Computer Games 2013
Game Design

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Sources

K. Salen, E. Zimmerman, Rules of Play Game Design Fundamentals, MIT Press 2004 (if not otherwise noted)

Iterative Design

- Play-based design approach
- Not purely theoretical
- Typical for paper & tabletop games

Iterative Design

- Prototyping as early as possible
  - after 20% project time at least
  - not visual, but interactive
- Prototype is
  - played
  - adjusted
  - evaluated
  - refined

Example: Pago

Iterative Design

Why is it important?

- We cannot anticipate a game in advance.
- Is the game accomplishing its design goals?
- Do players understand what they are doing?
- Are they having fun?
- Do they want to play again?

Core Concepts of Game Design

- Meaningful Play
- Design
- Systems
- Interactivity

Meaningful Play

Meaningful play is the goal of successful game design

- *Meaningful* w.r.t. the relationship between
  - user actions and
  - system outcome

Meaningful Play: Examples

Elefunk: Building a bridge for elephants

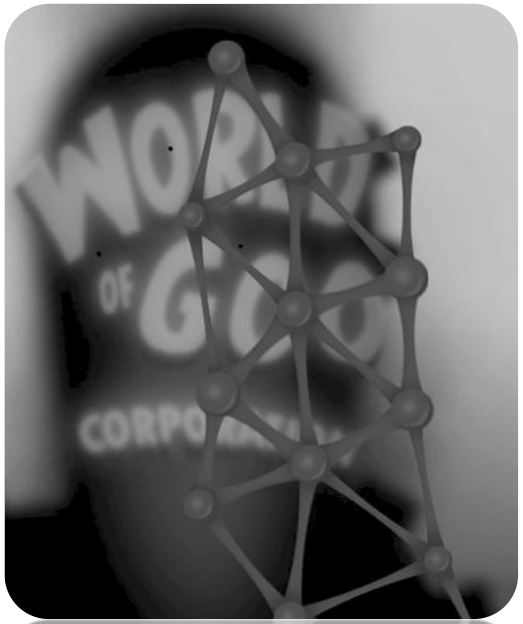
- User builds bridge
- Elephant starts to walk
- Bridge
  - breaks
  - doesn‘t break

http://youtu.be/q8C2o7jwqrI

Meaningful Play: Examples

World of Goo: Building with „goo“

- User builds structure
- Structure wobbles
- Type of wobble indicates instability
- Users can react



Meaningful Play: Examples

RPG – feeding the avatars

- Do I see if they are hungry?
- Do they just drop dead on starvation?

Strategy – mini maps & events

- Do I see if I am attacked outside my map section on the mini map?

Meaningful Play: Examples

The Walking Dead (ttg)

- Dialogs have effects
- Effects are displayed

Trailer: http://youtu.be/fhL776xz9YU

Play?

Meaningful Play

Descriptive definition

Meaningful play emerges from relationship between player action and system outcome. Meaning resides in the relation between action and outcome.

Meaningful Play

Evaluative definition

*Meaningful play occurs when the relationships between actions and outcomes are **discernable** and **integrated** in the larger context of the game.*

Meaningful Play

- Discernable relationships
  - perceive outcome of an action immediately
- Integrated relationships
  - outcome of an action is woven into the game system

Meaningful Play

Designing a successful game requires to understand the principle of meaningful play.

Design

Design is the process by which a designer creates a context to be encountered by a participant, from which meaning emerges.

Design: Example

World of Goo

- Player is in a world, in which
  - goo can be used to build structures
  - goo needs to „rescued“
  - environment & goo characteristics pose obstacles to construction

Design: Semiotics

- Semiotics is the study of *meaning*
  - investigating how signs represent or denote
- Signs to designate objects & ideas
  - A sign represents something
  - Signs are interpreted
  - Meaning results when signs are interpreted
  - Context shapes interpretation

Design

- Design creates meaning
  - expressed by signs
  - shaped through context (not the sign itself)
- Game designers create systems, which
  - are a context for signs
  - provide meaningful play

System created by game design …

- Stacking (Double Fine)

- See http://youtu.be/S3l5Rhtamhs

System

A system is a set of parts that interrelate to form a complex whole.

System

- Objects
  - elements, parts, variables of a system
- Attributes
  - properties of elements & system
- Internal relationships
  - relations among the objects
- Environment
  - context surrounding the system

Systems

Games systems can be framed as

- Formal systems
  - mathematical, logical
- Experiential systems
  - based on interaction with the players
- Cultural systems
  - cultural references, interrelations

Systems: Chess

- Formal system
  - Objects
    - pieces on the board
  - Attributes
    - rules for each object
  - Internal Relationships
    - spatial and strategic relationships
  - Environment
    - just the actual play for formal systems

Systems: Chess

- Experiential system
  - Objects
    - two players (chess as interaction between players)
  - Attributes
    - pieces players control & state of the game
  - Internal relationships
    - interaction (strategic, emotional, social, psychological)
  - Environment
    - board, pieces, players, immediate environment

Systems: Chess

- Cultural system
  - Objects
    - the game of chess itself
  - Attributes
    - designed elements of the game and when, how and why the game was made and used
  - Internal relationships
    - links between game and culture (e.g. black & white, king)
  - Environment
    - culture itself in which the game is played

Closed vs. Open Systems

- Formal systems
  - closed
- Cultural systems
  - open
- Experiential systems
  - closed around players & game
  - open as influenced by the outside

Interactivity

What is interactivity?

… interactivity means the ability to intervene in a meaningful way with the representation itself, not to read it differently.

src. A. Cameron, Dissimulations: Illusions of Interactivity, 1995, http://mfj-online.org/journalPages/MFJ28/Dissimulations.html

Interactivity: Multivalent Model

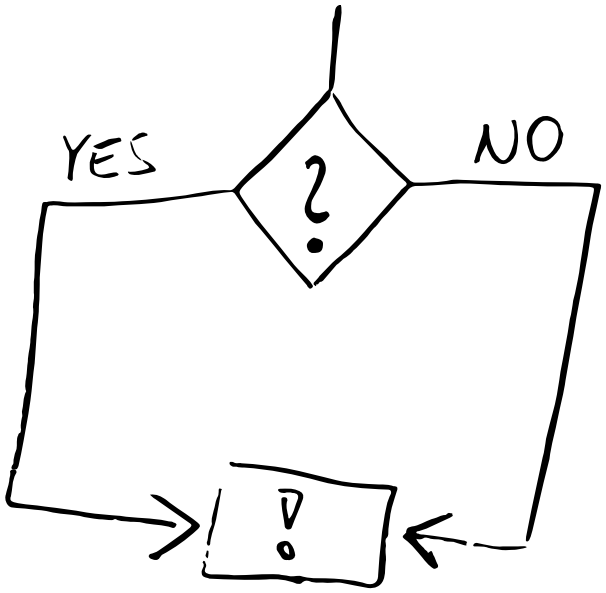
- Cognitive Interactivity
  - interpretive participation
  - psychological, emotional and intellectual participation
- Functional interactivity
  - utilitarian participation
  - functional use like buttons, readability, response time

Interactivity: Multivalent Model

- Explicit interactivity
  - participation with designed choices and procedures
  - clicking links, moving objects with the gamepad, pressing button on the guitar controller
- Beyond-the-object interactivity
  - participation within the culture of the object
  - fan communities, interaction outside the system

Interactivity

- Game design focuses on explicit interactivity
  - How to design meaningful choices?



Interactivity
Meaningful Choices

Role-Playing Game: Example I

- DM: You are at a fork
- P1: I‘m heading left
- P2: I‘m heading right
- DM: After a while of walking your paths join again.

Interactivity
Meaningful Choices

Role-Playing Game: Example II

- DM: You stop at a door made of blinding light.
- P1: I put my dagger into the light
- DM: It turns to dust
- P1: I put my knife into the light
- DM: It turns to dust
- P1: I put my Mithril sword into the light
- DM: It turns to dust too
- P1: Why??? It’s made of Mithril!

Interactivity: Choices

- Micro choices
  - moment-to-moment interactivity
- Macro choices
  - long term progress
- Consider example “Tekken”
  - Choice of character is macro choice
  - Choice of next combat move is micro choice

Designing Interactivity

- Basic unit of designed interaction
  - action > outcome unit
- 5 stages of action > outcome events
  (1) What happened before the player was given the choice?
  (2) How is the possibility of choice conveyed to the player?
  (3) How did the player make the choice?
  (4) What is the result? How will it affect future choices?
  (5) How is the result of the choice conveyed to the player?

Designing Interactivity Examples

- Feeling as if decisions are arbitrary
  - Game suffers in stage 4?
  - Is there an effect in the system?
- Not knowing what to do next
  - Game suffers in stage 2?
  - Are choices presented to the player?

Designing Interactivity Examples

- Loosing a game without knowing why
  - Game suffers in stage 5?
  - Has the result of choices been presented to the player?
  - Example: environmental influence in an RPG
- Not knowing if an action has an outcome
  - Game suffers in stages 3 and 4?
  - Either action was not taken or it doesn‘t affect the system?
  - Example: motion game

Storytelling

- Basic outline of a good story
  - Create a hero/ine
  - Create a goal
  - Model the steps between start and end
- Example: Super Mario
  - Hero: Mario
  - Goal: Rescue princess
  - Steps: Level your way through challenges
  - http://youtu.be/4TdczoetXk4

Bioshock Infinite

Cyberpunk 2077

- Auf Basis „Neuromancer“ (Gibson) & Cyberpunkt RPG
- http://youtu.be/P99qJGrPNLs

Metro Last Light

- Basierend auf Roman von Dmitry Glukhovsky, „Metro 2033“
- Live Action Trailer: http://youtu.be/mON5WmA5REk
- Gameplay Trailer: http://youtu.be/Zinq8ZcCksg

Storytelling in games

- Example: Fallout 3
  - Hero: Vault 101 dweller that escaped
  - Goal: Find father
  - Steps: Quest to get information on whereabouts of father
- Discuss: Unreal Tournament vs. Heavy Rain

Storytelling as USP

- Telltale Games
  - Monkey Island, Wallace & Grommit, Sam & Max, Walking Dead
  - Buy IP and create short episodes
  - Focus on storytelling
  - Engine is developed “along the way”

Src. *Connors, Dan (Telltale Games); “What Television Can Learn from Episodic Gaming” GDC Europe 2009*

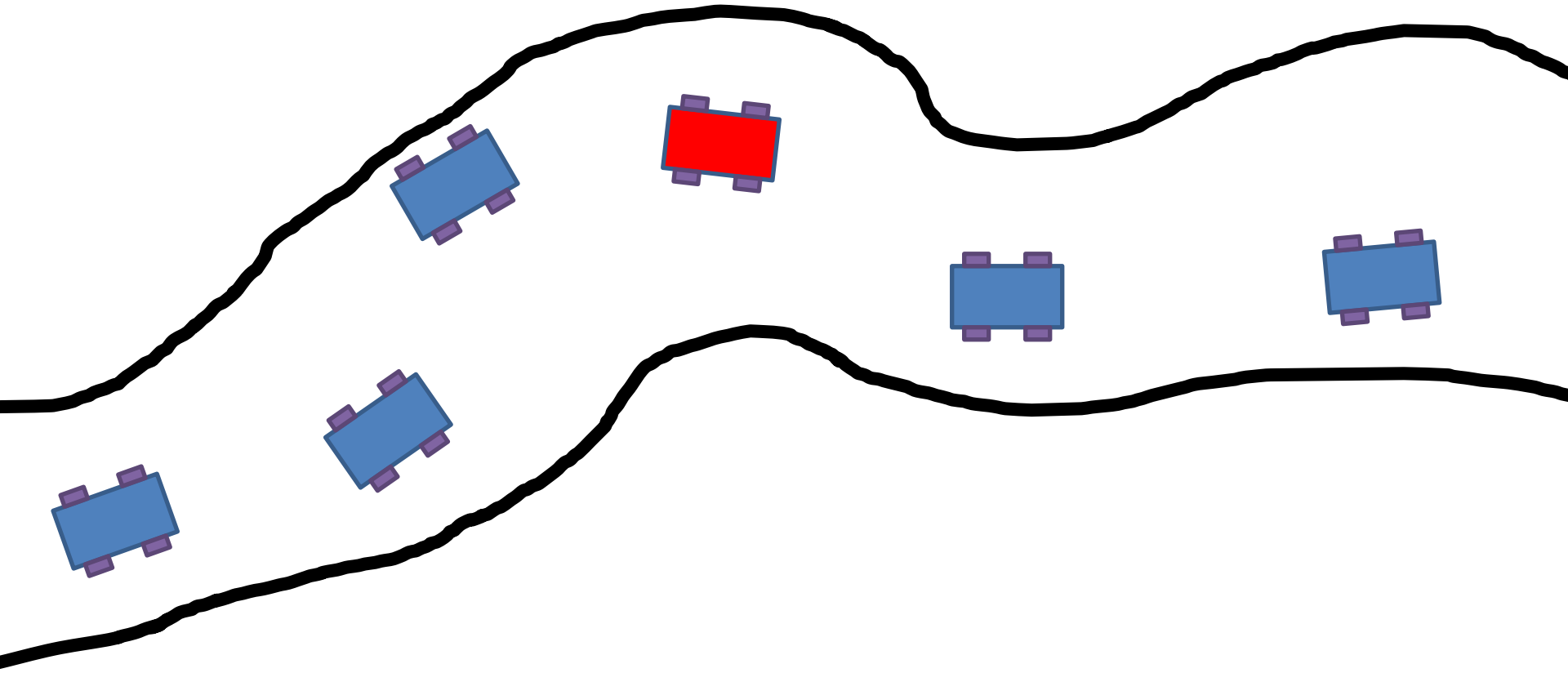
Example: Pure

- Quad racing game
- Mainly player vs. AI
- Idea: Don’t let player race alone

Pure: Storytelling with Rubberband AI

- Pull a rubber band over player and AI quads
- Pros:
  - Neither of them can get “away”
  - Player does not feel alone
  - Easy to implement
- Cons:
  - Requires cheating
  - Typical, linear experience

Pure: Storytelling with Rubberband AI



Pure: Storytelling with Rubber Band AI

- Race script: storyboard for races
  - Set of rules instead of static definition
  - Done by designers
  - Fixes “loneliness” and “cheating” experience

Pure: Storytelling with Rubber Band AI

- Example: the ideal case
- 3 groups: head, middle, back
  - Head and middle group leave the player behind at the start
  - Player goes progressing and jumping from one group to another
  - Some AI riders will jump with the player
  - At the middle of the last lap the player is in head position and the AI will be more forgiving from now on with his errors

Example Game Design Processes

Game Design of Flower

- Show video …

Flower (1)

- Goal: Emotional experience
  - More than aggression, hate, anger & fear
  - “Feel good experience”
  - No highscores etc.

- Game design
  - Not clear from the beginning
  - Easy to understand
  - Developed over several prototype-test iterations

Flower Prototypes

Main game objects: flowers

Series of prototypes

- Control sun to let flowers grow
- Sleepwalkers perspective (no flowers)
  - Sleepy view, blurred environment
- Golf prototype
  - control seed, plant in hole
  - Final game: game control

Flower Prototypes ctd.

- Rollercoaster prototype
  - Tunnel experience, sit & watch
  - Contribution to final game: wind
- Survival prototype: flowers as “fuel”
  - Contribution to final game: hostile environment
- Orb prototype
  - Flowers fill colored orbs, unlock environments
  - Contribution to final game: hideouts

Flower

- Prototypes on different platforms
  - Java
  - Microsoft XNA
  - Playstation 3
- Small team
  - 6 people core
  - 3 people joined later

Src. Santiago, Kellee; "FLOWER: Design Postmortem", GDC Europe 2009

Designing a horror game

What is horror?

- an intense feeling of fear, shock or disgust
- a literary of film genre concerned with arousing such feelings

Src. B. Gomez, Vatra; "Silent Hill: Past, Present & Future", GDC Europe 2011

What is horror?

- A very broad category of fiction
- Any work that produces feelings like fear, shock, dread, or disgust
- Genre is unique as it is described by the feelings that emerge by consuming the work

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Src. B. Gomez, Vatra; "Silent Hill: Past, Present & Future", GDC Europe 2011

Designing Horror Games

- Manipulate player behavior
- Conduct emotional response
- It’s about extreme emotions

Src. B. Gomez, Vatra; “Silent Hill: Past, Present & Future”, GDC Europe 2011

Good Horror Games

- … immerse us in an atmosphere of dread
- … explore our fears
- … violate our comfort zones
- … let us experience the thrill of being preyed upon

Src. B. Gomez, Vatra; "Silent Hill: Past, Present & Future", GDC Europe 2011

Action vs. Survival

Action Horror

- Faster pace (fight)
- Action
- Combat
- Action Hero Protagonist
- Empowered Player

Survival Horror

- Slower Pace (flight)
- Puzzles
- Exploration
- Survivor Protagonist
- Disempowered Player

Src. B. Gomez, Vatra; "Silent Hill: Past, Present & Future", GDC Europe 2011

Horror Game Examples

- Heavy Rain
- Alan Wake
- Resident Evil
- Left 4 Dead
- Dead Space

Survival Horror

- Survival horror is full of contradictions
- Video games typically provide wish fulfillment, but horror games provide “nightmare fulfillment”
- Video games are empowering …
- … but horror games are disempowering

Src. B. Gomez, Vatra; “Silent Hill: Past, Present & Future”, GDC Europe 2011

Survival Horror

Early survival horror games were broken action games with …

- poor camera
- poor controls
- poor interface

Src. B. Gomez, Vatra; "Silent Hill: Past, Present & Future", GDC Europe 2011

Action Games for Horror?

- Action games have evolved
  - Interface & controls improved
  - Clever inventory systems
  - Streamlined HUDs
  - Intuitive camera
- Applied to horror games this again empowers players

Src. B. Gomez, Vatra; "Silent Hill: Past, Present & Future", GDC Europe 2011

Clive Barker's "3 Degrees of Violation"

- 1st Degree: Infliction
- 2nd Degree: Infestation
- 3rd Degree: Possession

Src. B. Gomez, Vatra; "Silent Hill: Past, Present & Future", GDC Europe 2011

Clive Barker's "3 Degrees of Violation"

1st Degree: Infliction

- Breaking of body surfaces
- Violation of human superiority
- Indignation of being preyed upon
- Death is the ultimate result

Src. B. Gomez, Vatra; "Silent Hill: Past, Present & Future", GDC Europe 2011

Clive Barker's "3 Degrees of Violation"

2nd Degree: Infestation

- Colonization or transformation of tissues and membranes ("body horror")
- Prolonged horror: impending death & doom
- Invasion of body; despoiling sacred temple
- Self-destruction – release – is still an option

Src. B. Gomez, Vatra; "Silent Hill: Past, Present & Future", GDC Europe 2011

Clive Barker's "3 Degrees of Violation"

3rd Degree: Possession

- Hijacking of mind (not only body)
- Psychological horror
- Victim is conscious, but unable to affect release
- Death is not an assured release

Src. B. Gomez, Vatra; "Silent Hill: Past, Present & Future", GDC Europe 2011

Trailer: Alan Wake

- http://youtu.be/sSB4QcQMm6E

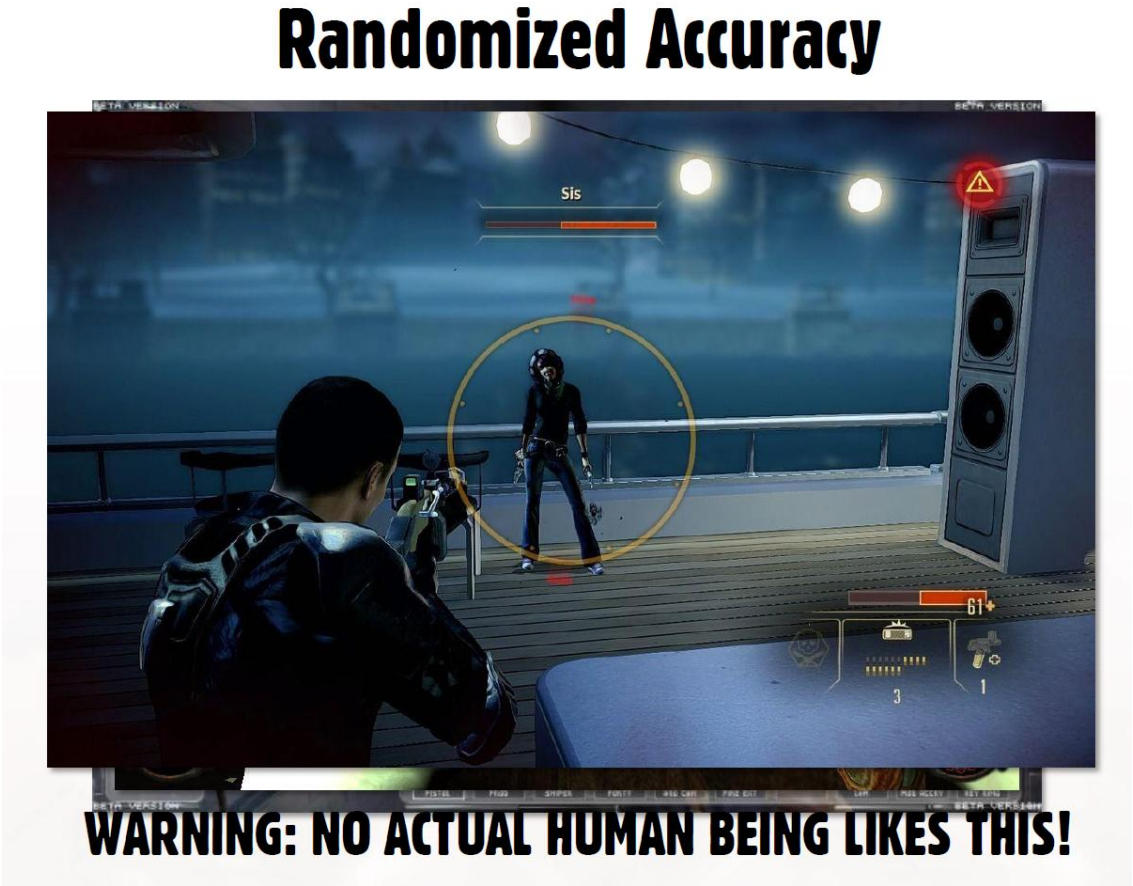
Game Mechanics of Fallout New Vegas

Lessons learned from Fallout: New Vegas

1. Mechanical Chaos Is Frustrating
2. What You Perceive Matters Most
3. Strategic Failures Feel Terrible

Src. J.E. Sawyer, Obsidian Entertainment; "The Evolution of RPG Mechanics: From Die Rolls to Hit Volumes", GDC Europe 2011

Mechanical Chaos



Src. J.E. Sawyer, Obsidian Entertainment; "The Evolution of RPG Mechanics: From Die Rolls to Hit Volumes", GDC Europe 2011

Fallout NV: Casino Gambling

Problems

- Player expectation of casino games
- Real casino games are house-biased
- Results can be avoided via reload
- Potential economy breaker
- Negative reaction to limits

Solution

- Three low-impact casino games
- Luck stat only improves odds
- Anti-cheating measures on load
- Set and accept max winnings
- Reward hitting the limits

Src. J.E. Sawyer, Obsidian Entertainment; "The Evolution of RPG Mechanics: From Die Rolls to Hit Volumes", GDC Europe 2011

What You Perceive Matters Most

Src. J.E. Sawyer, Obsidian Entertainment; "The Evolution of RPG Mechanics: From Die Rolls to Hit Volumes", GDC Europe 2011

9mm SMG: Before & After

Before

- Low DAM (11)
- High DPS (121)
- Terrible Spread (2.2)
- High Ammo Consumption (11/sec.)

After

- Low-ish DAM (14)
- High DPS (154)
- Fair Spread (1.5)
- High Ammo Consumption (11/sec.)

Src. J.E. Sawyer, Obsidian Entertainment; "The Evolution of RPG Mechanics: From Die Rolls to Hit Volumes", GDC Europe 2011

Strategic Failure Feels Terrible

- Fallout 3: Big guns skill
- Fallout NV: Re-Design

Src. J.E. Sawyer, Obsidian Entertainment; "The Evolution of RPG Mechanics: From Die Rolls to Hit Volumes", GDC Europe 2011

Readings - Exercise

- Read the postmortem of Brütal Legend
  - `http://goo.gl/x7cYq`

Checklist: PS3

- The Walking Dead
- Stacking
- Little Big Planet
- Flower