Don Norman’s Knowledge in the Head and World

Jim Rowan
Georgia Gwinnett College
ITEC 4130
Knowledge in the head & Knowledge in the world

• There’s more knowledge in the world than you might imagine

• Humans are lazy... on purpose
  • There’s too much going on in the world to pay attention to everything so we are selective
  • We learn just enough to do what we need to do
• Herbert Simon called this “satisficing”
  • http://en.wikipedia.org/wiki/Satisficing
  • What good is the right answer if it comes too late to help you solve the problem?
Herbert Simon

He pointed out that human beings lack the cognitive resources to optimize:
  • we usually do not know the relevant probabilities of outcomes
  • we can rarely evaluate all outcomes with sufficient precision
  • our memories are weak and unreliable

So... we can’t be completely rational

A more realistic approach to rationality takes into account these limitations
  • This is called bounded rationality
Strategies that take advantage of satisficing

Don’t sacrifice the “good enough” answer
In a search for the perfect answer

POGE: Principle of good enough

Worse is better:
http://en.wikipedia.org/wiki/Worse_is_Better

The reverse of this is Featuritis:
http://en.wikipedia.org/wiki/Featuritis
Knowledge in the head
Knowledge in the world

There’s more out there than you might imagine
Knowledge in the head
Knowledge in the world

There’s more out there than you might imagine

That’s why **context** is so important

Many times context provides the actual meaning

This is one reason that moving an aging person to an elder care facility can be so traumatic for the aging person... their living arrangements provide the context to their lives... it provides them with clues to who they are and how they live
## 3.6 Tradeoffs

<table>
<thead>
<tr>
<th>PROPERTY</th>
<th>KNOWLEDGE IN THE WORLD</th>
<th>KNOWLEDGE IN THE HEAD</th>
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</thead>
<tbody>
<tr>
<td>Retrievability</td>
<td>Retrievable whenever visible or audible.</td>
<td>Not readily retrievable. Requires memory search or reminding.</td>
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<tr>
<td>Learning</td>
<td>Learning not required. Interpretation substitutes for learning. How easy it is to interpret information in the world depends upon how well it exploits natural mappings and constraints.</td>
<td>Requires learning, which can be considerable. Learning is made easier if there is meaning of structure to the material (or if there is a good mental model).</td>
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<tr>
<td>Efficiency of use</td>
<td>Tends to be slowed up by the need to find and interpret the external information.</td>
<td>Can be very efficient.</td>
</tr>
<tr>
<td>Ease of use at first encounter Aesthetics</td>
<td>High.</td>
<td>Low.</td>
</tr>
<tr>
<td></td>
<td>Can be unaesthetic and inelegant, especially if there is a need to maintain a lot of information. This can lead to clutter. In the end, aesthetic appeal depends upon the skill of the designer.</td>
<td>Nothing need be visible, which gives more freedom to the designer, which in turn can lead to better aesthetics.</td>
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