

What is a Game?



Brent M. Dingle, Ph.D.
Game Design and Development Program
Mathematics, Statistics and Computer Science
University of Wisconsin - Stout

2015
BMD

See also references at end of slides (if any)

A Definition

- A Game is
 - a **play activity** with **rules** that involves **conflict**
- Problem?
 - It says nothing about how to design a game

Formal Elements

- Perhaps easier to discuss a game in terms of its *component parts*
 - rules
 - resources
 - actions
 - story
 - ...
- These may also be called “*formal elements*” of a game

How to Find the Parts

- Consider options

Definition 1

- A game has “ends and means”
 - an objective,
 - an outcome,
 - and a set of rules to get there
 - » David Parlett

Definition 2

- A game is
 - an activity involving
 - player decisions,
 - seeking objectives
 - within a “limiting context”
 - » Clark C. Abt

Definition 3

- A game has six properties
 - it is “free”
 - playing is optional and not obligatory
 - separate
 - fixed in space and time, in advance
 - has an uncertain outcome
 - is unproductive
 - generates neither goods nor wealth
 - is governed by rules
 - is “make believe”
 - not real life, but a shared separate reality
 - » Roger Callois

Definition 4

- A game is a
 - voluntary effort to overcome unnecessary obstacles
 - » Bernard Suits
- *NOTE: this definition implies*
 - *voluntary*
 - *with goals*
 - *and rules*
 - *“unnecessary”*
 - » *implying inefficiency caused by rules on purpose*

Definition 5

- Games have 4 properties
 - Closed formal system
 - formal meaning defined
 - Involve interaction
 - Involve conflict
 - Offer safety
 - as compared to what they might fully represent
 - » Chris Crawford

Definition 6

- Games are a form of art
 - which the participants (players)
 - make decisions
 - to manage resources
 - using game tokens
 - in the pursuit of a goal
 - » Greg Costikyan

Definition 7

- Games are a system in which
 - players engage in
 - an artificial conflict
 - defined by rules
 - that results in a quantifiable outcome
 - i.e. there is winning and losing
 - » book: *Rules of Play* by Katie Salen and Eric Zimmerman
 - » which also lists all the above definitions

Common **Elements**

- Games (implicitly) have **players**
- Games are an **activity**
- Games have **rules**
- Games have **conflict**
- Games have **goals**
- Games involve **decision making**
- Games are **artificial, safe, outside ordinary life**
- Games involve **no material gain** on the part of the players
- Games are **voluntary**
- Games have an **uncertain outcome**
- Games are a **representation** or **simulation** of something real but are themselves **make believe**
- Games are **inefficient**
- Games have **systems**
- Games are a form of **art**

Observations on: **Goals** Part

- Object of the game is what?
 - Players are trying to do what?
- **Goals can help tie the parts of a game together**
- Details Vary
 - Some Generic Options
 - Capture/Destroy
 - Control Territory
 - Collection
 - Solve (like Clue)
 - Chase/Race/Escape
 - Build

Observations on: **Story** Part

- Games should have a **story**
 - Narrative of the game
 - Theme of the game
 - **Binds events, goals, objectives, parts together**
 - Moves player towards the completion of the game
 - Options:
 - Designer driven
 - Emergent based on player choices and actions
 - Linear
 - Non-Linear

Observations on: **Rules** Part

- Rules and Mechanics of a game
 - are tricky
 - are subtle
 - need details
 - must be tested
 - using mockups and prototypes
 - by ‘real’ players and designers and developers
 - **can bind parts of the game together**
 - **should create/support player expectations**

Observations on **System** Part

- Games have/are Systems
 - a set of connected things or parts forming a complex whole
 - a set of principles or procedures according to which something is done
 - an entire group of parts that work together
- **A “good” game ties all of its parts together**

End Point of Element Parts

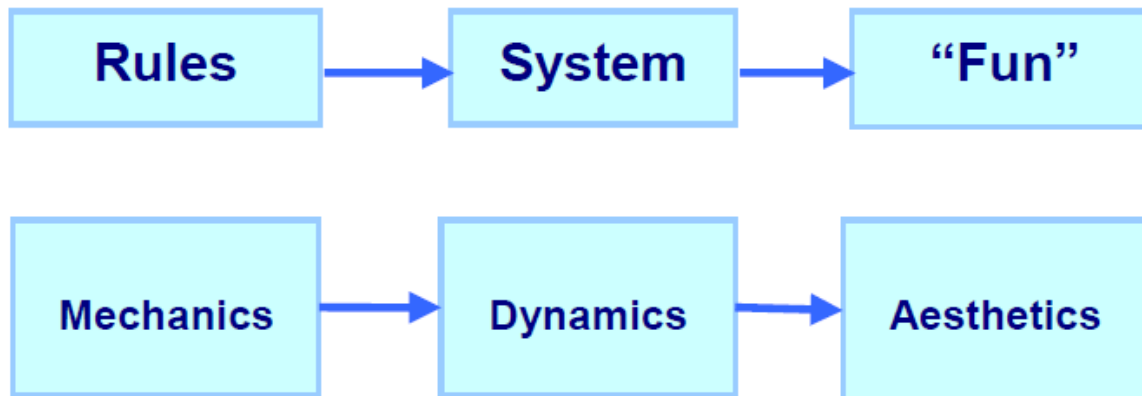
- Game Design is Designing a System of Elements
 - Each element may influence another
 - Changing one element may change the entire game
 - The combination of elements forms a complex whole
 - A system may be a system of systems
 - a game containing games
 - The game/system state is dependent on the state of its elements
 - Allows for emergent behavior (from a simple rule set)
 - Difficulty in predicting
 - Player choices are variable and affect states
- mechanics yield system dynamics*

Recall

- Designing a game is designing a system
- Game design and development is iterative
- Games can be described as
 - the successive layering of constraints
- Games have elements

Another Set of Parts

- It is possible to look at a game in different ways depending on how you define “parts”
- The Mechanics, Dynamics, Aesthetics **(MDA) Framework**
 - Has received a lot of attention from industry professionals
 - **Shows the designer perspective AND the player perspective**
 - How each “sees” and relates to the same game parts
 - **Aids the process** of designing and developing a game



- *Defined in 2001 by LeBlanc, Hunicke, and Zabeck*
 - <http://www.cs.northwestern.edu/~hunicke/MDA.pdf>

Mechanics = Rules

- **Mechanics are the rules of the game** at the level of data representation and algorithms
- These Formal Rules define
 - What is allowed (and not allowed)
 - How is the game setup
 - What actions can players perform
 - What goals/objectives can/should/must be achieved
 - When does the game end
 - Who wins, who loses, what is scored
 - How are rules enforced
 - ...

Rules

Mechanics

Dynamics = System (in motion)

- **Dynamics describe the run-time behavior** of the mechanics acting on player inputs and each others' outputs over time
 - Describe **the “play” of the game**
 - What strategies/behaviors emerge from the rules
 - How do the players interact with the environment and each other

System

Dynamics

Aesthetics = “Fun”

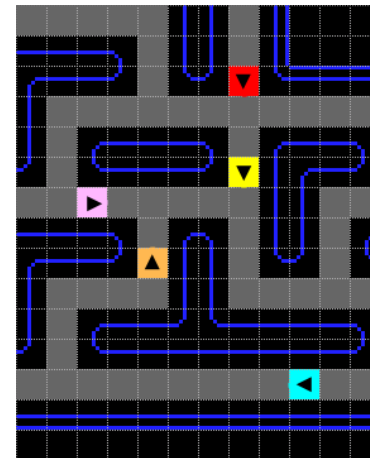
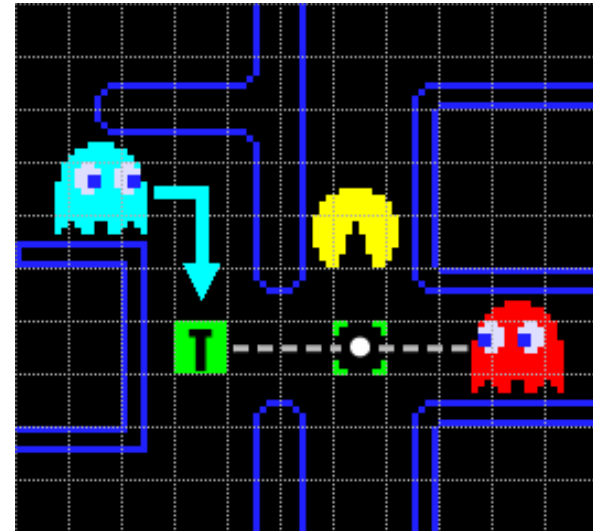
- **Aesthetics describes the** desired **emotional responses** evoked in the player when interacting with the game system
 - Not the visual elements of the game
 - But rather the player experience of the game
 - enjoyable, fun, frustrating, boring, interesting...
 - emotionally or intellectually engaging

“Fun”

Aesthetics

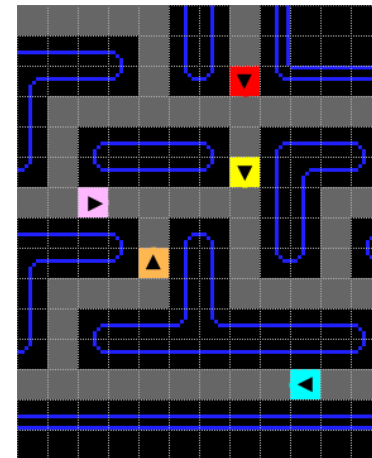
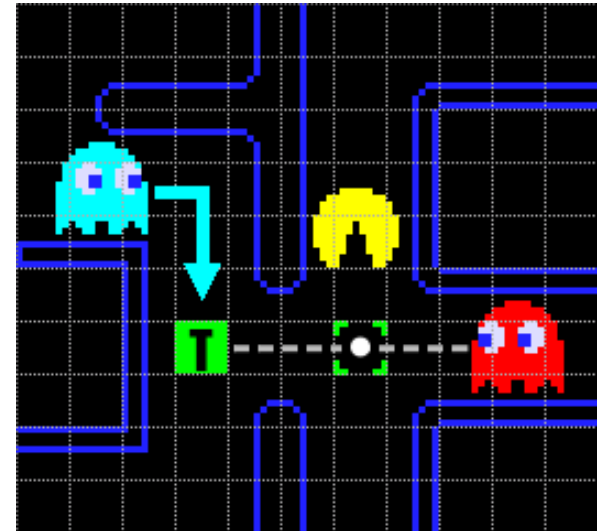
Example: Pac Man Mechanic

- Ghost's pathfinding logic is defined by rules
 - Each ghost has a unique seeking **mechanic**
 - Blinky targets the tile player is in
 - Inky targets the end of the vector that
 - starts at Blinky,
 - goes through two tiles in front of player
 - is twice as long as distance of that tile to Blinky



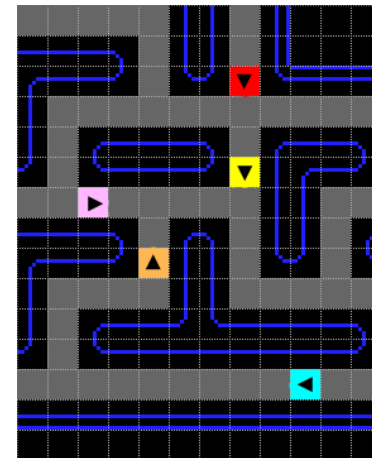
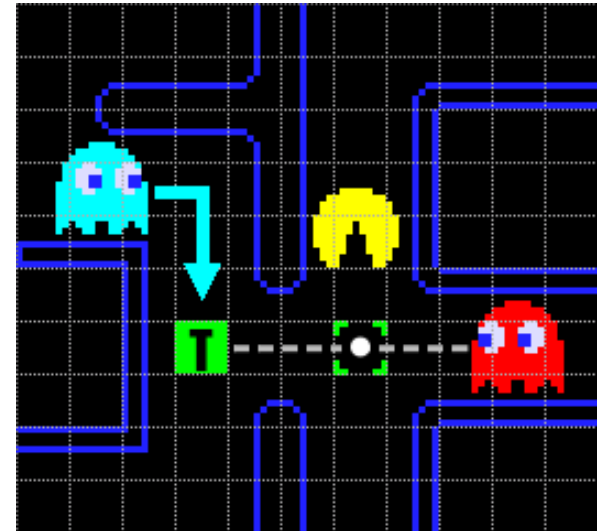
Example: Pac Man Dynamic

- The rules create a **dynamic**
 - where the player is trapped by Blinky and Inky



Example: Pac Man Dynamic

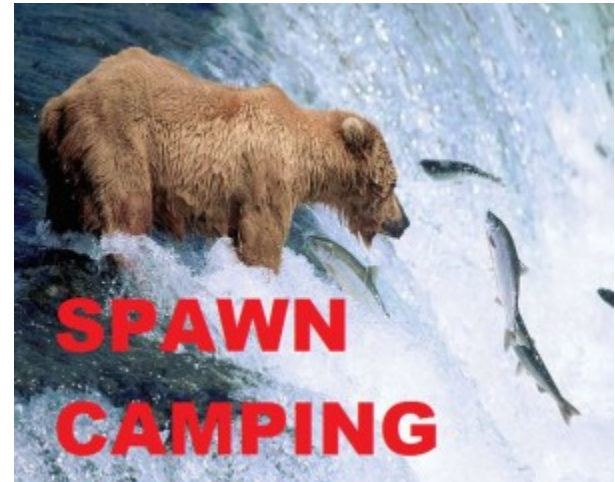
- The enemy dynamics challenge the player
 - creating an **aesthetic** of fun and excitement



Example: Spawn Points

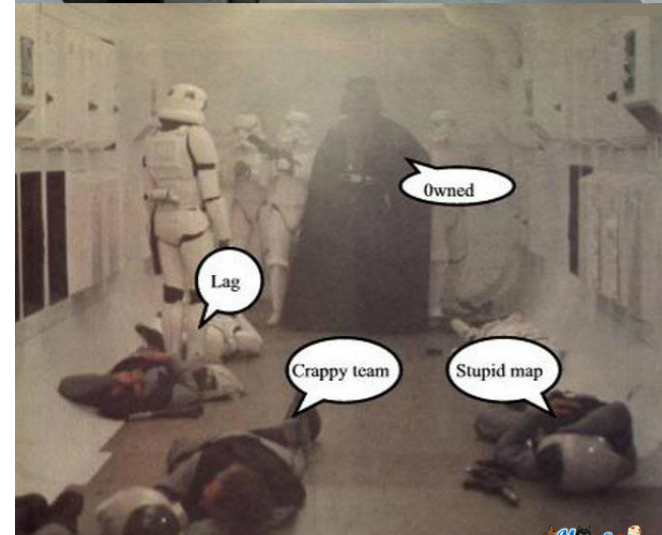
- First-Person Shooters often have a “Spawn Point”

Mechanic



Example: Spawn Points

- Leading to the **dynamic** where a player may sit near a spawn point and take out players as they respawn

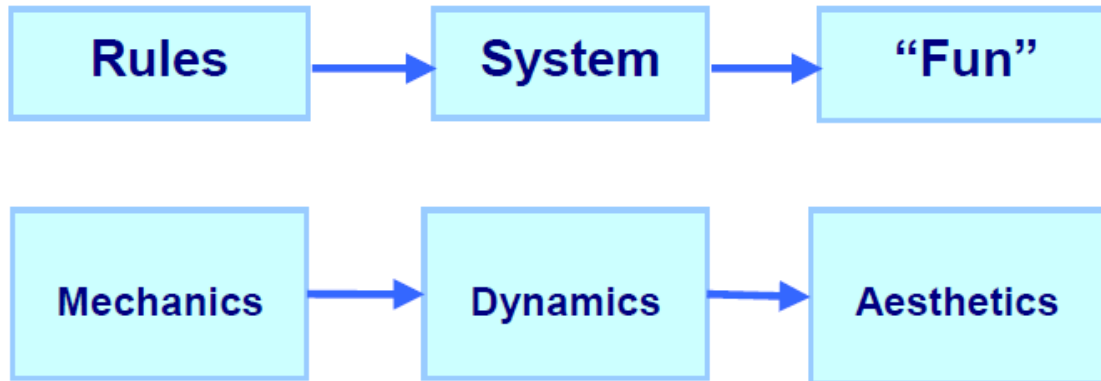


Example: Spawn Points

- Leading to the **Aesthetic** of Player Frustration



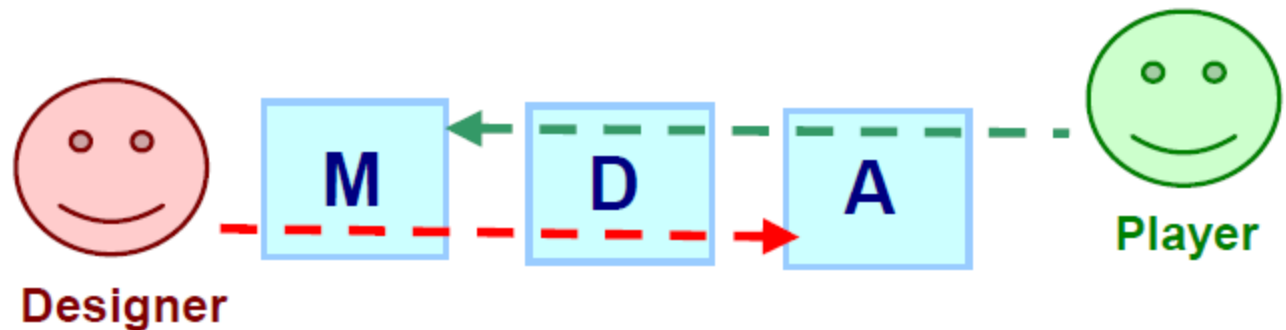
Order of Thought



- This is the order a Designer will often experience/plan the game
 - Designers control the mechanics
 - Mechanics generate dynamics
 - Dynamics generate aesthetics
- Designers often work outward
 - design the mechanic to generate the desired aesthetic

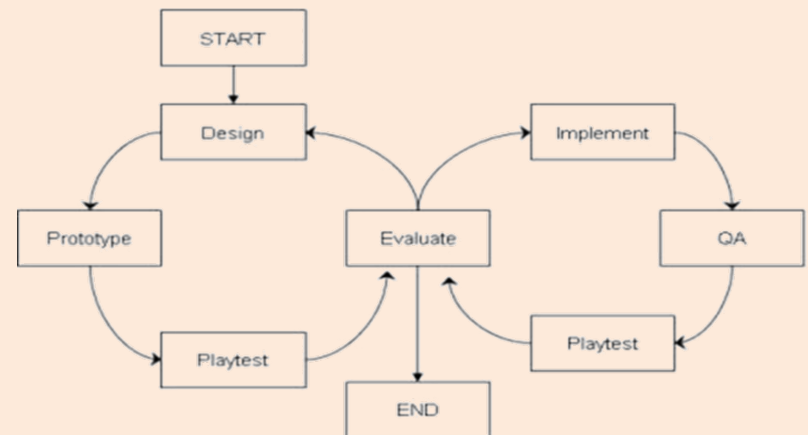
Player View

- Players see things in reverse order
 - Aesthetics set the tone
 - which is created from observed dynamics
 - which is controlled by operable mechanics



End Summary

- Games are composed of elements/parts
- Rules are a major part of a game
 - Designers create rules
 - Rules create gameplay
 - Gameplay creates player experience
 - A small rule change may have enormous (or no) effect
- Play Testing is critical
 - Test early → mockups, prototypes
 - Test Often
 - Evaluate
 - Improve
 - Iterate, Iterate, Iterate
 - From “Success” to “More Success”



Questions?

- Beyond D2L
 - Examples and information can be found online at:
 - <http://docdingle.com/teaching/gdd450/>
- *Continue to more stuff as needed*

References

- Some material in these slides was derived/based on material from:
 - Ian Schreiber, Game Design Concepts
 - <https://gamedesignconcepts.wordpress.com/>
 - Released under a Creative Commons Attribution 3.0 U.S. License
 - <http://creativecommons.org/licenses/by/3.0/us/>
 - Matthew Gallant, Mechanics, Dynamics & Aesthetics
 - Blog, August 21, 2009
 - <http://gangles.ca/2009/08/21/mda/>