Psychology 020-Chapter 11 –Part 1
Developmental Psychology
Tues. Jan.8, 2008

OUTLINE
Lifespan development
Definition
Methodology for studying development
Prenatal development
Conception
Prenatal development
Teratogens
The newborn

●**Developmental Psychology**

- study of physiology, cognitive, and social emotional changes throughout the lifespan
- from birth to death

→ Research methods:

longitudinal –same individuals are studies over long periods of time

problems: subject attrition, practice effects

cross-section- people of different ages are studies at the same time

problems: cohort effects- differences due to different life experiences

longitudinal-sequential – persons of different ages are studied over long periods of time

→Physical development

Conception

Ovulation- mature egg released and picked up by tube

~300 million sperm in ejaculate (~000 reach egg)

Sex determination

Dependent on the x or y chromosome present in sperm

XX – female

XY- male

Y chromosome has TDF gene

- testes develop by 6-8 wks after conception
- testes then secrete androgen

Prenatal development

Zygote(fertilized egg) travels down the fallopian tube to uterus

~ 36 hours after fertilization, the egg begins to divide

~5-7 days after conception, ZYGOTE implants in lining of uterus

Up to this point is the germinal stage

Embryonic period (0-8 wks)

- major organ systems formed
- endoderm differentiates into the digestive system
- mesoderm into skeleton, muscles, reproductive and circulatory systems
- Ectoderm into the nervous system and skin
- another group of cells, the trophoblast develops into the placenta
- placenta nourishes the fetus and acts as a site for exchange of substances between the mothers' blood and the fetus' blood
- provides oxygen and nutrients
- umbilical cord develops in 5th week

End of the first trimester

External body parts and internal organs have been formed

Fetus is ~4 in.

-weighs ~3/4 oz

- looks like a small infant

Now development will consist mainly of enlargement and differentiation of structures that are already present

Second trimester

3-6 months

Fetal movements felt(14th week)

Fetal heartbeat can be detected (18th week)

Open eyes(20th week)

Sensitive to light and sound

Third trimester

6-9 months

Skin loses downy hair and wrinkly appearance

Moves into birth (position with head down)

Last 2 months rapid weight gain. Average newborn 7.5 lbs. & 20 in. long.

Drug use during pregnancy

Teratogens- substances that cause birth defects in babies

Antibiotics- can cause deafness, or bone and tooth deformities

Antidepressants

- tricyclics(e.g. imiparmine) have been associated with some birth defects(mixed results), no effect on later development
- lithium- associated wit cardiovascular abnormalities
- prozac -no adverse effects found

Cigarettes

- higher risk of infant illness
- low birth weight
- later children more hyperactivity, lower IQ and motor skills

Marijuana

- later difficulties
- later children more inattentive, lower IQ and motor skills

Caffeine

> complications during labour and delivery

Drinking during pregnancy

Regular drinking (1-2 daily)

Impaired sine and gross motor skills

Slower information processing

Irregular binge drinking (5 or more)

Lower intelligence

Academic and behaviour problems

Alcohol abuse (6 or more daily)

Fetal alcohol syndrome

Growth deficiencies (both prenatal and postnatal)

Small eye openings, joint, limb, and heart malformation

Small brain

Lower IQ

Other teratogens

Diseases (rubella, chicken pox, mumps, herpes, AIDS)

Malnutrition

Stress hormones

Radiation'

1950 s Thalidomide tragedy

~ 12, 000 children affected

The amazing newborn

Reflexes

Perception

Vision- poor

Preference patterns, faces, novelty

Auditory- excellent

Prefer familiar voices

Smell- excellent

Visual tracking

Physical development-infancy

Develops rapidly following:

Cephalocaudal principle:

From head to foot

Proximodisal principle:

From inner body parts and extends out

Brain shows most rapid growth

By 6 months, doubled in wt

By 5yrs, reach 90% wt

Language development

Language: turning thoughts into words

Properties of language

Symbolic

Semantic

Generative

Structured

Hierarchical structure of language

Phonemes= smallest speech units -100 possible, English – about 40

Morphemes= smallest unit of meaning

- 50,000 in English, root works, prefixes, suffixes

Semantics= meaning of works and word combinations – objects and actions to which works refer

Syntax= a system of rules for arranging works into sentences (differ by language)

Broca's aphasia: impaired ability to produce language

Wernicke's aphasia: inability to comprehend language

Language: developmental milestones

Initial vocalization similar across language

Crying, cooing, babbling

6 months- babbling sounds begin to resemble surrounding language

1 year- first word

Similar cross- culturally – words for parents

Receptive vs. expressive language

18- 24 months –vocabulary spurt

Fast mapping

Over and under extensions

End of second year- combine words

Telegraphic speech

Mean length of utterance

End of third year

Complex ideas

Plural, past tense

Overregularization

Bilingualism: learning more than one language

Research findings:

- similar vocabularies in one language, combined vocabularies average
- higher scores for middle-class bilingual subjects on cognitive flexibility, analytical reasoning, selective attention, and metalinguistic awareness

- slight disadvantage in terms of language processing speed
- second languages more easily acquired early in life
  -greater acculturation facilitates acquisition

Theories of language acquisition

Behaviorist(Skinner)

- empiricist/environment
- learning of specific verbal responses

Nativist(Chomsky)

- biologically equipped to learn rules of language
- language acquisition device(LAD)

Interactionist- both innate and learned aspects

- cognitive – language component of more general cognitive development
- social communication theories- emphasize function of language and social context

Can animal develop language?

Dolphines, parrots, chimpanzees

Vocal apparatus issue

American sign language

Allen and Beatrice Gardner(1969)

- chimpanzee – 160 word vocabulary

Sue Savage- Rumbaugh

- Bonobo chimpanzee- Kanzi

Symbols

Receptive language

~72% of 660 requests

Nim chimpsky project

Chimps can not develop" language" wt the same sophistication as humans

But …

Kanzi studies

May be capable of symbolic representation

Some understanding of structure of language