



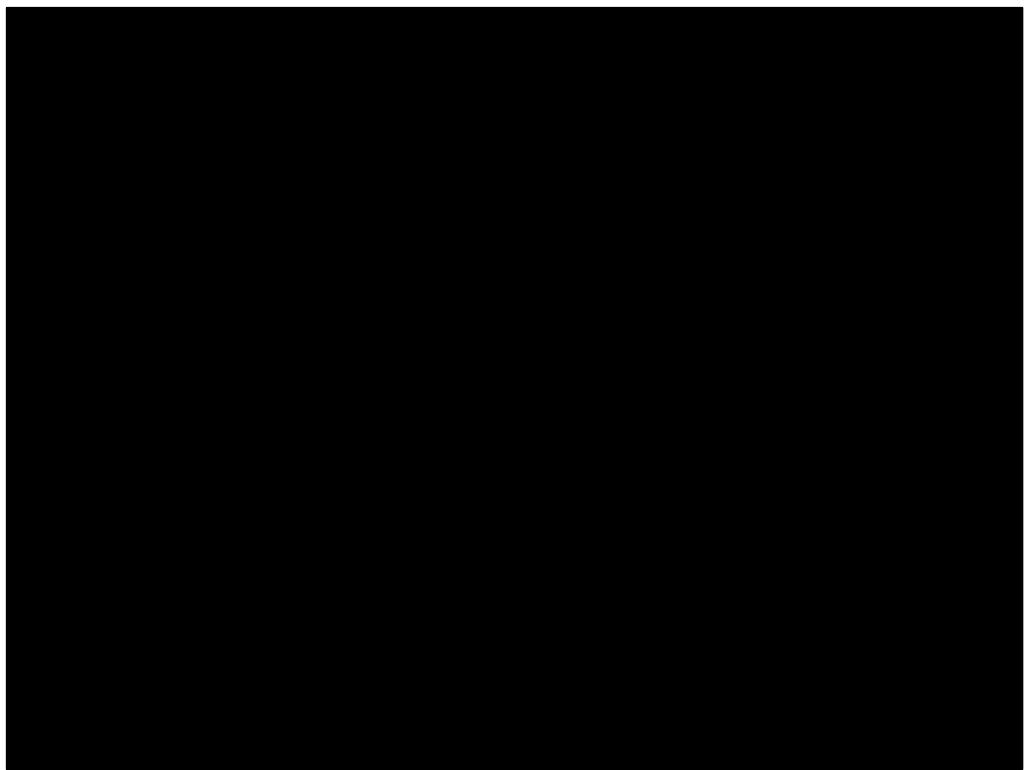
GAMES  
ACADEMY

# GAM320 - Creativity & Prototyping

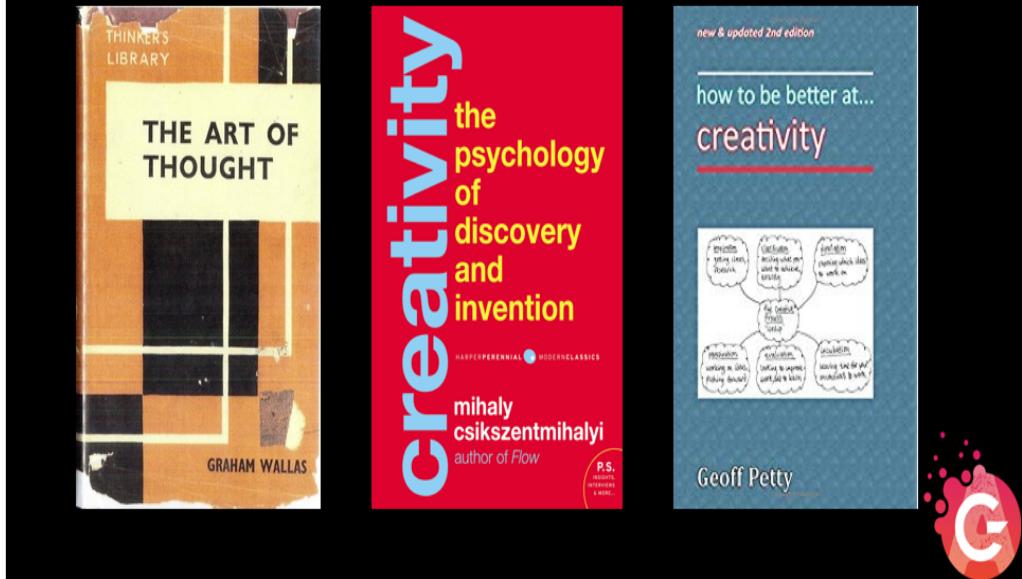
Brian McDonald

# The Problem





# Models of Creativity



# Models of Creativity

## Wallas Model

Preparation

Incubation

Illumination

Verification



<http://members.optusnet.com.au/charles57/Creative/Brain/wallis.htm>

1. In the **preparation** stage, we define the problem, need, or desire, and gather any information the solution or response needs to account for, and set up criteria for verifying the solution's acceptability.
2. In the **incubation** stage, we step back from the problem and let our minds contemplate and work it through. Like preparation, incubation can last minutes, weeks, even years.
3. In the **illumination** stage, ideas arise from the mind to provide the basis of a creative response. These ideas can be pieces of the whole or the whole itself, i.e. seeing the entire concept or entity all at once. Unlike the other stages, illumination is often very brief, involving a tremendous rush of insights within a few minutes or hours.
4. In **verification**, the final stage, one carries out activities to demonstrate whether or not what emerged in illumination satisfies the need and the criteria defined in the preparation stage.

# Models of Creativity

Wallas	Csikszentmihalyi
Preparation	Preparation
Incubation	Incubation
Illumination	Insight
Verification	Evaluation
	Elaboration



## Chapter 6 - Game Design Workshop

**Preparation:** Become immersed in the topic

**Incubation:** Churn around the idea

**Insight:** Aha moment, idea falls together

**Evaluation:** Check to see if the insight was valuable and worth exploring

**Elaboration:** Longest part of the process

## Models of Creativity

Wallas	Csikszentmihalyi	Petty (ICEDIP)
Preparation	Preparation	Inspiration
Incubation	Incubation	Clarification
Illumination	Insight	Evaluation
Verification	Evaluation	Distillation
	Elaboration	Incubation
		Perspiration



**Inspiration** – explore, generate ideas, research, have visions, brainstorm, dream!

**Clarification** – discuss aims, clarify goals, research costs, assess risks

**Evaluation** – assess which ideas have the best potential, and how to improve your work as it moves forwards. Find Strengths & weaknesses - how to capitalize and remove.

**Distillation** - the process of concentrating your ideas into a single vision.

**Incubation** - Leaving the work alone, allowing it to stay on the surface of your mind. Stopping and working on other things.

**Perspiration** - Determined, hard work on only your best ideas. Draft, evaluate, redraft.



# Practical Advice



## Know your audience - Personas

Maria, 19

I thought about studying architecture as I love design but I am very passionate about Games and interested in how industry and how they are made.

Games Design Student GCU

Background	<ul style="list-style-type: none"><li>Maria moved to Glasgow 5 years ago from Prague with her family.</li><li>She works in a coffee shop part-time.</li><li>She writes her own blog on buildings she has visited and uses various social networking tools to circulate</li><li>Enjoys clubbing, travel, playing all types of games, currently revisiting favorite childhood game Pokemon</li></ul>
Goals	<ul style="list-style-type: none"><li>To develop a portfolio of games</li><li>Possibly learn to sketch</li><li>Fit my studies in around work and other commitments</li><li>Internship placement abroad</li></ul>
Technology	<ul style="list-style-type: none"><li>Wordpress, Social Networking, Gaming, Creative Story writing tools</li></ul>

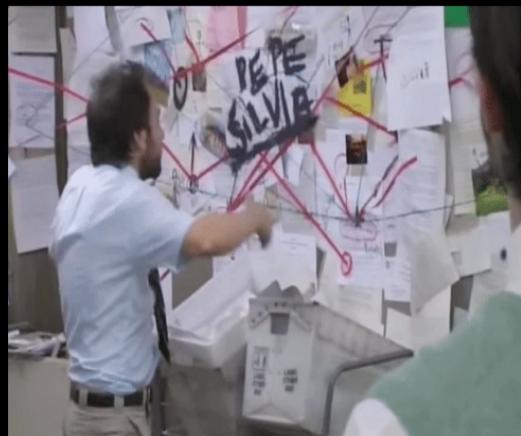


Once you have an audience identified, build a persona.

<https://www.interaction-design.org/literature/book/the-encyclopedia-of-human-computer-interaction-2nd-ed/personas>

You build 1 to N number of personas and they often contain bio info (likes, dislikes), a bit of flavour.

## Ideation - Brainstorming



State a challenge

No Criticism

Vary the Method

Playful Environment

Put it on the Wall

Go for lots of ideas

Don't go to long

## Brainstroming methods - List Creation



- Write out everything you can think of in a topic
- Process of writing them down helps you freely associate and organise
- Excellent for groups, gets everyone on the same page



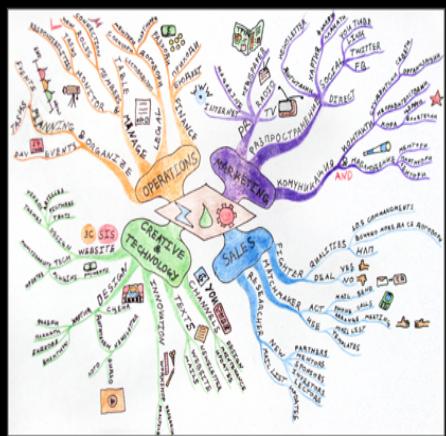
## Brainstroming methods - Idea Cards



- Brings an element of randomness into the mix
- Take a deck of index cards, write a word on each one
- Shuffle them up, take two cards out and pair them



## Brainstroming methods - Mind Maps



- Visual method to explore ideas visually
  - Start with a core idea and build linkages with connect ideas
  - Aids in pulling together a shared vocabulary about the game



## Brainstroming methods - Stream of Conscious/Shout out



- Often better for individuals
- Sit down at a computer (or pen and paper), start writing anything that comes to mind for 10 mins.
- Shout Out is very similar, use a voice recorder and speak for 10 mins. Then go back and transcribe.



## Brainstroming methods - Cut it Up



- Take a newspaper or magazine, go to any page, and cut random words and images
- Once you have a pile pieces, start playing with them, match them up to make game concepts.



## Brainstroming methods - Research



- Useful for serious games and games that are grounded in a world
- Research a topic that interests you. Immersive yourself in a topic
- Even if your game isn't ground in the real world it might have real world analogues



## The role of constraints

- At the Academy, you only have a few constraints
  - Time (deadlines)
  - Technology
  - Skillset
  - Team makeup
- Constraints are drivers for creativity, consider adding them into your project
  - Audience - The game should appeal to your Mother
  - Technology - Mobile game
  - Interaction - the game only uses one button



Constraints are requirements and limitations we have to address in order to reach our goal

# Prototyping



# Prototyping

- The goal of a prototype is to answer some questions about your game or production pipeline
- It should be quick to develop, rough in terms of quality and be ‘throw away’
- You may have several prototype idea, consider splitting your team

## Prototype 1 - Combat System

- 1 Programmer
- 1 Designer/Lead
- 1 Artist
- 1 Animator

## Prototype 2 - Crafting System

- 2 Programmer
- 1 Designer/Lead
- 1 Artist
- 1 Writer



## Prototyping tips

- Prototyping is not **Pre-Production**, in pre-pro you know what the game is going to be
- It is fine to fail, failure is part of the process
- Use previously created assets, greyboxes, basic shapes
- Test, Test, Test!
- Timebox everything (these timings a guide!)
  - 2 weeks per prototype
  - $\frac{1}{3}$  of development time on prototypes
- Make prototypes on the tools you feel most comfortable with



# Paper Prototypes



## Tools

- Sheets of paper
- Dice
- Cards with card sleeves
- Post it notes
- Boardgame bits

## Best uses

- Space, maps, grids
- GUI
- Simple systems (probabilities, weapons etc)

# Paper Prototypes

- Advantages
  - Speed of development and iteration
  - Low barrier to entry
  - Collaborative
  - Iterative by nature
- Disadvantages
  - Tracking lots of information
  - Physical interfaces
  - Game rhythm issues



## Digital Prototypes



Spiderman PS4 -

<https://twitter.com/KrisZadziuk/status/1039858710460473344>



# Types of Digital Prototypes

- Mechanics
- Aesthetics
  - Storyboards
  - Concept art
  - Animatic
  - Interfaces
  - Audio
- Kinesthetics
  - Game Feel
  - Controls



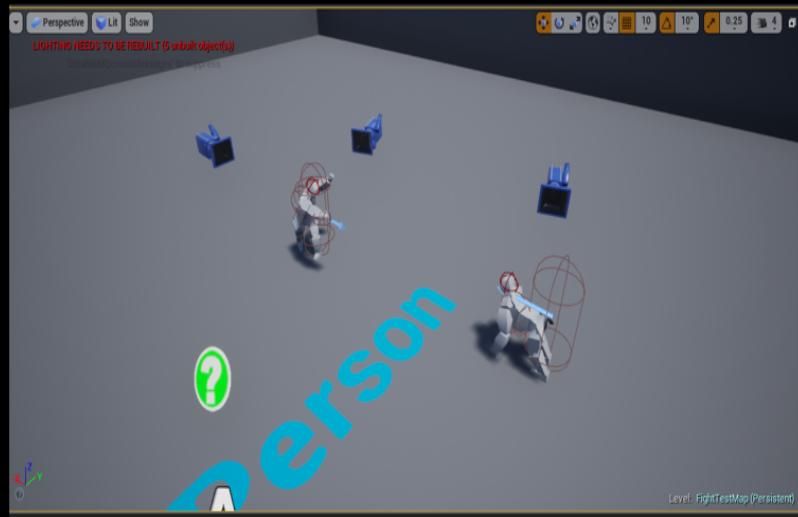
## A word on ‘grey boxing’

- Grey boxing is suitable for most prototypes
- In some cases grey boxes don't give the emotional impact required
- Case Studies
  - Alien Isolation - <https://www.gdvcvault.com/play/1021852/Building-Fear-in-Alien>
  - Firewatch - [https://www.youtube.com/watch?v=hTqmk1zs\\_1I](https://www.youtube.com/watch?v=hTqmk1zs_1I)
- Consider creating a beautiful corner with some polished assets
  - Basically use the standard grey boxing technique
  - But one room should have ‘polished assets’
  - This will hopefully showcase the emotional impact your game might have



Jane Ng - Greyboxing... just.. didn't quite work for us. Imagine walking from Point A in this grey box. to Point B. With some subtitled Writing. It is going to be a boring eternity.

# Case Study



# Team



- Me!
- Programmer/Designer



- Richard Milligan
- Artist/Animator/Designer



## The Game

- Fighting game which uses direct movement of the joypad thumbsticks to control the arms of the combatants
- Theme - male Gorillas fighting for dominance
- 3 Initial prototypes
  - Movement
  - Combat
  - Switching between combat and movement

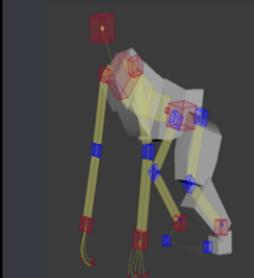


# Task 01 - Art/Animation - Proxy Mesh/Rig



Richimaru 04/09/2018

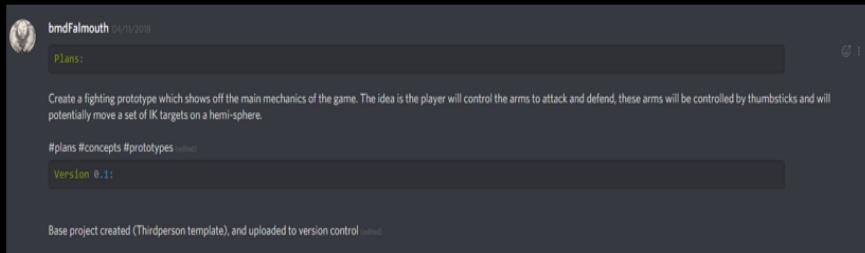
01 - The first experiment with a gorilla type rig was merely a human with longer arms. Nothing fancy but a quick test rig to play with ape walking. It went ok but I soon realised that Apes also have a fairly elongated body so I spent a little longer looking at specific proportions and re-created a rig and added a HIK control system. Am in the process of creating a proxy mesh (split meshes) to use as a test object for in-game testing. The mesh doesn't much matter but it would be beneficial to get the skeleton into engine being close to the final proportions and with the same joint names. Close to completion now but logging off for the night.



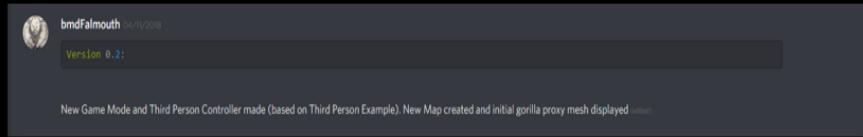
Reference - <https://www.youtube.com/watch?v=3T0z1CT-nR8>



# Task 02 - Start of Movement Prototype



## Task 03 - Movement



# Task 04 - IK Combat System



bmdFalmouth 04/12/2018

Version 0.4:

IK setup completed for first hand, will need to implement control scheme and then blend between arm animations. (edited)

April 25, 2018



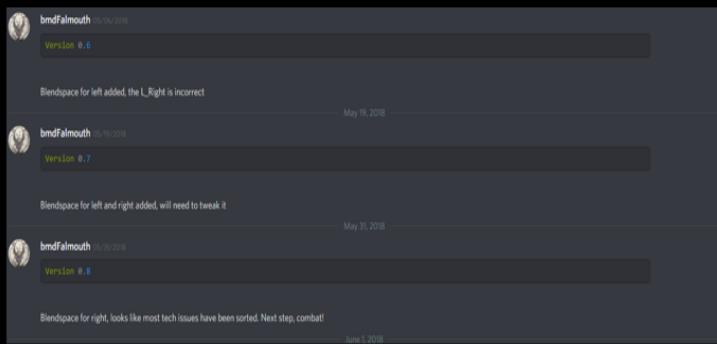
bmdFalmouth 04/25/2018

Version 0.5:

Left Hand IK Target moving with User Input, next up to move with forces being applied



# Task 05 - Move to Blendspaces for combat



## Task 05 - Move to Blendspaces for combat



Final version shows gorilla fighting movement with blendspace for combat

## Lessons Learned

- Prototypes are a collaboration
- The question we were trying to answer required
  - 1 Programmer
  - 2 Designers
  - 1 Artist
  - 1 Animator
- Iteration, Iteration, Iteration!
- Research is also key, animator required references
- Ensure your prototypes are small



## Closing Advice

Game Jams

Throw away your first idea

Iterate

Play and Evaluate

Kill your darlings



# Questions?



# References

Gibson Bond, J. Introduction to Game Design, Prototyping and Development 2nd Edition. Addison-Wesley, 2017. Chapters 15 & 28 - 35

Warfel, T.Z. Prototyping: A Practitioner's Guide, Rosenfeld Media 2009

Fullerton, Tracy. Game Design Workshop: A Playcentric Approach to Creating Games 4th Edition. Morgan Kaufmann, 2018. Chapter 7 & 8

Dallas, I. Weaving 13 Prototypes into 1 Game: Lessons from 'Edith Finch', GDC 2018  
<https://www.gdcvault.com/play/1025016/Weaving-13-Prototypes-into-1>

Martz, N. Perfecting Pitchable Prototypes, GDC 2012 <https://www.gdcvault.com/play/1015849/Perfecting-Pitchable>

Glinert, E. Rapid, Iterative Prototyping Best Practices, GDC 2012  
<https://www.gdcvault.com/play/1015585/Rapid-Iterative-Prototyping-Best>

