Week 12 - Game Economies and Balance

The notion of "game balance" and different takes on the subject; some basic ways of looking at game economies, and thinking about balance in complex asymmetrical multiplayer environments (such as fighting games, MOBAs, CCGs, team shooters like Overwatch, MMOGs, etc)

POSSIBLY DUE (depending on schedule): Digital Game Pitch Presentation
POSSIBLY ASSIGNED (depending on schedule): Digital Game Concept Document – see next week for details
ASSIGNED: Final Project

Lecture / Discussion: Week 12

You may be doing this lecture in the middle of the pitch presentation project, or right after it finishes – but the pitches usually take one full class.

- What do we mean by "game balance?"
  - Some people think it's a state: the game is balanced or not balanced
  - Some people think it's a process: the game is always "being balanced" and moving towards greater balance, through the actions of both creators (tweaking the game, changing things) and players (finding new strategies, altering the meta)
  - Others (a subset of the second group, usually) think "balance is longevity" – the longer your game manages to last without being changed, the more balanced it is. But that's also stasis!

- There are different kinds of "balance"
  - Economic – how fast are resources moving through a system? How long until it reaches total disequilibrium – meaning perhaps that one player has won or lost?
  - Difficulty – how hard is the game? Is it too hard or too easy, or just right... for a particular player, group of players, kind of player?
  - Strategic – are there dominant strategies? Everyone picking the same weapon or race, because it's too overpowered? Completely dominated strategies – choices that nobody would choose if they want to win, and only use to be odd, shocking, trolling?
  - Tuning – adjusting numbers to get the feel just right, a very fine-grained kind of balancing (as a tiny hammer to a sledgehammer, or a putter to a nine-iron) often for physics, or difficulty, or economies
  - Communities – is the mix of players right to create a good competitive atmosphere? Are players "in the same league?" (This is why leagues exist.) How do you create good matchups between opponents (ladders, ranking systems, matchmaking, etc)

- The complexity of balancing a game with a ton of choices and components – like a fighting game, or a CCG such as Magic. At Wizards of the Coast, designers (coming up with new card ideas) and developers (balancing and tuning) coexist as separate roles.

Exercise: BATTLE BATTLE (90 minutes)
Optional Exercise: Spreadsheet Design

Assignment: Final Project

Either this week or the previous one, it can be good to tell students to bring their ideas for a final project, to see if anyone wants to team up. The basic rule is "bring in a concept, or talk to some former teammates about whether you want to continue an earlier project together, or do neither of those and be prepared to join another project."

The new idea for the final project this year is that it's a continuation of an existing project. This might be something they worked on in this class, or that they had from previous experience designing games. Non-digital is best, unless it's already prototyped.

Rules for picking groups:

- If you want to continue an existing idea, it is courteous to ask your former teammates if they want to work on it OR if they would be OK with you working on it without them.
- Ideas can be "forked" – even if we worked on it together, one of us can make a next version pursuing a direction or changes they like, and others can pursue a different version of the same base game we worked on together.
- Because of this – and the fact that it's a requirement to continue to evolve, iterate, and change your game – it's also courteous to let a former teammate continue with their fork.
- If a former teammate has a strong feeling that they really don't want you to continue a project without them, it's courteous to listen to their wishes – but you do not have to. You can always fork one of your projects.
- It's always OK to ask someone to be in a group with you – if you want to work with someone, or would appreciate their talents and perspective on a project, or you like their ideas, you should ask them! By the same token, you should be OK with being asked.
- It's ALSO always OK to say no when someone asks to group with you. There are many reasons someone might say no – they most likely want to work on something else, or already have a group, or want to work with a particular set of people. Try not to take it personally!

Lab: Week 12

This lab may be a continuation of the pitch exercises from last week if that project is still going on, or working on the final project if that's been assigned – one or the other, basically. It can also be a good time to assign the concept document (see next week).
Exercise: Battle Battle

Eric likes to frame exercise as one where the students are a balancing team for a bigger game. They are working at a company and their job is to balance the characters.

Setup

- You'll need a lot of six-sided dice (at least a few per student) and this PDF: BattleBattle.pdf – these cards get used up a lot, so it may be necessary to print more and cut them.
- Print one of each character type and have them spread out on a central table.
- Have enough vanilla characters, rules, and blank characters (from the end of the PDF) so that each group of 2 can get one of them
- Students split into groups of 2
- Each group gets 1 Vanilla character + 1 other character, plus 4d6, tokens, and a writing utensil

Round One: BATTLE BATTLE QUALIFYING ROUND

- Lead them through one game of whatever non-vanilla character they chose vs. the vanilla character, step by step. They mark wins and losses on the non-vanilla character sheet, with check-marks or Xs at the bottom.
- We discuss the idea of balancing against a vanilla unit. Why would you do it?
- Then we talk about how they will balance their character - what criteria to use. We usually came up with 4 criteria:
  1. power level
  2. fun factor
  3. simplicity/elegance
  4. flavor that matches the character
- They can have 2 or 3 battles against the Vanilla, only changing 1 or 2 characteristics each time. Then they put the character back in a central area and take a new one.
- They are allowed to make notes on the back explaining each generation of changes for future designers.
- The main thing to keep in mind is to keep the students moving! They may want to iterate multiple times on a character. Tell them that the goal is to play through as many characters as possible.

Round Two: BATTLE BATTLE GRAND MATCH-UP

- After balancing 2 characters in this way, they're not allowed to use Vanilla anymore. So they begin balancing 2 special characters against each other. You go and get a new character – including a character other groups have used!
- One of their characters has to have at least 2 tick marks (2 battles) in the Wins/Losses row at the bottom, in either wins or losses (combined). This way, they are always rebalancing at least one character that others have already tried to balance.
- We discuss the challenges of balancing this kind of game in which there is a lot of chance and characters that will never be fully balanced against each other.
- And we brainstorm ways to change the game to accommodate this kind of unbalance.
- Some of the ways might involve changing the game design to allow for unbalance (i.e. each player has a team of characters so it is OK if some always beat others... or simplifying the number and types of characters)
- Others are methods for achieving balance, such as a big spreadsheet of every character vs. every character, or trying to abstract some kind of power level, or having AI play each other
- But every technique has its problems. There is no perfect solution to this problem!

Round Three: BATTLE BATTLE NEO GENESIS

- The final part is for them to make their own characters. They can use any size dice for HP and for their battle die. (This might be too much for over-eager complexity-happy undergrads – NC) Start with a name/theme and then build from there.
- They balance them against Vanilla, at least a couple matches. The goal is BALANCE, not to make a super-powerful character.
- Then they fight each other. Try and have at least 3 matches against other newly created characters. It's OK to fight vs. Vanilla and tweaked stock characters.
- On the back of each character sheet, list wins and losses – but list the HP of the winning character, whether you won or lost.
- Have everyone fight the exact same number of matches.
- At the end of the exercise, add up the HP total – the lowest number is the winner, because that character has had the closest matches.
- There are ways to cheat this system – for instance, a character that beats people by losing all its HP, or by setting opponent HP and its HP to 1 (a la Pokemon Fear) – and smart students will anticipate + find these. Worth talking about!

Exercise: Spreadsheet Design

For lab or class – could be run by TAs, although it's nice to have an instructor review work.

- Explain Google spreadsheet basics
- Part 1: making a deck
  - first, brainstorm a game theme, name cards that could be in this game. They might be enemies, allies, units, weapons, houses, clothing accessories, etc.
  - decide which of these cards will be for the early, middle and late game: this is a game of progression!
  - also decide which will be "small" and "medium" and "big" – in terms of cost, effect, difficulty, scale, whatever makes sense
  - give them some stats – no need to design a full system, but have a rough idea – and just start by saying what stats are involved!
At least three numerical stats.
- show how you can keep track and balance these categories
- then talk about VALUE – a balancing idea. Can you extrapolate from stats to a value? How much is a particular card **worth** – it depends on the rules of the system!

Optionally: show a spreadsheet from a real game (Eric has one for Losswords)

**Readings: Assigned Week 12, Due Week 13**

Readings about rules design are assigned if doing the "communication & documentation" class – otherwise see Week 13 for big multiplayer readings.

- Rob Daviau, "Design Intuitively" from the Kobold Guide to Board Game Design: [Kobold_Book_Design_Intuitively.pdf](#)
- Mike Selinker, "Writing Precise Rules" from the Kobold Guide to Board Game Design: [Kobold_Book_Writing_Precise_Rules.pdf](#)

**Quizzes: Week 12**

Naomi, Fall 2015: [NC-Fall2015.quiz-week12.docx](#) (covers Advanced Game Design reading)

**Lecture Slides: Week 12**


[IntrotoGameDesign.Week12-Balance.pptx](#)
[ IntrotoGameDesign.Week12-Balance.pdf](#)