Cognitive Psychology

Internal processes that make sense of the environment and decide on appropriate action (attention, perception, learning, memory, language, problem solving, reasoning and thinking).

What it is not:

Behaviorism, does not care about the cognitive processes, only asses the stimulation and the reaction.
The problem is that way the same stimulation does not have the same response on different specimens. That is how cognitive psychology was born.

Cognitive Neuropsychology:

Trying to make sense of cognitive performance of brain-damaged patients. If we know what kind of injury and what area it affects. We can reason that that area is responsible for the function affected. *Studying brain-damaged patients can tell us much about cognition in healthy individuals.*
This perspective is based on **modularity**, the assumption that the brain consists of independents modules or processors, each specialized for a process (e.g. area to process music). Each module is located in a specific brain area.

Characteristics of modularity:

- Domain specificity
- Information encapsulation
- Mandatory (fast) operation (e.g. if u are listening to music you are going to process the melody).
- Superficiality of computation (i.e. we are not processing what type of information it is do decide to which area it has to go, the path for information is already predefined).
- Innate (there are always in those specific areas, we are born with them, they just need to get mature).
- Neurologically hardwired (see previous point about superficiality).
- Specific breakdown patterns
- Characteristic pace and sequencing in ontogeny (all humans learn the same thing at the same time (e.g. firsts words), abilities evolve following the same pace)

Principle of Transparency

Performance (damaged) = Performance (healthy) - Impact of the lesion

Cognitive Neuroscience

Intensive study of brain activity as well as behavior. We must consider how the brain is organized and how different areas are described to understand research involving functional neuroimaging (e.g. PET scan)

Computational Cognitive Science

- Computational modelling: programming computers to model/mimic human functioning. *have the goal of understanding the human mind through computer simulation* i.e. understand the human brain.
- Artificial intelligence: constructing computer systems producing intelligent outcomes but typically in ways different from humans i.e. design machines that solve problems.

Types of models:

- Computational models: provide cognitive architectures *models of the fixed structure of the mind*
- Connectionist models: typically consist of interconnected networks of simple units that exhibit learning. They have stages (input, hidden, output and adjustment model)