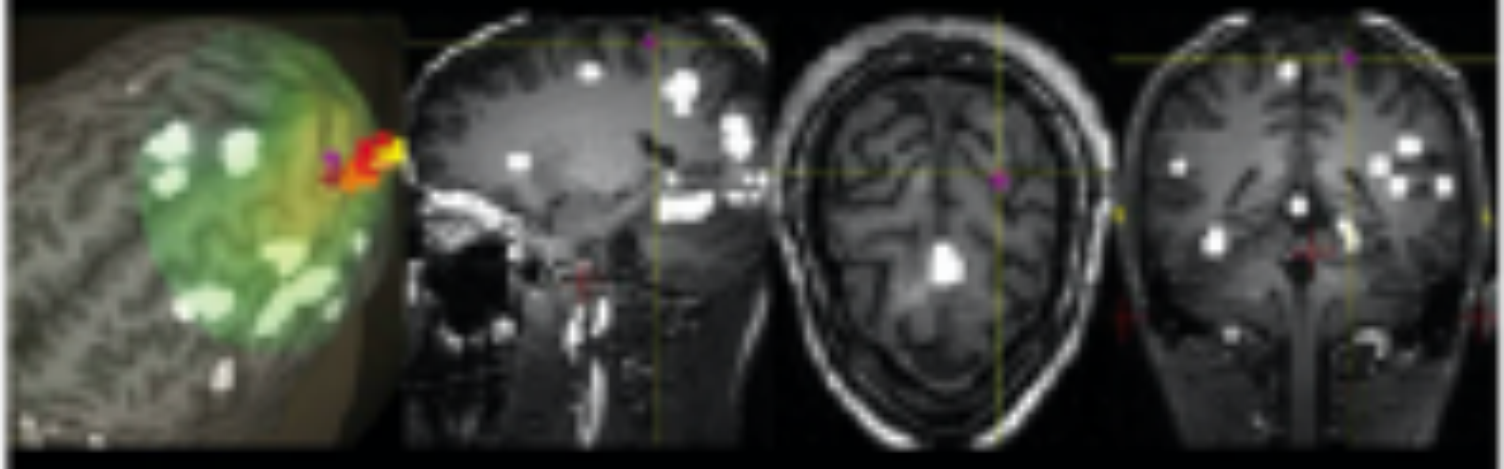
PDP Models

Modelling 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



ESSENTIALS OF COGNITIVE NEUROSCIENCE

Bradley R. Postle

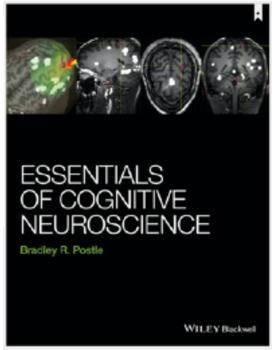
WILEY Blackwell

RESEARCH SPOTLIGHT

9.1 Where's the recognition in visual object recognition?

PDP Models

Modelling Recognition



- 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

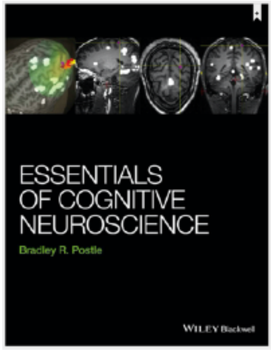
- Note that one complication to the above is people sometimes do seem to have pretty specific behavioural consequences from neurological damage, e.g. a case study of visual agnosia that was restricted to musical instruments

fMRI Methodology

The Problem of Multiple Comparisons

METHODOLOGY BOX

9.2 Some problems, and solutions, with univariate analyses of fMRI data



- Returning to the world of fMRI, let's first briefly consider two kinds of challenges associated with that technique, as they relate to Kanwisher's work on the FFA

- Recall the problem of multiple comparisons raised on slide 28 of lecture 1: the dead salmon that produced a (definite!) false positive in an fMRI study using analysis methods typical of the time