Nothing New Under the Sun

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T RULY original design ideas that transform the gaming landscape are rare. Almost all new games are created by combining ideas from previous games in novel and interesting ways, in a process of *combinatorial creativity* [1].

The good news is that this relatively small pool of known ideas can be combined in a seemingly endless manner, to create the many fascinating games that continue to emerge. The bad news is that most new games necessarily contain elements that players will recognise from other games, making some designs seem less original than they really are. This Editorial is an appeal for common sense from both designers and players.

Inspiration or Appropriation?

Given a new game, how much should its design differ from its closest contemporary to be considered 'original'? There is no clear answer to this question, and I believe it largely misses the point. As long as designers *credit their inspirations*, and their designs provide some improvement over the prior art, then that would seem sufficient.

Consider the case of Squava,[1] a game that maps the rules of 4-in-a-row game Yavalath verbatim from a hexagonal grid to a smaller 5×5 square grid. This apparently trivial change actually has a tangible effect, as the reduced area and increased 8-connectivity give the game a different character. Some players even prefer it as a 'Yavalath-lite': games are shorter, can be played on standard square boards, and square grids are easier to draw than hexagonal ones. The game's designer clearly states its inspiration – even the name 'Squava' is an homage to its parent – so I have no issue with its status as its own game.

The video game 2048 is a more high-profile example.[2] 2048 was an instant hit upon its release in 2014 and became something of a 'new Solitaire', but drew a vehement backlash by those who decried it as a clone of earlier game Threes. Again, the differences in game-play seem trivial – tiles move as far as possible per push, 1+1 merge while 1+2 do not, etc. – but these combine to give a different character. Another factor is that the author of 2048 nailed the design to make it as easy to play as possible. And again, the author clearly states his credit to earlier games 1024 and Threes, so I have no issue with 2048 standing unashamedly as its own game. Of course, the stakes are higher when millions of players are involved and there is the potential for significant monetisation, and 2048 is often cited as a seminal case in calls to tighten video game copyright laws [2].

Creative Freedom

American novelist Jonathan Lethem observes that the practice of reusing ideas from previous works has always been an accepted driving force in literature and other arts [3]. He extols the virtues of the public commons and the dangers of commodifying creative concepts, which can only stifle the wider enjoyment of the very things that are supposedly being protected. He states:

> *Don't pirate my editions; do plunder my visions.* [3, p. 68].

Copyright should exist to protect the works through which artists make their living, but the ideas they express should be gifts to the world. What if the inventor of Hex had patented and jealously protected the concept of connection in games? This invention would have closed down a whole field of games rather than opening it up.

As an amateur game designer, I can afford to have a *laissez-faire* attitude to this issue. When someone 'borrows' or 'independently reinvents' one of my ideas and releases it without reference, I usually just request that appropriate reference be made. When a Chinese company releases a pirated version of one of my games, I am secretly pleased that there is such a demand for it.

However, unjustified claims of plagiarism are extremely hurtful to game designers. I know designers accused of plagiarism despite clearly crediting their inspirations. I know one accused of plagiarism *in advance*, when one of his games was released in a different form by a more famous designer years later. But I also know designers who deliberately remain ignorant of the prior art so as to not limit their creative options.

With the wealth of information now available online, and the ease with which it can be accessed, there should be no excuse for designers not to be aware of similarities between their inventions and what has gone before. The onus is on designers to check the prior art and cite existing precedents; even if their rediscoveries were arrived at independently, this shows transparency and an awareness of the state-of-the-art, and places the

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[1]https://www.boardgamegeek.com/boardgame/112745/squava
[2]http://gabrielecirulli.github.io/2048/

new work in context. The onus is then on players to appreciate what is being created from a limited pool of ideas, to judge new designs on their merits, and to focus on where they differ from previous designs rather than where they overlap.

This Issue

Most of the papers in this issue highlight the notion of drawing inspiration from prior art. . . as do perhaps most of the papers in all previous issues?

The opening piece by Larry Back, 'Diamond: Improving on a Known Design', describes the process of taking a flawed masterpiece and attempting to remove those flaws. Oskar van Deventer and Igor Kriz then draw on the mathematics of permutation groups as the inspiration for a new type of mechanical puzzle, in 'From Computer Operations to Mechanical Puzzles'. Miguel Marqués describes the difficulties of plausibly modelling basic laws of physics as game mechanisms in 'Physics Laws as Game Rules', and how to capture the very first minutes of our universe in a board game. My own piece 'Make the Design do the Work' illustrates, through example, how games can be designed to minimise the mental effort required by players simply to follow the rules, freeing up their brains for the more interesting task of strategic planning.

Carl Hoff builds on existing work with 'How to Make a Better $3{\times}3{\times}3{\times}3$', in which he literally takes twisty puzzles to a new dimension to reveal another family of variants to be explored. Carl's graphics grace our cover for the third issue in a row. This does not mean that Carl is our new in-house artist, or that the journal has taken a slant towards mechanical puzzles; it is simply a testament to the quality of Carl's illustrations.

Craig Duncan then describes ways to address known problems with three-player games in 'Mitigating Non-Strategic Coalitions', Fred Horn describes 'The Development of a Tangram Family', Daniel Ashlock and Cameron McGuinness outline 'Graph-Based Search for Game Design' with example, and I present 'A Game Design Approach to a Real-World Problem'.

We conclude with a reprint of David Parlett's essay 'What's a Ludeme?', which elucidates the history of this important term. Ludemes are the conceptual units from which games are composed, and constitute the building blocks from which new games are created.

This issue's feature puzzle (shown below) is based on Fred Horn's Gloop tiles. The challenges throughout the issue were generated by computer to guarantee correctness and uniqueness, and hand-tested for deducibility and quality.

As befits this Editorial's theme, I devised this puzzle format of the Gloop tiles specifically for this issue, only to be told by Horn that he had proposed the same format to a games company a month earlier. I take this convergence as a positive sign that the design has some merit.

References

[1] Boden, M. A., *The Creative Mind: Myths and Mechanisms*, New York, Routledge, 2004.

[2] Dean, D. S., 'Hitting Reset: Devising a New Video Game Copyright Regime', *University of Pennsylvania Law Review*, vol. 164, 2016, pp. 1239–1280.

[3] Lethem, J. 'The Ecstasy of Influence', *Harper's Magazine*, February, 2007, pp. 59–71.

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Gloop Challenge #1

Pack the tiles on the right into the grid to form a single closed contour. Gloop is described on pp. 31–32. The bottom row shows one sequence of deductions to solve this challenge.