TETRIS-SYSTEM

being a recording method for matches of the puzzle-game

P. Higgins & T. Hwang (2012)

"Apart from being a fine game, Tetris is also a perfect mirror of the human condition"
-Ashley Pomeroy (2001)

Introduction

Released in 1984, Tetris remains a game that has not been the subject of sustained gameplay analysis. Instead, much academic scholarship has focused on topics like the extent to which Tetris as a game is computationally solvable, and the psychological effects of the game.

Unlike Chess, no robust dialogue has taken place about the tactical and strategic aspects of the game. There is no sense of how Tetris is optimally played in its opening, midgame, and endgame. There is no Fool's Mate, Nimzo-Indian Defense, or other repertoires that inform the dedicated player. The "schools of thought" and practices that allow championship players to reach their level of proficiency remain obscure. However, we feel that this strategic depth is waiting underneath the surface of the game.

To our minds, one important reason that this level of analysis has not emerged around Tetris is that the game lacks any standardized system for recording and closely analyzing the block-by-block maneuvers by players. As a real-time game, *how* a row was cleared is forgotten almost as soon as the next block appears. Moreover, we believe there to be a variety of novel entertainments made possible by the creation of a "turn-by-turn" game (much like a Chess or Bridge puzzle) based on the original game experience.

We offer the following system for your consideration.

The Game-Grid

Our system proposes that the Tetris be divided up into a grid. There are two dimensions within which blocks can exist: horizontal and vertical. We label a position within this grid as follows:

* Horizontal Columns: Reading from the leftmost column to the rightmost column, these are columns a, b, c, d, e, f, g, h, k, m.

  The reader will note that the letters "i", "j" and "l" have been eliminated to avoid confusion with the denotation of pieces (detailed below).

  These letters will always appear in lower case in the notation system.

* Vertical Rows: These are referred to by their number from the bottom. The lowest row is 1, the second lowest is 2, and so on. Our system relies less on this particular variable, but is included in this specification to be included as needed.

Piece and Orientation

There are seven types of Tetriminos. We label these according to the letter they most resemble. These are: I, J, L, O, S, T, Z. These always appear in capitals in our notation to distinguish them from the column notation.

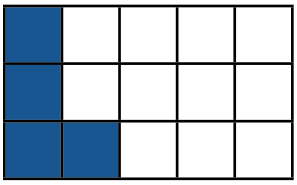
Each Tetrimino has a number of possible orientations. We denote which orientation based on a subscript number that indicates the number of 90 degree clockwise turns of the piece from its initial letter position. The initial position receives no subscript. Thus:

* T: 
* T_1: 
* T_2: 
* T_3: 

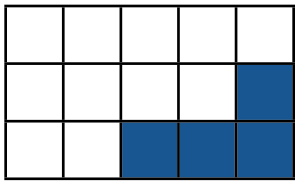
Placement

The placement of a Tetramino is to be defined by a sequence including the following: the letter indicating the piece, the subscript defining its orientation, and then the letter of the column in which the bottom-left most square of the Tetramino is located. This is referred to as a *triad*. With a simplified board below, we present a few examples.

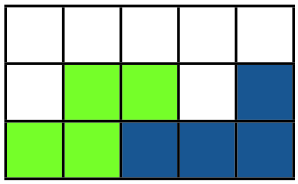
* Example One: “La”



* Example Two: “L_3c”



* Example Two: “L_3c / Sa”



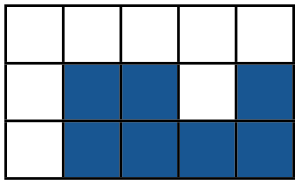
Initial Positions

Initial positions of a board are to be demarcated by strings of numbers within square brackets ([ ]) for each row.

Within each bracket, numbers without parentheses will indicate the number of consecutive filled squares, and numbers in parentheses will indicate the number of consecutive empty squares. These numbers will indicate the placement of blocks on each row reading from left to right.

These bracketed sets themselves will be ordered from the bottom row to the topmost row. To illustrate:

* Example : [(1), 4] [(1), 2, (1), 1]



In this way, analyses can proceed easily from any point within the span of a game, without

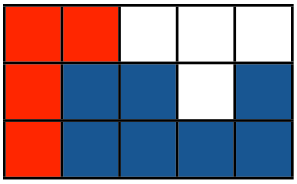
requiring readers to reconstruct a full game from the blocks placed.

Clearance

The final element of the system allows for the notation to easily record when a block placement clears a row. This is indicated by a parentheses after the triad clearing the row. The parentheses will contain a number of "X" marks depending on the number of rows cleared.

The clearance of four rows simultaneously (a "Tetris") will be indicated by a "T" rather than four Xs.

* Example : J_2a (X)



Commentary and Annotation

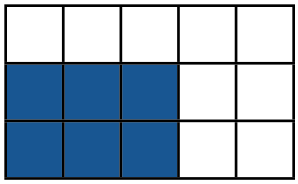
Our system may be used to provide commentary annotation when a block maneuver is particularly noteworthy. Like clearance, these are noted as parenthetical markers following a triad. We borrow the conventions from Chess notation. These are as follows:

?? = Blunder
? = Mistake
?! = Dubious Move
!? = Interesting Move
! = Good Move
!! = Brilliant Move

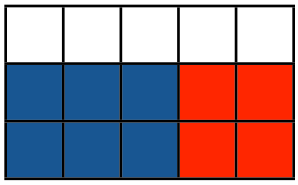
A Sample Notation

To aid the interested scholar of Tetris, we provide a brief sample of notation below, using the simplified board.

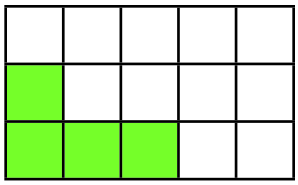
* Set Up: [3, (2)] [3, (2)]



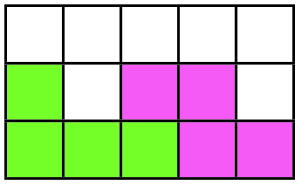
* First Move: Od (XX)



* Second Move: Od (XX), J_1a



* Third Move: Od (XX), J_1a, Zc



* Final Move: Od (XX), J_1a, Zc, Ta