Creative computing

CS4784: HCI Capstone
Virginia Tech
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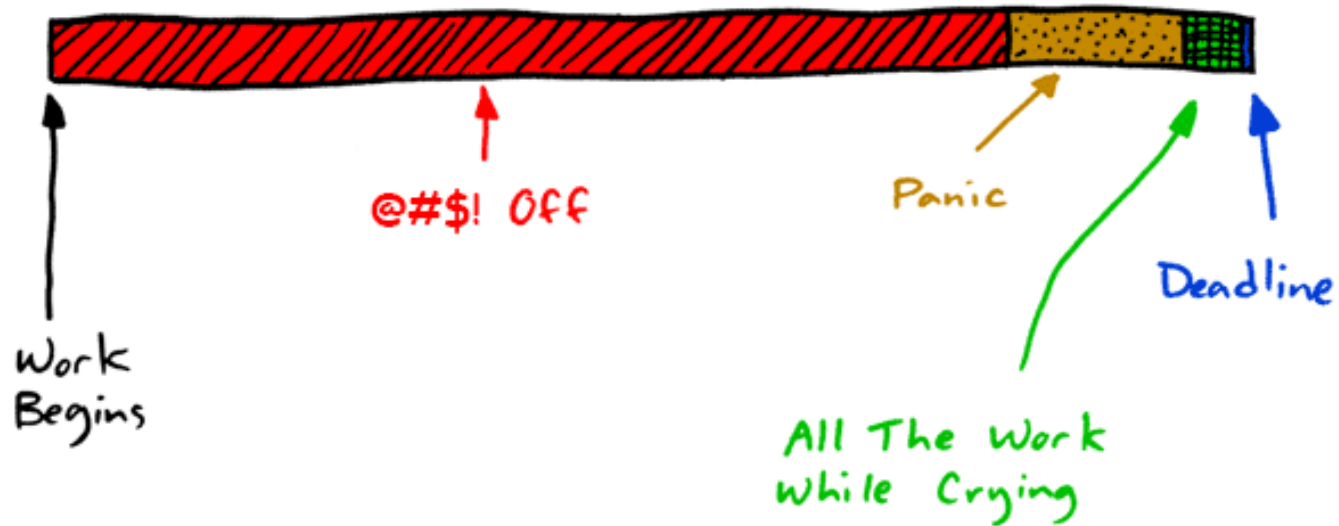
Preview

- Discuss Shneiderman reading
- Finish social computing
- Creative computing
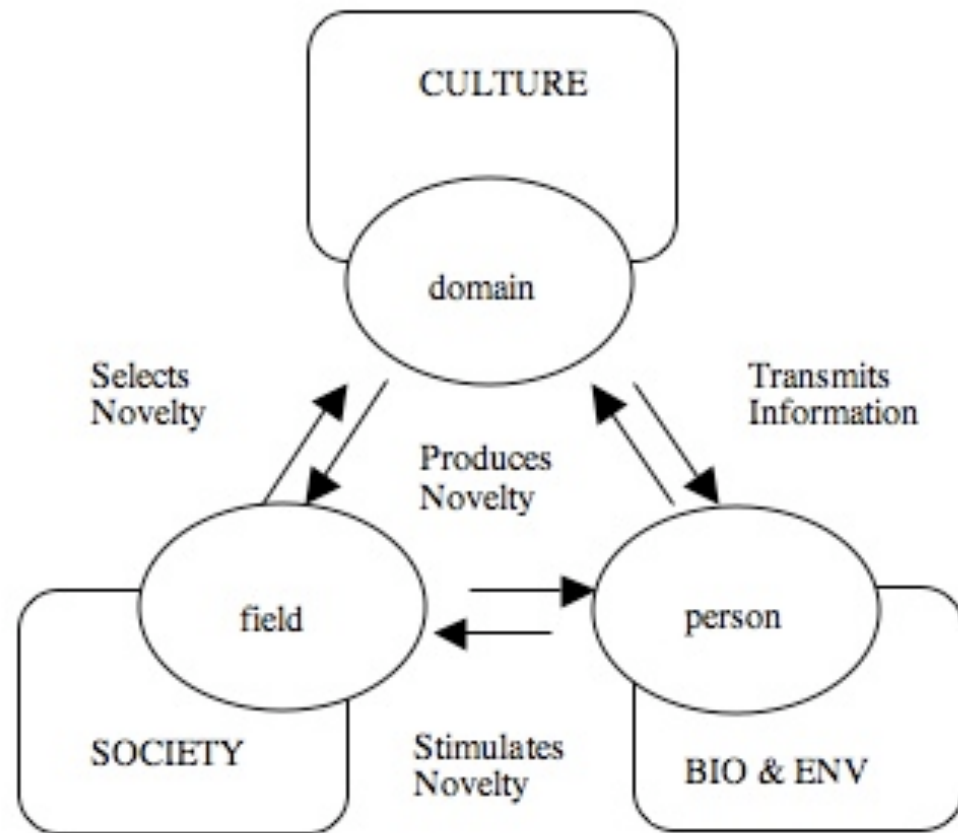- Project pitches

What is creative computing?

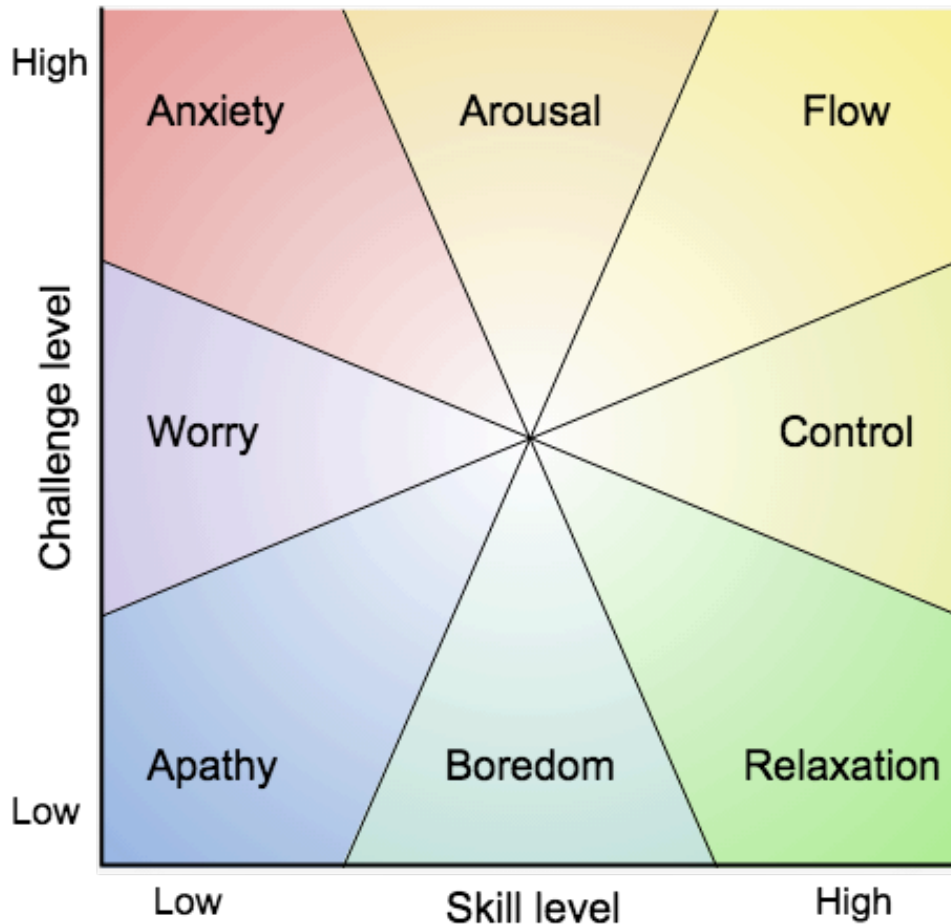# What is creativity?

THE CREATIVE PROCESS

Work Begins

@#$! Off

Panic

All The Work while Crying

Deadline

Toothpaste For Dinner.com

Who decides what's considered "creative"?

Csikszentmihalyi's
socio-cultural model

What makes people feel creatively "in the zone"?

Csikszentmihalyi's model of flow

Designing for flow:
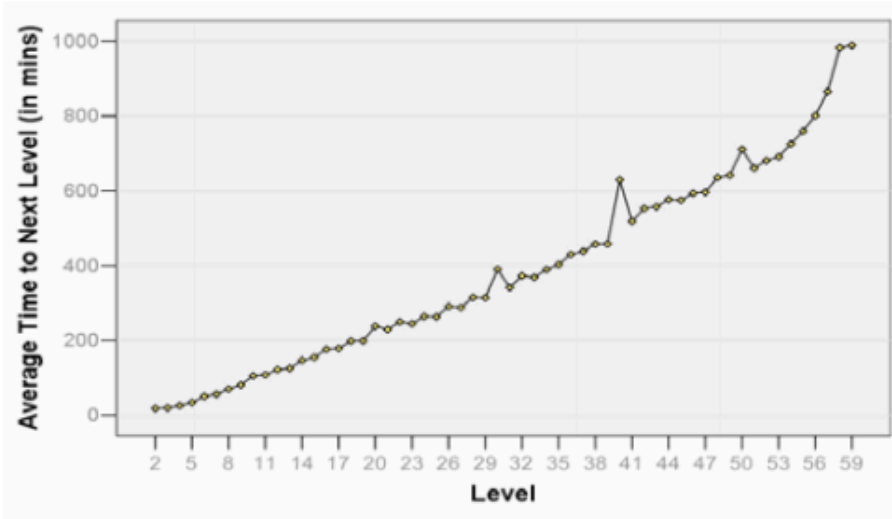# Leveling in *World of Warcraft*

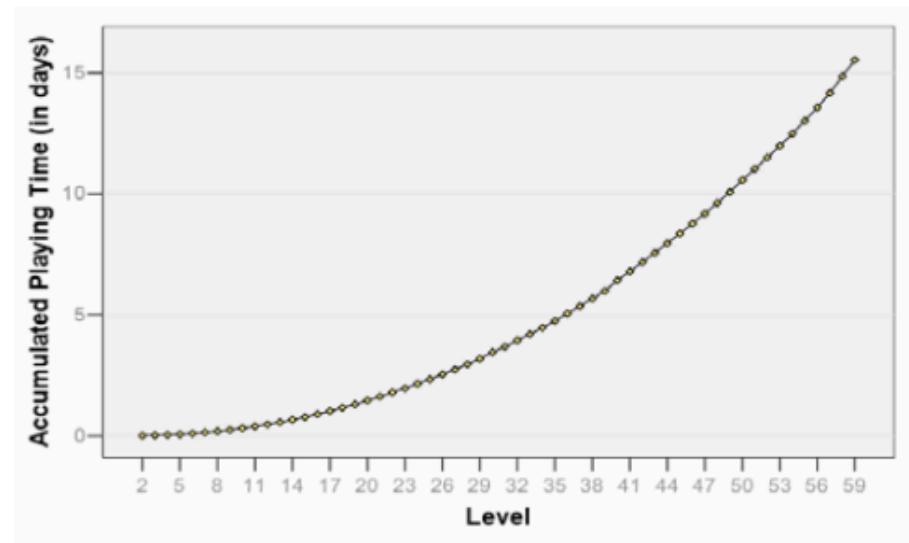Figure 2 - Average time required to reach a level

Figure 3 - Average accumulated play time by level

(Ducheneaut et al. 2006)

Creativity and social computing

- Creativity is social; the lone genius is a myth
  (Csikszentmihalyi 1996)

- Collaboration can enhance creativity (Sawyer 2007)

- Technologies can enhance creative collaboration
  (Fisher et al. 2005)

  – Brainstorming, division of labor, feedback, social support, combining ideas, sharing work
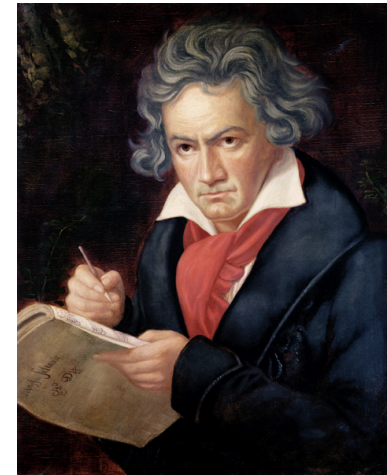
Genex framework

Foundational Beliefs	Creative Phases	Genex Tools
New knowledge is built on previous knowledge	**Collect** information from an existing domain of knowledge	Digital libraries, Search services Dynamic queries Information visualization Multimedia search
Powerful tools can support creativity	**Create** innovations using advanced tools	Document assemblers Art, design & architecture tools User interface builders Simulations, Models Templates, History, Macros
Refinement is a social process	**Consult** with peers or mentors in the field	Listservs, Newsgroups Conferencing, Groupware Presentation, Annotation Tele-democracy
Creative work is not complete until it is disseminated	**Disseminate** the results widely	Email, Electronic publications Narrowcasting Affiliation networks, Niche lists E-communities

(Shneiderman 1998)

Creativity support tools

(Shneiderman 2007)

Individual and Group Creativity Support Tools	
Information visualization tools	Spotfire, SAS JMP, DataDesk, ManyEyes, Digg
Specialized visualization tools: GIS	Google Maps, ArcInfo
Specialized visualization tools: gene expression analysis	GeneSpring, DNASTAR
Mathematical manipulation	MatLab, Mathematica
Engineering, architectural, industrial, product design	Autocad Inventor, DataCAD, SolidWorks
Simulation	SPICE, Tierra
New media development environments	Max/MSP, Pd, processing
Animation and interaction	Flash, FLEX, OpenLaszlo
Music	Cinescore, Cakewalk Sonar
Video editing	Premier, Final Cut Pro, Lightworks, iMovie, Windows MovieMaker
Concept mapping	Inspiration, MindMapper, MindManager, Axon
Group and Social Creativity Support Tools	
Software development	Eclipse, JDeveloper, Visual Studio
Wikis	Wikipedia, Wikia
Citizen journalism	Blogger, Ohmynews, Slashdot
Media sharing	Flickr, YouTube
Music	Garageband, MacJams

Design principles for creativity support tools

- Support exploratory search
- Enable collaboration
- Provide rich history-keeping
- Design with low thresholds, high ceilings, and wide walls

Examples

What makes a good pitch?

- Get the point across quickly
- Show passion and enthusiasm
- Make the listeners feel engaged and creative
- Optional: align yourself with a creative prototype

Prototype	Perceived creativity
Artist	High
Storyteller	High
Showrunner	Moderate
Neophyte	Moderate
Journeyman	Moderate
Dealmaker	Moderate
Nonwriter	Low

(Elsbach and Kramer 2003)

Your pitch (should you choose to accept it)

- Max 5 minutes per pitch
  - 1-2 minute pitch
  - 3-4 minutes of discussion
- Address the following
  - What is the grand vision? Why does this matter?
  - What do you actually plan to do?
  - What skills must you learn/know?

Next class

- Read Chapter 3, *UX Book*, contextual inquiry
- Read project ideas on blog
- Discuss project ideas with me in office hours, over email
- Prepare pitches for *Wednesday*