

Reflection 1

Tom Betts is a British game developer, artist, programmer, coder, and academic researcher who works with generative art, game modding, installation art and programming. He was the lead programmer at the game studio Big Robot and now runs his own studio called Nullpointer Games. He enjoys creating generative systems, exploring the various intersections between creative coding, video game technology and digital artwork and enjoys modifying these intersections, particularly the aesthetics of video games, revealing the raw computational processes that generate virtual worlds. He often mods video game engines, such as Unity, into a creative tool for visual expression. His work aims to challenge traditional methods of play, interactivity, and player agency within a digital setting. Betts' work also consists of formulating generative art within video game engines, tweaking and repurposing them to emphasize visual experiences and outcomes. Throughout this process, he develops intentional glitches, abstract distortions, and algorithmic randomness into these virtual worlds, turning them into emerging art spaces rather than structured environments. Outside of modding, Betts also researches procedural generation, an innovative technique in which algorithms autonomously create game environments, visuals, or behaviors. I enjoy this work because it explores how randomness, and programming can be used as creative tools, which creates experiences that go beyond human design limitations. Betts' artistic practice is driven by a desire to push the boundaries of digital interactivity and to explore emergent behavior within game engines. Through his work, he criticizes the simplistic and goal-oriented structures of

traditional video games by introducing new elements of unpredictability, chance, and abstraction. Instead of focusing on finishing and beating the game or completing objectives, his projects encourage players to engage with the digital environments that surround them as dynamic artworks. By modifying game engines, and disrupting rendering systems, Betts creates a sense of procedural beauty that challenges conventional game aesthetics that I have come to appreciate.

One of Betts' most prominent works is Permutation Racer. It is an endless and experimental racing game that explores the possibilities of the algorithmic construction of space. The race tracks are generated based on what Betts describes as "a set of noise filtered 'biome' styling functions," which creates an unpredictable and adaptive environment for the player to play around. There are 12 biome types, which range from canyons, caves and archways, all generated within real time as the player progresses through each level. In this sense, the gameplay shifts from a predetermined race track towards something that causes unpredictability and chaos. However, due to the generation algorithms, the track becomes more convoluted and more dangerous based on the amount of time and distance the player has traveled. This environment also forces players to learn new skills on the fly, where speed and precision are key. The aim of the game is to avoid crashing your spaceship, and to race it as far as possible, as there is no concrete finish line since everything is generated procedurally. Instead, a 30 second timer is displayed, which forces the player to reach the next checkpoint as fast as possible, so that they may further extend their time by reaching this checkpoint. The visual design of

the game has glitchy effects, futuristic textures, and erratic movement, which gives the player a very disoriented feel while piloting the spaceship. At its core, the game is not just about winning or losing, but about bringing attention to the opposing behaviours of order and randomness. The game also explores the relationship between the player and the game, as the unpredictable setting presented by the game makes each playthrough a new experience, which suppresses the idea of a fixed, repeatable outcome. In this way, *Permutation Racer* is a stark contrast to conventional game design through the illusion of control and player agency.