

The Relatively Large and More Complex Human Brain

- 80% of brain size is due to our large size
- 20% is due to the process of human bicultural evolution
- Selective expansion of those areas of the brains that influence: -vision (occipital lobe) speech or hearing (temporal lobe) -symbolization (frontal lobe)
- The human brain may be an adaptation that made other adaptations unnecessary (meaning that we don't need to grow fur because we can use our brains to make coats)
- The brain must be stimulated and extended to realize its full potential
- Brian potential is hard to reclaim nice once it is lost or neglected
- Parietal lobe- intelligence, reason, telling right from left, language, sensation, reading
- Occipital lobe- vision
- Cerebellum- balance, coordination, fine muscle control
- Brain stem- breathing, blood pressure, heartbeat
- Temporal lobe- speech, behavior, memory, hearing, vision, emotions
- Frontal lobe- movement, intelligence, reasoning, behavior, memory, personality

Human Speech Language

- Most important adaptation
- Most unique characteristic, leading to reading and writing
- The significance of speech and language
 - allows better standardization of behavior
 - aids origination and invention
 - aids in cultural borrowing
 - aids in the ability to learn from past experience
 - aids in the ability to anticipate the future
 - aids in the development, preservation and modification of ideas and knowledge
- Words as tools-
- To form concepts, recall the past, discuss the future, relate the present

The Phonetic Code:

- System in which shirt, meaningless sounds are combined into meaningful units
- Because it is open we can and do create words to meet our needs
- Unique to our species

Biological Characteristics Related to Speech

- Mandible broadened and reinforced with a projecting chin
- But maintained the strength for chewing
- Larynx moved down the throat away from the soft palate
- Forming an oral chamber which makes resonating for human speech possible
- Special area for speech in brain enlarged and well developed (processing center)

- Fine motor control of tongue
- Fine motor control of breathing
- Size of vertebral canal crucial (homo creetus too narrow)
- Innervation necessary for breath control which is necessary for articulated speech
- Exact neurological basis for speech unknown

Human Biophysocial Individuality

- Each individual is genetically unique
- Variations occur at all levels of organismal organization
- Biochemistry, morphological (anatomical) physiology, psychology (behavior)
- Less variation occurs in the chemical and physical properties of the internal cellular environment
- The statistical chances of two individuals having the same genotype is on in 10,000,000 to the 7th power
- So called bio-racial variation is very minor and of little biological significance

Human Behavioral Plasticity

- Practically free of instinctive behavior
- Humans can adapt to a great variety of situations
- By modifying them or developing cultural means to cope with them
- Educability is a vital aspect into old age (any age)
- We learn by classifying and categorizing
- Memorization of information is the key to all other learning
- Positive reinforcement is necessary

The Human Omnivorous Diet

- Humans can eat anything that isn't poisonous or indigestible
- Human teeth are non-specialized and able to process a wide variety of animal and plant foods
- Our digestive tract is well adaptive to handle a variety of foods
- We are the only meat eating primate
- We have special kidneys for carrying off protein wastes
- Omnivory expands the range of the human species
- It allows us to adapt to changes in our environment
- Variation in diet is important since humans need 50+ nutrients daily