

# Reinvent the Wheel

**Cameron Browne, Queensland University of Technology (QUT)**

*This article presents the case that most new games are created from novel variations or combinations of a limited core of fundamental mechanisms, and that reinventing even well-known mechanisms – not always in optimal or expected ways – can provide a rich source for new designs. Mutation and crossover are identified as two common modes of reinvention, applied to rules and equipment.*

## 1 Introduction

MY editorial for the previous issue of *Game & Puzzle Design*, titled ‘Nothing New Under the Sun’ [1], explored the notion that most new games are created from novel combinations of a relatively small core of known mechanisms. If you study any game, you will probably recognise the elements that make it up from previous games, but applied in a new context.

Original ideas that truly transform the gaming landscape are rare [1]. Board game historian Irving Finkel states that the idea of renting out a square (as in Monopoly) was the last ‘momentous’ innovation in board games [2]. However, I would add to that the concept of connection, which has led to hundreds of new games over recent decades that constitute the relatively new genre of connection games [3], and other innovations including cooperative games, deck-building card games, simulation games, and so on.

There are now thousands of game designers worldwide producing hundreds of thousands of new games per year of all types. The design space has been so closely examined and so well trodden by so many inventive minds that it can sometimes feel that the good ideas have already been discovered. This is obviously not the case – good new games continue to be produced – but it is likely that the most useful core mechanisms *have* already been discovered.

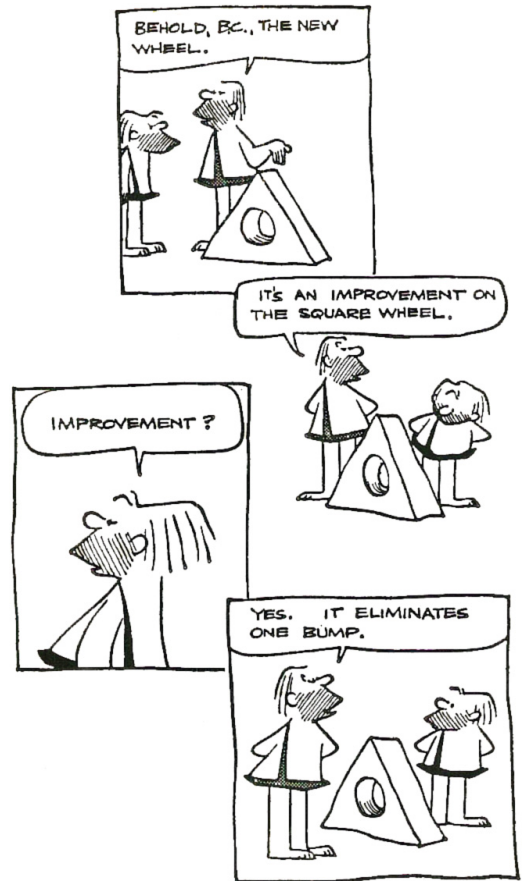
One way to progress is to identify the key mechanisms and refine them to their fundamental forms, applying the typical game designer’s urge for elegance and simplicity [4]. But it is hard to think of simpler forms for the more well-used mechanisms, such as *N*-in-a-row, piece hopping, capture by replacement, trading a card, etc.

A more fruitful way to progress may be to start with mechanisms known to work and to build *away* from them, to find interesting variations nearby in the design space. This process of ‘complexifying’ ideas may run counter to the designer’s desire for simplicity. However, the trick is to look at more complex variations to find something original and interesting, then find the simplest valuable form of these ‘complexified’

variants. In the end, game design is the art of creating complexity from nothing: a Draughts set is just a piece of cardboard and a handful of plastic disks until the rules are added.

### 1.1 Reinventing the Wheel

Figure 1 shows a favourite comic strip from my childhood. It is an episode of *B.C.* by Johnny Hart, in which Thor the inventor presents his new triangular wheel, and describes it as an improvement on the square wheel as ‘it eliminates one bump’ [5].



**Figure 1.** Reinventing the wheel. Reprinted with permission of Ita Hart Trust (all rights reserved).