

Delia Derbyshire: The Music of Mathematics

Analysis by Pete Paphides, The Times

One work to which Delia Derbyshire sometimes liked to refer was Maya Angelou's *I Know Why The Caged Bird Sings*. On the face of it, Angelou's theme couldn't be farther removed from Derbyshire's abstract sound world. Yet the point was that "you need to have discipline in order to be truly creative". For Delia Derbyshire, mathematics provided all the creative discipline she needed in her musical activity. She wasn't exactly the first.

Pythagoras heard the sound of hammers on anvils and produced a formula connecting their mass to the sound they made. In the 17th century, Gottfried Leibniz wrote that "music is the pleasure the human mind experiences from counting without being aware that it is counting".

Like George Gershwin before her, and the design of the Eden Project in her latter years, Derbyshire derived much of her own inspiration from the Fibonacci sequence, which is well known for matching growth patterns in nature.

In the 1980s, when bands such as Tears for Fears spent six weeks at a time using the freedom so disdained by Derbyshire to perfect the sound of a single snare drum, it looked as though the world she had tried to preempt deemed her methods surplus to requirements. It was only with the aggressively cerebral microclimate of "intelligent techno" labels such as Warp, and groups such as the Aphex Twin and Autechre, where her methods and reputation found a new generation of admirers.

But Derbyshire's ideas haven't restricted themselves to the synth boffins to whom she has long acquired Joan of Arc status. Recently, Robert Schneider, of Apples in Stereo, explained how he set about writing the instrumental pieces on the Kentucky band's *New Magnetic Wonder* album: "I came up with a 12-tone scale based on the natural logarithm function that I experimented with. The notes on the keyboard get closer together according to the difference between the sequence of the logarithms of natural numbers."

Does anyone know what that means? Perhaps not, but as a change from the usual creative catalysts used by musicians - spending two months at The Priory with an acoustic guitar or working out an old Beatles song and playing the chords in reverse - it's got to be welcome.