Peer reviewed

Daisy Bell

Ryan Page

Near the end of Stanley Kubrick's *2001: A Space Odyssey*, as the artificial intelligence system HAL 9000 is being disabled, it asks if Dr. Bowman would like to hear it sing a song. The piece of music that it chooses is "Daisy Bell (Bicycle Built for Two)," a composition that, not coincidentally, was used by the composer Max Mathews to demonstrate the first digital speech synthesis algorithm in the early 1960s. It was upon hearing a demonstration of this work at Bell Labs that science-fiction author and inventor Arthur C. Clarke incorporated the aforementioned incident into the screenplay he created with Kubrick for *2001: A Space Odyssey*. Mathews's rendition of the song—derived from an earlier, popular composition written by the British composer Henry Dacre in 1892—has become an iconic instance of digital simulation and uncanniness; after a stilted introduction featuring synthesized strings and piano, a digital voice croons

> Daisy, Daisy, give me your answer true. I'm half-crazy over the love of you. It won't be a stylish marriage. I can't afford a carriage. But you'll look sweet. Upon the seat. Of a bicycle built for two.

"Daisy Bell" was later coded into a program for generating sounds from the read/write-head of the Commodore 64 disk drive (released 1982), and Microsoft's Cortana (released 2014) will sing the song if asked; also, in the Netflix original series *Stranger Things* (2016–19), a carousel playing "Daisy Bell" is the tipoff to a Russian invasion of the United States. As the technological infrastructure underlying speech synthesis changes, it is important to consider the meaning of successive translations of the same song. What is considered essential? What qualities are preserved and, perhaps more important, what changes? "Daisy Bell" functions

symbolically as both a shorthand for the uncanny flat effect of the digital and its potential malevolence.

I have constructed this rendition[1] of "Daisy Bell" using the aforementioned dialogue from *2001: A Space Odyssey*, a YouTube demonstration of the Commodore 64 disk drive playing the piece, Mathews's synthesized version, a re-creation using a modern form of speech synthesis known as a vocaloid, and several traditional recordings of the song. The result is a bizarre piece of music that takes the voices of the now-dead as transcribed onto wax cylinders or phonographs and juxtaposes those sounds with voices that were never alive to begin with. It is intended to be uncanny, funny, hopeful, and sad. This work is part of a larger project exploring the ontological problems that emerge from simulation, and in particular how nostalgia and uncanniness—with their respective semantic origins in homesickness and the quality of being "un-home-like"—are an intrinsic aspect of the digital.

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Ryan Page is a composer, performer, sound artist, engineer and Ph.D. candidate at the University of California, Santa Cruz. His work focuses on the nostalgic, uncanny aspects of digital simulation and exploration of the interstices between analog and digital media. His current research includes the design of hardware systems offering digital state recall and interpolation of chaotic analog systems for audio synthesis, the use of human flesh to convert 8-bit digital audio signals to analog, the design and creation of a modular synthesizer featuring a light-reactive case, photocell mixers, dirt and ash as audio processors, anachronistic methods of signal modulation/demodulation, and digital oscillators with hand-drawn wavetables.

Notes

[1] *Daisy Bell* (2019) is available for listening at
https://escholaship.org/uc/item/6cd60127.