

Randomness in CCG

This essay will focus on the notion of randomness in games. Most people are familiar with the notion of randomness, from the roll of a dice, or the toss of a coin; however, in games it presents itself more intriguing and in different levels from Random computing, or map generation to Random Number Generator. Randomness can be described as an unorthodox cure of boredom and repetitiveness but to what effect on competitiveness and fairness? We will try to answer that and more with all the little-known aspect of randomness; from its variety of implementations to its outcomes.

Randomness is apparent in all collectable card games (CCG) such as Magic the Gathering (1994), to recent games, namely Pokemon and Yu-Gi-Oh, which between them have generated 5 billion dollars of revenue to date. For the purpose of this essay, randomness will be discussed through the game of Hearthstone, one of the giants in the new frontier of digital CCG (online matching and ranking). Hearthstone is derived from the World of Warcraft series, from the creators Blizzard.

The essay will explore different types of randomness in different genres in comparison to Hearthstone as a CCG game. With worldwide tournaments and many more dedicated competitive players mastering a title in this genre, CCG randomness is never more questioned, nor is its implications and impacts argued.

Randomness ensures that a game plays out differently each time (Felder, 2015). According to Elias (2018) it is critical that the lower ranked players can play with the top players. From such gameplay we will add fun, variety and freshness to the gameplay, which is in line with the main objective of the game designer Engblom (2017) when designing Clash Royale.

All games have a level of uncertainty according to Salen and Zimmerman (2004). Uncertainty can be described in two levels, the 'macro-level' which relates to the ultimate outcome of the game, and 'micro-level' which is the actual operation of chance that occurs at isolated moments in the game system such as random number generators (RNG) or effectively randomness.

However, Salen and Zimmerman (2004) observe that all uncertainty must incorporate meaningful play through effective decision making such as the card to be played, the relationship between a game decision to a game outcome. This refers to Richard Epstein's (1995) theory of degrees of

uncertainty (Salen and Zimmerman, 2004) which has three levels, those being; Certain outcome, completely predetermine (no fun to play), Uncertainty (not knowing the odds) and Risk (can calculate precisely the uncertainty a known probability of what could happen) most games have a combination of risk and uncertainty (Salen and Zimmerman, 2004).

Hearthstone finds itself using a combination of uncertainty and risk. Hearthstone is a CCG game; it is a player versus player, where each player will start with a deck of cards from their collection and create pre-match. They will then draw a card randomly during play at each turn. Players can only place a card into the game depending on the mana they possess and the winner is the player who can manage to get his opponent (hero) to zero or below health points.

In 'Rules of Play', games with no randomness can evoke the feeling of randomness by a sheer number of interlinked decision making, resulting in unpredictable play; hence, feel random although each decision was a meticulous strategy play. Hearthstone, our case study, can perform such phenomena in the later stage of the game with multiple series of attack and power up of spell. One can wonder how a minion reaches an attack, quadruple its original attack statistic; for example, by being next to a card that offers +x attack to all surrounding cards. In card games, it is also important to take into consideration the element of probability in randomness.

Hairer (2018) discusses the use of probability as "Most of the time we use probability theory, it's not because we are dealing with fundamentally random process. Instead, it's usually because we don't possess all the information required to predict the outcome of the process". Probability in accordance with 'Rule of Play' is in the micro-level in two-fold. On the one hand, chance element introduces randomness and chaos leading to uncertainty, and on the other hand, a thorough study of mathematics of probability reduces wild unknown to known risks, increasing the overall certainty of the game.

Probability and micro-level uncertainty are increasingly important in a dice-rolling game or in our case, card-shuffling game. For example, the key as suggested by 'Rule of Play' is in understanding how probability relates to a player's decision and outcome. In Hearthstone a player can pick up two of the same card as a maximum, increasing the probability of drawing the card but not to break point by having an unlimited pick of the same card. Effectively

choosing two of each card throughout his/her deck, doubling the chance of implementing a chosen strategy, but alternatively limiting their options and response to opposition attack and/or defence. Probability mitigates itself a combination of known and unknown; however, some games can represent themselves as pure chance.

In 'Rules of Play', the authors talk about meaningful play through seemingly a game of chance such as lottery-based games. In our chosen CCG game Hearthstone, it can seem to have the molecules of lottery-based games; pick a series of cards and then wait to see them come up. At first glance it is a game of pure chance with great uncertainty; however, the game is well balanced out by the certainty that all the cards the player have chosen will be drawn giving enough time. We can see this in play in tournaments where players usually end up with 7-8 or more cards in hand, patiently waiting for the right set of cards to implement a devastating combination of cards for a match winning strategy. Chance itself can be manipulated by players.

In 'Rule of Play', it is mentioned in the system of uncertainty, the strategizing chance, when the use of chance becomes strategic in which experienced players manipulate uncertainty itself during a game. In Hearthstone, our chosen CCG game, the procedure used to determine which player goes first is balanced out by offering the second player a 1 mana card. However, most players preferred to go second and effectively using the 1 mana card as a spell card in itself. Hearthstone designers attempt to balance out, backfired; however, not to an extent of breaking the game. But nevertheless, players have found a way of strategizing chance.

Veering off from 'Rules of Play', now that we know that all games have certain levels of randomness. Randomness can be viewed by some as not having any decision making, when in fact, randomness incorporates a great deal of decision making resulting in meaningful play.

Many regard chess as the ultimate strategy game, and countless books have been written on how to play it; champions of this game are well known and respected, even bringing head-to-head two hostile nations, the USA and USSR in 1947. However, what chess does is it has a set of moves that each player must already be familiar with; hence, the staggering number of books written

on the subject. As Will Luton (2012) in 'What Magic: The Gathering Can Teach Us' published in Gamasutra allude to is "The human mind can't comprehend the complexity of cause and effect in chess, so it goes about seeking patterns in order to model and understand it. When the mind uses these models to apply a strategy that generates a win condition, it provides a sense of satisfaction and exhilaration as a reward".

What that does is separate the beginners to even mid-level players and make them unmatchable. If one of the players is unfamiliar with the basic strategy moves, even a full understanding of the game rules will be at the mercy of the mid-level player. In a randomised structure such as Hearthstone, the beginners have a chance to win against tournament players by sheer luck of the draws, or by spell card, drastically changing the course of the game. Elias, S. (2018) argues that all players lose is accuracy and skill testing, it might take more games to identify the better player and over time the best player will have the advantage. Same with PUBG the best shooter will ultimately win more matches.

Hearthstone and other CCG are very well-balanced games in contradiction with Keith Burgun (2018), game designer in 'Three Types of Bad Randomness and a Good One'. Burgun talks about four types of randomness created by four ingredients: Output randomness: random information that is brought into the game after a decision is made e.g. critical hit in a roll of dice precision. Input randomness: random information that is brought into the game before a decision is made. Random map generation variable: resources delivered to players from one match to the other which is not the same as from a match-to-match. Finally, uniform randomness: the same access to resources through the length of the game. Combining these four factors creating input/uniform, output/variable, input/variable and output/uniform. According to this theory Hearthstone is a variable/input, meaning variable resources are delivered differently from one match to the other combined with the after delivery decision making of random information, which Burgun (2018) argues as "people really underestimate the degree to which the meaningful sequence of events in a match is damaged by variable input randomness" with the advice "never do it". My counter argument is the following; if it is such a bad design, why do more and more genres take these elements of drawing randomness or variable/input to their arsenal?

Red Hook studios co-president Tyler Sigman (2017) 'Darkest Dungeon: a design post-mortem' spoke in GDC about the acquiring system of heroes randomised, to allow a similar excitement of a loot drop comparing his game multiple RNG to a 'poker' like game; despite doing the right thing -planning, levelling up etc. you, the player, still may lose referring to poker 'bad beats'.

We see many importations of this game genre card drawn system in other types of genres, as shown above in Role-playing games. But, even in first person shooters with the on-trend battle-royal mode like in PUBG Mobile, a multiplayer FPS where a single player or team mode are at scrums with other players to be the last one or team standing. However, you enter the world without any weapon, armoury or extras (med kit etc.); basically, you enter with the 'clothes on your back' and are left to scrummage the rest. The weapons, armoury and other items are scattered randomly all over the world, effectively reincarnating the card drawn system with great popularity, ranked five in the top grossing in Google play and Google play game of the year at the time of this writing.

To conclude, from this essay we learn that there are many ways to gauge randomness and that all game genres have a level of randomness for different reasons. In our chosen game and genre to an extent, is to offer players new challenges, to apply their wits, accumulate knowledge beyond a set of decks and explore, discover through play other combinations and methods. It is about the tempo of the game, keeping the game fresh and new, beyond just new cards releases. It is about finding the perfect opponent rather than the perfect teammate to allow you to execute that carefully laid out plan you been saving. It is about learning, practicing, putting a plan together and watch it shredded to pieces by others simply by the delay of one card.

Finally, it is all about creating your own stories with heroes and minions and sharing it with others. Randomness allow all this to take place. It is never about the right way to play as we seen in other strategy board games, it is about the way that the dice turn, as no two games are alike and the one that can have fluid yet versatile, even predict opponent play, may just win.

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