

College Guild

PO Box 696, Brunswick, Maine 04011

Logic, Puzzles, and Games

Unit 5 of 6

Game Design

Welcome back to Logic, Puzzles, and Games.

We all have a long list of games we have played in our lives. Some games do not hold our interest, but others we return to time and time again. What makes a game popular? What makes certain games stand out to each of us? The structure of a game sets the stage for competition. If designed well the player gets the opportunity to show their talent, creativity, and progress. The many decisions that go into making a game fuel its enjoyment and longevity. In Game Design you will encounter a thoughtful list of what every game needs that will help organize these thoughts. Afterwards you will reflect on the existence of luck in the games we play and in our lives. How does our mind explain away both the good and bad fortune that we come across each day? We hope this is a refreshing look at the games we play, and who knows maybe it will inspire you to make your own game. After all each and every game had a creator that pondered "What if?"

Glossary of Terms: In order of appearance

Inertia - the tendency of an object or thing to remain either at rest or in motion

Confirmation bias -the tendency to seek out, interpret, and remember information that validates an existing belief

Superstition- an unfounded belief that supernatural forces shape our fate based on rituals or traditions that have no scientific effect on our lives.

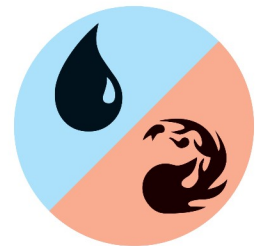
Game Greatness

There are dozens of games that are tremendously popular, some spanning generations of play. The list includes board games like Monopoly, dice games like Yahtzee, card games like Go Fish, sports like soccer, and video games like Mario Kart. To begin this unit on game design, we will be looking at the components of a game and how those components make the game a success.

1. Write down a list of all the games you have played in your life that you can remember. After a few minutes stop and separate your list into different categories. You can group these games any way that you choose. Which of these categories do you or did you find most enjoyable to play?

2. Name a popular game that you have played many times over. Describe the game as if you were explaining it to someone who knows nothing about the game. In your description tell the person what features make the game so attractive to play again and again.

There is a science to creating a game that thrives and sells. Finding the next big hit involves many considerations and revisions. We can look to Mark Rosewater for help seeing what makes a game a hit. Mark was Head Designer for the card game Magic the Gathering for more than twenty years when his daughter's fifth grade teacher asked him to come in as a guest speaker. The class was about to work on a history project where the students had to create a game that helped the players learn about



the American Revolution. Rosewater reflected on his work over the years and came up with the following presentation. The features on this list can be used to rank games on their quality and give insight on how to improve a game.

Ten Essential Elements that Every Game Needs (According to Mark Rosewater)

1. A goal or goals: There has to be a point that motivates the player.. The goal of the board game chess is to capture the opponent's king while defending your own king. The challenge of accomplishing this by balancing offensive and defensive moves is a huge reason the game has been played for centuries.
2. Rules: A list of what players can and cannot do must make reaching the goal a challenge. There should be obstacles to overcome, as Rosewater puts it, "restrictions breed creativity". There is a delicate balance here. If the rules are too complicated it will turn people off from trying to learn the game. If the rules are too simple the players can lose interest in the game. Strategy grows from these rules and this propels someone to put their own spin on how to play.
3. Interaction: Adapting your strategy or approach to the game after an opponent's turn creates excitement and makes players want to return to the game for another go at it. Reacting to a surprise strategy or learning your opponent's playing style inspires innovation, and it can feel pretty good to stump someone else when it's your turn..
4. A catch up feature: Why should you want to continue the game if you are so hopelessly behind? A quality game has an element that could pull victory from the jaws of defeat. This could ruin the game if it is too common however. A well-played game should be rewarded most often over a random occurrence that "lucks" another player into a win.
5. Surprise: A dull and predictable course during a game needs a spark that forces the players to reexamine their play style. One way to make a game more thrilling is to add the element of mystery. Card games are very strong in this category due to the way cards are revealed throughout the game. These games are taken to a whole other level when the decks used are customized such as in Magic the Gathering, Pokémon, and Yugioh.
6. Strategy: One thing that gets players to return to a game is the chance to improve on their performance. Being able to take what you have learned from a loss or even a win and continue to perfect your game plan is a rewarding feeling.
7. Inertia: This may be an unfamiliar word to you. **Inertia** is a scientific word that Rosewater uses to describe how a better game has a somewhat consistent duration. Once the game has begun it is set in motion, and the players in the game, although they might want to try to stall the game, are subject to the game itself moving along to a finish. Building in a structure that ensures that the game will end in a reasonable time helps potential players make a decision on if they should play or not. Most team sports have a game clock so that the games will end in a predictable amount of time.
8. Fun: If the game is strong on most of the things on this list it probably qualifies as being fun. Games that motivate a person to return without hesitation are likely the most fun.
9. Flavor: Appearance matters. If the game is artistic or pleasing to the eye then it is more inviting and can immerse you deeply into the game. The personality of the game is more than just appearances. A flavorful game contains little touches displaying the designer's attention to detail. One could almost hear the game's creator say, "Oh, I'm glad you noticed that." Monopoly has tremendous flavor with a colorful board, silver game pieces, fake money, silly card illustrations, little houses and hotels.
10. A hook: What about a game makes someone want to try it or in most cases



buy it? Catching someone's attention might not be all that easy to do. Think of the hook as a free sample of food that is given out at a shopping mall. It is that tiny bite that creates a first time customer. The restaurant hopes that this will blossom to a weekly customer, or even a lifelong customer. For games, the hook would be a way to introduce the game without having to explain all the rules.. "You have to get this ball through that hoop", is all that needs to be said to get someone to give basketball a try.

- 3. Take the game or sport you wrote about in the first question and give it a score from 1 to 10, with a 10 being the highest for each of the ten elements from Rosewater's list. Write down each of these individual scores. Add the scores from each element together to give the game a total score. A total of 100 would be a perfect total score.**
- 4. What was one element that your game or sport was strongest in? What made the score so high for this category?**
- 5. What was one element that your game or sport was weakest in? What ideas do you have on how you could change the game or sport that would improve it? How might changing the game in these ways backfire, making the game worse?**
- 6. Which elements from Rosewater's list do you feel are most important for a game to have? Which do you feel are least important? Do you think there are any elements that are missing? Explain.**
- 7. Take another game or sport and score it just as you did in question 2 to come up with a total score. Do you believe this way of measuring a game's success is effective? Explain.**

Recent Creations

People can be satisfied with what they know and like, but at the same time thirst for something different. Games and sports are no different. In 2015 when the city of Savannah Georgia lost its minor league baseball team, they scrambled for a way to keep their community entertained and invested in baseball. Their solution was a rebranding of the sport calling it "Banana Ball". This was not a brand new game. It is still a baseball game with pitching, batting, and catching, but with new rules that aim to make the game more 'appealing'. The rules below - along with a cast of colorful players/entertainers and a cult following - create a spectacle that is a blend of baseball, professional wrestling, and a circus. Players and coaches dance, wear capes, walk on stilts, ride unicycles, and wear costumes all throughout the game. The players are encouraged to make trick plays, such as doing backflips, throwing the ball to each other through their legs, and catching the ball barehanded. These are not part of the scoring but the league keeps track of the number of these gimmicks that each player makes. Banana Ball Rules include:



- If you outscore your opponent for each of the first eight innings you get a point for your team. In the last inning, however, each run counts as a point. This makes it so that the games have closer results, making it more unpredictable on which team will win.
- There is a game clock so that no games last longer than three hours
- No bunting. You must swing the bat to hit the ball. If you bunt you are out.
- You are allowed to steal first base at any time.
- Walks are now called sprints, instead of walking to first, the batter can now advance as many bases as they want, until all the players on the opposing team touch the ball.
- If a fan catches a foul ball the batter is out.

The success of the league was fueled by even more thinking outside-the-box. The affordable game tickets included food and beverages leading to increased merchandise sales. There was a notable sea of yellow in these sold out games, as fans of all ages showed their support for the team that started it all, the Savannah Bananas. The league's season is known as a world tour and has expanded to include six teams with a total of ninety games held in North America. Additionally tens of thousands of dollars have been donated by the league each year to communities and non-profit organizations through its sales and fundraisers. This example shows the benefits of placing trust in ingenuity.

8. Use your imagination and give a play-by-play broadcast describing the theatrics and athleticism that you are witnessing on the field during one of the games between the Savannah Bananas and their rivals the Party Animals. Feel free to come up with something outrageous that might be part of the spectacle that the fans at this family event would enjoy.

9. Take another sport or game and give it the “banana ball” treatment. Come up with at least three new rules for it and explain why it could improve the game. Keep your focus on making improvements based on one main objective, making it fun.

Lucky Duck

In Mark Rosewater's Ten Essential Elements for Game Design, two of the elements, the “catch up feature” and the “surprise” both provide excitement that come from the unexpected. In sports, a mistake or a bad bounce can have the players and fans shaking their heads in disbelief, cursing their bad fortune. Of course the players on the other team are proclaimed to be lucky, or “to get all the breaks”. We call these unusual, remarkable, heartbreaking, and extraordinary events luck. Whether it is real or imagined, luck is woven into the games we play and more importantly our lives. The following one paragraph story about two kids learning to play a game probably sounds familiar.

Mike and Sully are twins that grew up together. One day their aunt teaches them how to play the game checkers. The boys sit down to play against each other and Mike wins the first four games. Sully says that Mike “just got lucky” with such a winning streak. He agrees to play one more time telling Mike that “your luck will run out”. Sully wins the next game, boasting, “See I told you!”.

10. If you believe that luck exists then it is easy to claim that Mike somehow was granted “beginner's luck”, and it propelled him to four wins right from the start, then his luck “ran out”. For someone who doesn't believe in luck, explain how the concept of luck helped Sully cope with losing and ultimately win.

It is safe to say that Sully believes in luck and because he won the game, it likely makes him believe even more strongly in luck. This is an example of what psychologists call **confirmation bias**. Simply put, Sully is now even more deeply invested in a potentially false belief due to it happening again. A person might avoid driving on the highway because one time they got stuck in a traffic jam traveling on it. This perception that the traffic is always bad there gets reemphasized every time they don't travel on the highway and arrive at home. They also might hear on the radio that the traffic is bad and automatically assume that the report must be about that particular highway. By following this tendency they are constantly choosing a longer way home and are wasting hours of their life.

11. Would you consider prejudice a form of confirmation bias? Explain.

12. Hailie wishes Josh “Good Luck” before the championship game. If neither person truly believes in luck why wish it at all? What could people say in place of good luck if they wanted to wish them well?

“The behaviors we do in rapid succession—from gambling to overeating to overbuying to binge-watching to binge drinking and so much more—are powered by a 'scarcity loop.' “ -Michael Easter

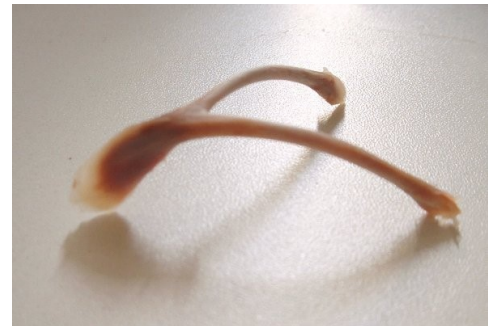
Believing in luck can interfere with our judgement, especially when our minds are engaged in an activity that offers an opportunity, which is followed by an unpredictable reward, which is then followed immediately by another opportunity. In his book [The Scarcity Brain](#), author Michael Easter refers to this cycle as “The Scarcity Loop”. Humans are conditioned to crave and biologically receive a surge of the chemicals produced in our brains when placed in loops of opportunity, event, opportunity. These chemicals give us pleasure but not entirely happiness. When we find ourselves trapped in this cycle of searching and wanting more, our minds falsely interpret and predict events. These traps are wrongly seen as luck affecting our lives when in fact it is randomness and slim chances at play.

- **Gambler’s Fallacy:** The erroneous belief that a win is overdue after a string of losses.
- **Hot Hand Fallacy:** The opposite of the gambler’s fallacy, where a player believes a winning streak will continue.
- **Illusion of Control:** The belief that skill or ritual can influence uncontrollable, random outcomes.
- **Availability Bias:** Placing too much weight on recent or memorable events (like a big win), ignoring events from farther back in time.
- **Apophenia:** The human tendency to seek patterns in random data, creating a false sense of predictability

13. Tell us of a time when you or someone you know has fallen prey to one of the false beliefs above. It can be embarrassing, but it is human nature to get caught up in making a bad decision.

Perhaps the biggest indication that someone believes strongly in the power of luck, are superstitions that they follow. A superstition is a practice or ritual that is used by people to influence the good and bad events in their life. Here are a few popular superstitions and their probable origins:

Breaking a wishbone. The idea of drying out a collarbone from a turkey and breaking it with someone is traced back almost 3000 years ago to an ancient civilization that later became part of the Roman empire. They held beliefs that birds could predict the future and had rituals and customs to interpret a bird’s actions to help them make important decisions. The wishbone was believed to hold a sacred power and once a bird was eaten the bone would be passed around so that the goodness could be shared. Eventually it came under the ownership of one person who would carry it with them for its mystical power. So why break the wishbone? Well, the Romans are believed to have started that custom. Since bones were in high demand, a broken bone could split the luck among more people.



Walking under a ladder. This superstition has several possible origins, but once again it is believed to have started long ago, even farther back than the wishbone one. The ancient Egyptians had a fascination with triangles seen in the pyramids. A ladder leaning against a wall formed a triangle and they believed that walking under it would disrupt the power it contained, bringing bad luck. You might be wondering how to restore the power. It is believed that going back through the ladder is enough, or an even more bizarre method is to cross your fingers until you see a dog. Perhaps this superstition has continued to last as it wards off to children to stay away from the ladders when adults are working. There are other examples of these superstitious “codes of conduct” such as not whistling while walking in the woods. In Appalachia this is considered bad luck as people are told it will attract unwanted spirits. Consider the more natural unwanted visitors during a night’s walk in the woods as you stroll along whistling about sounding like a wounded prey to a bear or mountain lion!

14. Make up an origin story for any two of the following superstitions. Be as practical or creative as you wish. If you know of a superstition or follow one yourself, you can choose that instead.

- Hanging up a horseshoe above a door brings good luck.
- Knocking on wood three times to prevent something bad from happening
- Tossing a pinch of spilt salt over your left shoulder cancels the bad luck
- The number 7 is lucky
- The number 13 is unlucky

The entire concept of luck is born from unlikely events that occur. So long as you don’t believe in fate or destiny, luck can be explained and even calculated using mathematics. In the last unit we will be sending you on a brief trip back to school to examine how randomness can be determined and communicated using fractions and percents. We call the next unit Probability.

Self Reflection

15. Do you think luck is real? Write enough to convince someone that it is or that it isn't.

16. What was the most interesting thing you learned about in Unit 5: Game Design?

Remember: First names only & please let us know if your address changes

<https://magic.wizards.com/en/news/making-magic/ten-things-every-game-needs-part-1-part-2-2011-12-19>

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