

Thesis Schedule

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1 Milestones

Full draft of thesis to be completed by 5 August 2012.

- chapter 1 (intro): complete (ish, needs revisions see last milestone)
- chapter 2 (ontology): 21 June
- chapter 3 (survey): 1 July
- chapter 4 (case studies): 19 July
- chapter 5 (discussion): 26 July
- initial revisions: 5 August

2 Chapter Outlines

2.1 Chapter 1: Introduction

To be finished by: completeish (needs revisions, see last milestone).

- I. high-level introduction
 - A. ubiquity of computation leads to responsive environments
 - B. analysis will focus on changing artifact ecologies
- II. evolution of artifact ecologies

- A. wild environments
 - B. leveraged environments
 - C. responsive environments
- III. ecology as cybernetic interface (where do we plug in?)
 - A. ecology as cybernetic interface
 - B. robunculi
- IV. robunculi typologies (***) not written yet)
 - A. idols (for example googlebot)
 - B. manipulatives / tangibles
 - C. modular robots
 - D. self-reconfiguring materials / programmable matter
- V. our project (***) needs substantial revision)

2.2 Chapter 2: Responsive Environments, an Ontology and Ecological Analysis

To be finished by: 21 June 2012.

- I. an ontology of responsive environments
 - A. robunculi typologies
 - i. idols
 - ii. tangible sketches
 - iii. golems
 - a. sock puppet (dumb rc golem)
 - b. avatar (golem serving as interface to idol)
 - iv. hyperforms
 - B. morphologies
 - i. tile
 - ii. block

- iii. skeleton (graph)
 - iv. panel
 - v. glass (screen / projection interface)
 - vi. shrine (idol-scale computing facility)
- C. affordances
 - i. parallel affordances are synergistic
 - ii. placing / self-reconfiguring
 - iii. posing / flexing (self-posing)
 - iv. commanding (pointing) / signalling (haloing)
 - v. listening (tagging) / responding (texting)
 - vi. grafting (accepting drawings) / gramming (responding with drawings)
 - vii. puppeteering / puppeting (present puppeteering interface)
 - viii. sinks generate structured data to be accessed through idols
 - ix. logging (recording interactions to data stores) (sink)
 - x. crawling (indexing data stores) (sink)
 - xi. tracking (id-ing and classifying agents with sensors) (sink)
 - xii. slamming (exploring and mapping environments) (sink)
- D. nodes of power
 - i. manufacturing
 - ii. data transmission
 - iii. data stores
 - iv. shrines (high-powered computing clusters)
 - v. leaf node control
- II. an analysis of the potential (artifact) ecological impacts of responsive environments
 - A. radical transparency - big brother and little brother
 - B. means of production 2 - factories vs 3d printers
 - C. battle of the heavens - corporate clouds vs govt clouds vs community clouds
 - D. digital serfdom and device transparency

- III. what things *arent* robunculi?
 - A. construction kits vs rapid prototyping
 - B. robunculi, productization and reuse

2.3 Chapter 3: Survey of Robunculi (the future is here, just not evenly distributed)

To be finished by: 1 July 2012.

- I. (provisional; further research on other realized combinations needed)
- II. tiles for tangible sketching
- III. blocks for tangible sketching
- IV. blocks for hyperforms
- V. skeletons for tangible sketching
- VI. skeletons for golems
- VII. glasses for idols

2.4 Chapter 4: Case Studies

To be finished by: 19 July 2012

- I. analysis of the following projects with respect to:
 - A. does proposed ontology usefully describe this project?
 - B. metrics for assessing relative success
 - C. potential for reuse of:
 - i. interface methodologies
 - ii. instrumentation of affordances
 - iii. software modules
 - iv. design representations
 - v. manufacturing techniques

- D. (artifact) ecological impacts
- II. (provisional list; to be amended after completion of survey)
- III. posey
- IV. prismatic cubes
- V. human hive
- VI. espresso blocks / architectural hyperforms
- VII. siftables
- VIII. topobo
- IX. cubelets
- X. ckbot
- XI. googlephone

2.5 Chapter 5: Discussion and Analysis

To be finished by: 26 July 2012.

- I. unexploited morphology + typology combinations
- II. identification of reusable components
- III. comparative analysis of relative success of projects
- IV. comparative analysis of ecological consequences of projects
- V. assessment of utility of proposed ontology
- VI. future directions

2.6 Initial Revisions

To be finished by: 5 August 2012.

- write 'robunculi typologies' intro section
- rewrite 'our project' intro section
- respond to any additional input received by the end of july