PROCESS

CART 416
RILLA KHALED

A THEORETICAL DESIGN PROCESS

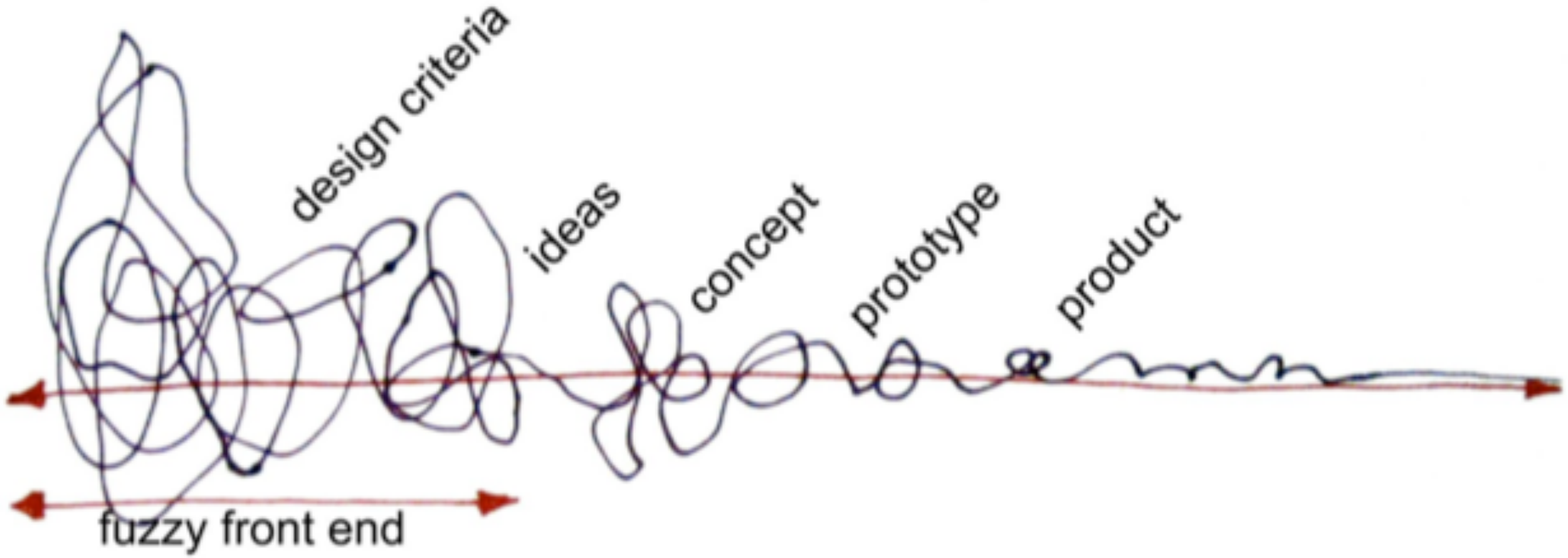
① Establishing requirements

② Designing alternatives

③ Prototyping

④ Evaluating

A REALISTIC DESIGN PROCESS



Sanders, E., and Stappers, J. 2006. *Co-creation and the new landscapes of design.*

WHAT IS A PROTOTYPE?

- any representation of a design idea, regardless of medium (Houde and Hill, 1997)

- materials to reflect and evaluate design ideas for future artifacts (Hennipman et al., 2008)

- one manifestation of a design that allows stakeholders to interact with it and explore its suitability (Sharp, Preece, and Rogers, 2011)

- tools for traversing a design space where all possible design alternatives and their rationales can be explored (Lim et al., 2008)

WHY DO WE PROTOTYPE?

- to answer questions (experiment)
- to discover questions and problems (explore)
- to help ourselves think (externalise)
- to help ourselves learn (evolve)
- to save time and money (economise)
- so that the “world can speak back to us” (engage)
    - to test out ideas with players / users
    - to communicate with other designers

THE DESIGN PROBLEM SPACE

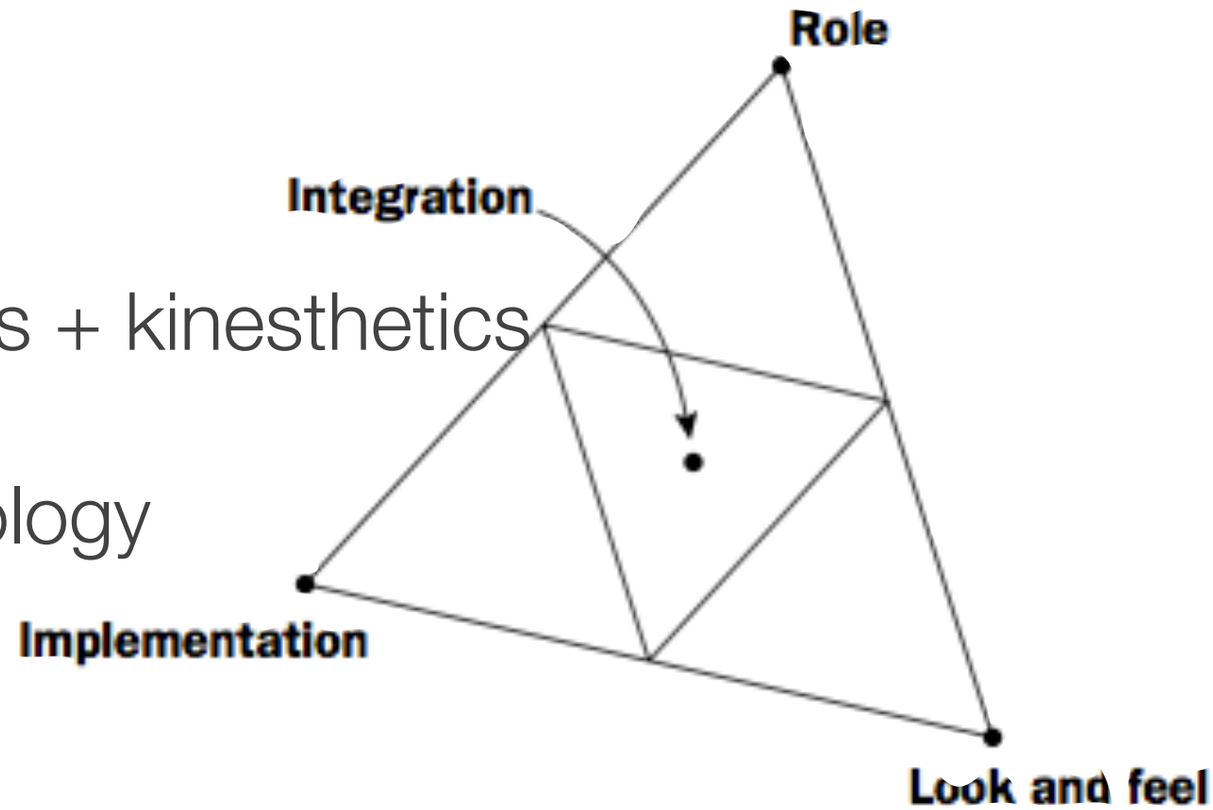
- a bounded space
- a conceptual space
- multidimensional
- prototypes are points in the space
- the solution exists within the space

LOW-FIDELITY VS. HIGH-FIDELITY

Adding a Cat and Setting Up Catometer™

CATEGORISING PROTOTYPES

- focusing on purpose of prototype:
  - role / game experience
  - look and feel / aesthetics + kinesthetics
  - implementation / technology
  - integration



Houde, S. and Hill, C. (1997). What do prototypes prototype? Handbook of Human-Computer Interaction, M. Helander, T. Landauer, P. Prabhu.

ECONOMIC PRINCIPLE OF PROTOTYPING

> “the best prototype is one that, in the simplest and most efficient way, makes the possibilities and limitations of a design idea visible and measurable”

Youn-Kyung Lim, Y., Stolterman, E., and Tenenberg, J. (2008). The anatomy of prototypes: Prototypes as filters, prototypes as manifestations of design ideas. ACM Trans. Comput.-Hum. Interact.

PROTOTYPING STRATEGY: ONE OR MANY?

- should you prototype one idea and keep refining it serially?
- should you prototype several ideas at the same time?

PROTOTYPING STRATEGY: KEEP TO YOURSELF OR SHARE?

- should you keep refining the ideas on your own?
- should you share the ideas with others?

RESEARCH ON PROTOTYPING CONFIRMS:

- Creating and viewing multiple prototypes leads to more individual design exploration

- Sharing multiple prototypes with a group leads to more productive dialogue and better group rapport

- Sharing multiple prototypes leads to more effective conceptual blending.

- **Sharing multiple prototypes produces better design results.**

Dow, S., Fortuna, J., Schwartz, D., Altringer, B., Schwartz, D., and Klemmer, S. (2011). Prototyping dynamics: sharing multiple designs improves exploration, group rapport, and results. In Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (CHI '11).

WHY MIGHT WE NOT WANT TO SHARE?

DESIGN + VALUES

GIANT JOYSTICK

MARY FLANAGAN

VALUES?

INSIDE

PLAYDEAD

VAP METHOD

- games should be developed in a way that they could include ethical ideals – or human values
- what if we were to intentionally embed values?
- VAP (values in play) method conceived of for activist games
- also insightful for any type of game - analytically and in terms of design

privacy

altruism

inclusivity

Flanagan, Mary and Nissenbaum, Helen. (2006). A Game Design Methodology to Incorporate Social Activist Themes.

VAP STEPS

1. **Discovery**: designers "discover" and identify the shared values relevant to their project
2. **Translation**: designers "translate" value considerations into architecture and features into game iterations
3. **Verification**: designers verify that the values outcomes they sought have been realized in the game

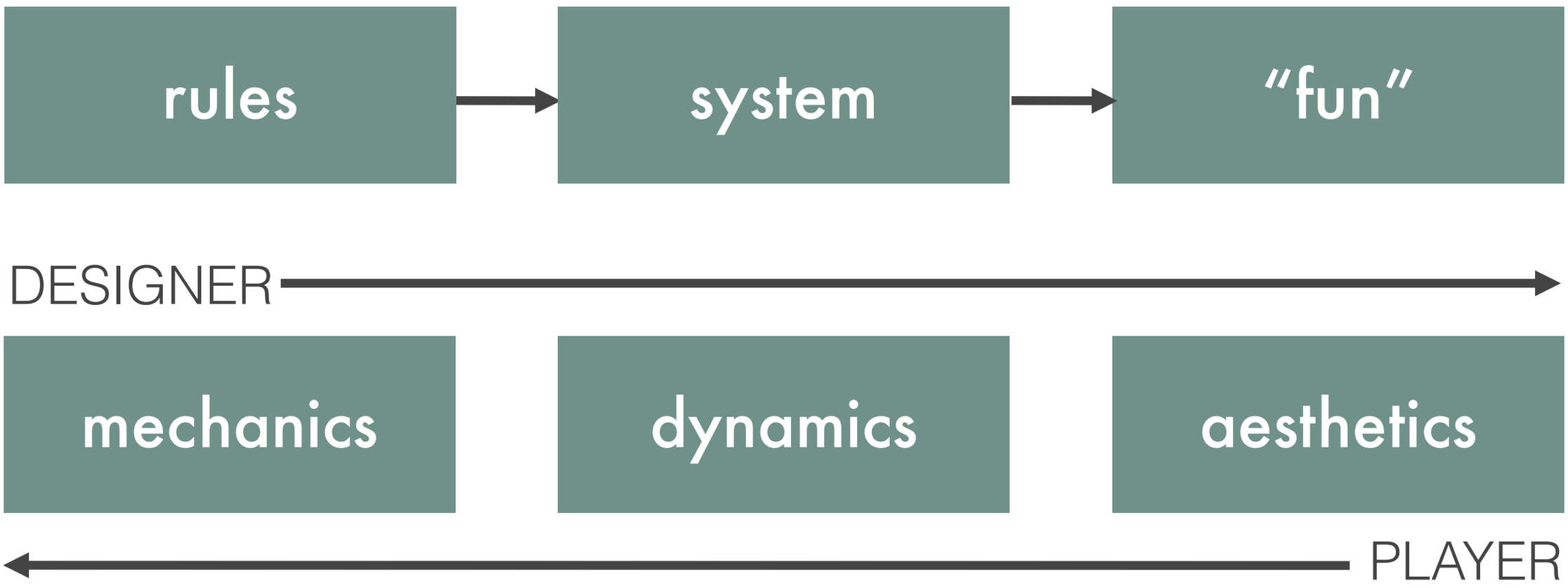
Flanagan, Mary and Nissenbaum, Helen. (2006). A Game Design Methodology to Incorporate Social Activist Themes.

MDA: MECHANICS, DYNAMICS, AESTHETICS

- **mechanics**: “particular components of the game, at the level of data representation and algorithms”
- **dynamics**: “the run-time behavior of the mechanics acting on player inputs and each others’ outputs over time”
- **aesthetics**: “the desirable emotional responses evoked in the player, when she interacts with the game system”

Hunicke, Robin, LeBlanc, Marc, and Zubek, Robert. (2004). MDA: A Formal Approach to Game Design and Game Research

MDA: MECHANICS, DYNAMICS, AESTHETICS



Hunicke, Robin, LeBlanc, Marc, and Zubek, Robert. (2004). MDA: A Formal Approach to Game Design and Game Research

DPE: DESIGN, PLAY, EXPERIENCE

- serious game design is a hard communication problem
- how do we coordinate between **theory** (best practice on how to teach particular material), **content** (the material itself), and **game design?**

Winn, Brian. (2007). The Design, Play, and Experience Framework.

DPE EXTENDS THE MDA

	DESIGN	PLAY	EXPERIENCE
LEARNING	content and pedagogy	teaching	learning
STORYTELLING	character, setting, narrative	storytelling	story
GAMEPLAY	mechanics	dynamics	affect
USER EXPERIENCE	user interface	interactivity	engagement
	technology		

Winn, Brian. (2007). The Design, Play, and Experience Framework.

THE LEARNING LAYER

	DESIGN	PLAY	EXPERIENCE
LEARNING	content and pedagogy	teaching	learning

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THE STORYTELLING LAYER

	DESIGN	PLAY	EXPERIENCE
STORYTELLING	character, setting, narrative	storytelling	story

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THE GAMEPLAY LAYER

	DESIGN	PLAY	EXPERIENCE
GAMEPLAY	mechanics	dynamics	affect

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THE USER EXPERIENCE LAYER

	DESIGN	PLAY	EXPERIENCE
USER EXPERIENCE	user interface	interactivity	engagement

Winn, Brian. (2007). The Design, Play, and Experience Framework.

INFLUENCE BETWEEN LAYERS? ORDER?

	DESIGN	PLAY	EXPERIENCE
LEARNING	content and pedagogy	teaching	learning
STORYTELLING	character, setting, narrative	storytelling	story
GAMEPLAY	mechanics	dynamics	affect
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	technology		

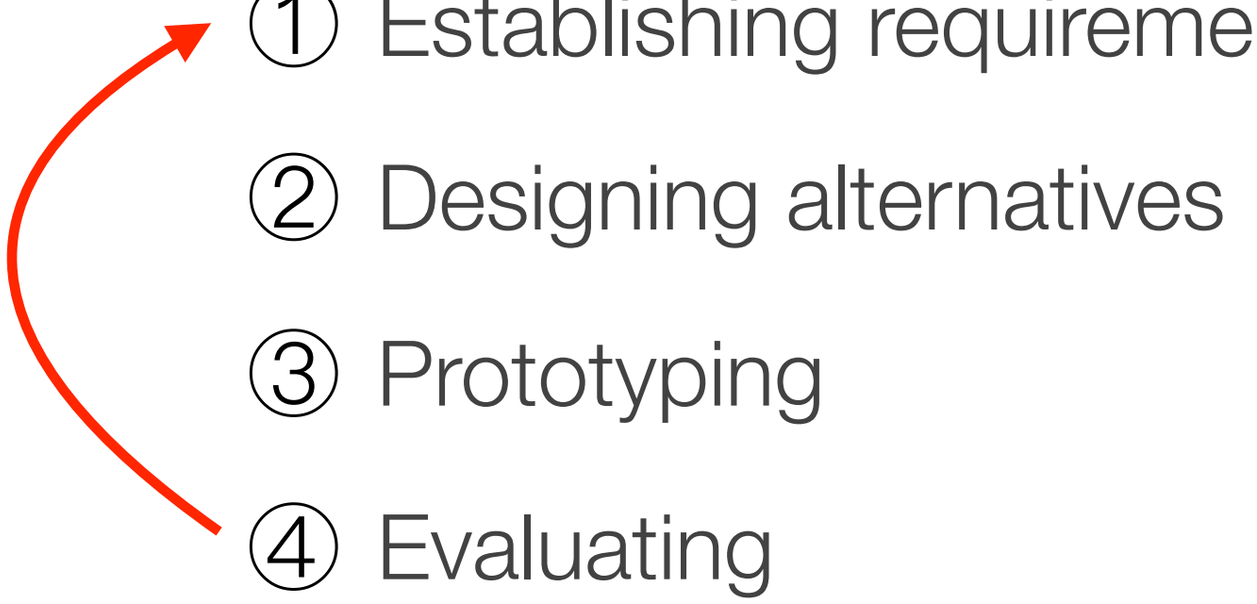
Winn, Brian. (2007). The Design, Play, and Experience Framework.

MEDIATING IT ALL

technology

Winn, Brian. (2007). The Design, Play, and Experience Framework.

ITERATE, ITERATE, ITERATE



WHO IS YOUR TARGET PLAYER?