Talking About Other People's Games

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MANY designers like to talk about their games. There is an element of vanity and self-interest in this, as designers are usually proud of their creations and happy to show them off, and in many cases if the designer does not promote their game then nobody will. But there is also a more pragmatic reason: these are the games that the designer knows the best. In fact, the designer is typically the only person in the world who knows the full story behind each game, from inception to release.[1]

At the same time, many designers are reluctant to reveal the underlying principles that make their games successful. This may be for professional reasons, a desire not to spoon-feed others, or simply an inability to articulate the finer details of the processes involved. In any event, the people who know their games the best are often reluctant to talk about them. This can be a problem for people like me who like to analyse games.

Design Constraints

Looking at other people's games from the outside, we can make some educated guesses about certain design decisions, but these are just guesses. We can of course not deduce what the designer was thinking or aiming to achieve, or know what constraints they were working under.

Such constraints include the desire to work with predefined equipment, such as in Schmittberger's classic *New Rules for Classic Games* [1] which is referred to several times throughout this issue, or to find games for given equipment for economic or ecological reasons, e.g. to reuse offcuts from the manufacture of other games [2]. Other designers constrain themselves by working towards certain game behaviours, although both approaches – equipment-based and behaviour-based – can be seen as two aspects of the same overall design process [3]. Designing under such constraints can focus the search and actually inspire greater levels of creativity, but it can also lead to unaccountable design decisions that would not otherwise have been taken.

What Can We Learn?

So what can we learn by studying other people's games? One of the beauties of many types of games is that they are self-contained entities that stand on their own as works of art, and exist apart from their creators. In a Platonic view of the world [4], games are like mathematical truths just waiting to be discovered, and stand apart from their process of discovery.

The role of the games scholar can be likened to that of the art critic or film reviewer, or commentator on any art form. And like a good piece of art, a good game provides room for study and interpretation. We can deduce certain aspects of other people's games from the qualities they exhibit. But it is almost always interesting to hear designers talk about their *own* games, to get the real inside story.

This Issue

This issue opens with the welcome return of the *Nikoli Logic Puzzles* column, after the recent retirement of long-time Nikoli correspondent Jimmy Goto. We thank Nikoli chief editor Yoshinao Anpuku and translator Ken Shoda for their efforts in continuing the series. This instalment describes 'Herugolf', a pure logic puzzle that cleverly captures the flavour of golf, in a rare case of a successful logical abstraction of a physical game. The designer outlines the process that led from the initial conception of the idea to the final game.

Iasaken, Holmgård and Togelius then describe the use of a deep learning approach for the generation of levels for two recent classic video games – The Legend of Zelda and Super Mario Bros – in their article 'Semantic Hashing for Video Game Levels'. This is the first *Game & Puzzle Design* paper to focus on video games since the first issue, which we hope marks an increase of submissions in this direction.

My paper 'Limping Boards for Games' describes the generalisation of a simple mathematical concept, and how this principle can be usefully applied to the design of game boards. I present several examples of games that demonstrate the benefits of this principle. Contrary to the above Editorial's key point, none of these are games of my own design. But most are games that I have played and studied for many years, and obtained the designer's inside comments where possible.

Carl Hoff continues his investigations into the computer-assisted design of (physical) mechanical puzzles in 'The Complex $3\times3\times3$'. This paper is Carl's most – dare I say it – complex yet, and demonstrates the extraordinary degree of analysis and problem-solving that this particular puz-

[1] I am referring more to games by one or two designers, rather than larger projects designed by committee.

zle has required over many years. There are few other designers who could look at Carl's design from the outside and deduce the steps that led to it, or appreciate the amount of work that has gone into it and continues to go into it.

In 'From Mathematical Proof to Puzzle', Néstor Romeral Andrés describes the genesis of his Gadeiro puzzle from a simple mathematical observation, showing that game designs can occur where we least expect them. This short note proved quite fruitful, providing both this issue's cover image of an infinite Gadeiro series and its 'feature puzzle' (shown below). Each challenge was handcrafted by the designer, and chosen for symmetry and visual interest.

Daniel Ashlock and Andrew McEachern describe their family of CliqueR games in 'CliqueR: A Graph Theory Game'. These were designed to introduce high school and university students to basic graph theory, so have a very mathematical basis. The authors describe a very focussed design process that is typical of developing such 'Games With A Purpose'.

My article 'Reinvent the Wheel' investigates the notion that modern game designers have a limited pool of core mechanisms to work with, and since it is likely that the optimal form has already been found for most of these, then it can be more fruitful to start with known mechanisms and work *away* from them. I offer dozens of examples of games demonstrating this principle, including some of my own.

João Pedro Neto and William Taylor describe different ways to mitigate problems with non-strategic coalitions in 'Games for Three Players', using several of their own excellent board games as examples. This paper complements several other papers on the topic in previous issues by various authors, making this the most popular/urgent design issue among our contributors.

This issue concludes with a revised version of David Parlett's observations on the relationship between chance and skill in games, in 'Some Random Thoughts On Chance and Skill'. Games can involve many different types of uncertainty, and require many different types of skill, and Parlett sheds some interesting light on these distinctions.

References

[1] Schmittberger, R. W., *New Rules for Classic Games*, New York, John Wiley & Sons, 1992.

[2] Andrés, N. R. and Browne, C., 'Eco-Friendly Game Design', *Game & Puzzle Design*, vol. 2, no. 1, 2016, pp. 19–27.

[3] Browne, C. and Colton, S., 'Computational Creativity in a Closed Game System', in *Proceedings of the 2012 IEEE Conference on Computational Intelligence and Games* (CIG 2012), Granada, IEEE Press, 2012, pp. 296–303.

[4] Horsten, L., 'Philosophy of Mathematics', *Stanford Encyclopedia of Philosophy*, 25 September 2007. http://plato.stanford.edu/entries/philosophy-mathematics/#Pla

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Gadeiro Challenge #1

Pack the pieces on the right to fill the shape on the left. Gadeiro is described on pages 39–41.