Try: A Hybrid Puzzle/Game

Cameron Browne, Queensland University of Technology (QUT)

Try is a new logic puzzle that juxtaposes a strategy game rule onto a solitaire puzzle. This article describes Try, some basic strategies, and the design process behind it, most importantly the creative leap that produced a novel puzzle from familiar elements.

1 Introduction

TRY is a pure deduction puzzle in the same family as Sudoku [1], but with an additional constraint borrowed from a strategy game. The rules are as follows:

> **Try** is played on a triangular tessellation of N hexagons per side, with some hint cells initially assigned numbers from 1..N. The aim is to assign every cell a number 1..N such that:
>
> 1. No number occurs more than once along any line (*Sudoku rule*).
>
> 2. No connected group of odd numbers touches all three sides (*Y rule*).

1.1 The Game of Y

The Y rule is borrowed from the game of Y, invented by Claude Shannon in the 1950s,[1] which is one of the earliest and most fundamental connection games [3]. The aim in Y is to complete a chain of your pieces connecting all three board sides, called a *Y*, as shown in Figure 1. Corners count for both incident sides.
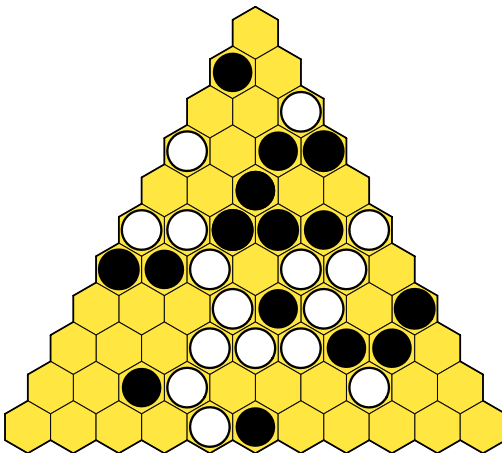

Figure 1. A game of Y won by White.

One of the attractive features of Y is that a winning chain of one colour that touches all three sides precludes any possible winning chain for the other; exactly one player must win each game. This means that the Y rule in Try can be rephrased as: *all three sides must be connected with a connected group of even numbers.*

1.2 Triangular Sudoku + Y = Try

Figure 2 shows a typical Try challenge for size N=5 (left) and its solution (right). The hint set for each challenge must be carefully chosen to give a single unique solution [4].
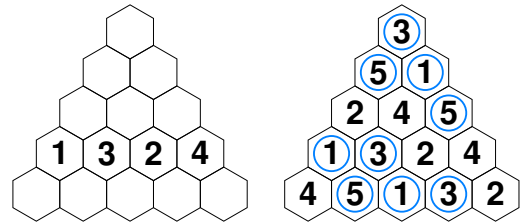

Figure 2. A Try challenge and its solution.

By comparison, the solution shown in Figure 3 is illegal because the odd-valued cells (circled) form a group that connects all three sides, even though the Sudoku constraint has been satisfied and no number occurs more than once along any line.
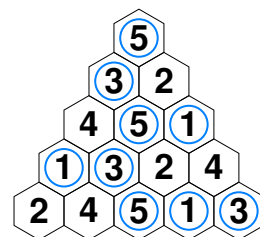

Figure 3. An illegal solution for this challenge.

The practice of circling cells that are guaranteed to be odd helps clarify the Y aspect of a solution in progress, and will be adopted throughout this paper. A simple mnemonic is: *'O' is for 'Odd'.*

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[1]The Y board was later redesigned in the 1970s with a non-regular tiling to bring the corner cells more into play [2], but Shannon's original design played on a regular grid of hexagons is more relevant here.