Understanding Creativity: from bad ideas to personality prosthesis

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today I am not talking about …

- intelligent internet interfaces
- fuzzy personal ontologies and structure from folksonomies
- visualisation and sampling
- situated displays, eCampus, small device – large display interactions
- fun and games, virtual crackers, artistic performance, slow time
- physicality and product design
- modelling dreams and regret

… or even lots of lights

http://www.hcibook.com/alan/projects/firefly/

group challenge

think of a bad / silly idea

e.g. inflatable dartboard, chocolate teapot

or actually 3
to give to other groups ;-)
make it a good idea

- What is good - keep it
- What is bad - change it
- Change context
- Learn from aspects

why bad ideas?

training:
- low commitment => easier to critique

design:
- large jumps through the design space

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why bad ideas?

training:
- low commitment => easier to critique

design:
- large jumps through the design space
  - understanding of the design space

plus ...

- other divergent techniques:
  - random metaphors, putting ideas together
- arbitrary constraints:
  - time, materials, etc.
- externalisation
- personality prostheses
critical transitions and generating examples

• good uses of bad feature: “what’s the difference”
• similar yet critical difference (good/bad)
• helps articulate (externalisation): dimensions, facets, concepts, criteria
• general technique ...

critical transitions

• construct a boundary case …
  – example A in category, example B not in category
  – make ‘path of small changes from A to B
  – where does it ‘cross’ the boundary
  – good for ‘fat’ categories

But how to find examples?

• generating examples – hard
• examples from experience easy ??? or is it ???

boundaries

• where the action is (wild west, sea shore)
• reductionist – define and delineate
• intuitive – life is fuzzy, categories meaningless

But how to find examples?

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• examples from experience easy ??? or is it ???

• define and delineate
  – for what you learn not the result
• wholeheartedly seek but hold lightly the outcome

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• wholeheartedly seek but hold lightly the outcome
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- generating examples – hard
- examples from experience ... actually harder!

but ... generating examples ...
- take arbitrary concrete example
- morph to new concept
- constant concrete – abstract movement

externalisation

different kinds

- drawings and sketches
- models
- diagrams
- mathematical formulae
- spoken words (learn to listen to yourself)
- written words (on paper, or screen)
- computer programs
- acting

why externalise?

- informational
  - passing on to others already formed ideas
- formational
  - ideas become clearer by the process of externalisation
- transformational
  - thinking using materials
- transcendental
  - our thoughts and ideas become the object of thought

informational

formational
transformational
e.g. measure length on diagram
c.f. external/distributed cognition

transcendental

multiple classifications

why multiple classifications?
• taxonomy:
  • things
    • circles
      • red circles
      • yellow circles
    • squares
      • red squares
      • yellow squares

multiple classification
– shapes
  • circles
  • squares
– colours
  • red
  • yellow
tell you in what ways things are similar and in what ways they differ

using multi-classifications
• to spread literature search
using multi-classifications

• to spread literature search
• to identify gaps
• to discover trends
• to uncover abstractions

using multi-classifications

• to spread literature search
• to identify gaps
• to discover trends

• tosynthesise solutions

using multi-classifications

• to spread literature search
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• to uncover abstractions
• to synthesise solutions

a researcher is ...

personality prostheses
a researcher is …

- interested
- active
- confused
- geek
- optimist
- organised
- diligent
- insightful
- fluent
- creative

imagine …

selling cars …

- make pink cars
- make people like pink

eShopping

- requirement: plan a week’s food in advance
- make people organised

<table>
<thead>
<tr>
<th>DAY</th>
<th>TIME</th>
<th>FOOD</th>
<th>QTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mon</td>
<td>7:45</td>
<td>grapefruit</td>
<td>1/2 tin</td>
</tr>
<tr>
<td>Mon</td>
<td>7:45</td>
<td>tea</td>
<td>cup</td>
</tr>
<tr>
<td>Mon</td>
<td>10:30</td>
<td>choc. bsct</td>
<td>3</td>
</tr>
<tr>
<td>Mon</td>
<td>10:30</td>
<td>coffee</td>
<td>2 cups</td>
</tr>
</tbody>
</table>

why do it to yourself!

research …

- the goal/outcome is fixed (sort of)
- the process involves you

who you are

- physical capabilities
  - maybe go to the gym
- cognitive capabilities
  - maybe take evening classes
- personality and cognitive style
  - time management, tidiness, divergent, convergent thinking
  - slow/hard to change if possible … and do you want to?
  - often treated as moral failure
  - only ever apologise for what you do, never who you are
tools to help you given who you are
(NOT to change who you are)

• physical prosthesis
  – forklift
• cognitive prosthesis
  – calculator
• personality prosthesis

N.B. Csikszentmihalyi – creative thinkers extreme at both ends of personality traits
  – convergent thinker – bad idea helps divergence
  – divergent thinker – prompts help convergence

don’t say:
  if only I were like X
  I could reach my (research) goals

do ask:
  given the way I am
  how do I do things

plus ...

come to
Tiree Tech Wave
3-7 Nov 2011