

Draw a picture of Rodney

When you are done submit it using the
button that shows an envelope with wings

Some ideas about design and design proposals

ESRM 462

Restoration Ecology Capstone: Introduction

October 10, 2008

Tablet PCs and Classroom Presenter

- Equipment was provided to us by Hewlett Packard to support innovation in learning and teaching
 - For our restoration program courses
 - We'll be “experimenting” for a couple of years
- Software was developed by Professor Richard Anderson in CSE
 - Used in lots of places
 - Established relationship with REN faculty

Ground rules

- Be kind to the tablets
- Be patient with the people
- Make no changes to the configuration
 - Software
 - Hardware
- Keep/leave the tablets on the table
- Sit with a team member

2nd try...

Some ideas about design and design proposals

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Write a short definition of “design:”

Design is...

Jim F would say:

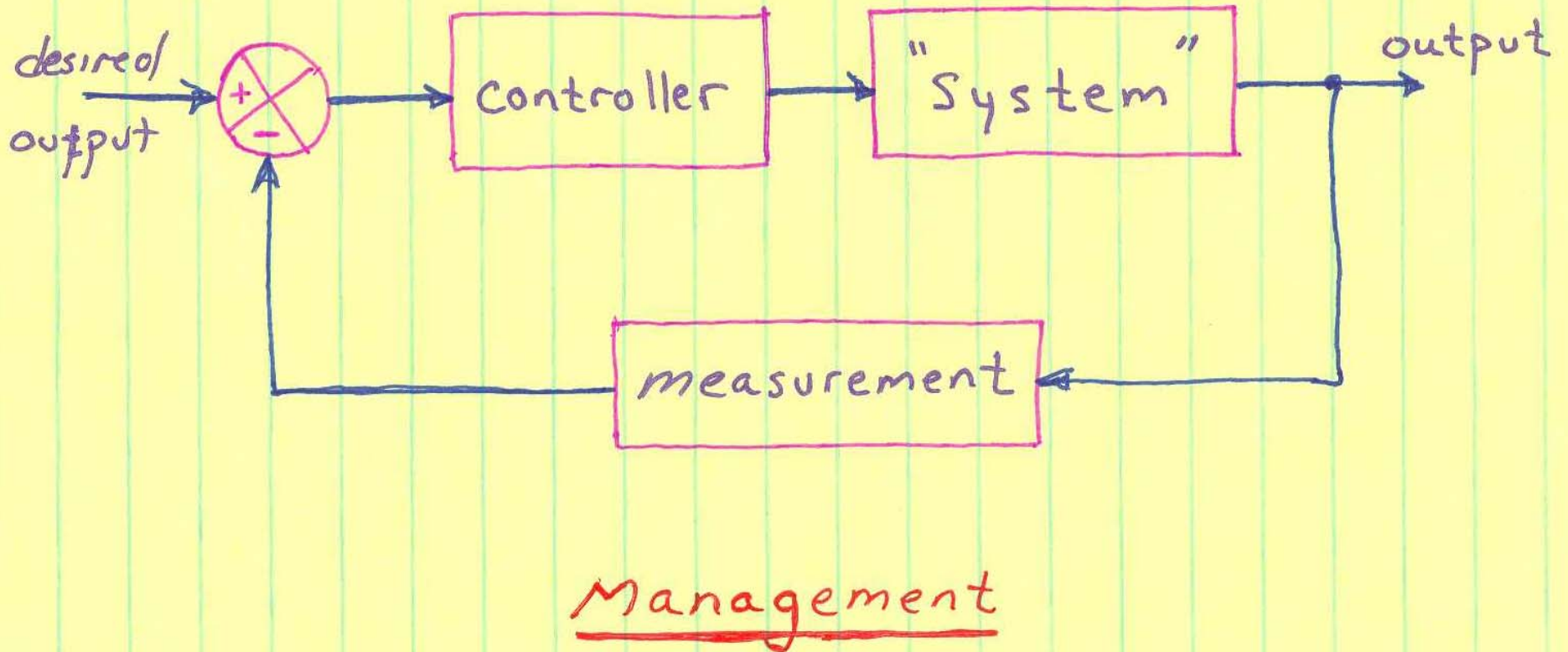
Design is generating plans to
“make” something that doesn’t already
exist

Process models

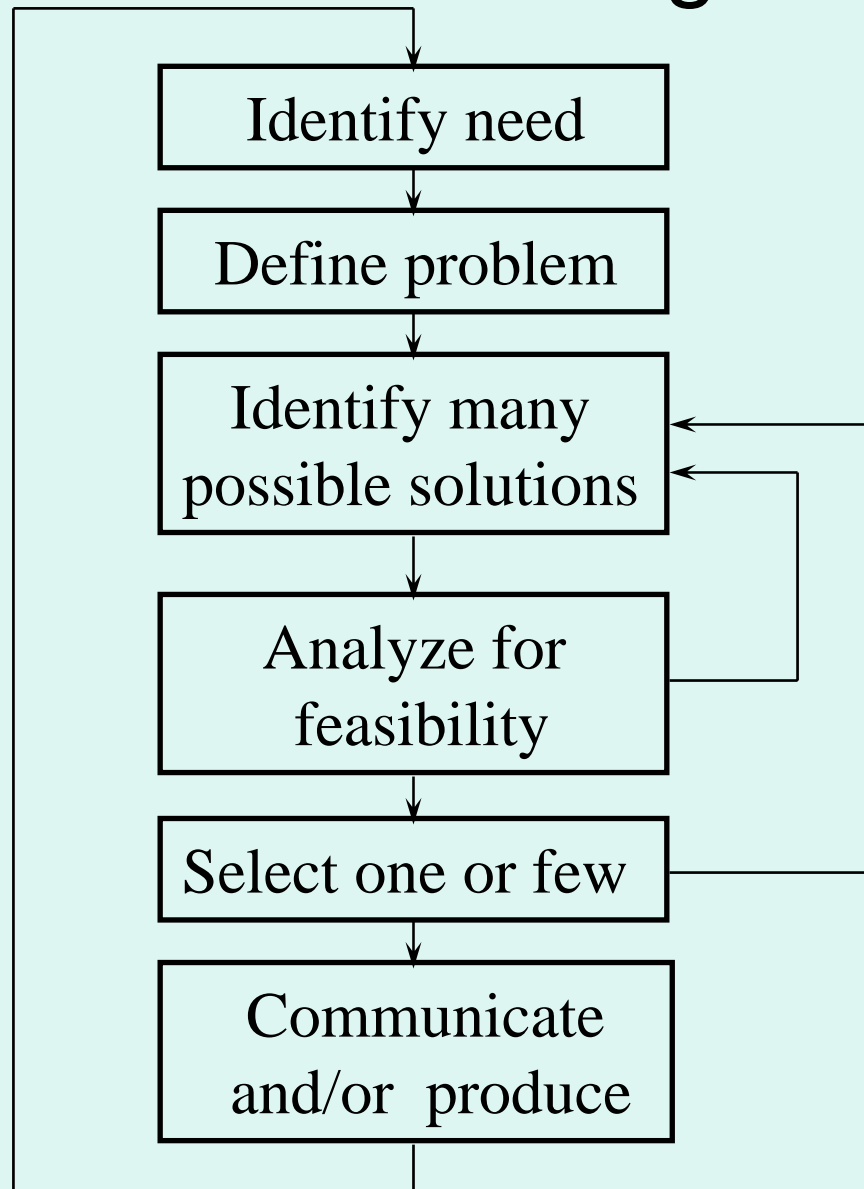
- Human constructs that describe (model) some particular process
- Examples
 - Hydrologic cycle
 - Legislative process
 - Scientific method
 - Management (control) process
- Usually (but not always) expressed using flow charts or flow diagrams

Sketch a process model of “the scientific method”

Management Process



Very Traditional Design Method



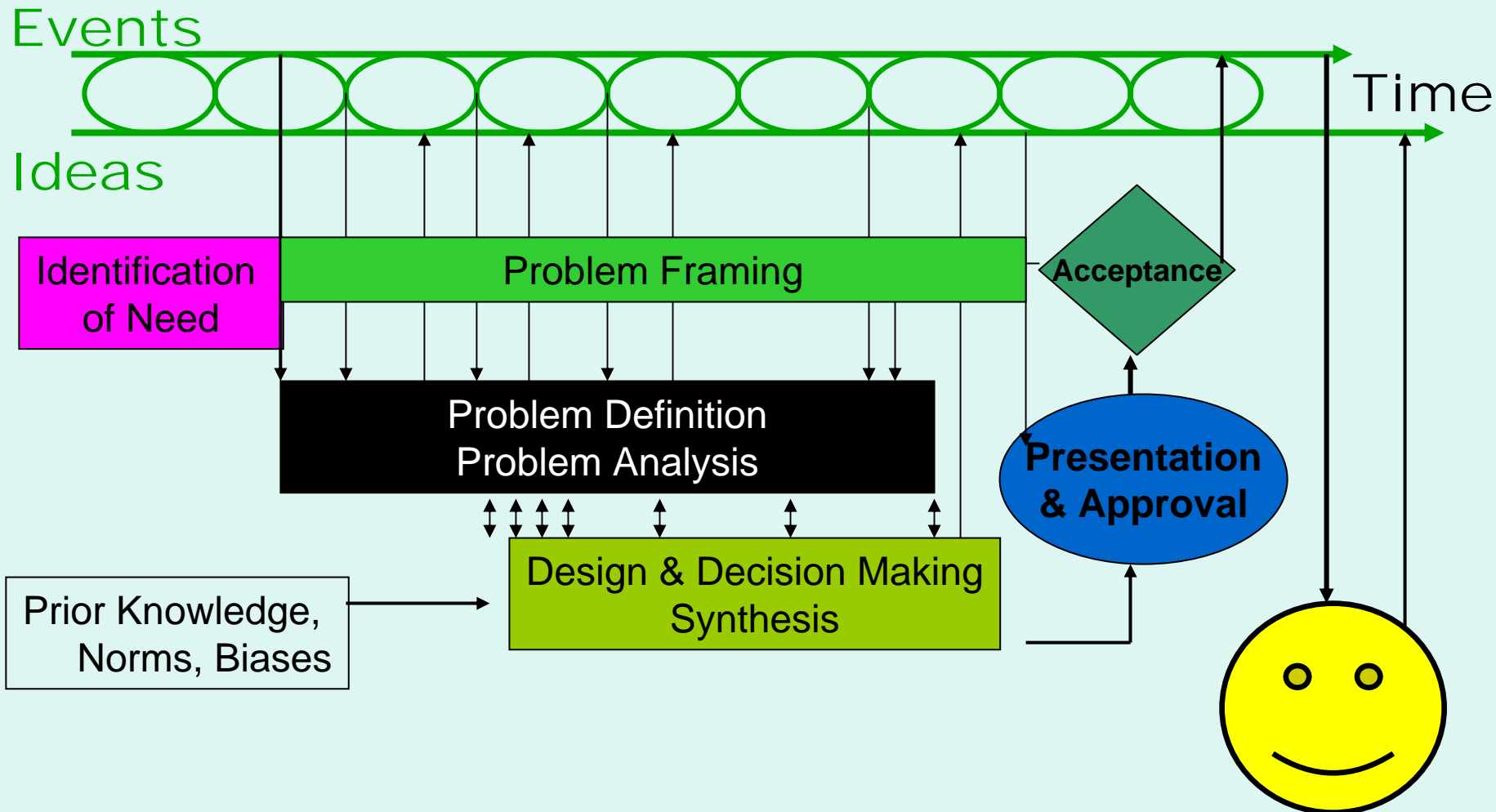
Source: Fridley's imagination
(used without permission)

Appreciative Design Model

Premises

- Design is a Social Process
- Perspectives Change over Time
 - Result of Events and Ideas
 - Result of Mutual Learning
- Structured Decision Processes Support Communication

Appreciative Design Model



Restoration Design is

- Purposeful
- Constrained
- Based in theory
- Hierarchical
- Finite

Restoration Design is

- Purposeful

There is a clear and unambiguous goal

- Constrained
- Based in theory
- Hierarchical
- Finite

Restoration Design is

- Purposeful

- Constrained

There are clear boundaries that the final design (and sometimes the design process) must stay within

- Based in theory
- Hierarchical
- Finite

Restoration Design is

- Purposeful
- Constrained
- Based in theory

*Consequences or Outcomes are
predictable*

- Hierarchical
- Finite

Restoration Design is

- Purposeful
- Constrained
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- Hierarchical

There is a *rational* order for making and implementing design decisions

- Finite

Restoration Design is

- Purposeful
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A clear end point for the design and implementation of the design exists and it can be communicated

Restoration Design is

- Purposeful
- Constrained
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- Hierarchical
- Finite

Note: It is important that a restoration design proposal communicates all of the above

It is critical that any proposal communicates that:

- “We really understand and appreciate the situation (problem, challenge, opportunities, whatever)”
- “We have a really great idea”
- “We have the wherewithal to bring the idea to fruition and (solve the problem)”

So, how do we do this?

“We really understand and appreciate the situation” (problem, challenge, opportunities, whatever)

- Active listening
- Client Expectations (CE's)
- Stakeholder Expectations (SE's)
- Overall Goal
- Functional Requirements (FR's)
- Constraints (C's)

Active Listening

- Provide direct feedback to assure the person or people you are listening that you are indeed listening
- Repeat accurately what you are hearing to confirm that you have successful communication
- (Go read a self help book on relationships)

Client Expectations (CE's)

- Use your client's own words to generate a list of their expectations:

Stakeholder Expectations (SE's)

- Stakeholders are all the folks that are either:
 - Affected by the outcome of your project; or
 - Can affect the outcome of your project
- Who are your project's stakeholders?
- What are their expectations? (write in the client's or stakeholders' own words)

Stakeholder Expectations (SE's)

Who are your project's stakeholders and what are their expectations?

Overall Goal

- The overall goal must accurately reflect the client's expectations
- It may (but doesn't have to) reflect some of the stakeholders' expectation
- It must be technically accurate

Overall Goal

Write a draft “overall goal” for your project:

Functional Requirements (FR's)

- Needed functions or functionality (or possibly structure)
- In R.E. often drawn from ecological function, process, structure
 - Examples?
- Technical (R.E. Designer's) interpretation of the CE's (must map to CE's)
- Unbounded (doesn't limit "how")

Functional Requirements (FR's)

Write possible FR's for your project:

Constraints (C's)

- Limitations on how the FR's are met
- Brought to the table by stakeholders
- May be:
 - Natural
 - Legal
 - Political
 - Ethical
 - Economic
 - Irrational

Constraints (C's)

Rewrite your SEs as constraints:

“We have a really great idea”

- Describe processes you use to develop and analyze ideas
- Explore the state of the art
- Show alternative ideas that you considered or will consider – lots of ideas are usually a good thing
- Use text, tables, maps, illustrations
- Elucidate your decision making process and criteria
- Explain and use sound theory

Remember: “Based in theory”

- *Outcomes* are predictable
 - You need to have a theory
 - You need to use the theory to predict the outcomes
 - Project execution
 - At completion of the installation
 - Ecosystem behavior (trajectories)
- You use the outcome predictions to make your design decisions

...based in theory

- One important collection of theory is “restoration ecology”
- Other potentially important areas of theory are:

Fridley explain DP's, use FR—DP mapping diagram

Hierarchical

- Big picture comes before the details
- Details can elucidate the bigger picture
 - Moving targets!
 - Perhaps design is inherently iterative
 - Soft Systems methodology
- Specifying *Design Parameters* (DPs = physical things you can directly specify) spawns new FRs and/or makes new Cs relevant

Hierarchical

- Example – Bicycle
 - DP of a derailleur is selected before the dimensions of the cogs (little sprockets) are specified
- Example – Restoration
 - DP of mulch is selected before a particular commercial fabric is specified (over perhaps cardboard)

We have the wherewithal to solve the problem

- Team makeup
- Individual qualifications, skills and experiences
- Institutional assets (such as facilities, equipment, software)
- Project plan with tasks, responsibilities, timelines, budgets
- Quality of your work as evidenced by your entire proposal

Finite

(when is “the design” done?)

- **The design is a “plan”**
- Who must approve the plan?
- Who will execute the plan?
 - A “**person of ordinary skill**” in the art
- Who will approve the installation?
 - Does it match the plan
 - Is ambiguity good or bad?
- How will disputes likely be resolved?
- **This lecture is finite too!**

You must develop a design-build proposal in two parts

- “Design Proposal” (Response to the RFP)
- “Work Plan” (after your first proposal is accepted)

Use the ideas from today’s class period as your framework for developing those two documents

Specific instructions for the two documents are being provided to you via the course website