<table>
<thead>
<tr>
<th>Age periods</th>
<th>Perspectives</th>
<th>Theories/Issues/Theorists</th>
<th>Stages/Events</th>
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<tr>
<td>Conception – birth (Prenatal)</td>
<td>Biological</td>
<td>Genetics; genotype → phenotype Critical vs. sensitive periods Tissue differentiation Immune transfer</td>
<td>Prenatal Dev and More Conception, then: 1. Germinal 2. Embryonic 3. Fetal</td>
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<tr>
<td></td>
<td>Cognitive</td>
<td>Learning in the womb</td>
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<tr>
<td>Birth– 18m/2 y (Infancy)</td>
<td>Biological</td>
<td>Growth rates/principles</td>
<td>Sensory/perceptual Nervous System Reflexes Locomotion</td>
</tr>
<tr>
<td></td>
<td>Cognitive Development</td>
<td>Cognitive Dev/Vygotsky</td>
<td>Early social interactions through babbling, laughing, motor activity –then sounds start to become language (at 10-12 mos)</td>
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<td></td>
<td>Information Processing</td>
<td>Language Dev</td>
<td>Cooing; babbling; doubling; then first words</td>
</tr>
<tr>
<td>Social/Emotional Psychodynamic</td>
<td>7 Basic Emotions in infancy</td>
<td>JIFDASS; activation of emotional states; temperament as basis for later personality. Oral: cathexis, satisfaction, frustration, fixation</td>
<td>Basic Trust vs. Mistrust –is the world safe? Are people O.K.? Hope</td>
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<td>Psychodynamic/Freud</td>
<td>Psychodynamic/Freud</td>
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<td>Psychodynamic/O.R. Theory</td>
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<td>Psychosocial</td>
<td>Psychosocial/Erikson</td>
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Conception – birth (Prenatal)

Above we see the sperm rubbing its head against the protective membrane of the ovum, attempting to enter the ovum. If successful it will release its DNA, and its 23 chromosomes can be joined with 23 from the mother to produce a genetically unique human organism, a zygote.
The germinal stage:

- A very brief description of the 10 days – 2 weeks after conception:
- The **zygote** begins to divide, and over the course of a few days the number of cells increase, first slowly, and then much faster.
- The **zygote** becomes a **morula**.
- The morula becomes a **blastula**.
- The blastula becomes a **blastocyst**.
- The **blastocyst** implants/ is embedded in the lining of the uterus.
1. Germinal: (0 – 10/14 days after conception)

The morula: 

The implanted blastocyst: 

2. Embryonic: (2 – 10 weeks)

Embryo at 6 weeks: 

Embryo at 8 weeks: 

3. & Fetal: (11 – 38/40 weeks)

Above we see the embryo of 4 weeks’ age has attached to the lining of the uterus, and briefly relies on the yolk sac for blood and nutrients. CLICK on the image above to go to a super-informative website!!
3. The Fetal Stage: (11 – 38/40 weeks)

11 Weeks
Note the eye spot; the bones are calcifying from earlier formed cartilage; all tissues have entered their own differentiation; many tissues are almost clear.

14 Weeks

20 - 22 Weeks
The fifth through the end of nine months are times of big increases in size and weight. At full term birth, the infant is 20 inches long and weighs 7.5 pounds.

38 Weeks

Our developing fetus can hear, suck its thumb, swallow and “breathe” amniotic fluid, can hear the sounds present inside the mother’s abdomen (heartbeat, rushing of blood, digestion), and of course, can hear her voice:

Click “hear!”

Some learning is possible as well (though on finding this out many parents-to-be imagine they can send their kids to school awfully early)! An infant learns the rhythms and tones of the mother’s voice, and may learn to be soothed or stimulated by the sounds heard in the womb. They even begin to prefer these sounds, and show they recognize and desire them after birth:

http://www.babycenter.com/2_natural-birth_3656508.bc
Once the birth has occurred there are a number of important issues in infancy:

- **Growth rates/principles**
- **Sensory/perceptual abilities:** Improvement in use of the seven senses, especially in sight and hearing; early formation of lower level perceptual abilities; basis for sensorimotor schema formation.
- **Nervous System/brain development:** Neural mitosis rates drop sharply after birth; neural migration continues for several months (at least); dendritic arborization advances; axonal growth; myelinization of axons.
- **Reflexes:** Primitive (rooting, Babinski, grasping, etc.) vs. Permanent/emerging survival and postural reflexes
- **Locomotion:** Lifting the head, turning over, sitting up, crawling, standing, “cruising” and walking (12 mos.) emerge in a fairly predictable order.

Click on the sleeping baby above for a website summarizing many of these issues. (Clicking here will make this picture more readable.)
Keep in mind that infants move through these milestones at very different rates, with some walking at 6 months, and others not taking first steps until 16 months.
Cognitive Development Theory

as described by Jean Piaget

- Key concepts:
- Adaptation to the environment
- Construction of reality through thought and perception
- Schema formation and use
- Assimilation
- Accommodation
- Equilibration
- Stage dependency
- Qualitative, discontinuous change over time
- Organismically driven development
Cognitive development as described by Jean Piaget:

- **Sensorimotor Stage (Birth to 2 years):**
  - ...Has 6 substages:
    - Simple reflexes 0-1 month
    - Primary circular reactions 1–4 months
    - Secondary circular reactions 4–8 months
    - Mental combinations 8–12 months
    - Tertiary circular reactions 12–18 months
    - Transition to pre-operational stage/beginning of mental *operations* 18 months – 2 years

- Perhaps most importantly it is during the substage of secondary circular reactions (at about 6–8 months) that infants develop **object constancy**, the basis for memory and symbolic reasoning. They can store and maintain mental images of people (and then other objects). And so they become fearful of strangers for a few months. They are able to recall, seek and sometimes seem to demand the immediate presence of someone or something they want. With time they can use the memory of a parent to feel comforted when alone.
Social/Emotional

- 7 Basic Emotions in infancy
  - JIFDASS
    - Joy, Interest, Fear, Disgust, Anger, Sadness, Surprise

Psychodynamic

- Psychodynamic/Freud’s Psychosexual Theory
  - *The Oral Stage (0-18 mos/2yrs):* centers on cathexis, satisfaction, and frustration of oral needs; presents the possibility of oral fixation

- Psychodynamic/Erikson’s Psychosocial Theory
  - *Basic Trust versus Mistrust (0-18 mos/2yrs):* The 1st of 8 conflicts that shape personality over the lifespan.
    - Centers on gaining security through bonding, attachment, consistent nurturing by parents, feeling loved and cared for by them; becoming hopeful toward people in general as a result of this foundation.

- Psychodynamic/Object Relations Theory
  - Bonding; autistic emotions; gradual formation of boundary between self and other.
  - Self-discovery; self-recognition; internalization of mother self-object, then father self-object, then formation of sense of self.
**Development of Emotions**

**Time/Age**
- First 6 months
  - **Primary Emotions**
    - Contentment -> Joy
    - Interest -> Surprise
    - Distress -> Sadness, Disgust
    - Anger, Fear

- Second half of second year
  - Consciousness, self-referential behavior
  - Embarrassment
  - Envy
  - Empathy

- 2½ to 3 years
  - Embarrassment
  - Pride
  - Shame
  - Guilt

- Acquisition and retention of standards and rules
How does personality form?

Hegel’s dialectical conflict  
Erikson’s drive conflict

Through a series of 8 dialectical conflicts that, over the lifespan, produce 8 cardinal virtues of character

...according to Erik Erikson’s Psychosocial Development
Object Relations Theory:

- Bigwigs: Margaret Mahler, David Winnicott, Heinz Kohut, ...Anna Freud?
- O.R. theorists describe ego development as the emergence of a personal sense of self out of a process of *boundary formation*.

The ego is a mental representation of oneself.
The ego is an internalized self-object.
The ego forms *after internalizing the representation of (at least one) primary caregiver, (usually) the mother first.*
Parent-child attachment emerges out of the bonding that occurs in the first few weeks after birth.

- Bonding occurs in a critical phase, occurring primarily from birth to 6 months…
- …and secondarily from 6 months to 1 year.

- Bonding appears to be a threshold event, so if it occurs in the first 6 months, it can readily reoccur later.
- However if primary bonding is delayed beyond 6 months, or fails to form, attachment is very problematic, and problems in relationship formation usually then follow the child throughout life.

Note: Failure to thrive syndrome occurs for two types of reasons: organic & psychogenic.
<table>
<thead>
<tr>
<th>Toddler period</th>
<th>Social/Emotional</th>
<th>Biological</th>
<th>Cognitive</th>
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<tr>
<td></td>
<td>Bonding &amp; Attachment /</td>
<td>Milestones and growth curves</td>
<td>I. Cog dev/ Piaget</td>
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<td></td>
<td>Bowlby, Harlow, Ainsworth</td>
<td>Brain Development</td>
<td>Pre-operational Stage</td>
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<td>=2 – 5/6 y.o.</td>
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<td>2 – 3.5 yrs</td>
<td>Bonding flexible or critical?</td>
<td>Milestones in growth &amp; behavior</td>
<td>From:</td>
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<tr>
<td>(early preschool)</td>
<td>Attachment types</td>
<td>Innervation of sphincter</td>
<td>deferred imitation</td>
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<td>Myelinization &amp;</td>
<td>gender recogn.</td>
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<td>Brain lateralization</td>
<td>centration</td>
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<td>egocentrism</td>
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<td>magical, animism</td>
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<td>III. Information processing</td>
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<td>Psychodynamic vs. Psychosocial</td>
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<td>Freud: Anal Stage</td>
<td>Potty training as basis for mastery of</td>
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<td>2 - 3.5</td>
<td>ideas about control, order, productivity,</td>
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<td>power</td>
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<td>Erikson: Autonomy</td>
<td>Acting on impulses successfully, gaining</td>
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<td>vs. Shame &amp; Doubt</td>
<td>self control &amp; will</td>
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<td>2 - 3.5</td>
<td>-or- developing poor basis for self image</td>
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<td>and later problems w/ impulse control</td>
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<td>Ainsworth: Attachment Play pattern:</td>
<td>Secure 65%; Ambivalent 20%; Avoidant 15%</td>
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<td>func./solo/par’l</td>
<td>Uses fewer social ref’ing cues; increasing exploration; att. style fully emerges by 2.0 – 2.5</td>
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<td>Theory of mind</td>
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<td>...becomes self regulation</td>
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<td>...emerges → pattern of responsiveness/acceptance and interference/demand</td>
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<td>...emerges → redir., affection, consistency, appropriateness</td>
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### Table of Theories in Childhood: (Toddler/Preschooler Development – Slide 14)

<table>
<thead>
<tr>
<th>Psychodynamic vs. Psychosocial</th>
<th>Freud: Anal Stage 2 - 3.5</th>
<th>Potty training as basis for mastery of ideas about control, order, productivity, power; Freud believed fixation on these concerns occurs due to too early/too much conflict around potty training.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attachment -- Key theorists: Bowlby, Harlow, Ainsworth, Baumrind</td>
<td>Attachment types (Ainsworth)...:</td>
<td>Secure 65%; Ambivalent 20%; Avoidant 15% Uses fewer social referencing cues; increasing exploration; attachment style fully emerges by 2.0 – 2.5</td>
</tr>
<tr>
<td>...Which are rooted in parenting style experienced (Baumrind):</td>
<td>Combination of interference/structure/demand --along with-- affection/warmth/acceptance/emotional support... ...creates an authoritative parenting style --or-- ....if one or more elements is lacking, creates authoritarian, permissive, or even worse neglectful/disengaged parenting.</td>
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<tr>
<td>Mutual regulation of behavior, emotion, &amp; communication w/ parent...</td>
<td>...becomes self regulation in the child</td>
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</tr>
<tr>
<td>Parenting style: Style of discipline by the parent...</td>
<td>...emerges into a pattern of responsiveness /acceptance and interference/demand ...emerges (\rightarrow) redir., affection, consistency, appropriateness</td>
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</table>

**THESE ARE SOME OF THE VARIOUS WAYS TO DESCRIBE/EXPLAIN SOCIAL/EMOTIONAL/PERSONALITY DEVELOPMENT IN TODDLERS AND PRESCHOOLERS**
Pre-operational Stage: Abilities are improving

Mental abilities advance throughout this stage as children’s perceptual and cognitive processing moves forward...

From: ...through toddler & pre-school period: To:

- Recognition in infancy
- Categorization & classification
- Sorting...
- ...ordering
- Numeric thought
- Counting middle c’hood
- Deferred imitation
- Pretending
- Signification
- Symbolic reasoning
- Reading, Math, Arts middle c’hood
- Gender recognition in toddlers
- Gender schemas
- Gender constancy

Note that each of these improvements is not completed at the end of the pre-operational stage, but making progress in all of these areas permits the mind to start undergoing the deliberate concrete mental operations that occur in the next stage, lasting from 6 – 12.
The early preoperational child is fully centrated—unable to focus on more than one feature of an object (or event) at a time. During the preoperational stage this changes: decentration gradually occurs. The various features of an object or event gradually have more power to affect perceptual judgments and decision making. Many abilities arise from this one underlying change:

- Improved attention
- Categorization, sorting, ordering, etc.
- Loss of egocentrism/improved perspective taking (by 5 or 6)
- Reversibility emerges (by 5 or 6)
- Conversational language
- Gender schemas grow more complex and accurate.
- Intuitive thought becomes more orderly, and illogical thought shifts toward logical thought.
- Magical and animistic ideas shift toward realistic, rational ideas.
- ‘Sense’ of time emerges.

Even in the next stage (Concrete operational [6 – 12]) further decentration occurs, resulting (at 7 or 8) in conservation.
| 3.5–5/6 y  
(later preschool) | Biological | Innervation of limbs; lateralization continues  
Growth rates now determine height in middle childhood | More milestones in locomotion articulation, improving coordination |
|-------------------|------------|-------------------------------------------------|--------------------------------------------------|
| Psychodynamic     | Freud: Phallic Stage (3.5 – 5/6) | Boys – Oedipal conflict:  
primal fantasy/scene; phallic power sought, but limited; sexual impulses satisfied within limits; emotional impulses frustrated --ego emerges, then superego --repression of memory; masculine identification begins  
Girls – Elektra conflict, penis envy;  
converse of all the above.  
Weak superego? | |
| Psychosocial      | Erikson: Initiative vs. guilt (3.5 – 5/6) | Acting on plans successfully;  
coordination of impulses with growing feeling of purpose  
Guilt over childish ideas, trivial wishes and pointless play | |
| 6–12 y/puberty: (middle childhood) | Biological | Lateralization | ...becomes hard wired as L/R handedness emerges.  
...but prepubertal growth spurt appears (at about 9-11) in girls.  
Boys have increases in gross motor coordination.  
Girls have earlier increase in fine motor coordination.  
Milestones in strength, speed, coordination produce athleticism and growing ability with manual skills such as playing an instrument, dancing, etc.  
At least 15% of kids of 6-12 are obese. The rate of age 6-12 obesity is increasing; so is diabetes. |
|---------------------------------|------------|----------------|--------------------------------------------------------------------------------|
| 6 – 12 (cont’d)                | Cognitive | Piaget         | **Concrete Operations:**  
Lose egocentrism, centration, & magical thought.  
Gain time sense, reversibility, logical reasoning, hierarchical org. of thought, conservation, use of multiple symbol systems, metacognition, metamemory.  
HOWEVER, throughout early concrete op’s. thought remains *concrete*. In latter half abstract thought may appear, but does not dominate thought.  
Scaffolding, ZPD, reciprocal teaching, cooperative learning in groups. Emphasizes the value of teaching as a learning strategy |
|                                |            | Vygotsky       |                                                                                   |
| 6-12 y (middle childhood) | Psychosexual | Freud - Latency stage 6-12 | Sexual impulses are repressed. Opposite gender is rejected or avoided. Identification w/ same gendered parent (or substitute parental object). Introjection of identified objects. Development of ego defenses: Identification, rationalization, projection, isolation of affect, intellectualization, displacement, sublimation. |
|-------------------------|--------------|-----------------------------|
|                         | Moral        | L. Kohlberg – moral reasoning *based in cog. dev.* C. Gillian – Girls moral dev. Differs from that of boys | At 6 or 7: shift from pre-conventional to conventional moral reasoning. Later (10-12) shift from ‘good boy’ to ‘social order.’ Individual survival shifts toward self sacrifice, then finally to moral equivalence/non-violence. |
Concrete, rule-governed thought

Emergent Abilities:
- Reversibility
- Time Sense
- Transformation of position

Emerging Abilities:
- Classification
- Sorting & Ordering

Concrete Operations

- Intuitive thought
- Identity / Constancy
- Symbolic reasoning
- Metacognition & metamemory

- Conservation
- Multiple symbol systems
- Transformation of states

Hierarchical organization of thought

- Mathematical reasoning
- Egocentrism
- Magical thought & Animism

- Concrete Operations
- Discovering
- Learning
- Developing
- 6

Abstract ideas
Losing preoperational egocentrism begins this stage. As centration diminishes, *reversibility* appears. Magical, animistic, intuitive thought is being replaced by *active use of logic*. Gaining some *time-sense*, and logical reasoning allow learning to become systematic. Both improve throughout the concrete operational stage.

Hierarchical organization of thought allows one to start recognizing that there is a bigger picture to be grasped (later in development).

Metamemory and metacognitive ability make the middle childhood-aged child a more flexible learner, and permit more give-and-take in teaching / learning. Use of multiple symbol systems opens up new areas of learning.

HOWEVER, throughout early concrete op’s. thought remains *concrete*. In the latter half abstract thought may appear, but it does not dominate thought until the next stage.

**Vygotsky:**
Scaffolding, ZPD = Zone of Proximal Development, reciprocal teaching, cooperative learning in groups.
Emphasizes the value of peer-to-peer teaching as a learning strategy for both peers.