A Theory of Board Game Design: Definitions of Terms

Posted by Shannon Appelcline (http://boredgamegeeks.blogspot.com/2006/03/theory-of-board-game-design.html)

Broadly I think a game can be defined using the following elements: *components*, *activity*, *decisions*, *luck*, and *victory*.

Components

Four types of components define most games: environment, tokens, markers, and randomizers.

Environment is the board upon which a game is played, though it may actually be a tabletop, a score sheet, or something stranger. You can have abstract environments (like a chess board), representative environments (like most Euro boards), randomized environments (like *Settlers of Catan*), evolving environments (like *Carcassonne*), and more.

Tokens are pieces that are placed upon that environment. They differentiate themselves from environment by the fact that they're dynamic. They enter play, leave play, move, or in some other way change. Broadly they're often "pawns" and they're defined by who they belong to, whether they move, and what they depict. You can have personal tokens, shared tokens, public tokens, dynamic tokens, static tokens, representative tokens, and many combinations thereof.

Markers are game elements which exist outside of the environment and which effectively replace a tic upon a piece of paper. They usually help you keep track of some quantity, such as dollars. You can have scoring markers (VPs, money), trading markers (goods), and more.

Randomizers are game elements which also exist outside the environment, and which in some way introduce luck into a game. See the discussion on **Luck**, below, for different types of randomizers, but the most common types are random randomizers (dice, spinners) and arbitrary randomizers (cards). Randomizers can sometimes combine with other types of components, such as the *Carcassonne* tiles, which are arbitrary environment and the *Diceland* dice, which are random personal tokens.

Tokens and environment tend to be the two more important types of components. By cross-referencing them you can usually say a lot about a game. For example, you could define *The Settlers of Catan* as using "personal representative tokens on a randomized environment" while some *The Seafarers of Catan* scenarios instead have "personal representative tokens on an evolving environment". Which is a fancy way of saying you have settlements and cities in both, but in one the board is randomized, but set at the start of the game, while in the other the board is randomized and can grow during the game.

Activity

I define activity as the mechanics that describe component interactions in a game. In other words they're the rules that say if you're allowed to change one marker into another ("wood for your sheep?") or if you're allowed to remove someone else's token ("die evil red army!").

I'm not entirely happy with my activity descriptions from my original article, but I still think they inevitably are classified by different ways that you move your components around. Following are some off-the-cuff definitions that I'm using for the moment.

Token activity might include: *token conflict*, where tokens directly affect each other, like *Risk*; *token movement*, where you're moving your tokens, often to some deliberate endpoint; the simpler *token placement*, where you're placing tokens on-board from an off-board position; or *token removal*, which is often a type of token conflict, but with a predefined result, such as when a dragon eats a meeple in *Carcassonne: The Princess & The Dragon*.

Environment activity usually centers on *environment exploration* (and/or *environment placement*), where you're trying to figure out what's in an environment and/or take advantage of it, such as in *Anno 1503* or *Goldland*. It could also include *environment conflict*, if you're having environment in some way fight each other, though I can't immediately think of any games which meet that definition.

Marker activity includes almost any type of logistical game and most resource-management games. I usually classify them as *marker collection* and/or *marker placement*. *The Settlers of Catan*, *Parthenon*, and many others feature one of these as their main game activity.

Inevitably the activity within a game is defined by *activity points* (or "action points", to use their more common name), which define how many activities you can take during your turn. There are two degenerate cases which actually define most activity: where you have 1 AP, and can thus do just one thing; and where you have infinite APs, and can do do as many things as you want, subject to resource exhaustion. These cases usually don't actually define their activity as using APs. However, many gamers' games (particularly those by Kramer & Kiesling) make their APs explicit, and give you 2-10 to spend on a turn.

Decisions

Decisions are what make activity interesting, because they offer different choices for you to make. You can usually define activity as a set of *decision sets*, each of which has two or more*options*.

Decision sets can cause Analysis Paralysis, which can be the downfall of a good game, and thus it's important to constrain them and thus make them more manageable. Some of the constraints I suggested in my original article include "constraint by turn phase", "constraint by game phase", "constraint by ability", "constraint by needs", "constraint by attractiveness" and "constraint by results".

The purpose of all of these constraints is the same: to reduce an infinite set of options to decisions sets which have 7 or less options each (using the psychologist's "Rule of 7" as a good thumbnail for what an individual can easily concentrate on). It's much preferred to have a 5-option decision, followed by another 5-option decision, then to have a single 10-option decision, and that's where constraints come in.

Luck

Luck is primarily used to determine the outcome of an activity. As I mentioned recently, in my second article on luck, I define four broad categories of luck.

Randomness is essentially selection with replacement. You get a random result from a set that never changes. These are dice.

Arbitrariness is essentially selection without replacement. You get a random result from a set that shrinks as you select from it. These are cards.

Chaos is the way that other players affect you & your plans.

Uncertainty is centered on hidden information, which is to say things that you don't know, but that other players do, which could have affected your decisions.

Dungeon Twister was a game that struck me last year for its claim that it has no luck. But it does: primarily *chaos*. Your placement of characters and items and your opponent's selection of the same can dramatically benefit one of you or the other through no real strategy. There's also some *arbitrariness* related to the placement of the room tiles. If my opponent's Dragon ends up on a big open square where it can flame lots of nearby rooms, and mine ends up on a square that's surrounded by walls no matter where he goes, then my opponent got lucky and I didn't.

Which is a long way of say that no dice doesn't mean no luck.

Victory

Just as activity is defined by activity points, victory is defined by victory points (and thus*victory markers*). Some games define a single victory point and some define five or ten required to win, but most constantly give you VPs throughout the game, and you call that a "score". Perhaps more confusingly some games use victory points as a resource within the game too (such as in *Oltremare* and many others where victory is money).

Victory Points are usually given out for component interactions (or, to put it another way, for certain types of successful component activities). Broadly, VPs are awarded for: *token creation, destruction, collection, or movement*; *environment creation, destruction, control, or exploration*; or *marker creation, destruction, or collection*.

As with activities, my definitions of victories have changed a bit since my original articles, and they're probably not quite settled yet.