

Exploring Emergence

When you see a white pixel move across a black screen, is that an object moving? No, in fact it is the screen turning little squares “on” and “off” following a pattern to create the illusion that an object is moving. This article talks about how objects and patterns can arise from simple interactions in surprising ways. One of the ways to make the squares seem like they’re moving is by applying the rule: *“If a square is on, it turns off. If a square is off, it turns on if exactly two of its eight neighbouring squares are on.”* This is but one of the many different rules that could be placed. These are known as Seeds gliders, which works moving the shape as a whole across the screen. Next we look at Life gliders; the rule has slightly changed now to: *“If a square is off, it turns on if exactly three of its neighbours are on. If a square is on, it stays on if exactly two or three neighbours are on; otherwise it turns off.”* Now the pieces are moving as though they have life, these pixels cycle through 4 different shapes before returning to its original shape, in a new position. In this way it is much easier to make “still life” shapes. It is mentioned that when Conway created the Life rules, he didn’t have access to a computer so instead he had to use stones on a Go board, and would update the pattern with every move. This form of art is very simple, yet very effective. It allows for the creator to play around with different shapes and arrangements to see how the program will react. Creating a piece that allows the user to play around with rules, and designs can be fun and interesting, and can make many cool little animation gifs.