

SCIENCE

DIFFUSING MUSIC: A THOUGHT-PROVOKING PERSPECTIVE ON MUSIC, AI, AND THE FUTURE

by Ivo Witteveen

[ABOUT THE BOOK](#) | [ABOUT THE AUTHOR](#)

Ben Neill is a true musical innovator, also in a literal sense: he is perhaps best known for inventing the Mutantrumpet, a hybrid electric-acoustic instrument. Throughout his multifaceted career, he has been at the forefront of new developments in music and music technology. Last December, the composer, performer, innovator, curator, professor and self-declared 'reluctant academic' published his first book: *Diffusing Music - Trajectories of Sonic Democratization*. The book explores how technology is reshaping music, enabling unprecedented levels of creativity and transforming how we share and experience sound. From digital tools that let anyone become a music maker to AI systems that write, mix, and master songs, Ben Neill breaks down how these advancements empower creators and reshape the relationship between artists and audiences.



Ben Neill



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Ivo Witteveen (IW): *Although your book is about much more than AI, it is a very timely book in the sense that many readers will feel that right now, we are in the midst of an AI revolution that will influence music in many ways. So, this first question might seem obvious, but I'd like to ask anyway: why this book, at this time?*

Ben Neill (BN): I started working on the book about 6 years ago, before AI had the presence it does today. I saw the democratization and superabundance of musical production as very transformative for both the creative and business aspects of the art form, and I felt compelled to write about it. My goal was to put the participatory model of music into a historical context that could alleviate some of the fear around it and to project new models for a positive musical future informed by those trajectories. While most of my peers from my generation were very threatened by the shift toward a democratized musical landscape, I saw it as the inevitable outcome of artistic activity from the last 100 years. I had been an enthusiastic advocate for the shift toward a more participatory musical environment, which meant I could relate my personal experiences to theoretical research. With my personal history and my experience teaching music technology and music business in a college where my students were not from traditional music backgrounds, I felt that my perspective wasn't being represented anywhere else. While I was working on the book, AI began to be more and more of a presence, pushing the ideas I was researching even further.

IW: *At one point you quote Jaques Attali, from his 1977 book Noise: "Music is no longer made to be represented or stockpiled, but for participation in collective play, in an ongoing quest for new, immediate communication (...)" and note that his ideas strongly resonate with the music landscape of today, where it is easier than ever to (co)create music and for instance users of the AI music site Udio create 10 songs per second. I found this a striking observation! Would you say that this development towards participatory and more collective music is generally true for music in society as a whole, is 'music on average' moving in that direction? Or is the democratized, collaborative, participatory music-making something that exists (or will exist) alongside more traditional and more individual*



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what he was talking about. His book clearly turned out to be incredibly prescient, and now I see the democratized, diffused model of musicking as becoming fully pervasive of music as a whole, particularly with the emergence of AI. I don't think traditional, individualized music making on conventional instruments will vanish, but it will need to adapt to the radical changes, perhaps partially through new models such as my Mutantrumpet. I believe the future of music will also be defined by artists who invent new ways of harnessing and shaping the explosion of mass creativity alongside their individual musical projects and goals.

"I don't think traditional, individualized music making on conventional instruments will vanish, but it will need to adapt to the radical changes."

— Ben Neill

IW: *In your book, you demonstrate how music over the last 100 years or so has been moving away from the highly individual 'genius composer' and 'virtuoso performer' archetypes, towards more democratized and accessible ways of creating and performing music. You offer many examples, ranging from the early automated instruments of the Futurists, compositions techniques from minimal music using chance and active participation, and developments in music technology. The book is very compelling because it is both thoroughly researched and also grounded in your personal experience as a composer and performer, mostly in the avant-garde world - you have personal experience and direct connections to many of the music contexts you mention in your book. But I also found myself wondering whether your personal experience as a musician was a bonus, or perhaps also a bias - or maybe both? How did you navigate between writing from personal*



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goal of mine in writing it. It was important to me that the structure of the book directly reflect the ideas of democratization and participation I was writing about. I experimented with different ways of folding my personal history into the research and theoretical aspects, but I always felt that blending auto-ethnography into the narrative would add an important layer of insight into the issues under discussion, rather than writing a purely analytical, third-person monograph. At the same time, it was important to me to have the text be well researched to lend credibility to my observations. Ultimately the approach I took to integrating the different elements was very much connected to my music. The Mutantrumpet has three bells, which I often treat as three individual voices that merge and blend to create a hybridized expression over the course of a piece. This kind of three-layered compositional approach inspired the structure of the book, in which three trajectories intertwine to investigate the phenomena of musical diffusion and democratization: recent technological developments, historical precursors to current patterns, and auto-ethnography. These are counterpointed throughout with the personal aspects taking on a greater role as the book progresses. I've always described myself as a reluctant academic, I didn't start teaching until I was 50 years old and never wanted to be identified with academic music. But my teaching over the last 15 years certainly influenced the ideas in the book along with my professional life as a composer, performer, and instrument designer. The book was an attempt to synthesize these different strands into a cohesive statement.

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IW: *You quote authors who fear that democratization of production enabled by digital technologies destroys deep attention (Stiegler) and Harren, who states that 'as connections multiply (...) artworks dissipate, disperse, devalue and almost disappear.' This leads to a central question of your book: by diffusing art, do we ultimately eradicate it? This question is explored further in the book in depth, so it might be hard to summarize an answer - but maybe you are willing to try? Am I right in thinking that all things considered, you have a positive outlook? And what are the aspects you are most concerned about?*

BN: One of the things I talk about in the book is how every new technological innovation that has been introduced to music over the last century was met with great fear and trepidation by the musical status quo. From John Philip Sousa's horror at early recordings, to the boycotting of radio by ASCAP, to the initially grim view of synthesizers, drum machines, and sampling, mainstream musical practice was highly resistant to all these technologies when they were introduced. But as we know, all of these developments eventually became broadly accepted, and the doomsday predictions turned out to look naïve in hindsight. I don't deny that we are living through a revolutionary period, particularly with the advancement of AI, but my view is that I have a responsibility to try and use my experience to try and articulate a new vision of music that is transformed by the new technologies but not destroyed by them. Musicians always have to create for the environment they are handed, as David Byrne points out so well in *How Music Works*. The new context for music is a world in which everyone can participate in musicking using digital technologies including AI, and that means we all must adapt to creating for that context rather than try and wish it away. Will this phenomenon eradicate music? I don't believe it will. But it is up to us to reimagine music for the emerging environment we find ourselves in, and to not waste too much time weeping for the past. That is the one of the takeaways from my historical research, that by embracing the new modalities, we shape them.

"It is up to us to reimagine music for the



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IW: *In the book you share some anecdotes about how your own career path changed a few times, sometimes influenced by economic necessities. But I think it is fair to say the economic value of music and how it translates to making a living as a musician is not a focus of the book. There are cultural critics like Ted Gioia who have shown that even although revenues from streaming music are increasing, the music industry as a whole is in decline and large part of the money is going to tech companies, not musicians. Taken to its extreme: if democratization of technology enables everyone to be a creator, if eventually there are as many people creating songs as there are listeners, it's hard to see an economic model supporting music as a profession, it becomes more like a hobby. Do you have an opinion about the economic aspects of the democratization of music?*

BN: You're right that I didn't want the book to focus primarily on the economics of music, although it was necessary to include some discussion of it along the way. I didn't want to concentrate so much on what has been lost, which has been done enough by Gioia and others, but rather on what brought us to this point and how we can go forward. It's always been difficult to make a living as a musician, as evidenced throughout musical history. Think of how many of our revered composers and musical artists had little or no recognition in their lifetimes and struggled to survive. The era of recordings and music as a product that sustained artists and their merchants may turn out to be a blip, although for those of us born into that era it seemed like a reality that would never end. Money is still being made from recordings, but that money is being spread out more every year as major label share declines and independent music artists take a greater percentage of the pie. Also Spotify still pays 70% of its revenues to music rights holders, but the warped nature of many recording contracts prevents that money from trickling down to the artists. Sure, for those of us that had the advantage of support from a major it's easy to be bitter, but that doesn't help. The whole music business structure has been in flux since the introduction of Napster, and it's certainly not done yet. Again, we have to adapt to the new reality which means changing our practices to fit the context. One thing that I see



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something that I also have a lot of experience with. The curator turns out to be at least as important as the creator in this climate, and that can be another way of generating income for those who pursue it seriously.

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— Ben Neill

IW: *You write that in your own practice, you have always taken the approach (as many other artists have done) of embracing new technologies as they emerge, to explore them before they become codified. It is an approach I recognize and sympathise with - I think my mindset has been similar, compared to you I've been less at the frontier of experimentation but generally I have embraced new technologies in the ± 30 years of my career, and it has on average been 'a good thing'. So, I value that approach of embracing new technologies. Therefore, I was surprised to discover recently that a large number of my current students (people in their early twenties) are very critical towards new technology, and AI in particular. Rather than embrace and explore, many of them outright refuse to work with AI, out of ecological concerns and well-articulated concerns about 'Big Tech' in general. This attitude is specifically towards AI: they are generally open and curious about new music and new ways of making music - but not AI. Could they be right? Is this part of the resistance that every major technical revolution has encountered in its time, or could it be that the current AI revolution is of a different character or magnitude compared to previous (music) technological developments? Could there be a revival of*



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superabundance. In the book I talk about at sampling as an effective way of looking at AI. On its most basic level, sampling could be seen as literally lifting an entire song and calling it one's own. But that isn't what happened with sampling. It was integrated into creative musical practice, and inventive, transformational uses of it were generally more successful than literal, dumbed-down approaches. I think the same thing will happen with AI, it will be integrated into musical practice in the future and ultimately not be such a controversial issue as it is now. Of course there are copyright questions, but that is nothing new – intellectual property has been transforming for decades. In the book I talk about some of the AI plugins such as Audiomodern's Playbeat, an AI drum machine, which improvises on patterns that I feed it and then learns which improvisations I like. The result is that my vocabulary of beats becomes more specific to me and more individual, rather than the current situation in which everyone uses the same stock sounds and loops that come with Ableton Live or Logic Pro. There's no question that our species is merging more and more with technology. Luciano Floridi describes how the infosphere actually contains physical reality now rather than just being superimposed on top of it. Music's close relationship with technology means that it is at the forefront of these changes, which I see as an asset, not a detriment. But I can understand how some people, young and old, see it as an existential threat.

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– Ben Neill

IW: *You describe the creative potential of the early stages new technologies entering the*



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specific artists that you would recommend following, who are 'shaping the concrete while it hardens'?

BN: Yes, I think that is exactly what's happening, and it's interesting to me that a number of the artists who are leading the way are women. Imogen Heap was one of the first people to open up her creative process to her audience, and she has developed new tools to help empower independent artists such as her Creative Passport and Mycelia projects. Holly Herndon and Grimes have made it possible for users to incorporate their voices into new creative projects, and all three have embraced AI as a creative partner rather than a potential threat. Kutiman is a DJ whose Thru You and Mix the City projects were great examples of celebrating and facilitating mass creativity, while he continues to also do his own more traditionally structured musical releases. The Range and Fred Again... have also used similar approaches successfully. Ryan Ross Smith's animated notation works enable non-musicians to participate in complex musical performances through visual structures whose approaches draw from gaming. All of these artists are embracing and shaping the new musical reality rather than resisting it. The artist-tech hybrid I've talked about is also important; companies like Eternal Research, Playtronica, and Artiphon are examples along with people like Tobi Hunke, the Ableton Drummer.

IW: *Lastly - as our readership primarily consists of composers and other creatives involved in creating music for various media (something that you have experience with too), is there a general advice or piece of wisdom you would like to share with music-for-media composers who find themselves worried about their future?*

BN: I can understand the trepidation in this community with AI sites that empower anyone to generate music tailored for other media. Of course, when doing this kind of work, the most basic thing to remember is that the music tends to be perceived as subservient to the image and the narrative, something Michel Chion talked about at length in his book *Audio Vision*. Creating always involves setting limitations, but in this case, you're given a set of limitations and a framework externally rather than making your own. For me that could feel liberating at times, particularly with the work I did for



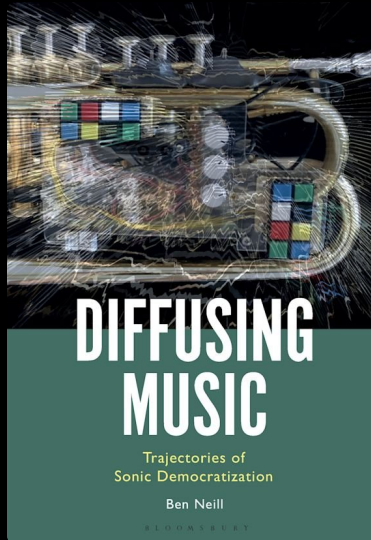
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you're making, while still keeping a close eye on what the music is serving. It can be very subtle or slight, but it might make all the difference. Check out Philip Ball's *The Music Instinct*, *Sweet Expectation* by David Huron and Elizabeth Margulies, and *Hit Makers* by Derek Thompson, among others, for more details.



About the book

Diffusing Music - Trajectories of Sonic Democratization explores the democratization of music in our current era made possible by digital technologies and puts it in a historical context. In the book, Neill explores how technology is reshaping music, enabling unprecedented levels of creativity and transforming how we share and experience sound. From digital tools that let anyone become a music maker to AI systems that write, mix, and master songs, Neill breaks down how these advancements empower creators and reshape the relationship between artists and audiences.

The book asserts that music has become ubiquitous and increasingly intertwined with everyday life, rendering previous models of creation, performance, and consumption obsolete. *Diffusing Music* identifies trajectories between 20th-century innovators and the broader redefinition of the musical art in popular culture today. This approach can inform new modalities of musical thinking in the wake of the transformations being actualized by artificial intelligence and other emerging



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- **Democratization of Music**

Technology has made it easier than ever for anyone to create and share music.

These tools, from laptops to apps, break down traditional barriers and allow everyone to be heard.

- **The Role of Artificial Intelligence**

AI is changing how music is made, from helping people write songs to creating new sounds. Neill explores both the exciting possibilities and the challenges of this technology.

- **Personal Insights**

Drawing on decades of experience, Neill reflects on his collaborations with music pioneers like Robert Moog, John Cage, and Pauline Oliveros and his time immersed in new wave, electronica, and ambient music. From the vibrant downtown New York scene to international stages, his career has been at the forefront of innovation in these genres.

- **Cultural and Historical Perspectives**

A look at how music has evolved over the years and what these changes mean for its future. Neill connects the dots between past innovations and today's rapidly changing music world.

Part history, part personal story, and part look at what's next; *Diffusing Music* is recommended reading for anyone curious about the future of music. The author, Ben Neill, has been an active participant in many of the scenes and movements that gave rise to musical democratization. His experiences and collaborations with influential figures in the field are woven into the fabric of the narrative. As both a creator and a chronicler of music's ongoing transformation, Neill brings a unique perspective to this timely exploration of the art form. *Diffusing Music* provides a valuable resource for those seeking to understand and navigate the industry with a clear and informed perspective and offers an accurate consideration of this field's present and future.

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Composer/performer Ben Neill is the inventor of the Mutantrumpet, a hybrid electro-acoustic instrument, and is recognized as a musical innovator who “uses a schizophrenic trumpet to create art music for the people” (Wired Magazine). Neill generates immersive musical experiences that merge ambient music, electronic grooves, and interactive video, all controlled live by his instrument. Thirteen albums of Neill’s music have been released on various labels.

Neill is a longtime close associate of minimalist pioneer La Monte Young, and leads international performances of Young’s music. The list of creative innovators with whom Neill has worked includes David Wojnarowicz, John Cage, David Berhman, Nicolas Collins, John Cale, Petr Kotik, Pauline Oliveros, Rhys Chatham, DJ Spooky, Mimi Goese, and King Britt. In addition to his many collaborations, Neill was the Music Curator at The Kitchen

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Based in New York since the early 1980's, his performances include BAM Next Wave Festival, Big Ears Festival, Lincoln Center, Whitney Museum of American Art, The Broad Museum, Bing Concert Hall at Stanford, Getty Museum, Cite de la Musique, Moogfest, Spoleto Festival, Umbria Jazz, Bang On A Can Festival, ICA London, Istanbul Jazz Festival, Vienna Jazz Festival, and the Edinburgh Festival, among many others.

Neill began developing the Mutantrumpet in the early 1980s. Initially an acoustic instrument combining 3 trumpets and a trombone into one, he collaborated with synthesizer pioneer Robert Moog to integrate electronics. In 1992, while in residency at the STEIM research and development lab for new instruments in Amsterdam, Neill made the Mutantrumpet fully computer interactive. In 2008 he created a new version of his instrument at STEIM, and in 2019 the current Version 4 debuted in the premiere of his electronic opera *Fantini Futuro*.

Recent projects include *Prana Cantos*, a music and meditation album with his daughter, Kadence Neill, and *Trove*, a 104 track ambient collection that was created during the Covid pandemic. A live version of *Trove* utilizing a wireless outdoor sound system that projects sound up to two miles was premiered in 2022 at Manitoaga/The Russel Wright Design Center in Garrison, NY, and repeated in 2023. Neill's new album *Amalgam Sphere* is being released gradually over the next few months.

A native of North Carolina, Neill holds a Doctorate of Musical Arts degree from Manhattan School of Music. Since 2008 he has been a music professor at Ramapo College of New Jersey, where he founded an MFA program in Creative Music Technology. His first book, *Diffusing Music*, was released by Bloomsbury Press in December 2024. Neill has also composed extensively for television and film.

visit [benneill.com](https://www.benneill.com)

**'Diffusing Music' podcast:
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DIFFUSING MUSIC: A THOUGHT-PROVOKING PERSPECTIVE ON MUSIC, AI, AND THE FUTURE

Private Kitchen talks with Ben Neill about his insightful book 'Diffusing Music' which connects AI to preceding technological and cultural developments.

AI, SELF-DEVELOPMENT & THE WISDOM OF BILL EVANS

Will using AI-powered assistance in the composition process only change your musical output, or will it change you as well?

HAPPY SESSIONS: HOW TO ELEVATE YOUR MUSIC BY WORKING WITH SESSION MUSICIANS

How can media composers benefit the most from working with session musicians? Private Kitchen editor Ivo Witteveen shares his thoughts.

BOOK REVIEW – ANDY HILL'S 'SCORING THE SCREEN – THE SECRET LANGUAGE OF FILM MUSIC

More than just a series of film music analyses: Hill uses the films and scores he discusses to weave a larger narrative.



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CREATIVITY, CONSTRAINTS AND MOUNTAIN CLIMBING

How to create your creative space as a media composer?

IVO WITTEVEEN – COMPOSER, MUSIC PRODUCER AND LECTURER

Ivo Witteveen is an Amsterdam-based music composer, producer and educator, writing music for various media.

JORIS DANIEL HOOGSTEDER – EXPERIENCES AND ADVICE FOR A CAREER AS A COMPOSER IN LA, USA



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