MEDIEVAL CELL DOCTRINE

AND VENTRICULAR THEORY
THE POPULAR MODEL OF BRAIN FUNCTION FROM THE 5TH TO THE 17TH CENTURIES
General Framework/Outline

(a) Five “outer” senses and (variable number of) “inner” or “internal” senses;
(b) Internal senses operate on forms or images that result from combining the 5 outer senses in the sensus communis (usually presented as being in the front of the first ventricle of the brain)
(c) Forms/images stored in memoria
“Aristotelian” cognitive model

• 5 outer senses
• Combine in sensus communis
• Unified perception stored in memoria
avicennian chain in outline:

common sense →
imagination → fantasy →
estimation → cognition →
memory
No “standard” model

• Variable number of “senses”
• Variable number of “cells”
• Variable emphasis on actual anatomy vs “schematic” anatomy
• Variable emphasis on process (physiology)
• Variable emphasis on animal vs human senses
‘genealogy’ (Green, 2003)

- Full medieval form only in medieval times
- Galen: mental functions in brain substance very little localization; more physiology
- Posidonius (4th century, A.D.)
- Nemesius of Emesa (4th century, A.D.) fully developed ventricular theory
- St. Augustine (401 A.D., *Literal Meaning of Genesis* – somewhat different ventricular theory)
MEDIEVAL CELL DOCTRINE

- Formation of the mental image
- Cognitive operations on the mental image
- Storing the mental image in memory
- Information Transfer (movement)
- Localization in brain
Figure 2.4. The ventricles as depicted by Hieronymous Brunschwig in a 1525 edition of his book from 1497.
Genius philosophi
Imaginaria

Intelligentia
Logica

Memoria

Capilla
Cuna
Cerebro
Pons
Dura mater
Pla mater
Cerebro
Ipsum
Utrich sed
Rete mistabile
Locum
Nervos paria
N
Corpuscle
Dilis
Budis
Olfactus
Gustus
Locomot
Sagital
Zunca.

Lacus per toto corpus expedit per nervos spondium.
Figure 2.3. A diagram from Johannes Peyligk's (1516) *Compendiosa* showing the ventricles and giving labels to the sensory organs.
Cerebrum per totum
Sensus cois
Imaginatio
Fantasia
Estimativa
Memoria
MEDIEVAL CELL DOCTRINE

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avicennian chain in outline:

common sense \( \rightarrow \) imagination \( \rightarrow \) fantasy \( \rightarrow \) estimation \( \rightarrow \) cognition \( \rightarrow \) memory
MCD + VT
Componentional – separate functions
Geographical – separate locations
Representational – image looks like the object