

“levels” of explanation—a symbolic and abstract level for cognition as opposed to a neural level for the actual functioning of cognitive processes in real time.

There is still strong argument among psychologists, biologists, philosophers, and computer scientists over which level of explanation is most useful for different kinds of understanding. However, increasing numbers of cognitive psychologists have become interested in the functioning of the brain as an underpinning for cognitive activity. Although the question of which level provides the most useful explanation remains, many cognitive psychologists feel they cannot investigate cognition without a working knowledge of how the brain develops and functions.

Of course, the topic of brain functioning and its relationship to cognition is itself a vast and complex one, and only brief highlights are given here. The interested student is referred to other in-depth treatments of the topic (e.g., Gazzaniga, 2009; Reuter-Lorenz, Baynes, Mangun, & Phelps, 2010). First, consider some growth statistics. The brain grows from 0 to 350 grams (about three-quarters of a pound) during the prenatal period, but this growth doesn't stop at birth. The maximum brain weight of 1,350 grams (about three pounds) is achieved when the individual is about 20 years old (Nowakowski & Hayes, 2002). Most postbirth growth takes place before the child's fourth birthday, but some changes continue through adulthood.