

Bern Academy of the Arts
Hochschule der Künste Bern
Haute école des arts de Berne

Dr. phil. Dorothea Schürch
Post-doctoral fellow, «Schreiben mit Stimmen»
Institut Interpretation
Fellerstrasse 11, 3027 Bern

A department of Bern University of Applied Sciences
Ein Departement der Berner Fachhochschule
Un département de la Haute école spécialisée bernoise

Trevor Wishart: Continuous Transformations of Sounds – “not vocal in a vocal way.”

Interview with Trevor Wishart, York, October 2024

Trevor Wishart (*1946, Leeds) is a British composer whose work has fundamentally expanded the concept of music through an exploration of sound, transformation, and the human voice. Trained in mathematics and music, Wishart became a leading figure in electroacoustic composition, developing a distinctive approach he termed *sonic art* – the organization of any sound material within a musical framework. Wishart has devoted much of his career to exploring the human voice as a source of musical material, using technology to transform and extend its expressive possibilities. Central to his practice is the idea of transformation: the continuous evolution of one sound into another, whether between speech and song, voice and environment, or human and machine. His music is often noted for its combination of technical innovation, political engagement, and imaginative sound design, establishing him as a central figure in contemporary electroacoustic composition.

From his early analogue works such as *Machine* and *Red Bird* to later computer-based compositions like *Vox 5* and *Encounters in the Republic of Heaven*, Wishart has created immersive “oral images” that blur the boundary between the real and the imaginary. His innovative use of vocal techniques, spectral morphing, and spatialized sound has made him a pioneer of acousmatic and electroacoustic art. Beyond composition, Wishart’s writings – including *On Sonic Art* and *Audible Design* – have deeply influenced contemporary sound theory, redefining how we hear and think about sound as music. ¹

¹ <https://borthcat.york.ac.uk/index.php/twis>

Trevor Wishart’s personal website http://trevorwishart.co.uk/publ_rec.html

Redefining `Music` and `Sonic Art`

A central aim of Wishart's artistic career has been to open the concept of music itself – to question what counts as music and to explore the expressive potential of sound in all its forms. Trevor Wishart is a composer, performer, and thinker whose work has profoundly expanded the idea of what music can be. From his early experiments with analogue tape to his later use of sophisticated computer tools, Wishart has consistently sought to widen the boundaries of musical thought and practice.

In his influential book *On Sonic Art*², Wishart adopted the term `sonic art` – originally borrowed from the American *Sonic Arts Union*³ – to describe an art form that organizes sound musically, regardless of whether it involves traditional instruments. He distinguishes his understanding of `sonic art` from the term's use in fine art contexts, where sound is often employed conceptually or sculpturally. Trevor Wishart elucidates the varying interpretations of the term *sonic art*. He explains that, for instance, if he were to compose a work centred on a political figure – such as Margaret Thatcher or the Prime Minister – using recordings of their voices drawn from diverse sources, his primary concern would be the *sonic quality* of the material. Even when the recordings were of poor technical fidelity, his interest would focus on the *intrinsic sound* of the voice and on how its specific timbral characteristics might be shaped to articulate his artistic intentions. Rather than employing any casually discovered recording, Wishart seeks to engage deliberately with the expressive and structural potential of the sound itself. For him, *sonic art* denotes the *organization of sound according to musical principles*. This distinction does not express a rejection of alternative practices, but rather delineates his own aesthetic and compositional priorities.

The Voice – Smooth Transformations I

Although not trained as a singer, Trevor Wishart came to focus on the voice as a central medium

² Wishart, Trevor. *On Sonic Art*. Amsterdam: Harwood Academic Publishers, 1996.

³ *The Sonic Arts Union* was founded by the composers Robert Ashley (1930 – 2014), Gordon Mumma (*1939), the pioneer of computer music David Behrman (*1937) and the composer and sound artist Alvin Lucier (1931 – 2021) in 1966. They were all member of the ONCE festival in Ann Arbor, Michigan. *The Sonic Arts Union* toured with their own equipment, in which, so David Behrman: «established techniques were thrown away and the nature of sound was dealt with from scratch.»

see: https://alvinlucierexhibition.wordpress.com/portfolio/sonic-arts-union/?utm_source=chatgpt.com

Further information about *Sonic Arts Union*, see: <http://www.sonicartsunion.org/>

of composition while working in the analogue studio of the University of York Music Department. He discovered that the voice was an extraordinarily flexible sound source – capable of imitating almost anything and thus ideally suited for creating smooth transformations between sounds. In a pre-digital world, this was crucial: the voice enabled sonic metamorphoses that technology alone could not yet achieve.

He began his career as a composer and soon became involved in several musicians' collectives in Britain that focused on free improvisation. There were three successive versions of the *York Musicians Collective*, and Wishart also performed with the *Bristol Musicians Collective*⁴ and the *London Musicians Collective*.⁵ For a brief period – about two weeks – he was a member of the *Scratch Orchestra*.⁶ At that time, performing with extended instrumental techniques was widespread, and Wishart often used found objects as sound sources.

Anticredos (see below) was widely performed and a recording available, and, as a result the *Studio at Fylkingen*⁷ invited him to perform as part of the celebrations for the studio's 25th anniversary. As a result of this event at *Fylkingen*, Wishart began receiving invitations to sound poetry festivals and vocal performance subsequently became an integral part of Wishart's artistic practice. He also met Paul Dutton member of the *Three Horsemen*⁸ and David Moss⁹ at a *Music Festival in St John's, Newfoundland* and they performed together on several later occasions.

He began to live two separate musical lives: one as an improviser and the other as a

⁴ <https://ocean.exacteditions.com/issues/39596/page/42>

⁵ London Musicians Collective (LMC) was founded in 1975.

https://en.wikipedia.org/wiki/London_Musicians_Collective?utm_source=chatgpt.com

⁶ The *Scratch Orchestra* was an experimental British ensemble founded in 1969 by Cornelius Cardew, Michael Parsons, and Howard Skempton. It was characterized by its inclusive membership, open to both trained and untrained musicians, and its use of graphic scores and improvisation.

(cited after: https://en.wikipedia.org/wiki/Scratch_Orchestra)

⁷ Fylkingen is an artist-run, non-profit organization dedicated to experimental music, intermedia, and sound art. Founded in 1933, it is one of the world's oldest and most influential forums of its kind. Based in Stockholm, Fylkingen has played a central role in promoting avant-garde and electroacoustic practices, providing a platform for composers, performers, and interdisciplinary artists working beyond traditional aesthetic boundaries.

(Cited after: [Fylkingen – About](#))

⁸ Paul Dutton (1943–2025) was a Canadian poet, novelist, essayist, and sound artist, best known as a member of *The Four Horsemen*, the Toronto-based sound poetry ensemble active from 1970 to 1988. He later performed with the free improvisation group *CCMC* and developed a distinctive solo practice in extended vocal performance.

⁹ David Moss (*1949, New York) is an American percussionist, vocalist, and composer known for his experimental vocal techniques and interdisciplinary performances. Since 1991 he has lived in Berlin, where he founded the *Institute for Living Voice* and continues to perform internationally across music, theatre, and sound art contexts.

purely electroacoustic composer, a division driven not only by stylistic differences but also by broader issues of musical reception and production. Musical audiences tend to operate within distinct genres or ‘camps,’ which underscores the necessity of expanding the very definition of music. Electroacoustic composition allows the incorporation of the sounds of the world as musical material, transforming environments into immersive soundscapes. In his work, Trevor Wishart creates entire sonic worlds – often surreal, often impossible to realize in live performance. While these compositions may lack the immediate excitement of a concert, they enable musical possibilities that cannot be achieved with conventional live ensembles. Through his electroacoustic practice, Wishart is able to integrate real-world sounds into a carefully structured artistic universe, constructing complex, immersive, and often surreal auditory experiences.

Wishart’s compositional interest was centered on the metamorphosis of sound – the transformation of one sonic material into another. His first composition in which he explored sound transformation in a systematic way was *Red Bird*¹⁰. He quickly recognised, however, that such transformations were exceedingly difficult to realise within the constraints of the analogue studio. It was at this juncture that the human voice assumed a central role in his work. Owing to its inherent flexibility and capacity to approximate a vast range of timbres, the voice provided a practicable medium through which transformations from one sound to another could be effectively executed, even within the technical limitations of analogue recording techniques.

Wishart learned to sing harmonics and discovered his own aptitude for these techniques, which led him to investigate further vocal possibilities through exploring his own voice and listening to vocal musics from around the world. He studied Tuvan and Tibetan chant as well as Japanese music, focusing particularly on methods of vocal production. While mastering North Indian vocal techniques typically requires a lifetime of dedicated practice, he also explored African singing traditions, collecting ethnological recordings to inform his work. He systematically recorded all the sounds he could produce with his own voice, noting how each could be manipulated. For instance, while pitch could easily be changed, he questioned whether

¹⁰ Trevor Wishart: *Red Bird: A Political Prisoner’s Dream*, recorded at University of York Electronic Studio, 1973–1977. Voice [Female] - Pippa Pierce, Poppy Holden Voice [Interrogator] - Graham Treacher Voice [Male] - Hugh Bernays, Trevor Wishart.

Red Bird is both a piece of music and an allegory of political oppression. It uses the sounds of birds, animals, words and mechanisms, which are 'orchestrated' and transformed into one another.

see: <https://timbreandorchestration.org/writings/amazing-moments-in-timbre/2019/3/28/red-bird>

the pitch of lip buzzing could also be controlled. After four years of sustained investigation, he had assembled a sophisticated body of data charting the capabilities and transformations of his own voice.

At the same time, Richard Orton¹¹, who directed the University of York Music Department, was deeply engaged with experimental music. The department was, and remains, a central institution for contemporary music in Britain. Orton regularly invited notable guests and organised performances of works such as Stockhausen's *Stimmung*. Wishart was in contact with various composers, including Warren Burt (*1942)¹² and the Australian composer Anne Boyd (*1946)¹³ who was a fellow student at York.

Anticredos

The exploration of Wishart's own voice culminated in his monumental vocal composition *Anticredos* (1979)¹⁴ in which the word 'credos' is gradually deconstructed both sonically and linguistically. The work demanded extended vocal techniques, precise graphic notation, and several years of research into the capabilities of the human voice. Over a long period, Wishart systematically catalogued the sounds he could produce – glottal clicks, harmonics, overtone singing, lip buzzing – and the transitions between them, thereby developing a sophisticated vocabulary for vocal transformation.

Initially, he had to devise an appropriate system of notation for these sounds – not only for the sounds themselves but also for the transformations between them. The scores, along with extensive explanatory materials, are preserved in the Borthwick Institute for Archives,¹⁵ which houses his collection. One large page provides a detailed explanation of the graphic symbols used in the piece.

The singers read these notations as precise performance instructions describing how each sound evolves over time. Although the score appears graphical, it is not merely pictorial

¹¹ Richard Orton (1940–2013), British composer and performer, established the Electronic Studio, established the University's Electronic Music Studio (EMS) in 1968.

¹² Personal website of the composer, performer, writer, video artist, instrument builder Warren Burt (*1942): <http://www.warrenburt.com/>

¹³ Anne Boyd's compositional work has strong roots in *writing with voices [Schreiben mit Stimmen]* – she began composing at the age of four, using a tape recorder and her own voice.

More information see: <https://www.australianmusiccentre.com.au/artist/boyd-anne>

¹⁴ Trevor Wishart: *Anticredos*, 1980, 6 amplified voices, 1 Percussion (1-3 Instruments), duration: 19:00.

¹⁵ See footnote 1

but functions as a detailed and exact specification of sound. The performers use the score as a guide during rehearsal, while in concert it functions primarily as an aide-mémoire.

According to Wishart, he initially performed the entire work himself, recording it on tape in order to test and refine the compositional material. When rehearsals for the live version commenced, the first ensemble to perform the piece was *Singcircle*, under the direction of Gregory Rose.¹⁶ Wishart personally demonstrated the required sounds to Rose, who subsequently guided the singers in realising the complex vocal transformations specified in the score. The ensemble, comprising six professional vocalists, prepared and premiered the work under his supervision.

All the singers involved in the premiere were professionals. The piece required producing a subtle sound using the cheek, which, with practice, could be slowed down to control the clicking effect. The performers also had to execute actions such as lip buzzing and using their hands to modify the sound. The visual aspect of these gestures was unimportant to Wishart, whose primary concern was the sonic result – though the process often appeared rather amusing. The original idea had been to perform the work behind a curtain, but this proved unpopular with the singers. In a later production in Durham in the 2000s, when Loré Lixenberg¹⁷ performed the piece with students, the performers stood behind a curtain, while small video cameras focused on their lips, allowing the audience to see these subtle manipulations. At the same time, the singers remained at a distance, avoiding any potential for giggling. This proved to be a particularly clever solution.

The Voice – Smooth Transformations II

In an instrument certain aspects of the ‘music’ are pre-embedded, a consistent timbre, and often the available musical pitches and intervals, which are somehow ready for use. Wishart emphasizes that with the human voice, these timbres and pitches must be actively executed;

¹⁶ *Singcircle* is a pioneering British vocal ensemble founded in 1976 by conductor and composer Gregory Rose. The group is renowned for its innovative performances of contemporary and electroacoustic music, with a particular focus on extended vocal techniques and live electronics. *Singcircle* gained international recognition for its performances of Karlheinz Stockhausen’s *Stimmung*, which became one of its signature works, and has premiered numerous compositions by British and international composers. Through its adventurous programming and distinctive sound, *Singcircle* has played a significant role in expanding the possibilities of the human voice in modern music. see: <https://singcircle.org/>

¹⁷ Loré Lixenberg is a British mezzo-soprano, <https://www.lorelixenberg.art/about> [accessed 4.10.2025]

each step between pitches and each shift in timbre must be created. It is easier for the voice to glide between pitches, producing glissandi or portamenti and to shift between completely different timbral objects, the pitched, the noise band, the iterated sound of a rolled “r” and so on. The synthesizer represents the ultimate instrument of modulation because it begins as an unstructured continuum of sound, offering the possibility of continuous transformation. This potential for seamless change is central to Wishart’s musical interest. In Western music, the voice is often treated as though it were a conventional instrument, but Wishart stresses that it is fundamentally different. Unlike instrumental performance, speech involves constant transformations in pitch, loudness, and spectral content.

Speech serves as an archetype of transformation, which is why Wishart’s compositions are frequently based on spoken material. His work can be understood as the epitome of *Schreiben mit Stimmen [Writing With Voice]*,¹⁸ the voice functions as a unique instrument for transformation and as a model for electronic composition.

Wishart’s interest in detailed sound analysis was a principal motivation for his use of computers. The computational ability to examine and manipulate sound in fine detail allowed him to extend his concept of transformation beyond what is vocally possible, creating sounds that are “not vocal in a vocal way.” While his earlier works were performed live or produced in analogue studios, computer technology enabled him to realize more sophisticated SAP (Spectral Analysis and Processing) transformations, expanding the expressive potential of his sound world.

Transformation as Musical Principle

Transformation – the continuous change of one sound into another – lies at the heart of Wishart’s musical language. His approach extends beyond traditional musical parameters such as pitch or rhythm; it entails multidimensional change – from language to noise, from bodily sound to abstract tone – with several parameters shifting simultaneously.

The conventional approach to pitch, says Wishart, is based on tuning instruments to produce discrete notes – what Wishart calls a ‘step’ or ‘lattice’ conception of music, structuring the sound according to fixed tonal or intervallic grids. However, the manifold qualities of sound

¹⁸ See the research project *Schreiben mit Stimmen* [writing with voices] of the Bern Academy of the Arts, Institut Interpretation: <https://www.hkb-interpretation.ch/projekte/schreiben-mit-stimmen> [accessed October 20, 2025]

– its spectral, timbral, and dynamic aspects – resist this kind of discrete organisation. To Wishart, applying a lattice-like system to such continuously evolving sound phenomena would be artificial. Instead, he embraces a mode of composition grounded in the natural fluidity of sound transformation, a continuum in which all parameters can change simultaneously. In this sense, Wishart regards his work not as a rejection but as an extension of traditional musical practice.

In the analogue studio, these transformations were crafted by hand, inch by inch, using razor blades and splicing tape. Wishart recalls making “flocks of birds” from individual recorded bird sounds, then crossfading them with “flocks of voices” imitating those birds. With the advent of computers, he could extend this principle into new realms – creating transformations that no voice could physically perform.

Vox 5

Wishart’s *Vox 5* (1979–86),¹⁹ realized at IRCAM²⁰ between 1979 and 1980 and premiered in Paris in 1986, was his first major computer-based work. In this piece, the subharmonics of the human voice are transformed into the sound of bees – a process that goes beyond simple mixing to involve precise spectral interpolation. Using custom-written software, Wishart was able to analyse, visualize, and morph between complex sound spectra, thereby extending his concept of transformation to a new level of precision and imagination.

Although he had conceived the idea earlier, he lacked the facilities to realize it; only at IRCAM was it possible to implement the work using sophisticated computer technology. The spectra of the voice and the bees constantly change and overlap, but far more complex than a conventional crossfade, which simply lowers the volume of one track while raising that of another. The computer, however, allowed Wishart to examine the spectrum at every moment, visualize its energy, and integrate it into a single, continuous file. He wrote custom software to interpolate the harmonics between successive moments, interpreting and executing the subtle differences between spectral changes with unprecedented precision.

¹⁹ Trevor Wishart: *Vox 5*, 1986, [6:05], it is the 5th piece in a serie of 6 pieces exploring the sound of the voice, see <https://www.jstor.org/stable/3680150>
http://trevorwishart.co.uk/publ_rec.html
<https://electrotheque.com/en/oeuvre/20576-vox-5>

²⁰ *Institut de Recherche et Coordination Acoustique/Musique, IRCAM*, dedicated to the research of music and sound in the fields of avant-garde and electro-acoustical art music, see: <https://en.wikipedia.org/wiki/IRCAM> [accessed 4.10.25]

The Analogue Years and Early Experiments

In early days of his career his composing was either for a concert or he worked in the analogue studio. When he first moved to York, he worked with two *Revox* tape recorders and after a year Electronic Music Studio at the University of York became a proper studio with a mixing desk and three *Revox* tape recorders with the possibility to change the speed on the tape recorder continuously or wind the tape past the heads manually. Later an EQ on the mixing desk was available. He did not use the *VCS3 synthesizers*,²¹ he wasn't interested in this kind of sound. The main tool for him in the studio was the splicing block for editing. Making transformation in the analogue studio implies to make a texture of one sound and then a texture of another and to cross these textures.

Mixing a voice and a bird, that would not work. But a flock of birds and a flock of voices, imitating the birds, this sort of cross-fade would work. He started with a single bird, making the flock by editing bits of birds together, speeding the recording up and bit of bird slowing down, working gradually to get a dense texture. And then the same with the voice. With the voice, he tried a sound as close as possible to that of a bird by listening to the bird sounds beforehand. The two textures cross in the middle, the bird goes into this texture, and out of this texture comes the voice. This is a crossfade and it is hidden. That's the main technique in the analogue studio. Working with the splicing block is very slow and demanding, it's handcrafted every second – the pieces are handcrafted every inch.

That is, before his digital period, Wishart had already produced a number of influential works in the analogue studio, including *Machine* (1970–71),²² a large-scale composition inspired by his father's work in a factory.²³ Combining recordings of machinery with spoken

²¹ The VCS3 (Voltage Controlled Studio, version 3) is a portable analogue synthesizer designed by Peter Zinovieff, David Cockerell, and Tristram Cary, and first produced by Electronic Music Studios (EMS) in London in 1969. It was one of the earliest commercially available synthesizers in the United Kingdom and became widely used in experimental and electronic music for its distinctive sound and flexible patching matrix. (Citation after: https://en.wikipedia.org/wiki/EMS_VCS_3)

²² «Wishart's early long-form pieces for tape, 'Machine...an Electronically-Preserved Dream' (1969-1971), and 'Journey-into-Space' (1970-1972) were created in the nascent Electronic Music Studio at the University of York. These pieces used field recordings and sound-effects records, as well as recordings of improvised and scored performances which were subsequently developed and processed in order to create what Wishart described as 'music-montage'. Music-montage aims to achieve the impression of a 'straightforward recording of events which have taken place in some real environment' but, Wishart explains, through the use of tape manipulation and the incongruous juxtaposition and transformation of sound-events, creates an equivalent in sound to the kinds of imaginary landscapes characteristic of surrealism.»

Zit. n. <https://borthcat.york.ac.uk/index.php/twis>

²³ <https://ocean.exacteditions.com/issues/39596/page/41>

texts and improvised choral sounds, the piece reflects both the industrial world and the human voice's capacity to imitate, interpret, and transform it, exploring group improvisation, using conductors to direct choirs in transforming mechanical or environmental sounds. *Journey into Space* (1970–72)²⁴ also used group improvisation using 'found objects'²⁵ and human voices. These experiences shaped his later electroacoustic practice – a blend of careful composition, physical performance, and imaginative sound-world construction.

Machine

Following the death of his father, a factory worker, Trevor Wishart sought to create a commemorative work. He began recording sounds in factories and power stations using a basic tape recorder, without a predetermined plan for the material. Upon securing a PhD position at the University of York, which provided access to an audio studio, he developed systematic methods for manipulating recorded sounds, culminating in the large-scale composition *Machine*, a work that remains influential. The piece uses, among other things, materials derived from 3 independent "pre-compositions". The first of these, Machine One, incorporates detailed performance instructions and draws upon a wide range of textual sources – including engineering manuals, sociology texts, and historical accounts related to machinery – compiled into an extensive lexicon of machine-related questions. In performance, volunteer students read these texts simultaneously at random, dispersed throughout the hall, while additional participants moved among the speakers with microphones to capture and amplify the voices.

The second 'pre-composition' was constructed using recordings of machinery, which

²⁴ Trevor Wishart: *Journey into Space* (composed 1970-72, released privately 1973 2LP, cassette edition, Reissue C90 Made in the York University Electronic Studio (U.K.), *Journey into space* uses improvised & composed musics for scaffolding pipes, steel combs, toy instruments, doors & the sounds of many other objects & situations, as well as conventional instruments, voices and electronics.

Performer – Andrew Bentley, Andrew Jackson (3), Andy McGhie, Anne Boyd, Baudouin Jourdan, Bernard Rands, Cliff Atkinson, Danny Evans (2), Dick Langham Smith, Dominic Muldowney, Ed Nelson, George Nicholson (2), Howard Cheeseman, Ian Milroy, Jackie Wishart, Jan Steele, Jim Webster, John Cardale, John Low, Jonty Harrison, Judy Lieber, Kathy Foster, Kathy Nicholson, Liz Piggott, Martin Wesley-Smith, Matthew Jacobson (2), Mike Jacobson, Neil Lamb, Nicola Hadley, Peter Coleman (2), Peter Meanwell, Phil Virden, Randall Giles, Richard Bolley, Richard Orton (2), Richard Pickett, Roger Marsh, Rosalind Davies, Rosemary Hughes, Ruth Andrews, Shirley Salmon, Stanley Haynes, Steve Beresford, Steve Pogson, Tom Endrich, Vic Hoyland (see: <https://www.discogs.com/de/release/776809-Trevor-Wishart-Journey-Into-Space>)
<https://digital.library.unt.edu/ark:/67531/metadc1808485/>

²⁵Found objects: «at the (early) musicians' collective(s) improvisation sessions, I would use objects found in the performance space such as chairs, ash-trays, door-handles etc. to generate sound, playing them to explore all their sonic possibilities, usually in the context of other performers making (extended repertoire) sounds on musical instruments.» (Trevor Wishart e-mail to the author. 30 October 2025)

Wishart could present to the choir conductor. In the recording of the subsequent controlled improvisation, one track contained the choir, while the other contained the machine sounds, which allowed controlled crossfading between them at a later stage. The performance hierarchy began with a principal conductor (Conductor A) directing the choir and determining how the singers would imitate the mechanical sounds. Control could then be subdivided among additional conductors, creating two, four, and eventually up to eight conducting parts. In the final stage, individual choir members could assume control over certain elements. Wishart would provide written hints suggesting possible transitions, but he deliberately avoided prescribing exact actions. Performers were free to modify rhythm, alter sonority, or extend the sonic textures. As the soundscape evolved, this freedom allowed the performers to shape its progression, generating unexpected and unpredictable results that often went beyond Wishart's initial intentions.

All the pre-compositions served as sources for generating material for tape-composition. Wishart then combined recordings of machinery and other environmental and technological sounds, including archival recordings of the Apollo 11 space launch, with the improvised vocal materials. By manipulating these recordings in the studio, he created a complex, hour-long electroacoustic piece in which sounds from disparate sources were transformed and integrated into a cohesive sonic world. This final section exemplifies Wishart's central compositional concern: the transformation of sound through temporal, spectral, and spatial processes, creating immersive environments that blur the boundaries between the recorded, the performed, and the imagined.

So in the end he made this hour-long tape piece which uses all these materials together with recordings of. He was creating a world out of those improvisations. And that was his first venture into working with voices, but the outcome was the electroacoustic.

The piece employs tape-based "cut-ups" of the word machine and other vocal and environmental sounds to create a sonic environment that evokes machinery, space travel, and technological processes. A choir of performers improvises in response to these sounds, following flexible instructions that allow the group to mimic mechanical and spatial phenomena, often mediated by one or more conductors. The work emphasizes spatial distribution, sonic imitation, and performative improvisation, blurring the boundaries between live performance and recorded material. In doing so, *Machine* anticipates many of Wishart's

later concerns with sound transformation, extended vocal technique, and the creation of immersive, acousmatic environments.

Musical theatre

Wishart also composed works of musical theatre, such as *Fidelio*²⁶ and *Tuba Mirum*²⁷ – the latter a theatrical solo for tuba featuring mutes made from other instruments and theatrical props. These pieces combine electroacoustic (tape) music with live instrumental performance. Though often humorous, they reveal his ongoing fascination with embodiment, absurdity, and the tension between live and recorded sound.²⁸

Fidelio

is a witty and theatrical piece for flute (or soprano saxophone) and suitcases containing cassette recordings. The work begins with a flutist performing simple pentatonic music. After a short while, an actor dressed in a white coat enters the stage carrying a suitcase. Inside the suitcase, a tape plays the same music as the flutist. The flutist uses this recorded sound as an accompaniment and gradually begins to elaborate on the material. This process continues with successive suitcases, each introducing a new layer of complexity. By the fifth suitcase, the improvisation reaches a level reminiscent of Boulez's intricate techniques. At the climax, the flautist, now obscured by the pile of suitcases, suddenly rushes forward and collapses at the front of the stage. The actor then enters with a large trunk, lifts the flautist into the trunk and drags it offstage. He then returns and stacks the trunk at the top of the suitcase pile, creating the visual effect of a large robot. The ensemble of cassettes then resumes playing, without the flautist.

Tuba Mirum

The second piece, *Tuba Mirum*, was written for Melvyn Poor.²⁹ who performs the role of a

²⁶ Trevor Wishart: *Fidelio*, for flute (or soprano saxophone) and tape, [9'], 1979.

²⁷ Trevor Wishart: *Tuba Mirum*, for solo tuba, three mimes, props, costume and stereo tape, [18'], (1977-1978).

Tuba Mirum was first performed by Melvyn Poore at the Gaudeamus Festival in Rotterdam, 1979.

see: https://www.sheetmusicplus.com/en/product/tuba-mirum-21252767.html?utm_source=chatgpt.com

²⁸ Trevor Wishart: «On music-spectacle» in: *Journal of New Music Research*, Volume 10, 1981 – Issue 2, Pages 97-112 | Received 01 Nov 1980, Published online: 03 Jun 2008.

<https://www.tandfonline.com/doi/epdf/10.1080/09298218108570332?needAccess=true>

²⁹ Melvyn Poore (*1951) is an English tuba player, composer, and improviser known for his innovative approaches to contemporary music.

https://www.schott-music.com/en/person/melvyn-poore?utm_source=chatgpt.com

prisoner in a psychiatric hospital. In the piece, he has a tuba stored in his cupboard. It begins with the tuba producing unusual gargling sounds. Towards the end, the performer picks up a glass of water, and gargles with it. He then plays through the Tuba, but this also has water in it, making the Tuba `gargle.` He then empties the water from the Tuba into a bucket. The precise amount of water in the Tuba is crucial for achieving the intended sound. At certain points, he must use mutes, – which were the inspiration for this piece these theatrical, ridiculous, huge objects. The piece employs several unconventional mutes: the first is a standard tuba mute, the second contains a tambourine that rattles when played, the third is a cloth draped with tassels containing a stage-smoke-effect so that, with the press of a pedal, the Tuba emits a cloud of smoke, and the fourth is a cornucopia of plastic fruit equipped with a loudspeaker, allowing him to play in counterpoint with himself. *Tuba Mirum* is conceived as music-theatre, where the boundaries between performance and composition are deliberately blurred.

The distinction between recording and live performance is secondary: attending a live performance is an immersive theatrical experience, engaging the audience physically and perceptually with the unfolding sound world.

A third piece *Pastorale, Walden-2*,³⁰ features flute and tuba performing within a mechanical clock, incorporating a variety of props, which the performers eventually manipulate to `escape.` Overall, however, Trevor Wishart has composed relatively few works that combine live performers with electroacoustic elements. His practice generally favours either fully live performances or entirely electroacoustic compositions, rather than hybrid forms. This distinction reflects his interest in exploring the unique possibilities and limitations of each medium independently.

Electroacoustic Worlds and `Oral Images`

Trevor Wishart's mature electroacoustic compositions create what he calls `oral images` – immersive, dreamlike sound worlds that blur the boundary between the real and the surreal. He is less interested in purely synthetic, abstract sounds than in sounds that *seem* real, yet could never exist in the physical world. His music inhabits this ambiguous space, where the listener perceives something that is simultaneously recognizable and impossible. He deliberately avoids

³⁰ Trevor Wishart: *Pastorale, Walden-2*, for flute, tuba, and stereo-tape, [20'], 1979.

purely electronic music because its artificiality is too obvious; instead, he aims to represent a world in which recordings appear to be of possible worlds, crafting a unique sonic cosmos with references to an imagined environment, as if one had gone out with microphones to capture real sounds, when in fact the composition is entirely constructed.

In his book *Audible Design*,³¹ Wishart argues that listeners naturally interpret sounds in terms of their physicality and causal origins: what produces the sound, and how it is produced. His approach differs from the ideal of abstract listening proposed in *musique concrète*, which seeks to detach the listener from causality.³² For Wishart, understanding the physical and causal aspects of sound – whether metal, wood, water, or air; whether struck, bowed, or stroked – is essential. Even when a sound is synthetically generated, listeners tend to perceive it as originating from a physical cause. Wishart embraces this perceptual tendency and works with it creatively, enabling the listener’s imagination to reconstruct a *possible world* through sound. For example, it is possible to synthesize a sound from voices that convincingly resembles a bell, giving the impression of a resonating physical object.

Wishart’s approach is thus decisively different from purely acousmatic listening. While he does not intend for his sounds to narrate a story, they are never completely abstract: even the most synthetic sounds maintain an implicit reference to the physical world. He deliberately avoids letting listeners associate them with a synthesizer or conventional audio design, instead encouraging engagement with the imagined sonic world he constructs.

Later Works

From the 2000s onwards, Wishart has composed in multi-channel surround formats, building

³¹ Trevor Wishart: *Audible Design: A Plain and Easy Introduction to Practical Sound Composition*, Orpheus the Pantomime Ltd., 1994.

In *Audible Design*, Trevor Wishart presents a practical guide to sound composition, emphasizing the creative manipulation of sound materials. The book introduces various techniques for transforming and structuring sounds, aiming to bridge the gap between theoretical concepts and practical application. Through accessible explanations and illustrative examples, Wishart encourages composers to explore the sonic possibilities inherent in everyday sounds, fostering a deeper understanding of the compositional process.

³² Trevor Wishart: *Sound Composition: A Collection of Writings with 2 CDs of Sound Examples*, Orpheus the Pantomime Ltd., 2012.

Sound Composition is a comprehensive collection of writings by Trevor Wishart, accompanied by two CDs of sound examples. Based on talks presented over several years, the book delves into the compositional approaches and working methods involved in the production of many of Wishart's musical works. It includes detailed discussions on sound diffusion and diffusion scores, providing worked examples for most of his electroacoustic compositions. The book serves as both a practical guide and a theoretical exploration, offering insights into the creative processes behind Wishart's innovative use of sound materials.

immersive environments for the listener.

Encounters in the Republic of Heaven (2010–11)³³ is a monumental, 8-channel electroacoustic composition in four “Acts,” created entirely from recordings of spoken voices collected across the Northeast of England. The work transforms the cadences, inflections, and melodies of everyday speech into richly textured sonic landscapes. Voices of children, adults, and older speakers become the raw material for a vast musical tapestry in which language gradually dissolves into pure sound.

Wishart explores the musical potential of speech – its rhythms, harmonics, and emotional contours – extending his long-standing interest in the voice as both instrument and metaphor. The piece moves between realism and abstraction: moments of storytelling and human intimacy coexist with dreamlike transformations, where speech clouds swirl, harmonies emerge, and the human voice is reimagined as an evolving sonic organism.

More than a technical experiment, *Encounters in the Republic of Heaven* is a social and poetic project – a portrait of a community rendered through sound, celebrating the diversity of human expression while imagining a ‘republic’ founded on the shared material of the voice itself.

His more recent project is *The Garden of Earthly Delights*,³⁴ a multichannel acousmatic composition, subtitled as a ‘comic opera’. Drawing inspiration from Hieronymus Bosch's renowned triptych, the piece reimagines the phantasmagorical scenes depicted in the painting through a sonic labyrinth of human predicaments. Composed over four years, it features a dense texture of digitally manipulated voices, including those of actors, singers, and politicians. The work is structured to present evolving narrative threads that transform each time they resurface, guiding the listener through a maze of situations that change upon revisitation. Wishart describes the experience as a journey through a labyrinth, where the exit is not guaranteed. *The Garden of Earthly Delights* reimagines Hieronymus Bosch’s painting as a sonic landscape – a surreal audio maze where voices, environments, and machines coexist and transform each other.

³³ Trevor Wishart: *Encounters in the Republic of Heaven*, 8-channel, [73'] (2011–12).
Premiere: 4 May 2011, The Sage, Gateshead, UK.

See: https://mtirc-news.blogspot.com/2012/01/trevor-wishart-encounters-in-republic.html?utm_source=chatgpt.com

³⁴ Trevor Wishart: *The Garden of Earthly Delights*, 8-channel, [70'], 2021.

The composition was premiered at the Institute of Sonology in The Hague on 12 October 2021
See: <https://icrdistribution.bandcamp.com/album/the-garden-of-earthly-delights>

Display for electroacoustic music

Most of Wishart's works up until around 2006 were composed in stereo. However, he frequently experimented with multiple loudspeakers, live sound diffusion, and spatialisation during performances. Around 2000, after receiving funding that enabled him to acquire a set of loudspeakers and establish an eight-channel studio, his later compositions were conceived for eight-channel surround sound.

This development was partly motivated by *Encounters in the Republic of Heaven*. Wishart sought to envelop the listener within this community by distributing the voices across eight loudspeakers surrounding the audience, creating the sensation of being addressed from all sides.

During preparation he typically uses a mixing desk placed at the centre of the audience so he can check and adjust the spatialisation in rehearsal; however, he insists that the desk be removed for the public performance so that listeners can occupy the centre of the sound field. The immersive experience of sitting *within* – rather than *in front of* – the sound remains essential to his conception of electroacoustic performance. He often advises audiences to close their eyes, reminding them that there is nothing to see – only to hear. In this way, the listener becomes fully embedded within a world of sound.

Extend human expressivity

Trevor Wishart's electroacoustic compositions involving the voice are always communicative – they address the listener directly. He constructs *impossible phenomena*: for instance, passages in which all voices seem to speak in tune – not by retuning the recorded material, but by carefully selecting and shaping it so that all the voices share a common harmonic field. Another phenomenon he explores is the isorhythmic articulation of speech: voices speaking with rhythmic precision, creating an uncanny yet engaging effect – magical, but never so alien that the listener ceases to feel personally addressed.

Even highly transformed vocal material retains its identity as a voice for a long time. Even the smallest fragment reveals its vocal origin. Within the spectrum of the voice, one can still recognise its source, because the voice moves in a uniquely human way.

The American composer and artist Holly Herndon (*1980) also works exclusively with

voices. In conversation with Trevor Wishart, their differing approaches were discussed – particularly in relation to Herndon’s installation *The Call*, presented at the Serpentine Gallery in London.³⁵

Holly Herndon’s sound installation is called *The Call*, a call to gather, a spiritual call by Renaissance music, by angelic voices of the machine. For the choral project *The Call* at the Serpentine Gallery, Holly Herndon developed an AI choir. Recordings of choirs from across the country were used to train an AI for singing Renaissance music.

Upon entering the installation, the voices sound strikingly natural – yet not quite convincingly so. Their tone is steady, but the bodies producing them seem unnervingly rigid. The algorithm simulates breathing, resulting in a kind of stiffness, as if the sound were travelling through a mechanical tube. The Call is both the name of the sound installation and its guiding metaphor: a call to gather, to come together. What distinguishes a recording of a choir from an algorithm calculating choral voices in real time?³⁶

The project of Holly Herndon searches the comparison (the Renaissance music), while Trevor Wishart searches the incomparable, a voice phenomenon only the machine can achieve.

The Call at the Serpentine Gallery was unsettling because of its religious resonance – or rather, its religious effect. In this church-like setting, a choir is no longer needed; the machine unfolds the ceremony on its own. The choir has become part of the machine.

The installation glows in gold, within a stage-like church interior. In the evening, after the Serpentine has closed its doors, the machine continues the ceremony endlessly, no need to rest. It does not end when the audience leaves – it goes on without you. Outside, in the garden, the atmosphere shifts: a cold dusk settles, the sun is fading. Expelled from the Serpentine’s ceremony, we begin to sing ourselves – finally, left alone.³⁷

At the end of *Encounters in the Republic of Heaven*,³⁸ the speakers suddenly burst into song. None of the performers were trained singers, so Wishart meticulously constructed the choral passage in the studio, capturing, extending, and shaping elements of each recorded voice to create the convincing impression of the voice singing. What matters is not the technical ingenuity behind the construction, but that the audience experiences the sound as *embodied* – as human voices breathing and singing together in shared space. Wishart’s aim is always to preserve this sense of presence and agency, the illusion that real bodies inhabit the sound.

³⁵ Holly Herndon: *The Call* (installation, Serpentine Gallery, London, 2023). Herndon’s work explores the voice as a site of technological mediation, using machine learning and digital processing to extend vocal identity. Her approach contrasts with Wishart’s analogue and acousmatic investigations of the voice, yet both share an interest in the transformation and redefinition of vocal expression.

³⁶ Log 241009 London, translated by deepL, ChatGPT and the author.

³⁷ Log 241009 London, translated by deepL, ChatGPT and the author.

³⁸ See footnote 33)

In contrast, Holly Herndon's *The Call* at the Serpentine Gallery operates at the threshold where human vocality becomes disembodied and virtual. The AI-generated choir evokes a liturgical atmosphere, yet its voices lack the micro-gestures of human breath – their rigidity betrays their machinic origin. If Herndon's intention was not to provoke a feeling of alienation, this disquieting effect might, from Wishart's perspective, pose a problem. For him, electroacoustic music should extend human expressivity, not replace it; its power lies in transforming the real rather than dissolving it.

Conclusion

Throughout his career, Trevor Wishart has redefined the relationship between the human voice, musical structure, and technology. For him, the voice is not merely a vehicle for linguistic or melodic expression but the most flexible and expressive of all instruments – one capable of continuous modulation and transformation. Unlike traditional instruments, in which musical timbre is fixed and intervals are pre-structured, the voice must actively create each sonority and each pitch and timbral transition, inhabiting a continuum between sound and meaning.

Wishart's compositional thought centres on the principle of smooth transformation: the seamless evolution of one sound into another, transcending discrete tonal or rhythmic organization. In this fluid conception, the boundaries between speech and song, between human and environmental sound, dissolve. His works such as *Red Bird*, *Anticredos*, and *Vox 5* exemplify this aesthetic, where the voice becomes both the generator and the model for electronic sound transformation.

Through analogue experimentation and later digital analysis, Wishart extended the capabilities of the voice into electroacoustic space. Computer technology allowed him to perform transformations that were “not vocal in a vocal way” – sounds that evoke the presence of a human voice while surpassing its physiological limits. Yet even at its most abstract, his music retains an embodied quality: an awareness of breath, gesture, and human agency.

In integrating the voice within the electroacoustic domain, Wishart has created a body of work that bridges the natural and the technological, the human and the machine. His compositions articulate a poetics of transformation in which sound itself becomes the subject of continual metamorphosis.

Further sources:

Wishart, Trevor. On Sonic Art, Amsterdam: Harwood Academic Publishers, 1996.

Wishart, Trevor: Audible Design: A Plain and Easy Introduction to Practical Sound Composition, Orpheus the Pantomime Ltd., 1994.

Wishart, Trevor: publications, book – personal website:

http://trevorwishart.co.uk/publ_bks.html#SC

Wishart, Trevor: estate: <https://borthcat.york.ac.uk/index.php/twis>