# Description

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This artwork is based on Particle Swarm Optimization (PSO) algorithm. PSO is an evolutionary computation technique developed in 1995 by Kennedy and Eberhart, and it's inspired by social behavior of bird flocking or fish schooling[[1]](#endnote-2).

Particles in PSO are made to follow a hypothetical point (focal point, fp) moving horizontally (i.e. scanning each row with a constrained random vertical offset); once fp reaches the end of a line, it goes to the next row; this process is repeated until the entire input image (the Q of the Q magazine) is scanned. As particles trace the fp , the average color of the pixel, where each particle is 'flying over', is taken and the color is reflected on the output image (the current cover of the Q). In other words, the color of each pixel of the input image changes the corresponding part of the output image to the swarms' average color as they flock around fp. The swarms flocking behavior over the image creates the resultant cover for this issue of the Q magazine.

1. Eberhart, Russell, and James Kennedy. "A new optimizer using particle swarm theory." *Proceedings of the Sixth International Symposium on Micro Machine and Human Science, 1995. MHS'95.,*. IEEE, 1995. [↑](#endnote-ref-2)