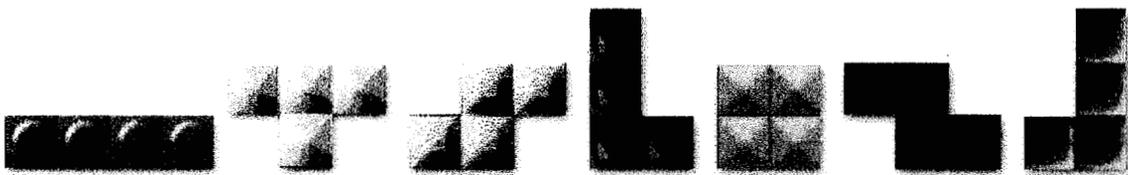# Have YOU Been Tetrasized?

STS 145
Becca Nycum
February 22, 2001

"'Tetris' is some song which you sing and sing inside yourself and can't stop," remarked its Russian designer, Alexey Pajitnov. Since its inception in 1985, "Tetris" has arguably developed into the most addictive game in the history of electronic games. With its addictive qualities, "Tetris" instigated an entirely new genre of computer games, the puzzle game.

The ancient puzzle pentamino inspired the game Tetris that is played globally today. In 1985, while working at the Computer Center of the Moscow Academy of Science, Pajitnov read about and was fascinated by Pentaminoes. In this game, various combinations of five squares yield twelve different puzzle pieces that can be arranged to fill a perfect rectangle. From this puzzle, Pajitnov developed the idea of a real-time game in which continuously falling, randomly generated pieces must be arranged to fit together to form complete rows of blocks. He decided to limit his puzzle pieces to a total of seven different shapes, and therefore created each out of *four* smaller blocks. Consequently, Pajitnov named his game "Tetris" from the Greek word for four, *tetra*, and each puzzle piece is referred to as a tetramino.

With the aid of Vadim Gerasimov, Pajitnov then programmed a version of "Tetris" that worked on an IBM-compatible computer. Soon, the game infiltrated PC's across Russia, but negotiations were necessary before the game could spread to America. The company Spectrum Holobyte obtained the rights to the PC version of "Tetris", and in 1987 they released "Tetris" to America packaged in a red box with designs and music that reinforced its Russian origins. A year later, in 1988, Atari released an arcade version of the game, and in 1989 Nintendo first shipped the product Game Boy with "Tetris" as its pack-in game.

The game swiftly became imbedded in the American culture, as people of all ages found themselves addicted to "Tetris". The game-play of this puzzle game is relatively straightforward, with the basic task being to rotate falling puzzle pieces and move them into a position that will bring about the completion of full rows of blocks. Once a solid row of blocks is formed, it will disappear, thereby shifting the remaining blocks on the Playfield down one row. If enough incomplete rows build up that the screen is full of blocks and there is no room for the falling puzzle pieces, the game is over; the ultimate goal of the game is therefore to persistently complete and eliminate rows of blocks while working through levels of the game.

The linear system of levels in "Tetris" is an important feature of the game. After completing a certain number of rows at one level, a player advances to the next level. Each level uses the same screen and the same set of seven tetraminoes that are randomly selected to fall down the screen, and the goal throughout all of "Tetris" is always to manipulate the four-block puzzle pieces in order to form full rows. However, the difference between levels is that the pieces fall from the top of the screen with intensifying speed as the levels increase. This demands a faster reaction time from the player and contributes to the addictive quality of the game, as players strive to work through the levels and establish control over the high-speed falling blocks.

One advantage for the players, as built into the first version of "Tetris", is a color system for the seven tetraminoes. Each was marked by its own distinct color, thus making recognition easier and aiding in the call for a shorter reaction time. On the grayscale Game Boy system, this feature was clearly not available. However, on most computer versions of "Tetris", the J tetramino is dark blue, the L tetramino is magenta,

the S tetramino is Green, the O tetramino is gray or white, the Z tetramino is red, the T tetramino is yellow, and the I tetramino is light blue.

These puzzle pieces are not the only colorful graphics incorporated into the game. In the United States, Spectrum Holobyte programmers decorated the background of the playfield with pictures of battle scenes. In addition, the game commenced with an animation of a plane flying across the screen and landing on a red square. This feature underscored the Russian origins of the game, because it symbolized a famous flight from Helsinki to Moscow by a West German pilot who evaded all Soviet military defenses.

The original American PC version of "Tetris" also included a table to keep track of high scores, as implemented by the Russian programmer Pevlovsky. Once the game worked its way to America, it was revised at Spectrum Holobyte to include a "boss button" on some versions of the game. This allowed for players to change the computer screen image with the stroke of a key. When the "boss button" was enacted, the game screen would be replaced with the screen for an accounting program. This technology is indicative of the impact of "Tetris" in the workplace. The highly addictive game deterred workers from their tasks and became a problem to be addressed by authorities with concern over the potential decrease in productivity as a result of greater time quanities invested in playing "Tetris".

As for the flexibility of game-play, the "Tetris" technology did easily allow for multiplayer games. When two players compete, suddenly they must not only survive and finish a level, but they must accomplish this in the least amount of time. The screen can be set up with side-by-side Playfields into which tetraminoes are dropped in the same order. Since a player can accelerate the descent of the tetraminoes, he or she is able to

control the game time, and this sets the stage for multiplayer competitions involving a demand for wise, yet swift, positioning of the puzzle pieces.

Although in multiplayer mode both players receive the same pieces in the same order, this sequence changes from game to game. The same is true with single player versions, and this random selection of tetraminoes is one of the keys to the success of the game design. The addictiveness of "Tetris" derives from the fact that players continuously yearn to find the perfect placement for *each* individual block that falls in terms of those that have already built up on the screen. If the order were to be the same each time, practiced players could devise schemas for the placement of their blocks that would achieve the highest results, but which would create the same pattern of blocks each time the game is played. This decreases not only the excitement, but also the intellectual demand, and therefore the desire to play. However, when the blocks become available in a random order, it is difficult for the player to create a plan that works for each game, and therefore the intellect of the game user is continuously exercised. This drastically increases the replay value of the game, due to the fact that no player can rely on knowledge of the tetraminoes in one game to help him play the next.

One advantage the player does have is that as one shape is falling, many versions of "Tetris" reveal a preview of the next piece. This adds strategic depth to the game, because it requires the user to think "outside of the box". The player must take into consideration not only the best placement for the falling tetramino, but also how to use that piece to maximize the potential of the next shape. Subsequently, the player may be forced to reevaluate a decision regarding the placement of the second shape as it is falling

and the shape of the third puzzle piece is revealed; this cycle continues throughout the game.

The simplicity of the game design, in combination with its continuous intellectual demands, contributes to the reputation of "Tetris" as a powerfully addictive game. It has, without a doubt, met with an extremely high success rate, even while leaving in its wake several conflicts between software companies. Following Nintendo's release of the NES version of "Tetris", the game maintained a position on the Nintendo top-ten most-popular game list for over a year. It became so engrained in the minds of its users, that people of all ages reported seeing "Tetris" shapes in their everyday life. This effect also resulted from the addictive nature of the game and therefore the subsequent large quantities of time people spent interacting with the tetraminoes. With increased use, it became necessary for numerous players to exert self-discipline to limit the hours they spent with "Tetris". One Russian astronaut even brought a copy of the Game Boy version of "Tetris" with him into space. These effects and examples indicate the power of the game, and serve as the significant contributors to its indisputable success.

The strength of "Tetris" is exemplified by its relationship with Nintendo's Game Boy. "Tetris" holds an important role in the history of the video game industry because it was packaged with the first Game Boys introduced by Nintendo. It is difficult to identify the exact influence of the game on the sales of Game Boys, but around 35 million "Tetris" Game Boy carts have been sold, and the inclusion of "Tetris" with Game Boys undoubtedly lead to the sales of many other carts.

Pajitnov created in "Tetris" the perfect balance between simple rules for play and strong strategic depth. Although he did not receive monetary rewards soon after the

release of the game, the designer spoke of the genuine happiness he derives from watching the growth and dissemination of his game. He enjoys the fact that at one point or another, millions of people have been tetrisized.