Project “HoWeDia“

by Vaclav Obsivac

A few years ago I had to prepare a couple of puzzles for a public event. This was a workshop that also included children. After doing a few more similar events, it led me to design a new series of puzzles with various goals for several levels of difficulty. To make these puzzles more fun and interesting especially for children, I Included simpler challenges with fewer pieces and used different kinds of wood and made them also in bigger sizes.

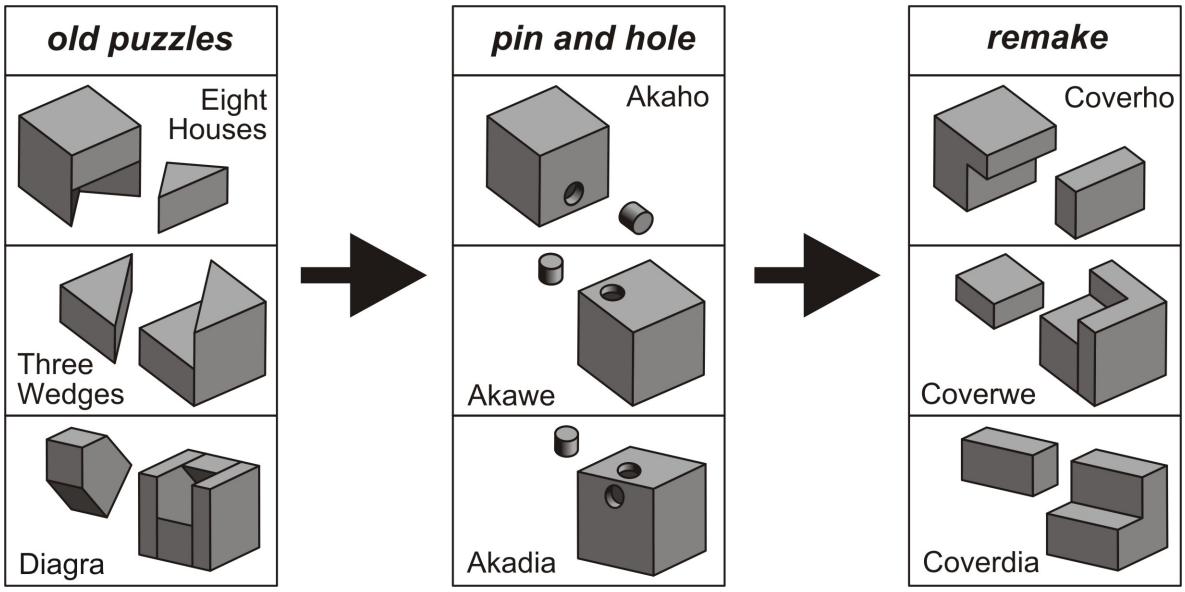

Figure 1. Transformations of puzzles

As a starting-point I took some of my older, favourite puzzles: Eight Houses, Three Wedges and DIAGRA [1] (see Figure 1, left). These puzzles have a 2x2x2-cube as a goal, and they have eight different pieces. The three original puzzles have a right-angled triangle as a distinctive, connecting element in them. And pieces are formed by connecting this triangle to the rest of the cube in different orientations.
By substituting the triangular connection by a "pin and hole" connection (see Figure 1, middle) I created new pieces based on the three mentioned puzzles. My new, or maybe just innovated, puzzles are named: Akaho, Akawe and Akadia. The names refer to the original puzzles. For every puzzle there are multiple goals with different levels of difficulty. You can use 4, 6 or 8 pieces based on the challenge at hand. See Figure 4 for the respective pieces. I think the change from Diagra to Akadia is the most impressive and few people can see the similarity with the original.

Substituting the triangular- by a "pin and hole" connection was the transformation that generated novel designs. So my guess was that substituting the triangular- by a geometry based on blocks (with right angles) should generate new designs as well (see Figure 1, right). This is how Coverho, Coverwe and Coverdia were created. I found Coverho really interesting because contrary to the original pieces from Eight

Houses, in the new pieces the geometry obscures the composing subparts. Again see Figure 4 for the respective pieces.

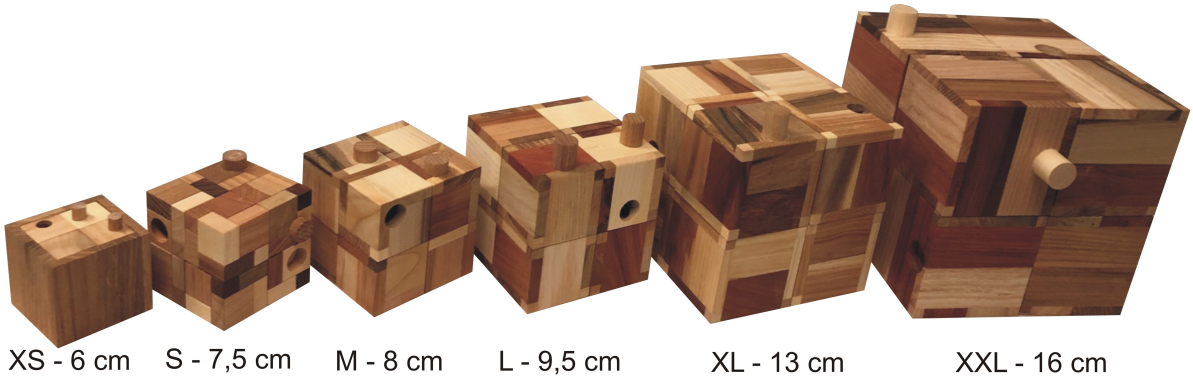

Figure 2. Puzzles in sizes XS-XXL

I enjoyed making these changes. I went from a “triangular“ version to a "pin and hole" version and eventually to a version with blocks. I commercially produced the puzzles in several sizes (XS-XXL), with individual pieces ranging from 2.5 cm to 8 cm (see figure 2) and the XS size packed in a wooden box. For reference the pieces are labeled A, B, C,...H. These markings are a great aid to the solver in identifying the pieces. I also made some unusual bigger versions. One of them for my daughter Ivana where every piece is 30 cm (see Figure 3) . These can be used for sitting or as small tables when 4 pieces are used.

Figure 3. Ivana's Puzzle-Tables

This HoWeDia-project was very satisfying, not only did I create several new and challenging puzzles, but I was also able to present my daughter with unique furnature for her new house.

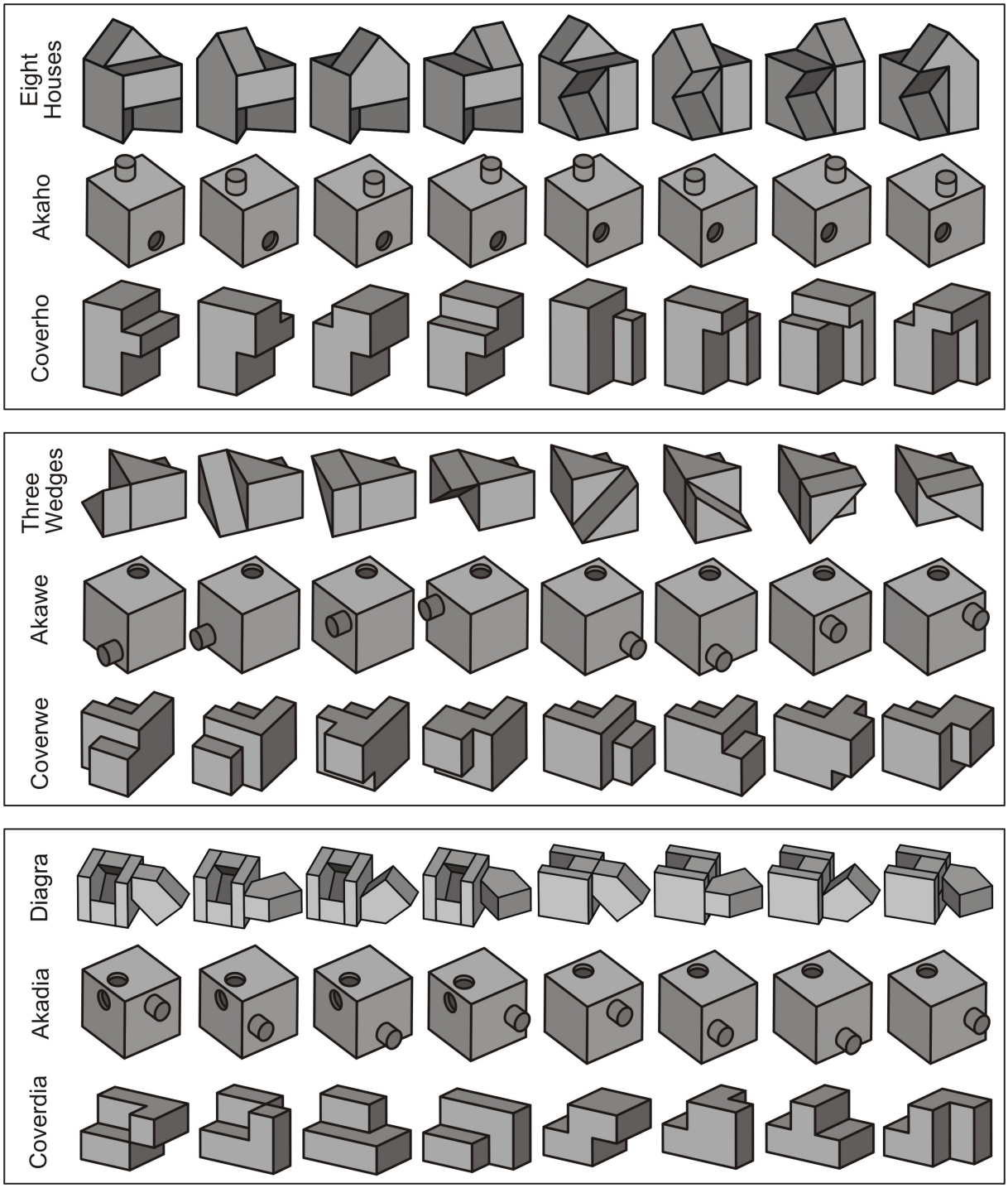

Figure 4. Original pieces and their transformations.

Reference:

[1] Vaclav Obsivac & Theo Geerinck, *Half-cube Puzzles,* CFF 77,pp 8-12, Nov 2008.