

Games for Three Players

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Creating suitable abstract games for three players is a hard design problem. When one player gains a lead, the other players tend to cooperate until this lead is pegged back and a new balance is achieved. This article explores the dangers of this behaviour, some simple ways to minimise it in games, and provides examples of abstract board games that exploit the proposed design strategies.

1 Introduction

AMONG family and friends, it is common to make a group around a table to play board games. In this age of e-mail and online servers of various sorts, it is becoming increasingly easier and more common for many players to join to play games via electronic media. But considering abstract games, most are for two players. Some, especially chess variants, are extended to four players. Very few have good three-player versions. Why is that?

Moving from two-player games to multi-player games creates a social environment which allows alliances, threats, betrayal, and a raft of group behaviours that go well beyond the mere dictates of rules. Some games, which would have no interest with just two players, may flourish with several players; however, the opposite is also true for some games.

1.1 Petty Diplomacy

We are referring to games in which players interact with each other, whether it be directly or through the pieces on the board. This excludes games like Snakes & Ladders where pieces share a board but do not interact. In these games, the main problem is the management of alliances. Multi-player scenarios are subject to a phenomenon that can ruin many promising games, called the *petty diplomacy problem* (PDP) [1]. In its form known as the ‘tall poppy effect’, as soon as a player gains a lead, the other players cooperate to cut them down, then shift alliances with a new leader develops.

One way to address PDP in multi-player games is to design the game with an even number of players – typically four – and assign pre-designated teams (e.g. many card games and four-player Chess). Another is to increase the number of players – typically to an odd number such as five or seven – and allow multiple alliances to occur (e.g. Risk). But the problem is exacerbated for three-player games.

1.2 The Kingmaker Effect

Another problem with multi-player games is the *kingmaker effect*, in which a player about to lose is able to dictate which opponent will win the game. If the number of players is three, then defeating one player means granting victory to the other. So in a three-player game, kingmaking is a powerful bargaining tool. Also, with such a small set of players, the suicide strategy may not be entirely effective, and the attacked player may become so weak as to attempt to inflict the suicide/murder pact on another player. The cycle continues and the game dynamic is compromised.

1.3 Revenge Rules

Multi-player games are also subject to problems of spite and revenge. Straffin, in his article on a three-player version of Hex [2], states the McCarthy Revenge Rule to handle such cases: *If I am about to lose, I will inflict as much damage as possible on the player who put me in this position.* This balancing mechanism is widely used and has a rough justice about it, and may be relevant to simulation board games such as Diplomacy and Monopoly.

However, it is difficult to enforce in practice, and sometimes both opponents can be equally to blame for a player’s disastrous position. Further, Browne demonstrates by example that actually enforcing the opposite rule – hurt the player who has hurt you the *least* – can actually work much better in reducing non-strategic coalition problems in some cases [3].

We feel strongly that such off-the-board bargaining should have no place in abstract board games. Friendly reminders from one player to another, that the third is about to become unsailable unless a certain action is taken, are probably unavoidable. But the open use of threats and revenge to induce such action is unpalatable.