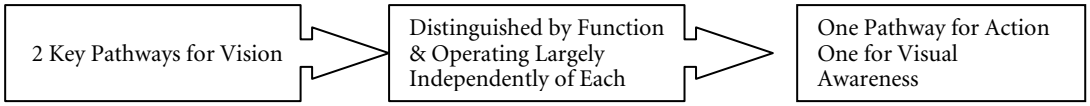
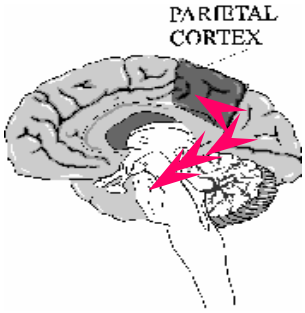
# Visual Cognition & Visual Awareness IV:
## *Dissociations of Vision & Action*

### 1. *Milner & Goodale's Functional Hypothesis*

…it has been traditional to vest processes leading to visual phenomenology with special significance and, indeed, to regard them as the final common pathway for the visual system... In contrast to this traditional view, we have argued at length for an alternative account in which there is no common pathway for vision. (Goodale & Milner, p.200, 1995)



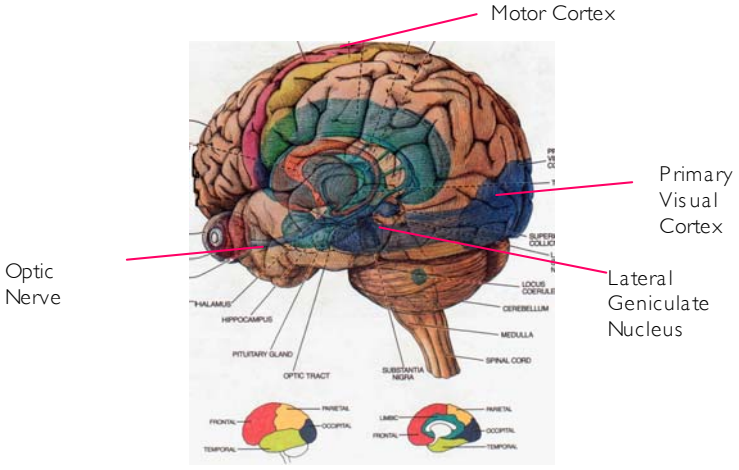



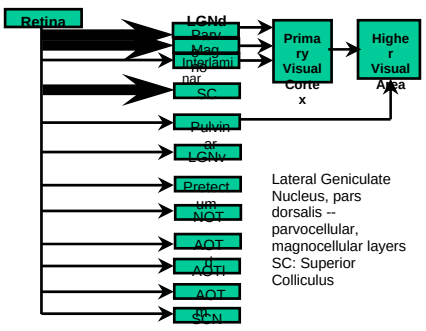

Earlier conceptions of distinguishing streams of visual processing assume *informational* differences not necessarily *functional* differences: 'What *versus* Where' (identification as opposed to location). Goodale and Milner stress a *functional* contrast – vision for action *versus* vision for identification/awareness.

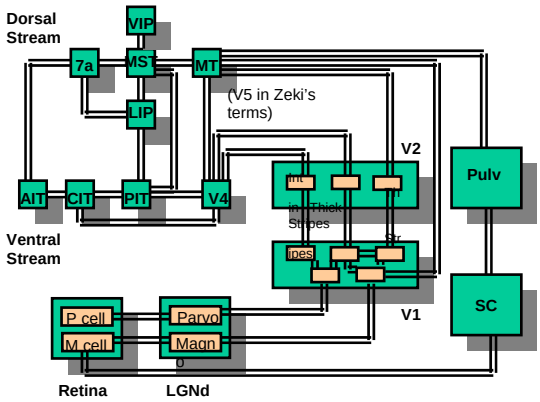
The Structure of the Case is built up through:

a.) anatomical evidence;
b.) double dissociations in pathological cases;
c.) double dissociations in normals;
d.) intelligibility of the functional dissociation

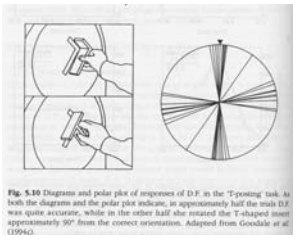
### *2. The Anatomical Division*





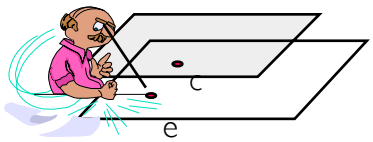

*3. Pathological Evidence: The Case of DF*



DF is a patient who has suffered brain damage to visual areas through carbon monoxide poisoning.
DF suffers from visual form agnosia: objects appear to be a blur and she cannot discern the orientation or shape of objects; or recognise the kind of thing an item is.

She can succeed in 'posting a letter'.
She does not succeed in manipulating a mannequin into the orientation for posting.
She does not succeed if there is a delay between prompt and appropriate action.

*4. Evidence of Dissociation in Normals*
We are subject to the Titchener illusion in visual awareness, but apparently not in visuo-motor coordination, when prehensile grip is measured.



Visuo-motor coordination can compensate for sudden movement of target without agent's awareness of the abnormality.

*5. Summary of Hypothesis and Evidence*
1. Two anatomical streams distinguished by *function* rather than information processed
2. Dorsal stream associated with visuo-motor control
3. Ventral stream associated with object-identification, visual perception and the construction of a description of the scene
4. Visual awareness is associated solely with the ventral stream and with 'visual perception'

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