono-Montage*, the poems are foregrounded, and they remain plainly spoken rather than sung, so the difference between the musical and poetic elements is emphasised. However, the electronic treatment of the voice does create the effect of mingling the poetic and musical elements. In this way, the distinction between the poetry and the electronic sound remains strong, but there is some ambiguity between the two.

For Tonks, electronic sound’s status as ‘raw material’ meant that it could provide a way of conveying the meaning of the poem with an immediacy that ‘ordinary music’ lacks. According to her, each poem in *Sono-Montage* is really only a short impression, a general ‘mood’ enhanced by electronics: ‘As you’ll hear, the electronic sounds have the ability to evoke a tremendously strong mood in a matter of seconds. This makes them ideal for short forms such as poems. All the pieces which follow began with a study in detail of the text of the poem. We then tried to conjure up the relevant mood by means of abstract electronic sound.’⁶⁵⁷ Each ‘collage’ consists of the exploration of a single, simple motif based on the poem. As Tonks suggests, these motifs present themselves immediately, or momentarily. They punctuate the poems by fading or dropping out in order to emphasise the voice, and they frame the vocal part with introductions and codas. In ‘Badly Chosen Lover,’ the anger and pain of a mistreated narrator at her past lover is conveyed in two main shapes: the sharp, noisy tape feedback created from a recording of a loud trumpet, and a recording of a

⁶⁵⁴ Ibid.

⁶⁵⁵ Ibid.

⁶⁵⁶ Ibid.

⁶⁵⁷ Ibid.

thumping heartbeat. Here, the convention of using electronic sound to convey emotional turmoil is fully exploited. Heading each of the two verses is a vocal motif consisting of the accusation ‘criminal’ repeated and treated with tape echo. As with Derbyshire’s earlier exploration of artificial acoustics in *Blue Veils And Golden Sands*, the use of an artificial acoustic creates a sense that the poem is narrated from an imaginary space. For all the invective fired at the lover during the poem, he is, after all, ‘badly chosen’ rather than just bad, and so the effect highlights the idea that the narrator is also levelling recriminations at herself inside her own mind. Similarly, the proximity of the reader to the microphone is used to create a specific sense of space. While most of the poem is read quite forcefully and at a medium distance from the microphone, certain lines are read closer to the microphone with different dynamics. The line ‘I damn you for it (very softly)’ is repeated in whispers.; ‘the breath of your neck’ is spoken, but very close to the microphone, giving the impression of an uncomfortable proximity. The heartbeat sound, coming and going, also adds to the impression of closeness. The electronic sounds, then, enhance the surface impression that in listening to the poem, we are entering into Tonks’s private emotions and thoughts.

‘Orpheus In Soho’ is the most successfully integrated of the three collages. Electronic sound in both ‘Poet As Gambler’ and ‘Badly Chosen Lover’ predominantly provides bookends and a secondary layer underneath the spoken words. ‘Orpheus In Soho’ contains a stronger dialogue between sound and poetry. The sound material is composed from discontinuous fragments, which are much more suitable for repetition and weaving in and out of the poetry. Orpheus, as a mythical archetype for music, is written into the electronic sound, which is composed more melodically than in ‘Badly Chosen Lover’. The main source of the sounds appears to be a piano: the regular meter of the music is marked with strong downbeat made from what may be the noise of a piano pedal. Simultaneously, a repeating, descending minor melody is played on what sounds like a piano in reverse with heavy reverb applied, while a tonic-dominant drone of two sine tones leads into the poem. The music is thus composed from these few cells, which are repeated and edited into the poem, rather than forming a background layer.

Repetitions of lines from the poem and tape effects also blur the line between the poetry and the music. While there are no major alterations to the written version of the poem, those devices significantly affect its pacing and rhythm, showing that the poem itself was changed in order to accommodate the setting. The word ‘Orpheus,’ spoken by a dark breathy voice treated with echo, is interjected between the four verses and at the end of mid-verse lines, punctuating the poem. Within the poem as written, Tonks emphasises the notion that the workers of Soho and Orpheus are aware of their reliance on each other by repeating the similar lines:

[...] the little night-shops of the Underworld
 With their kiosks...they know it,
 None of these places would exist without Orpheus/
 And how well they know it. [...]
 ...there is so little risk of finding her
 In Europe's old blue Kasbah, and how he knows it⁶⁵⁸

In the radio version, 'they know it' is repeated throughout, with added reverberation and echo, again emphasising the sense of imaginary space and helping to conjure the image of a character slowly moving through an 'Underworld' at night. In contrast to the use of repetition as both a poetic and musical device, absence and allusion are also significant: Orpheus' wife, Euridice, from the original myth, is never mentioned but we are told that 'His search is desperate!' in one of several allusions to the missing woman. Equally, the function of electronic sound in its historical context—as 'raw material' that alludes towards an absent music but does not quite occupy the same role—provides a space for allusion rather than illustration.

A BBC Listener Research Report found that 'the audience for this broadcast was too small to be recorded,' although audience members surveyed for the report gave a generally favourable response.⁶⁵⁹ It was felt by most that the idea of combining electronic sounds and poems 'was not without possibilities', but a substantial group preferred poetry 'unadulterated' and seemed to think that the treatments were simply a 'gimmick.'⁶⁶⁰ Still, there was a sense that programmes such as this were worth pursuing purely because of their experimentalism, even for those who did not enjoy it.⁶⁶¹ The BBC, therefore, continued to make a few similar programmes, despite the miniscule audiences they attracted. Further, a letter from Tonks to Derbyshire mentions their plans to collaborate together on an audiovisual project, and Tonks also states in an article from 1968 that she planned to work on a television show with electronic sound,⁶⁶² but there is no evidence that these ideas were brought to completion.

⁶⁵⁸ Tonks, *Iliad of Broken Sentences*, 23.

⁶⁵⁹ 'Out of the Unknown', The BBC Written Archives Centre.

⁶⁶⁰ Ibid.

⁶⁶¹ Ibid.

⁶⁶² Pendennis, 'Writer of Light Temper', *The Observer*, 30.

5.4.4 Collaboration and Compromise

Chapters in her autobiographical fiction novel *The Bloater* appear to detail Tonks's experiences in the Radiophonic Workshop while working on *Sono-Montage*. Min/Rosemary is working on a poem about Orestes in the 'electronic sound workshop' that parallels the real-life poem about Orpheus. She works alongside Jenny/Delia and a technician called Fred, and she describes the collaborative process as intensely frustrating. She and Jenny become especially irritated due to Fred's constant negative criticism regarding Min/Rosemary's ideas. Fred's sentiments echo the complaints made by Tonks about British poetry's fear of 'passions':

We work meticulously; I boil up into little rages at my music-stand to keep them interested. I have to do this every time I want to use 'feedback' or overlapping; these are considered my weaknesses and I'm forced to take the witness box and argue for them.

"But, Fred, it's just perfect there, to have a breathy voice calling 'Orestes' into the distance."

"Well yes, but you've just had this dark voice on feedback calling 'Orestes' into the distance. You're rather laying it on you know."

"This isn't the kindergarten. These are grown-up passions. You can't lay it on enough. People feel these things."

'Do they? I don't.'⁶⁶³

In order to get her 'dark voice on feedback', Min/Rosemary reverts to manipulation: 'Hmm. I see what you mean. You may be right. Look, we'll just give it one try on feedback, and if it's totally wrong, I'll follow your judgement, and we'll take it out, i.e. never.'⁶⁶⁴ She has a similar argument with Fred about a heartbeat sound that is reminiscent of the sound that appears in 'Badly Chosen Lover':

'You'll never get that heart-beat to sound like a heart-beat,' says Fred, the defeatist.

'So what? It's a real heart-beat. It was recorded in hospital. It's the real thing.' I'm trying at least.

⁶⁶³ Tonks, *The Bloater*, 20.

⁶⁶⁴ *Ibid.*, 24.

Jenny says petulantly: 'I don't think it's normal. It sounds as though it's got heart disease.'

'Yes,' says Fred, siding with her, 'it sounds like an old blackbird flapping a pair of rotten wings.'

The ranks are closing against me, and at any moment a serious discussion of work will turn to chatter. Someone puts their head round the studio door and says: 'Sorry'. [...]

Actually they're too apathetic to take advantage of it. Fred plays with his tools, a razor, a miniature screwdriver, and some joining tape. He wants to make his heartbeat, and that will take at least three-quarters of an hour. If it's better than the one I've brought in from outside, from the sound library, I can use it. If it's worse, we shall have to start at this point all over again tomorrow morning. And if you stick in one place too long in constructing electronic sounds, you lose your ear, your memory of sound already used, and your ability to improvise spontaneously so that the whole thing 'jells'.⁶⁶⁵

Tonks describes a situation in which the number of collaborators creates a counterproductive environment, offering an insight into the frustrations felt at the Radiophonic Workshop. The factual basis of this description appears to be further confirmed by Tonks's previously mentioned letter to Derbyshire. There she writes that in their unrealised collaboration she should have complete control over the sounds used, inferring that her previous experience was marred by the presence of too many people working on the sound for her project at the Workshop.

⁶⁶⁵ Ibid., 92.

6 Conclusion

There is still a large gap in knowledge about Derbyshire and the Radiophonic Workshop, with many unreleased and archival tapes that are inaccessible to the public and that contain a large amount of electronic music. Some of the pieces explored above are examples of music that has been left largely unheard in archives, known only to a small handful of people. Rosemary Tonks's *Sono-Montage* and Derbyshire's radio collaborations with Angela Rodaway were especially exciting subjects for research for this reason. Other pieces, such as *The Dreams*, are still officially unpublished but have been circulating online for several years, gathering a cult following among listeners. Only a small proportion of Derbyshire's music has been covered in this thesis, but more examples are listed in the Appendix, providing some insight into the large size of her catalogue of work for the BBC. Without direct access to the Radiophonic Workshop tape archive, the often very convoluted routes to primary materials resulted in a fragmented collection of findings. This difficulty has influenced the structure of the thesis, with many questions still remaining. These will be addressed, rather than resolved, in the closing remarks here.

Many previously obscure electronic music recordings from the early-to-mid-twentieth century onwards are currently being rereleased and reassessed by contemporary listeners, suggesting that the history of the medium is a relatively fluid field of knowledge. Such recordings are also often sourced from people normally considered to be on the fringes of mainstream histories of electronic music. For instance, beyond the constraints of its normally white Western bias, Iranian-American composer Dariush Dolat-Shahi's 1985 album *Electronic Music, Tar and Sehtar* was recorded at the Columbia-Princeton Electronic Music Center,⁶⁶⁶ female composers such as Elianne Radigue, ex-assistant to Pierre Henry,⁶⁶⁷ as well as Derbyshire herself have become more visible within the traditionally masculine domain; and the medium has come to include often trivialised genres, such as music for advertisements by Suzanne Cianni.⁶⁶⁸ Even from more conventional perspectives on the history of European electronic music, Schaeffer's writings are only recently being translated to English,⁶⁶⁹ while the record label Editions Mego is rereleasing recordings from the Parisian

⁶⁶⁶ Dolat-Shahi, *Electronic Music, Tar and Sehtar*, LP.

⁶⁶⁷ Radigue, *Jouet Electronique*, LP.

⁶⁶⁸ Ciani, *Lixiviation.*, LP.

⁶⁶⁹ Schaeffer, *In Search of a Concrete Music*.

GRM studio on their *Recollection GRM* series of recent years.⁶⁷⁰ These too can be seen as challenging established narratives, with, for instance, Schaeffer's purely electronic work of 1978 *Le Trièdre Fertile* released only in 2012.⁶⁷¹ It seems likely that it will not be very much longer before more music from the BBC Radiophonic Workshop archives becomes published in such a way. Through continued enquiries it emerges that the development of electronic music has encompassed a much more diverse array of creative practices than mainstream historical accounts often consider, suggesting the importance of keeping those enquiries open-ended rather than constructing a very conclusive narrative from them.

Derbyshire is a central figure in revisionist perspectives about the history of electronic music. She is most commonly recognised as a 'pioneer' for her realisation of the *Doctor Who* theme—one of the earliest examples of electronic music to achieve popular and commercial success. Its significance is not simply musical, but social, since it had an effect upon the popular perception of electronic music generally, with much publicity and press surrounding its broadcast. It appeared at a time when many people in Britain did not accept that electronic music was music at all. As Derbyshire pointed out, it must have played a role in providing a different context for audiences to hear other examples of the medium that they came into contact with by 'convincing' them of its identity as music. The desire to create electronic music with a popular audience in mind drove Derbyshire throughout her career. The *Doctor Who* theme combined familiar musical language with the strangeness of electronic timbres in a way that kept the two musical elements recognisably distinct. She continued to explore this combination with her later work in synthesis such as *Blue Veils And Golden Sands* and *Inventions For Radio*, where timbre is 'extended' into tonal harmonic language, rather than treated as a separate element. Significantly, it was not until Jean-Claude Risset's later work in spectral composition and computer synthesis in the late 1960s that this approach to synthesis was articulated more fully in an art-music context. In contrast to Derbyshire, Risset worked in an academic research environment, making Derbyshire's use of the technique around half a decade earlier appear prescient. It is important to stress that her work moved in that direction not despite, but because of its public service context, providing a method for combining an experimental technique with a commonly understood tonal musical language.

It is the importance of the social function of her work that explains a lack of academic interest in uncovering more of it, since the discipline of musicology traditionally emphasises the importance of musical autonomy. Specifically, the discourses that have grown up around the sonic arts and electronic music have especially privileged the concept of autonomy,

⁶⁷⁰ 'Recollection GRM', *Editions Mego*, website.

⁶⁷¹ Schaeffer, *Le Trièdre Fertile*, LP.

following from Pierre Schaeffer's ideas about the *concrète* dimension of sound as the corporeal, objective quality of sounds, distinguished from their communicative or contextual significance. His application of the term presupposed a challenge to its 'elementary definitions' and a shift in the boundaries between musical and non-musical sound. The Radiophonic Workshop appropriated his language early in its existence, applying it to the production of sound effects for experimental radio plays. The Workshop's term for these sound effects, 'special sound,' reflected an ambiguity similar to Schaeffer's terminology, lying somewhere in between music and sound effect. This ambiguity continued to be a central theme in work there, with combinations of poetry and electronic sound in radio programmes continuing into the late 1960s. It also had a large impact on working methods at the Workshop, leading directly to an experimental approach to techniques, technologies and musical composition. While the London studio found many of its antecedents in Schaeffer's Parisian base, the British term 'special sound' reflected the large amount of uncertainty about the musical status of *musique concrète*. Schaeffer's words suggest that it definitely was music, 'even if and above all' it was difficult for listeners to accept it as such. Derbyshire was the member of the Radiophonic Workshop that took the most from art music; and, like Schaeffer, she expressed her certainty that what she did there was 'music,' in contrast to the term used in her institutional work environment. However, there is little to suggest that her creative activities there were particularly aspirational, and her stated aim to create her work specifically for a large audience lay at odds with the high modernist emphasis on musical autonomy from society. While these factors have played a large part in her absence from academic histories of electronic music, the continuing revision of the subject in popular culture reflects a lessening of that emphasis.

Rather than suggesting an increasingly complete picture of the past, this revisionist tendency towards the subject points towards how many more works remain relatively unacknowledged, exposing the limited usefulness of making too many firm conclusions on the subject. It is more useful to conclude that these enquiries should also be seen as part of a continual process of writing and rewriting the past according to the culture of the present. As suggested in the introduction to this thesis, it is striking that it is primarily online that Derbyshire has come to prominence as a key figure in the history of British electronic music. The rise in her public profile in that space could not have happened in her lifetime, when broadcasting was the main form of cultural mass dissemination. The democratisation of technology associated with the digital culture of the present has removed barriers to both the distribution and reception of knowledge and has fragmented culture, in contrast to the more centralised model of broadcasting where the same things are brought to many people at the same time by one institution. For the medium of experimental electronic music (and probably many others) in the present, this democratization can be linked to the absence of a shared sense

of language or history, without a central canon to provide a coherent frame of reference. This situation, arising from the technological developments of the past couple of decades, also implies that a large amount of cultural value is placed on pluralism. This pluralism is, for some, a problem and a situation that they may seek to correct. For instance, Leigh Landy has published his concerns about the lack of coherence in experimental music,⁶⁷² attempting to delineate a more fixed academic approach to ‘sound based art,’⁶⁷³ which is accompanied by a large online bibliography on the subject.⁶⁷⁴ Counter to such motivations, Tony Myatt expresses the idea in his editorial introduction to a 2008 edition of the journal *Organised Sound*, ‘New Aesthetics And Practice In Experimental Electronic Music,’ that this academic desire to create genres, endless sub-genres, and categories for electronic music only has a very limited usefulness, especially when considering recent music from outside an academic tradition: ‘Not surprisingly, many of the leading figures working outside our academic tradition reject the notion of single, unified genres, so why should academic debate seek to impose this?’⁶⁷⁵ While Myatt’s remark refers to more recent music made with computers, the point is still relevant here. From the present perspective, the main interest in Derbyshire’s work comes from outside academia, where, as Myatt suggests, the creation of a reified discourse around the subject of electronic music appears less necessary or desired. This thesis, then, has not been written in order to search for some missing parts of electronic music history that can be moved from the margins to a canon at the centre. The activity of the Radiophonic Workshop was prohibited from even being categorised as ‘music’ made by ‘composers,’ and this left open what they were doing, inadvertently creating a space within which exploration of a new medium could be undertaken with relative freedom away from the baggage of that terminology. Hence, in conclusion, it is the exploratory, experimental element of Derbyshire’s reaction to that situation that is emphasised here, leaving the matter open for further research into her back catalogue of work.

⁶⁷² Landy, *What’s The Matter With Experimental Music Today?*.

⁶⁷³ See: Landy, *Understanding The Art Of Sound Organisation*; and ‘Reviewing The Musicology Of Electroacoustic Music: A Plea For Greater Triangulation’, *Organised Sound*.

⁶⁷⁴ Landy, *EARS: Electroacoustic Resource Site*.

⁶⁷⁵ Myatt, ‘Editorial: New Aesthetics And Practice In Experimental Electronic Music’, *Organised Sound*, 1.

7. Appendix

Further Research

More BBC Projects

This is not an exhaustive selection of projects. It simply includes information on some pieces that could not be extensively covered in more detail in the thesis, have not been discussed in detail elsewhere, and may include useful starting points for further research on Derbyshire's work for the BBC. For this purpose I have also provided for most titles the TRW numbers that refer to the entry in the 'Radiophonic Workshop Catalogue' as well as indications of useful sources that may help in finding recordings or more information on the programmes and music.

1. *Time On Our Hands* (1963)

TRW4060

Times On Our Hands was Derbyshire's first commission to produce music for a television programme. Excerpts are included on the 2008 CD, *BBC Radiophonic Workshop: A Retrospective*. Produced by Don Haworth and Pieter Morpurgo, the BFI database describes it as a 'documentary made in 1963, which projected the viewer 25 years into the future to 14th Sept. 1988, to look back over the events of the past 25 years. With Kingsley Amis, Stafford Beer, Aldous Huxley, Franklin Medhurst and Raymond Williams.'⁶⁷⁶ It was repeated in 1983, the year of its imagined future setting.⁶⁷⁷ Derbyshire mentioned it in her interview with *Doctor Who Magazine*: 'I had only done one other television programme before [*Doctor Who*], called *Time On Our Hands*, using beautiful abstract electronic sounds. So I was very inexperienced, but making something from nothing was my secret.'⁶⁷⁸ There are papers relating to her planning for the project in her archive at the University of Manchester.⁶⁷⁹

⁶⁷⁶ 'Time On Our Hands', *BFI*.

⁶⁷⁷ 'Time On Our Hands', *Radio Times*.

⁶⁷⁸ Derbyshire to Atkinson-Broadbelt, 'Soundhouse'.

⁶⁷⁹ 'Time On Our Hands', Papers Of Delia Derbyshire.

2. *Know Your Car*

This is the title of an unused theme tune for a television programme, *Family Car*. The track is composed from the concrete sounds of a car's horn and exhaust. The recording is contained on two albums of radiophonic music, *BBC Radiophonic Workshop – 21*, and *BBC Radiophonic Workshop: A Retrospective*. According to Derbyshire and Hodgson, her tune was turned down because of the BBC's concerns about how the car's manufacturers might respond to having it associated with their brand.⁶⁸⁰ This was not a reflection of the producer's feelings, because there is a letter in the BBC Written Archives from him expressing his gratitude: 'It is exactly what I hoped it would be and I am delighted with it.'⁶⁸¹

3. *The Dark Ages*

TRW6061

Produced by Michael Bakewell and written by Bernard Kops, this radio play 'takes place in the womb,' according to the *Radio Times*⁶⁸² as well as a magazine article written by Bakewell contained in Derbyshire's paper archive.⁶⁸³ It was broadcast May 1 and 17 1965 on the Third Programme.⁶⁸⁴ The narrative centres around a baby 'waiting to be born' who 'dreams of the future that his father is contriving for the human-race,' 'a nightmare vision of the future.'⁶⁸⁵ Like other experimental radio writers, Bakewell writes that Kopf 'believes in the art of total radio',⁶⁸⁶ and he includes very specific instructions regarding sound effects. He continues, 'nearly every scene had to have a special electronic background'; but the instructions were so demanding that they had to record the play first before adding the electronic sounds separately afterwards.⁶⁸⁷

⁶⁸⁰ Derbyshire cited in Briscoe, *BBC Radiophonic Workshop: The First 25-Years*, 85; Hodgson in *BBC Radiophonic Workshop -21*, CD Liner Notes.

⁶⁸¹ Stanley Hyland, 'Family Car', BBC Written Archives Centre.

⁶⁸² 'The Dark Ages', *Radio Times*.

⁶⁸³ 'Newspaper and Magazine Cuttings: Radiophonic Workshop articles', Papers Of Delia Derbyshire.

⁶⁸⁴ 'The Dark Ages', *Radio Times*, 67.

⁶⁸⁵ Ibid.

⁶⁸⁶ Ibid.

⁶⁸⁷ Ibid.

4. *The Singing Bird*

TRW6062

This was also a radio play produced by Michael Bakewell but written by Jean Morris and broadcast on the Home Service Monday March 2 1964 at 8.30 as part of the *Monday Play* series.⁶⁸⁸ Bakewell recalls during a radio interview that ‘Delia created a marvellous kind of strange, unearthly flute music’ for the play.⁶⁸⁹

5. *Science and Health*

TRW6152

According to Derbyshire, *Science and Health* was composed as a theme tune for a children’s sex education programme but was turned down for being ‘too lascivious.’⁶⁹⁰ It is available on a Radiophonic Workshop compilation, and it consists of a very strong pulse with a ‘twangy’ string sound on four chords with a simple major key melody.⁶⁹¹ Notes for the piece are contained in her manuscript archive.⁶⁹²

6. *The Man Who Collected Sounds*

TRW6192

Produced by Douglas Cleverdon (a radio producer who played a large part in the original establishment of the Radiophonic Workshop) *The Man Who Collected Sounds* was an experimental radio collaboration between writer Leonard Smith and composer George Newson, broadcast 28 June 1966 on Network Three. An entry in the *Radio Times* provides a short description of the narrative: ‘Driving across a Californian desert, a young man encounters a millionaire who stores in his ranch recorded sounds of every kind; even the sounds of Perfect Love and Good Government. He hears the singing voice of the millionaire's lost daughter, Avalon, and goes in search of her.’⁶⁹³ It is available to listeners at the British

⁶⁸⁸ ‘The Singing Bird’, *Radio Times*.

⁶⁸⁹ Smee, ‘Wee Also Have Sound Houses’, *The British Library Sound Archive*.

⁶⁹⁰ Derbyshire To Kember, *Surface*.

⁶⁹¹ *BBC Radiophonic Workshop - 21*

⁶⁹² ‘Scores “Science & Health”, “Inventions For Radio” And Others?’, *Papers Of Delia Derbyshire*.

⁶⁹³ ‘The Man Who Collected Sounds’, *Radio Times*.

Library Sound Archive,⁶⁹⁴ while Derbyshire's manuscript archive contains a review explaining some of the shortcomings of the piece: 'There is a school of thought—attractive but not terribly practical—which holds that radio as an art form should work wholly in terms of pure sound. That, like music, it should be both abstract and self-sufficient: that narrative is extraneous.'⁶⁹⁵ According to the reviewer, the play was 'excellent' but 'did not quite come off because Leonard Smith's idea, good in itself, did not have enough steam to keep it going.' He did qualify his views, remarking that 'the BBC Radiophonic Workshop was put to thoughtful use', and that the 'music, in fact, was the most exciting element in a slightly confused programme.'⁶⁹⁶ Primarily, the flaw lay in its intermediary nature: 'the piece was not quite opera, not quite dramatic allegory, and least of all an experience in pure sound.'⁶⁹⁷ Despite this, Cleverdon sent a note of appreciation to Derbyshire, writing 'her expertise and enthusiasm have been invaluable'.⁶⁹⁸

7. *French Eyes On The Future* (1965)

TRW6299

Derbyshire made music for this documentary, written and produced by Roy Battersby about France's space programme and scientific development.⁶⁹⁹ It was broadcast on BBC1 June 1 1965, and the *Radio Times* credits 'Music by the BBC Radiophonic Workshop', rather than special sound.⁷⁰⁰ The producer of the programme wrote to Derbyshire to say 'your tracks fit the film so well that it looks as though you must have had two months!'⁷⁰¹

⁶⁹⁴ Smith and Newsom, 'The Man Who Collected Sounds', The British Library Sound Archive.

⁶⁹⁵ 'The Man Who Collected Sounds Review', Papers Of Delia Derbyshire.

⁶⁹⁶ Ibid.

⁶⁹⁷ Ibid.

⁶⁹⁸ Cleverdon to Briscoe, 'The Man Who Collected Sounds', The BBC Written Archives.

⁶⁹⁹ 'French Eyes On The Future', *Radio Times*.

⁷⁰⁰ Ibid.

⁷⁰¹ Battersby to Derbyshire, 'French Eyes On The Future', The BBC Written Archives.

8. *Out Of The Unknown* (1965)

TRW6326

Derbyshire was commissioned to make the theme tune for this sci-fi television programme produced by Irene Shubik (with whom she later worked on *Play For Today*), but it was ultimately not used, even though the tape was catalogued and perhaps still exists.

9. *Signature Tune For Munich Radio* (1965)

TRW6340

Documents in the BBC Written Archives show that in 1965 Derbyshire was asked to make a signature tune for a programme on Munich Radio called *Chronik Des Tages* (*The Daily Chronicle*).⁷⁰² In a letter from Munich, the programme was described as ‘a daily 30-minute broadcast which deals with the events of the past 24-hours,’ with ‘plenty of pace,’ containing many short reports. This suggested that ‘the difficulty in finding a signature tune is that it should be suitable for every kind of event — an obituary, a Parliamentary debate, the opening of an exhibition or a beginning-of-school-term commentary.’ A note at the bottom says that Munich Radio paid £75 for the tune, but ‘would have been prepared to pay quite a bit more.’⁷⁰³ This is in contrast to a note from Head Of Central Programme Operations, R.V.A George of the BBC which says ‘The estimate of £75 may seem to be high,’ perhaps showing the different attitudes towards electronic music in each country.⁷⁰⁴ In a later memo George writes, ‘I do not want our activities in this field to be over exploited as this could only lead to demands for additional staff in the Workshop,’ showing opposition to the idea of expansion there.⁷⁰⁵ A very revealing note written by Briscoe after the completion of the theme tune says that the opening tune lasted 16 seconds, the closing tune lasted 11, but it ‘occupied 53 ½ man hours in the Workshop.’⁷⁰⁶ After receiving the tune, Hans Joachim-Netser, from the German radio station, was very pleased with it, writing to Briscoe: ‘Up to now I have never had the experience of a signature tune creating so bright an atmosphere amongst our colleagues as that which Miss Derbyshire composed for us.’ In an unfortunate reversal of George’s comments, he asks, ‘perhaps we have opened up a new field of co-operation between the

⁷⁰² R97/9/1 Folder, BBC Written Archives Centre.

⁷⁰³ ‘The Daily Chronicle’, BBC Written Archives Centre

⁷⁰⁴ George, ‘RADIOPHONIC SIGNATURE TUNE FOR MUNICH RADIO’, BBC Written Archives Centre.

⁷⁰⁵ George, ‘DER BAYERISCHE RUNDFUNK’, BBC Written Archives Centre.

⁷⁰⁶ Briscoe, ‘MUNICH SIGNATURE TUNE’, BBC Written Archives Centre.

BBC and the Berlin Radio.’⁷⁰⁷ The first broadcast was sent back to the BBC, with a transcription showing that it contained a whole feature on their new theme tune, comparing it with the previous one which they had used for fifteen years and explaining that they had decided to move from that to the use of an electronic theme to reflect the contemporary feel of the programme:

Our world has altered since 1950. It has become more hectic, more materialistic, freer; quite simply, more modern whether we are happy about it or not. We, therefore, got the impression that our old signature tune has become rather old-fashioned, no longer up to date. It is just a coincidence that this new tune, which you will soon hear, has been composed by an English woman, Delia Derbyshire, but the fact that you and I find nothing unusual in being in contact every day with the rest of the world is for us also a symbol. Fifteen years ago the world would have been astonished.⁷⁰⁸

11. *A Game Of Chess* (1967)

TRW6346

Produced for the education section of the Home Service, this was a ‘session of creative drama exercises for Secondary children’, broadcast in the morning of June 5, 1967, for use in schools.⁷⁰⁹ The author of Derbyshire’s *Wiki* recently published an off-air recording of the programme on his website,⁷¹⁰ with a description provided by the creator of the programme, Derek Bowskill:

A Game of Chess was a dance drama intended to provide stimuli for improvised, stylised movements freely created by students, based on the characteristics suggested by the names of the pieces in the classic game of chess. For 'advanced' teachers who had sufficient floor space and the correct number of students to fill a marked-out chessboard with a full set of 'pieces', and who had the patience to work out the necessary detail of the 'clues' in the music of both games, there was in actual fact a proper game of chess to be played out.⁷¹¹

⁷⁰⁷ Nester to Briscoe, ‘Translation Of Letter From Munich’, BBC Written Archives Centre.

⁷⁰⁸ ‘The Daily Chronicle’, BBC Written Archives Centre.

⁷⁰⁹ ‘Drama Workshop’, *Radio Times*.

⁷¹⁰ Guy, Martin, ‘A Game Of Chess’, *Wikidelia*.

12. *The Dreaming Eye* (1966)

6357

The Dreaming Eye was a four-part television documentary about dreams broadcast on BBC2 beginning April 3, 1966.⁷¹²

13. *Fire And Ice* (1966)

TRW6458

This was another instalment of the *Drama Workshop* educational series, also presented by Derek Bowskill. It was broadcast November 7, 1966, on the Home Service. It was the fourth in a 'unit' on the theme of the elements: 'air, fire, water, earth, man's living environment.'⁷¹³

14. *Out Of The Unknown: The World In Silence* (1966)

TRW6536

The World In Silence was one instalment of the sci-fi anthology television series *Out Of The Unknown*, broadcast on BBC2 November 17, 1966.⁷¹⁴ It told the story of a young girl who 'is distinguished from her fellow pupils at Garsfield college by her fear and dislike of the new teaching machines,'⁷¹⁵ echoing the concerns of the sci-fi programmes discussed previously.

15. *Out Of The Unknown: The Prophet* (1966-7)

TRW6560

One track created for this programme, 'Ziwzih-Ziwzih OO-OO-OO' is widely available on two Radiophonic Workshop compilations,⁷¹⁶ and Derbyshire also spoke candidly about her composition process for the track.⁷¹⁷ It was designed as a song of praise sung by robots to

⁷¹¹ Bowskill cited in Ibid.

⁷¹² 'The Dreaming Eye', *Radio Times*.

⁷¹³ 'Drama Workshop', *Radio Times*.

⁷¹⁴ 'Out Of The Unknown', *Radio Times*.

⁷¹⁵ Ibid.

⁷¹⁶ *BBC Radiophonic Music; Music From the BBC Radiophonic Workshop*.

⁷¹⁷ Derbyshire to Kember, *Surface*.

‘this bloke, presumably the prophet,’ with an interesting juxtaposition of technological and human elements. The main vocal part was made from ‘backwards chanting,’ which originally said ‘Praise to the master, his wisdom and his reason’ when played forwards.⁷¹⁸ From this, she selected parts to edit into the track, making the ‘Ziwzih Ziwzih’ from ‘his wiz, his wiz’.⁷¹⁹ The second part of the chant, ‘Oo-oo-oo’ was made from sine tones rather than voices.⁷²⁰ The instrumental backing of the track recycled material from the previously rejected *Science And Health* theme tune.⁷²¹

16. *A Year I Remember (A Silence Filled With Greek)* (1966-7)

TRW6568

A Year I Remember is the title of a piece of music Derbyshire wrote for a radio programme entitled *A Silence Filled With Greek*, produced by Douglas Cleverdon and broadcast January 17, 1967, on Network Three.⁷²² There is a score from 1966 entitled ‘Silence’ in Derbyshire’s manuscript archive that may be connected to this.⁷²³

17. *Home This Afternoon* (1966)

TRW6572

Home This Afternoon was an afternoon magazine programme produced by Rosemary Hart for the Home Service.⁷²⁴ Derbyshire created some music to accompany an item about the tonic-sol-fa notation for singing,⁷²⁵ for which Hart returned a note of special thanks to her: ‘I thought that it was excellent [...]. It gave a very necessary lift at the end of the interview. Many thanks and I do hope we can work together again.’⁷²⁶

⁷¹⁸ Ibid.

⁷¹⁹ Ibid.

⁷²⁰ Derbyshire to Cavanagh, *Original Masters*.

⁷²¹ Derbyshire to Kember, *Surface*.

⁷²² ‘A Silence Filled With Greek’, *Radio Times*.

⁷²³ ‘Scores: “Silence” And “Martinis”’, Papers Of Delia Derbyshire.

⁷²⁴ Elmes, *And Now On Radio 4: A Celebration Of the World’s Best Radio Station*, 18.

⁷²⁵ ‘Home This Afternoon’, *Radio Times*.

⁷²⁶ Hart to Derbyshire, ‘Tonic Sol-Fa’, BBC Written Archives Centre.

18. *The African Xylophone* (1967)

TRW6584

This was an instalment in a series of radio programmes produced by Douglas Cleverdon about the xylophone, with this part focusing on Africa and Indonesia.⁷²⁷ It was broadcast April 17, 1967, on Network Three.

19. *Cubism* (1968-9)

TRW6844

The title here refers to one part of an educational radio series for children, *Art And Design*, with this episode written by the poet Edward Lucie-Smith. It is one example of the BBC's 'radiovision,' where teachers were given packs of information containing visual materials or suggestions for activities, with the sound broadcast meant to accompany a classroom lesson.⁷²⁸ The full tape of the programme is contained in Derbyshire's tape archive at the Radiophonic Workshop. In it, Lucie-Smith talks about the painters, and then Derbyshire's electronic music fills in patches of silence with some simple sine tone octaves intended to mark time allotted for the children to consider reproductions of pictures provided on slides. Finally, there is an electronic song setting the Apollinaire poem, *Le Pont Mirabeau*, composed by her. There are notes and manuscripts for this in Derbyshire's archive,⁷²⁹ and she is given full credit for it both in the programme itself and in the *Radio Times*.⁷³⁰

20. *Ken Russell Festival* (1968)

TRW6882

Derbyshire is credited for making music for a series of four programmes made as part of the *Omnibus* arts series on the early films of director Russell, presented by Michael Caine.⁷³¹ These were first broadcast June 25, 1968, on BBC1.⁷³²

⁷²⁷ 'The Xylophone', *Radio Times*.

⁷²⁸ R16/1134/1 Folder, BBC Written Archives Centre.

⁷²⁹ 'Le Pont Mirabeau', Papers Of Delia Derbyshire.

⁷³⁰ 'Cubism', *Radio Times*.

21. *The Living World* (1968)

TRW6886

Derbyshire made two theme tunes for this Natural History programme produced for Radio 4 by John Sparks. They were both rejected, but there is still an archived tape catalogued,⁷³³ and there are several documents relating it in Derbyshire's manuscript archive which suggest she did quite a large amount of work on the project prior to its rejection.⁷³⁴

23. *The Long Polar Walk* (1968)

TRW6944

The Long Polar Walk was a three-part BBC2 documentary about a British Trans-Arctic expedition from 1968, produced by Richard Taylor.⁷³⁵ It was broadcast February 4, April 22, and October 21.⁷³⁶ Derbyshire made music for the series and spoke about it later:

I loved creating the score for the TV programme *The Long Polar Walk*. I had to get the feeling of trudging through snow. I worked all night on that one, until the cleaners came in. I remember using one of them as a guinea-pig on that track. I asked her how my music made her feel and she said, 'Oh really shivery!' I knew I'd succeeded.⁷³⁷

27. *Buckminster Fuller* (1970)

TRW7208

This was a radiovision programme for schools aired as part of the *Art And Design* series and produced by Joan Griffiths, about the famous utopian thinker and inventor of the geodesic dome. It was broadcast November 27, 1970, on Radio 4.⁷³⁸

⁷³¹ 'Omnibus', *Radio Times*.

⁷³² Ibid.

⁷³³ 'The Radiophonic Workshop Catalogue'.

⁷³⁴ 'The Living World', Papers Of Delia Derbyshire.

⁷³⁵ 'The Long Polar Walk', *Radio Times*.

⁷³⁶ Ibid.

⁷³⁷ Derbyshire to Atkinson-Broadbelt, 'Soundhouse'.

⁷³⁸ 'For Schools', *Radio Times*.

30. *Paolozzi* (1971)

TRW7352

This is another *Art And Design* radiovision programme about Eduardo Paolozzi, which includes a discussion with the artist himself. It was broadcast October 8, 1971, on Radio 4, and Derbyshire is credited with the music, suggesting a contribution worth looking into.⁷³⁹ Correspondence and classroom pamphlets for the programme are contained in her archive.⁷⁴⁰

⁷³⁹ 'For Schools', *Radio Times*.

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