



2014 Kemeny Public Lecture



Escher and the Droste effect

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LSC 100 Arvo J. Oopik 1978 Auditorium
Class of 1978 Life Sciences Center



Photo courtesy of Kegan Thorrez

In 1956, the Dutch graphic artist M.C. Escher made an unusual lithograph with the title *Print Gallery*. It shows a young man viewing a print in an exhibition gallery. Amongst the buildings depicted on the print, he sees paradoxically the very same gallery that he is standing in. A lot is known about the way in which Escher made his lithograph. It is not nearly as well known that it contains a hidden *Droste effect*, or infinite repetition; but this is brought to light by a mathematical analysis of the studies used by Escher. On the basis of this discovery, a team of mathematicians at Leiden produced a series of hallucinating computer animations. These show, among others, what happens inside the mysterious spot in the middle of the lithograph that Escher left blank.

Hendrik Lenstra is Professor of Mathematics at Universiteit Leiden and Professor Emeritus at the University of California, Berkeley. His research interests include algebra, number theory, and algorithms. He is responsible for two of the most famous algorithms in 20th century number theory: the LLL lattice basis reduction algorithm (along with his brother, Arjen Lenstra, and László Lovász) and the elliptic curve factoring algorithm. His work has important applications in the areas of cryptography and computer security.



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