

RDPModels

Modeling Recognition

- PDP models demonstrate **graceful degradation**, which means selectively damaging certain units doesn't necessarily result in a complete breakdown of the whole system (as can happen with other kinds of system, e.g. damage the AC adaptor for a game console and it won't even turn on)
- Depending on the extent, this seems similar to what happens with neurological damage (thought continued on next slide...)

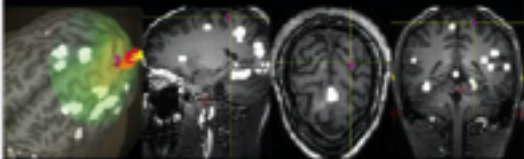
GRACEFUL DEGRADATION (with acceptable fallbacks)



© cordell brewer

<http://creativeengineeringstudio.com/grateful-degradation-with-acceptable-fallbacks/>

A different kind of grateful degradation...



ESSENTIALS OF COGNITIVE NEUROSCIENCE

Bradley R. Postle

WILEY Blackwell

RESEARCH SPOTLIGHT

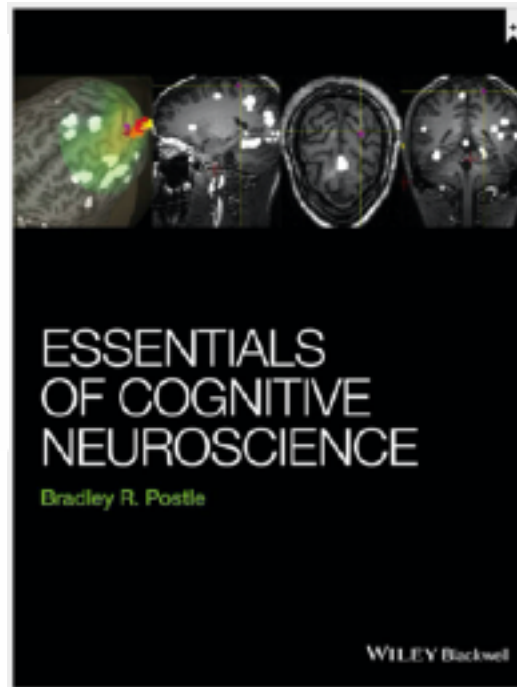
9.1 Where's the recognition in visual object recognition?

PDP Models

Modelling Recognition

RESEARCH SPOTLIGHT

9.1 Where's the recognition in visual object recognition?



- PDP models demonstrate **graceful degradation**, which means selectively damaging certain units doesn't necessarily result in a complete breakdown of the whole system (as can happen with other kinds of system, e.g. damage the AC adaptor for a game console and it won't even turn on)
- Depending on the extent, this seems similar to what happens with neurological damage (thought continued on next slide...)

GRACEFUL DEGRADATION
(with acceptable fallbacks)



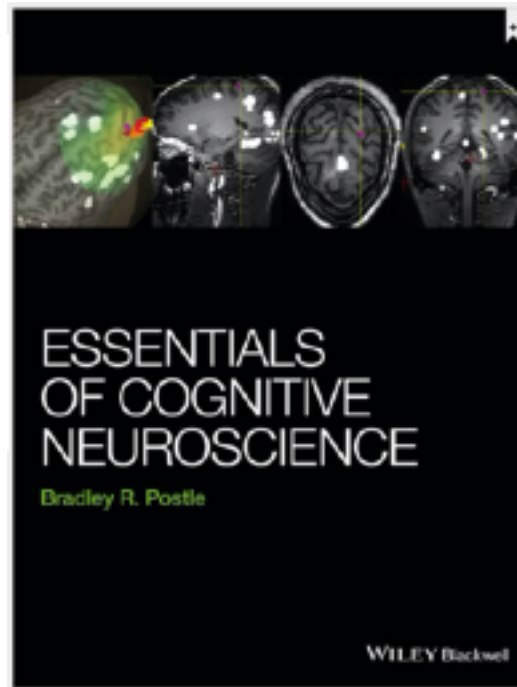
A different kind of graceful degradation...

PDP Models

Modelling Recognition

RESEARCH SPOTLIGHT

9.1 Where's the recognition in visual object recognition?



- If we thought that conceptual knowledge (e.g. what a 'dog' is gets stored in neuron X) gets stored by a specific neuron/group of neurons, we would expect stroke damage to result in very selective losses for recognizing specific objects on the one hand (e.g. lose neuron X and lose your concept of dog), while leaving knowledge for all other kinds of objects completely intact on the other
- This doesn't seem to be what happens and people tend to get more generalized kinds of behavioural effects from neurological damage
- Note that one complication to the above is people sometimes do seem to have pretty specific behavioural consequences from neurological damage, e.g. a case study of visual agnosia that was restricted to musical instruments