

Self-Similar Melodies (1996)

The theory of the logical and mathematical techniques used by the composer: finite and infinite automata. the paper-folding formula, "self-replicating" melodies, etc. A rather detailed discussion, 291 pages, with many new melodies, written to demonstrate the techniques used. 24 € (Euros).

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An appreciation of the connection between mathematics and music dates back at least to Pythagoras, but rarely does one have a chance to explore that connection in such intimate detail as in these bracing pages. Composer Tom Johnson weaves back and forth between notes and numbers, delighting in patterns that lead up to self-similarity (the basic of fractal geometry). Some familiarity with both sides of the topic is a prerequisite; committed readers will, however, receive a unique aesthetic education.
Scientific American, May 1997