Neuroanatomy for the Clinical Psychologists: Understanding the Brain in the Clinical Context

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I. Developmental Approach
### II. Cytoarchitectural Approach (e.g. Brodmann’s areas)
3. Functional Organization

1. Primary Areas - blue (modality specific)
2. Secondary Association Areas – yellow (modality specific)
3. Multimodal/Supramodal pink
4. Limbic Ring green
Functional Neuroanatomy
from “centers” to functional systems

Erroneous Assumptions

1. Unitary notion of brain function
   --organicity ↔ modularity
2. Lesions have specific effects only
   general deterioration associated with
   overall slowing of processing
   --present information more slowly'
   --talk in shorter sentences
3. Any lesion will produce a “measureable”
   deficit - negative signs
   --structured vs. unstructured situations
Importance of a Conceptual Model of Brain/Behavior Relationships

1. Sets A Reasonable Expectation of Performance  
   *i.e. severity/mechanics of TBI*

2. Anticipates Deficits Associated with a Neurobehavioral Disorder  
   *i.e. what kinds of problems should this stroke patient have and what can I suggest to the family*

3. Recognition of Performance that is Inconsistent with a Neurobehavioral Disorder  
   *i.e. is this magnitude of forgetting expected or could it be compliance?*

Important Elements of a Well Reasoned Approach

1. Effects of brain lesions are not directly proportional to their size

2. Brain injury also results in more general effects – slowing, etc.

3. Keep in mind the nature of brain injury/lesion – pathological processes have different effects depending on type, diffuse/local, chronicity, size, toxicity

4. Individual differences – age, education, handedness, culture, etc.