Bad Things May Be Good for You:
creativity and regret

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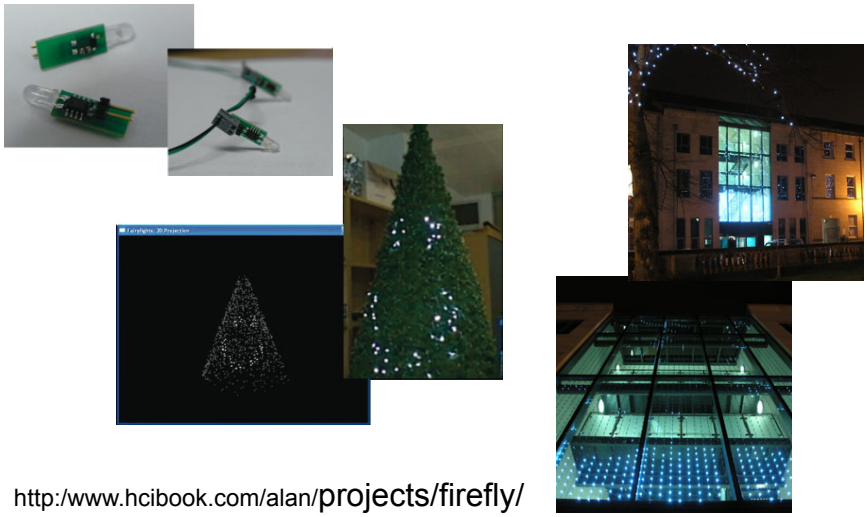
today I am not talking about …

- 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

but have before

… or even lots of lights



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

... but I will talk about

bad ideas for creativity and design — for innovation in computing

understanding regret — using computational modeling

linked by imagination and rationality

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bad ideas
for creativity and design

origins ... nearly 15 years ago, UG research methods ...

design exercise (recent example)

Collaborative or Social Networking Thing* for babies and/or parents of babies …

… but … design a bad one / silly one

* at least some physical token or device, not purely web/digital

prompts …

THE BAD

1 what is bad about this idea?
2 why is this a bad thing?
3 are there any other things that share this feature but are not bad?
4 if so what is the difference?

THE GOOD

1 what is good about this idea?
2 why is this a good thing?
3 anything that shares this feature but is not good?
4 if so what is the difference?

try different contexts

used car salesman – how would you sell it to someone?

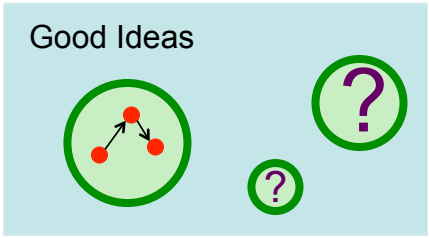
make it a good idea

- 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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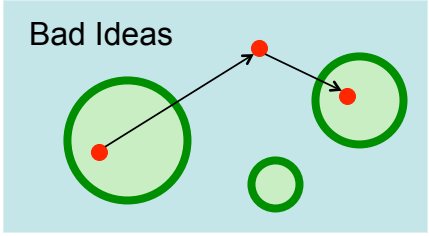
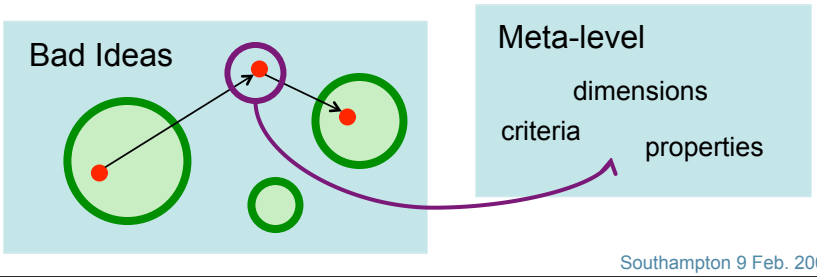


why bad ideas?

training:
- low commitment => easier to critique

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



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plus ...

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

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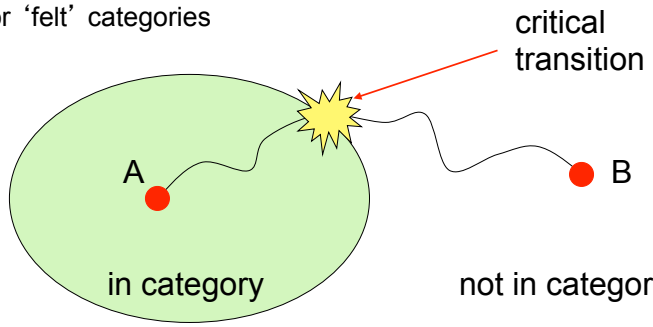
bad ideas ... related things ...

critical transitions

examples

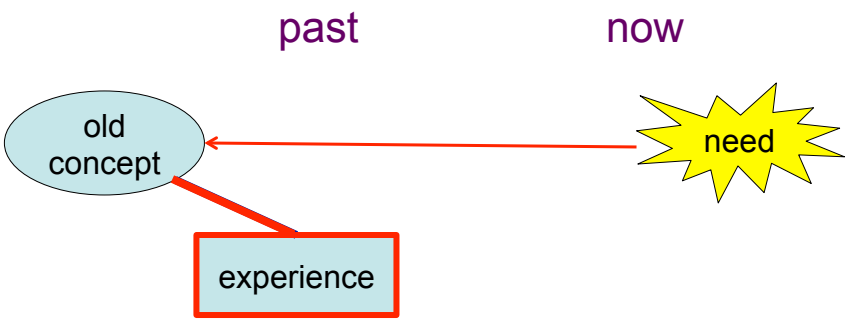
critical transitions

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



but how to find examples?

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



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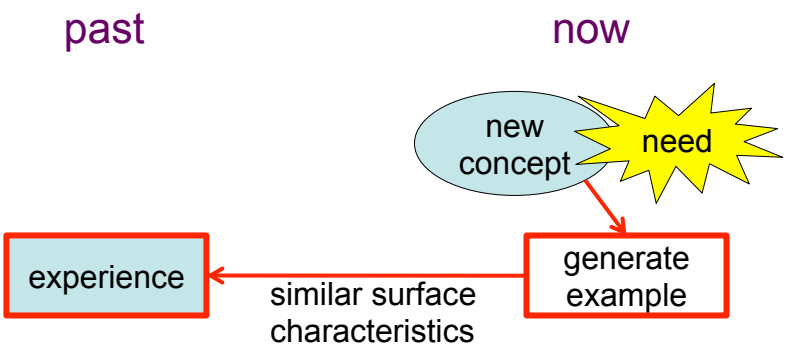

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but how to find examples?

- generating examples – hard
- examples from experience ... actually harder!

but .. generating examples ...

- take arbitrary concrete example
- morph to new concept
- constant concrete – abstract movement

WARNING! speculative

modelling regret

why regret?

it seems such a negative emotion

is there some adaptive reason for it?

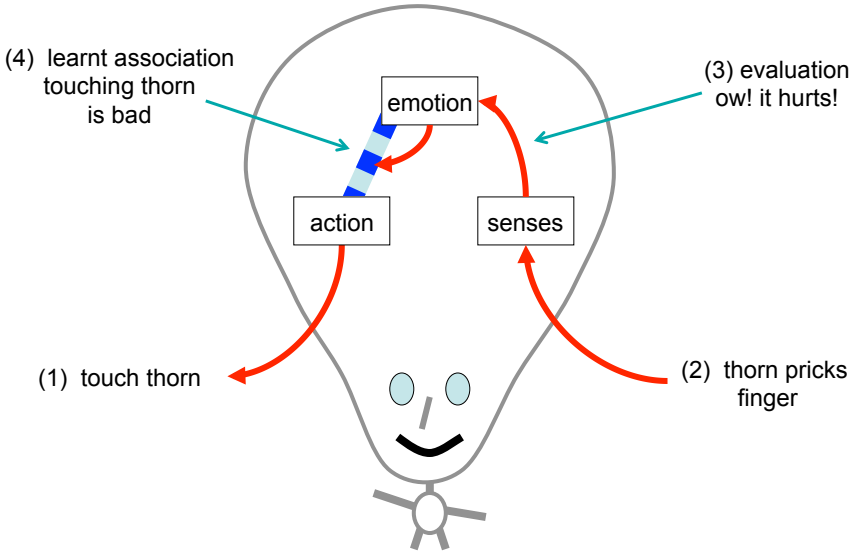
... or just an accident

features of regret

- modal/counterfactual “what if” analysis
- worst when you ‘nearly’ averted disaster
- seems to be about learning

so how do we learn ....

basic reactions - learning



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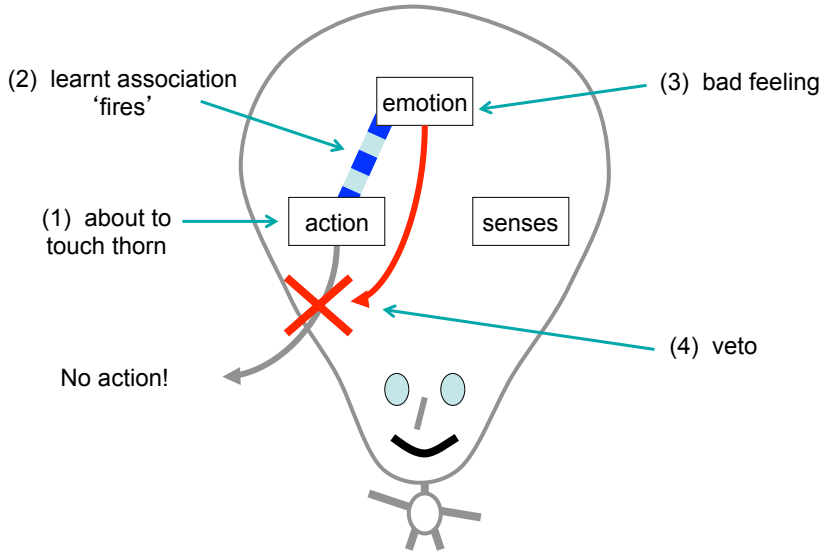
basic reactions – moderating action



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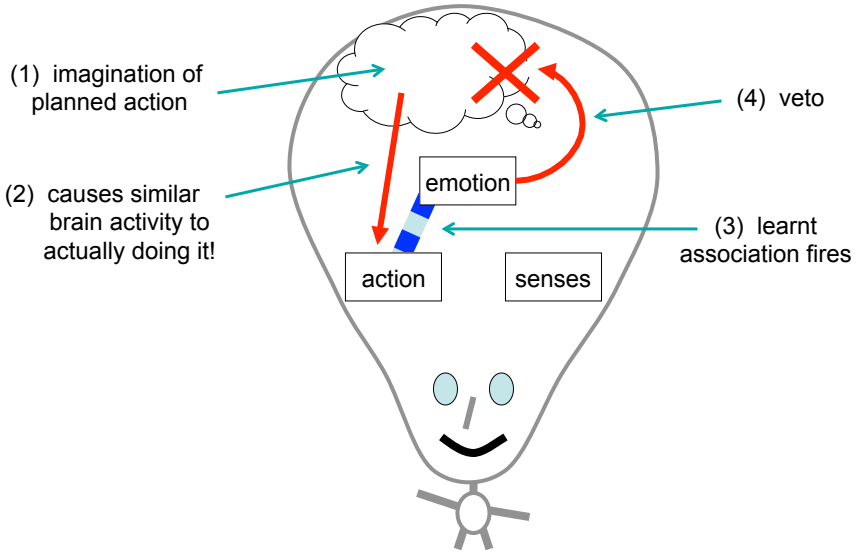
basic reactions – moderating intention



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only works for instant effects

so what about delayed effects?

(e.g. poisonous plant)

need imagination!

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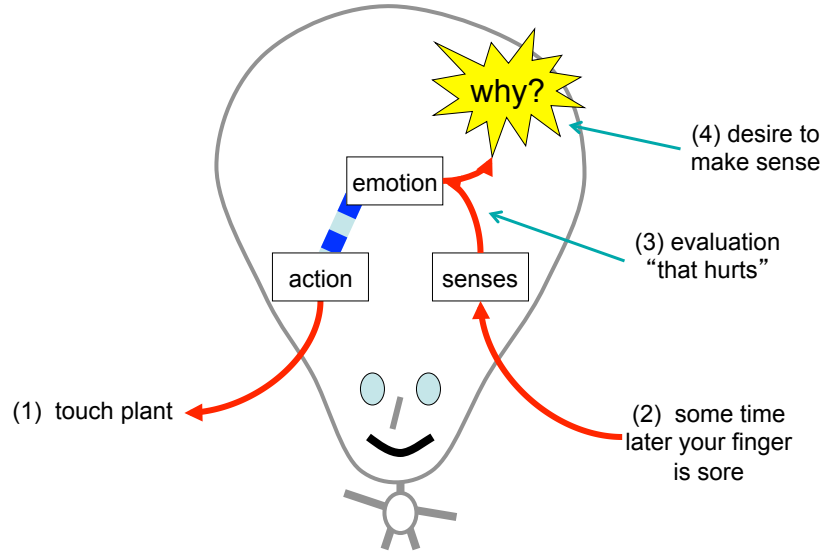
delayed effect – the gap



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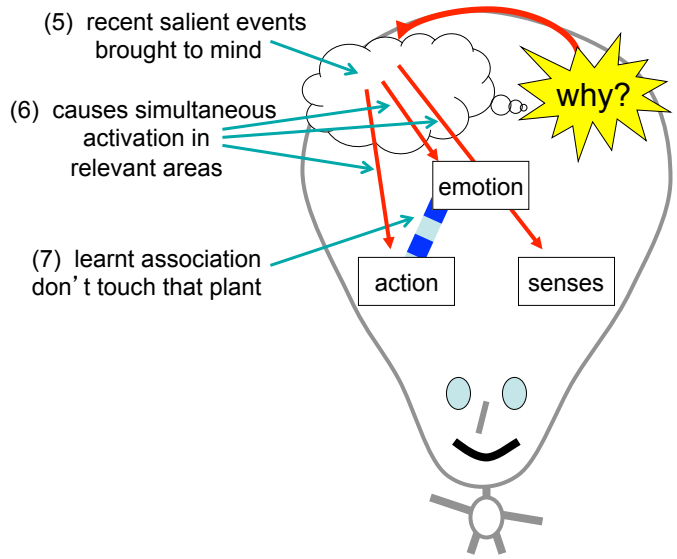
delayed effect – bringing to mind



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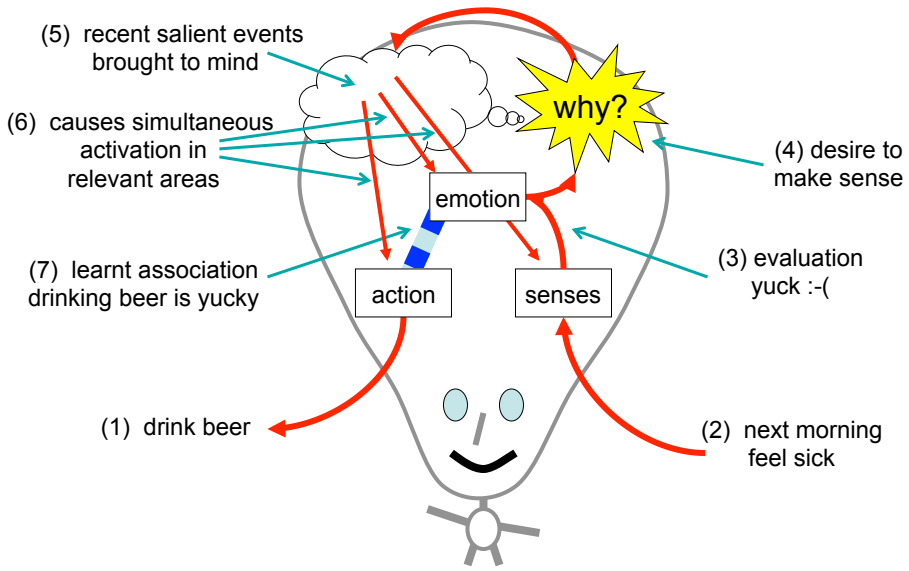
delayed effect – put it together

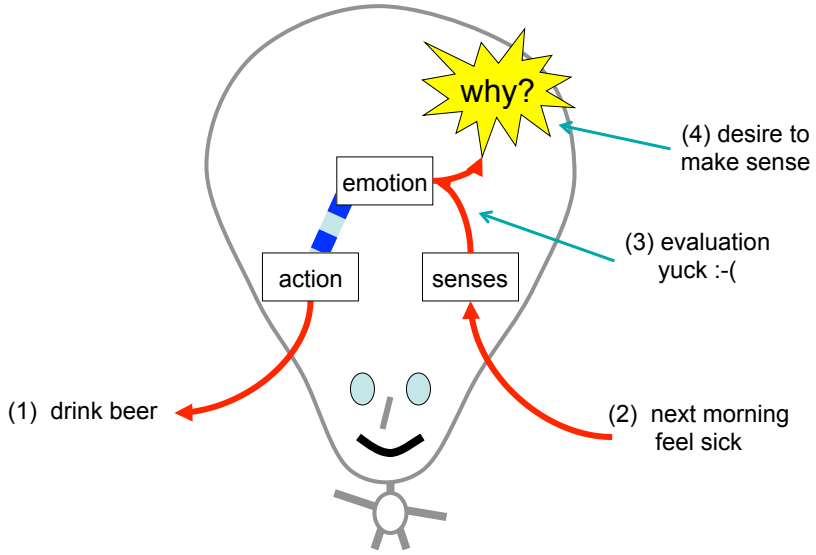


and now regret ...

similar but also:

- causal connections
- moderating emotions

regret – the gap



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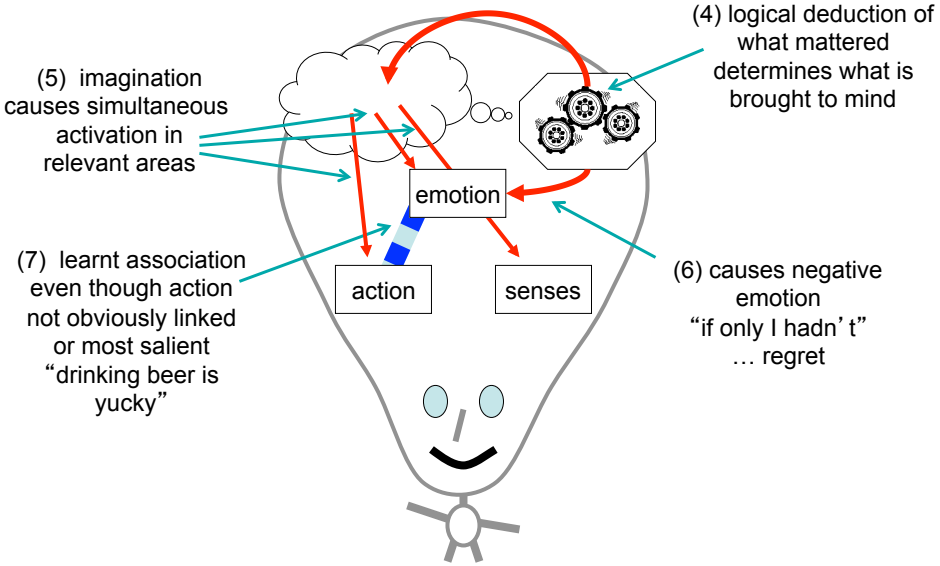
regret – casual thinking



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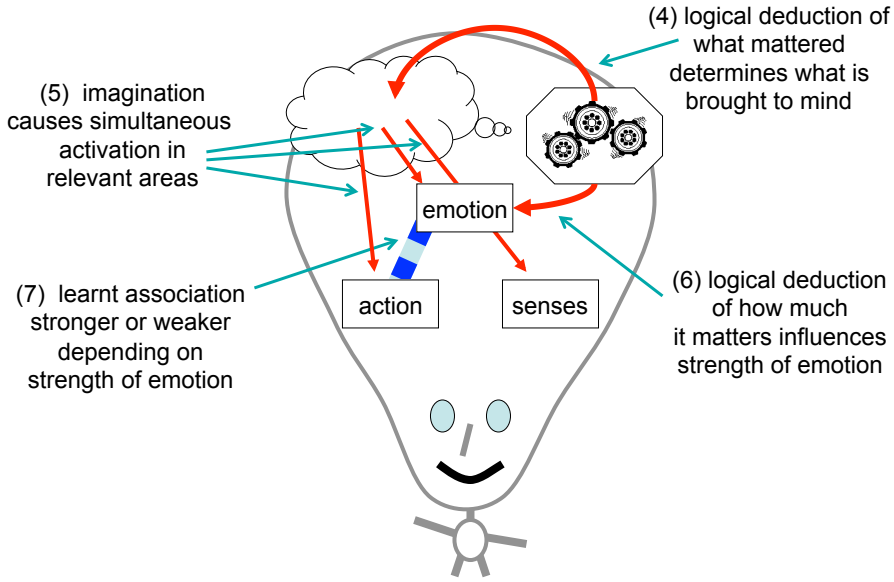
regret – modifying emotion



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but is it true?

if I were a psychologist
I would run an experiment

if I were a brain scientist
I would do a scan

but as a computer scientist ...
... build a computer model

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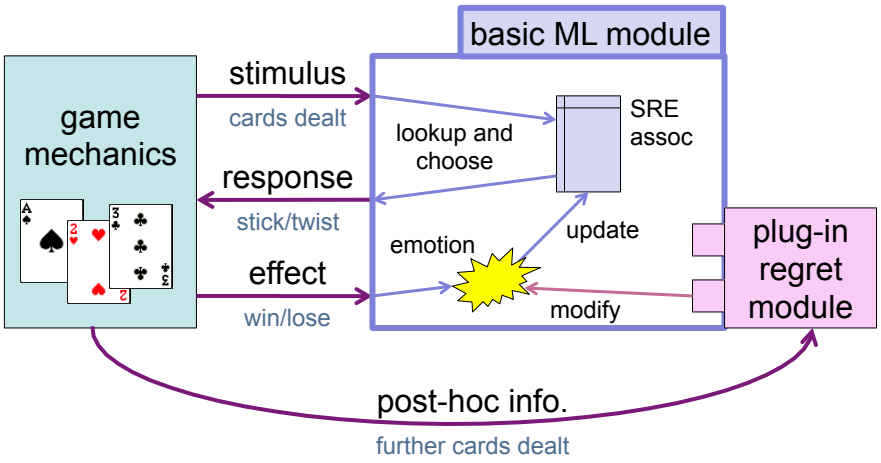
model architecture



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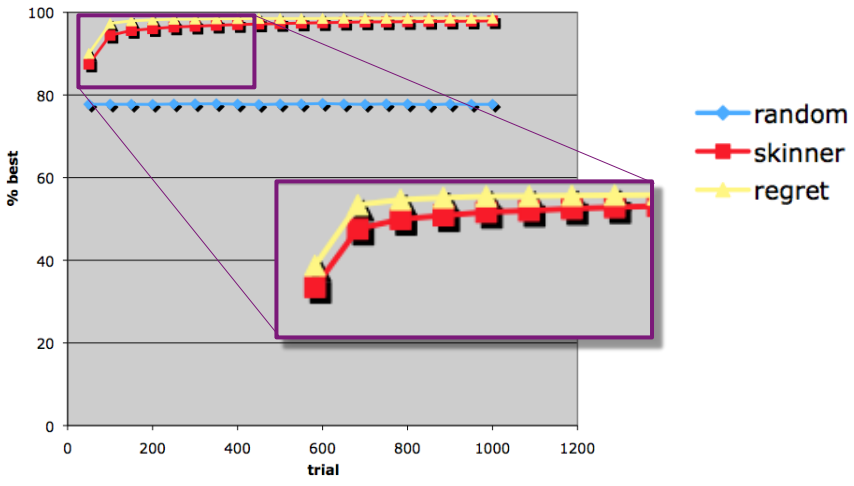
it works!
faster (not better) learning ☺



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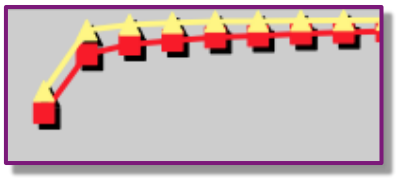
the data

no regret

iteration	%best
50	87.47
100	94.43
500	97.27
1000	97.94

with regret

iteration	%best
50	90.05
100	97.31
150	97.94
1000	98.60



and the twist ... positive regret

the code:

```
if ( effect negative ) do Regret
```

coder thinks,
"do we need the condition?"

positive regret?

- the grass is greener ...
- in code has greatest effect
  - ameliorates winner takes all local minima

for people too?

bad things really may be good

Bad Ideas make us creative
- with the right prompts

Regret helps us learn
- maybe machines too

} both need imagination and rationality

understanding how we think helps us:
- develop practical techniques
- maybe even tools

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