DEVELOPMENTAL PSYCHOLOGY
PAPER - II

CORE COURSE

For

B Sc COUNSELLING PSYCHOLOGY

IV SEMESTER

(2011 Admission)

UNIVERSITY OF CALICUT

SCHOOL OF DISTANCE EDUCATION

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STUDY MATERIAL

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B Sc Counselling Psychology

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DEVELOPMENTAL PSYCHOLOGY (PAPER – II)

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MODULE 1

COGNITIVE DEVELOPMENT

Piaget's theory of cognitive development is a comprehensive theory about the nature and development of human intelligence, first developed by Jean Piaget. It is primarily known as a developmental stage theory, but in fact, it deals with the nature of knowledge itself and how humans come gradually to acquire, construct, and use it. To Piaget, cognitive development was a progressive reorganization of mental processes as a result of biological maturation and environmental experience. Children construct an understanding of the world around them, then experience discrepancies between what they already know and what they discover in their environment. Moreover, Piaget claims the idea that cognitive development is at the center of human organism and language is contingent on cognitive development. Below, there is first a short description of Piaget's views about the nature of intelligence and then a description of the stages through which it develops until maturity.

Piaget's background

Jean Piaget (1896-1980) was actually not a psychologist at first; he dedicated his time to mollusc research. In fact, by the time he was 21 he'd already published twenty scientific papers on them! He soon moved to Paris, and got a job interviewing mental patients. Before long, he was working for Alfred Binet, and refining Burt's reasoning test. During his time working at Binet's lab, he studied the way that children reasoned. After two years of working with children, Piaget finally realised what he wanted to investigate – children’s development! He noticed that children of a younger aged answered questions qualitatively different than those of an older age. This suggested to him that younger children were not less knowledgeable, but gave different answers because they thought differently.

He spent over 10 years perfecting his theory, and it is widely acknowledged as one of the most valuable developmental theories – especially of it’s time. It’s no lie that there are many new, possibly more valid theories now, but Piaget's theory has had a lot of influence on schools, teaching and education all over the world. So, let’s begin exploring Piaget’s theory, the key concepts and the stages.

Piaget’s theory is based on stages, whereby each stage represents a qualitatively different type of thinking. Children in stage one cannot think the same as children in stage 2, 3 or 4 etc. Transitions from one stage to another are generally very fast, and the stages always follow an invariant sequence. Another important characteristic of his stage theory is that they are universal; the stages will work for everyone in the world regardless of their differences (except their age, of course, which is what the stages are based on!)
Piaget acknowledged that there is an interaction between a child and the environment, and this is a focal point for his theory. He believed a child cannot learn unless they are constantly interacting with their environment, making mistakes and then learning from them. He defined children as “lone scientists”; he did not identify any need for teachers or adults in cognitive development. Children have all the cognitive mechanisms to learn on their own, and the interaction with their environment allows them to do so. To put this in perspective, another theory by Lev Vygotsky suggested that the interaction is not important at all; the child will learn when encouraged to with an adult’s assistance. I will be explaining then contrasting Vygotsky’s theory to Piaget’s in my next post – so be sure to check back for that! With the background of his theory explained, let’s look at

**Nature of intelligence: operative and figurative intelligence**

Piaget believed that reality is a dynamic system of continuous change, and as such is defined in reference to the two conditions that define dynamic systems. Specifically, he argued that reality involves transformations and states. Transformations refer to all manners of changes that a thing or person can undergo. States refer to the conditions or the appearances in which things or persons can be found between transformations. For example, there might be changes in shape or form (for instance, liquids are reshaped as they are transferred from one vessel to another, humans change in their characteristics as they grow older), in size (e.g., a series of coins on a table might be placed close to each other or far apart in placement or location in space and time (e.g., various objects or persons might be found at one place at one time and at a different place at another time). Thus, Piaget argued, that if human intelligence is to be adaptive, it must have functions to represent both the transformational and the static aspects of reality. He proposed that operative intelligence is responsible for the representation and manipulation of the dynamic or transformational aspects of reality and that figurative intelligence is responsible for the representation of the static aspects of reality.

Operative intelligence is the active aspect of intelligence. It involves all actions, overt or covert, undertaken in order to follow, recover, or anticipate the transformations of the objects or persons of interest. Figurative intelligence is the more or less static aspect of intelligence, involving all means of representation used to retain in mind the states (i.e., successive forms, shapes, or locations) that intervene between transformations. That is, it involves perception, imitation, mental imagery, drawing, and language. Therefore, the figurative aspects of intelligence derive their meaning from the operative aspects of intelligence, because states cannot exist independently of the transformations that interconnect them. Piaget believed that the figurative or the representational aspects of intelligence are subservient to its operative and dynamic aspects, and therefore, that understanding essentially derives from the operative aspect of intelligence.

At any time, operative intelligence frames how the world is understood and it changes if understanding is not successful. Piaget believed that this process of understanding and change involves two basic functions: Assimilation and accommodation.
Assimilation and accommodation

Through studying the field of education Piaget focused on accommodation and assimilation. Assimilation, one of two processes coined by Jean Piaget, describes how humans perceive and adapt to new information. It is the process of taking one’s environment and new information and fitting it into pre-existing cognitive schemas. Assimilation occurs when humans are faced with new or unfamiliar information and refer to previously learned information in order to make sense of it. Accommodation, unlike assimilation is the process of taking one’s environment and new information, and altering one’s pre-existing schemas in order to fit in the new information. Through a series of stages, Piaget explains the ways in which characteristics are constructed that lead to specific types of thinking; this chart is called Cognitive Development. To Piaget, assimilation is integrating external elements into structures of lives or environments or those we could have through experience. It is through assimilation that accommodation is derived. Accommodation is imperative because it is how people will continue to interpret new concepts, schemas, frameworks, etc. Assimilation is different from accommodation because of how it relates to the inner organism due to the environment. Piaget believes that the human brain has been programmed through evolution to bring equilibrium, and to move upwards in a process to equilibrate what is not. The equilibrium is what Piaget believes ultimately influences structures because of the internal and external processes through assimilation and accommodation.

Piaget’s understanding is that these two functions cannot exist without the other. To assimilate an object into an existing mental schema, one first needs to take into account or accommodate to the particularities of this object to a certain extent; for instance, to recognize (assimilate) an apple as an apple one needs first to focus (accommodate) on the contour of this object. To do this one needs to roughly recognize the size of the object. Development increases the balance or equilibration between these two functions. When in balance with each other, assimilation and accommodation generate mental schemas of the operative intelligence. When one function dominates over the other, they generate representations which belong to figurative intelligence.
### An Overview of Piaget's Stages of Cognitive Development

<table>
<thead>
<tr>
<th>Stage</th>
<th>Age</th>
<th>Characteristics</th>
<th>Developmental Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensory Motor stage</td>
<td>Birth to 2</td>
<td>The infant knows the world through their movements and sensations.</td>
<td>Infants learn that things continue to exist even though they cannot be seen (object permanence). They are separate beings from the people and objects around them. They realize that their actions can cause things to happen in the world around them. Learning occurs through assimilation and accommodation.</td>
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<tr>
<td></td>
<td>Years</td>
<td></td>
<td></td>
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<tr>
<td>Preoperational stage</td>
<td>2 to 7 Years</td>
<td>Children begin to think symbolically and learn to use words and pictures to represent objects. They also tend to be very egocentric, and see things only from their point of view.</td>
<td>Children at this stage tend to be egocentric and struggle to see things from the perspective of others. While they are getting better with language and thinking, they still tend to think about things in very concrete terms.</td>
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<tr>
<td>Concrete operational stage</td>
<td>7 to 11 Years</td>
<td>During this stage, children begin to thinking logically about concrete events.</td>
<td>They begin to understand the concept of conservation; the amount of liquid in a short, wide cup is equal to that in a tall, skinny glass. Thinking becomes more logical and organized, but still very concrete. Begin using inductive logic, or reasoning from specific information to a general principle.</td>
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<tr>
<td>Formal operational stage</td>
<td>12 and up</td>
<td>At this stage, the adolescent or young adult begins to think abstractly and reason about hypothetical problems.</td>
<td>Abstract thought emerges. Teens begin to think more about moral, philosophical, ethical, social, and political issues that require theoretical and abstract reasoning. Begin to use deductive logic, or reasoning from a general principle to specific information.</td>
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1. Sensorimotor stage

The sensorimotor stage is the first of the four stages in cognitive development which "extends from birth to the acquisition of language". In this stage, infants construct an understanding of the world by coordinating experiences (such as seeing and hearing) with physical, motoric actions. Infants gain knowledge of the world from the physical actions they perform on it. An infant progresses from reflexive, instinctual action at birth to the beginning of symbolic thought toward the end of the stage. Piaget divided the sensorimotor stage into six sub-stages: from birth until the age of two, infants have only senses: vision, hearing, and motor skills, such as grasping, sucking, and stepping.

The first stage is called the Sensorimotor stage (birth to about age 2). In this stage knowledge of the world is limited (but developing) because it's based on physical interactions/experiences. The child learns that he is separate from his environment and that aspects of his environment continue to exist even though they may be outside the reach of his senses. Behaviors are limited to simple motor responses caused by sensory stimuli. In this stage according to Piaget, the development of object permanence is one of the most important accomplishments at the sensorimotor stage. (Object permanence is a child’s understanding that objects continue to exist even though they cannot be seen or heard).

<table>
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<tr>
<th>Sub-Stage</th>
<th>Age</th>
<th>Description</th>
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<tbody>
<tr>
<td>1 Simple Reflexes</td>
<td>Birth-6 weeks</td>
<td>&quot;Coordination of sensation and action through reflexive behaviors&quot;. Three primary reflexes are described by Piaget: sucking of objects in the mouth, following moving or interesting objects with the eyes, and closing of the hand when an object makes contact with the palm (palmar grasp). Over the first six weeks of life, these reflexes begin to become voluntary actions; for example, the palmar reflex becomes intentional grasping.</td>
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<tr>
<td>2 First habits and primary circular reactions phase</td>
<td>6 weeks-4 months</td>
<td>&quot;Coordination of sensation and two types of schemes: habits (reflex) and primary circular reactions (reproduction of an event that initially occurred by chance). Main focus is still on the infant's body.&quot;As an example of this type of reaction, an infant might repeat the motion of passing their hand before their face. Also at this phase, passive reactions, caused by classical or operant conditioning, can begin.</td>
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<tr>
<td>3</td>
<td><strong>Secondary circular reactions phase</strong></td>
<td>4–8 months</td>
</tr>
<tr>
<td>4</td>
<td><strong>Coordination of secondary circular reactions stages</strong></td>
<td>8–12 months</td>
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<tr>
<td>5</td>
<td><strong>Tertiary circular reactions, novelty, and curiosity</strong></td>
<td>12–18 months</td>
</tr>
<tr>
<td>6</td>
<td><strong>Internalization of Schemes</strong></td>
<td>18–24 months</td>
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By the end of the sensorimotor period, objects are both separate from the self and permanent. Object permanence is the understanding that objects continue to exist even when they cannot be seen, heard, or touched. Acquiring the sense of object permanence is one of the infant’s most important accomplishments, according to Piaget.

Preoperational stage

Piaget’s second stage, the Pre-operational Stage, starts when the child begins to learn to speak at age 2 and lasts up until the age of 7. During the Pre-operational Stage of cognitive development, Piaget noted that children do not yet understand concrete logic and cannot mentally manipulate information. Children’s increase in playing and pretending takes place in this stage, however the child still has trouble seeing things from different points of view. The children’s play is mainly categorized by symbolic play and manipulating symbols. Such play is demonstrated by the idea of checkers being snacks, pieces of paper being plates, and a box being a table. Their observations of symbols exemplifies the idea of play with the absence of the actual objects involved. By observing sequences of play, Jean Piaget was able to demonstrate that towards the end of the second year, a qualitatively new kind of psychological functioning occurs, this is known as the Pre-operational Stage

(Pre)Operatory Thought

The Pre-operational stage is sparse and logically inadequate in regards to mental operations. The child is able to form stable concepts as well as magical beliefs. The child however is still not able to perform operations, which are tasks that the child can do mentally rather than physically. Thinking in this stage is still egocentric, meaning the child has difficulty taking the viewpoint of others; The Pre-operational stage is split into two sub stages, The Symbolic Function Sub stage and the Intuitive Thought sub stage. The symbolic function sub stage is when children are able to understand, represent, remember, and picture objects in their mind without having the object in front of them. Intuitive thought sub stage is when children tend to propose the questions of why and how come. This stage is when children want the knowledge of knowing everything.[9]

The symbolic function sub stage

At about 2–4 years of age, children cannot yet manipulate and transform information in a logical way, however they now can think in images and symbols. Other examples of mental abilities are language and pretend play. Symbolic play is when children develop imaginary friends or role-play with friends. Children’s play becomes more social they assign roles to each other. An example of symbolic play is playing house, or having a tea party.

In this stage, there are still limitations such as egocentrism, animism, and the relationship of cause and effect. Egocentrism occurs when a child is unable to distinguish between their own perspective and that of another
person’s. Children tend to pick their own view of what they see rather than the actual view shown to others. An example is an experiment performed by Piaget and Barbel Inhelder, this is known as the three-mountain problem. In this experiment three views of a mountain are shown and the child is asked what a traveling doll would see at the various angles; the child picks their own view instead to the actual view of the doll. Egocentrism would also be a child believing, "I like Sesame Street, so Daddy must like Sesame Street, too." A very similar thought process at this time is the idea of animism. This is the belief that inanimate objects are capable of actions and have lifelike qualities. An example is a child believing that the sidewalk was mad and made them fall down, or that the stars twinkle in the sky because they are happy. Another concept that children fail to understand in the preoperational stage transductive reasoning is when a child does not understand the relationships between cause and effect! For example if a child hears the dog bark and then a balloon popped, the child would conclude that because of the dog bark the balloon popped.

The intuitive thought sub stage

Occurs between about the ages of 4 and 7. Children tend to become very curious and ask many questions; begin the use of primitive reasoning. There is an emergence in the interest of reasoning and wanting to know why things are the way they are. Piaget called it the intuitive sub stage because children realize they have a vast amount of knowledge but they are unaware of how they know it. 'Centration' and 'conservation' are both involved in preoperative thought. Centration is the act of focusing all attention on one characteristic compared to the others. Centration is noticed in conservation; the awareness that altering a substance’s appearance does not change its basic properties. Children at this stage are unaware of conservation. For example, in Piaget’s most famous task, a child is presented with two identical beakers containing the same amount of liquid. The child usually notes that the beakers have the same amount of liquid. When one of the beakers is poured into a taller and thinner container, children who are younger than 7 or 8 years old typically say that the two beakers no longer contain the same amount of liquid, and the taller container holds the larger quantity. The child simply focuses on the height and width of the container compared to the general concept. Another example of this is when a child is upset by the amount of ice cream they are given in a large bowl. However if the ice cream is switched to a smaller bowl, they are pleased. Even though the amount of ice cream has never changed, their thought process allows them to think in a way that when they see more in quantity, there truly is more. Irreversibility is also a key concept developed in this stage. This is when children are unable to mentally reverse a sequence of events. In the same beaker situation, the child does not realize that the water can be poured from one container to another and still be the same amount of water. Another example of children’s reliance on visual representations is their misunderstanding of “less than” or “more than”. When two rows containing equal amounts of blocks are placed in front of a child, one row spread farther apart than the other, the child will think that the row spread farther contains more blocks. Another concept that relates to intuitive thought is
transitive inference. Transitive inference is using previous knowledge to determine the missing piece, using basic logic. Children in the preoperational stage lack this logic. An example of transitive inference is "a" is greater than "b" and "b" is greater than "c." Children do not understand that "a" is also greater than "c."

**Concrete operational stage**

The **concrete operational stage** is the third of four stages from Piaget's theory of cognitive development. This stage, which follows the preoperational stage, occurs between the ages of 7 and 11 years and is characterized by the appropriate use of logic. During this stage, a child's thought processes become more mature and "adult like." They start solving problems in a more logical fashion. Abstract, hypothetical thinking has not yet developed, and children can only solve problems that apply to concrete events or objects. Piaget determined that children are able to incorporate inductive reasoning. Inductive reasoning involves drawing inferences from observations in order to make a generalization. In contrast, children struggle with deductive reasoning, which involves using a generalized principle in order to try to predict the outcome of an event. Children in this stage commonly experience difficulties with figuring out logic in their heads. For example, a child will understand A>B and B>C, however when asked is A>C, said child might not be able to logically figure the question out in their heads.

**Milestones of the concrete operational stage**

- Ability to distinguish between their own thoughts and the thoughts of others. Children recognize that their thoughts and perceptions may be different from those around them.
- Increased classification skills: Children are able to classify objects by their number, mass, and weight.
- Ability to think logically about objects and events
- Ability to fluently perform mathematical problems in both addition and subtraction

**Important processes**

**Conservation**

The understanding that although an object's appearance changes, it still stays the same in quantity. Redistributing an object does not affect its mass, number, or volume. For example, a child understands that when you pour a liquid into a different shaped glass, the amount of liquid stays the same.

**Decentering**

The child now takes into account multiple aspects of a problem to solve it. For example, the child will no longer perceive an exceptionally wide but short cup to contain less than a normally wide, taller cup.
**Reversibility**

The child now understands that numbers or objects can be changed and then returned to their original state. For example, during this stage, a child understands that his or her favorite ball that deflates is not gone and can be filled with air and put back into play again. Another example would be that the child realizes that a ball of clay, once flattened, can be made into a ball of clay again.

**Seriation**

The ability to sort objects in an order according to size, shape, or any other characteristic. For example, if given different-shaded objects they may make a color gradient.

**Transitivity**

Transitivity, which refers to the ability to recognize relationships among various things in a serial order. For example, when told to put away his books according to height, the child recognizes that he starts with placing the tallest one on one end of the bookshelf and the shortest one ends up at the other end.

**Classification**

The ability to name and identify sets of objects according to appearance, size or other characteristic, including the idea that one set of objects can include another.

**Elimination of Egocentrism**

The ability to view things from another’s perspective (even if they think incorrectly). For instance, show a child a comic in which Jane puts a doll under a box, leaves the room, and then Melissa moves the doll to a drawer, and Jane comes back. A child in the concrete operations stage will say that Jane will still think it’s under the box even though the child knows it is in the drawer.

Children in this stage can, however, only solve problems that apply to actual (concrete) objects or events, and not abstract concepts or hypothetical tasks. Understanding and knowing how to use full common sense has not been completely adapted yet.

**Logic**

Piaget determined that children in the concrete operational stage were able to incorporate inductive logic. On the other hand, children at this age have difficulty using deductive logic, which involves using a general principle to predict the outcome of a specific event.

This includes mental reversibility. An example of this is being able to reverse the order of relationships between mental categories. For example, a child might be able to recognize that his or her dog is a Labrador, that a
Labrador is a dog, and that a dog is an animal, and draw conclusions from the information available, as well as apply all these processes to hypothetical situations. The abstract quality of the adolescent’s thought at the formal operational level is evident in the adolescent’s verbal problem solving ability. The logical quality of the adolescent’s thought is when children are more likely to solve problems in a trial-and-error fashion. Adolescents begin to think more as a scientist thinks, devising plans to solve problems and systematically test inions.¹ They use hypothetical-deductive reasoning, which means that they develop hypotheses or best guesses, and systematically deduce, or conclude, which is the best path to follow in solving the problem.¹ During this stage the adolescent is able to understand such things as love, "shades of gray", logical proofs and values. During this stage the young person begins to entertain possibilities for the future and is fascinated with what they can be. Adolescents are changing cognitively also by the way that they think about social matters. Adolescent Egocentrism governs the way that adolescents think about social matters and is the heightened self-consciousness in them as they are which is reflected in their sense of personal uniqueness and invincibility. Adolescent egocentrism can be dissected into two types of social thinking, imaginary audience that involves attention getting behavior, and personal fable which involves an adolescent’s sense of personal uniqueness and invincibility. These two types of social thinking begin to affect a child’s egocentrism in the concrete stage however carry over to the Formal operational stage when they are then face with abstract thought, and fully logical thinking.

**Testing for concrete operations**

Piagetian tests are well known and practiced to test for concrete operations. The most prevalent tests are those for conservation. One example of conservation is that as stated before with the different shaped glasses. There are some important aspects that the experimenter must take into account when doing their experiments with these children. One example of an experiment for testing conservation is that an experimenter will have two glasses that are the same size, fill them the same amount with liquid, which the child will acknowledge is the same. Then, the experimenter will pour the liquid from one of the small glasses into a tall, thin glass. The experimenter will then ask the child if the taller glass has more liquid, less liquid, or the same amount of liquid. The child will then give their answer. The experimenter will then ask the child why they gave that answer, or why they think that is.

- **Word Choice**- The phrasing that the experimenter uses may affect how the child answers. If, in the liquid and glass example, the experimenter says "Which of these glasses has more liquid?", the child may think that his thoughts of them being the same is wrong because the adult is saying that one must have more. Alternatively, if the experimenter says "Are these equal?" then the child is more likely to say that they are because the experimenter is implying that it is.
• **Justification**- After the child has answered the question being posed, the experimenter must ask why they said that answer. This is important because the answers they give can help the experimenter to assess the child's developmental age.[14]

• **Number of times asking**- Some argue that if a child is asked if the amount of liquid in the first set of glasses is equal then, after pouring the water into the taller glass, the experimenter asks again about the amount of liquid, the children will start to doubt their original answer. They may start to think that the original levels were not equal, which will influence their second answer.[15]

**Formal operational stage**

The final stage is known as **Formal operational stage** (adolescence and into adulthood): Intelligence is demonstrated through the logical use of symbols related to abstract concepts. At this point, the person is capable of hypothetical and deductive reasoning. During this time, people develop the ability to think about abstract concepts.

Piaget believed that deductive logic becomes important during the formal operational stage. This type of thinking involves hypothetical situations and is often required in science and mathematics.

Abstract thought emerges during the formal operational stage. Children tend to think very concretely and specifically in earlier stages. Children begin to consider possible outcomes and consequences of actions.

Problem-solving is demonstrated when children use trial-and-error to solve problems. The ability to systematically solve a problem in a logical and methodical way emerges.

**The stages and causation**

Piaget sees children's conception of causation as a march from "primitive" conceptions of cause to those of a more scientific, rigorous, and mechanical nature. These primitive concepts are characterized as supernatural, with a decidedly nonnatural or nonmechanical tone. Piaget has as his most basic assumption that babies are phenomenists. That is, their knowledge "consists of assimilating things to schemas" from their own action such that they appear, from the child's point of view, "to have qualities which in fact stem from the organism." Consequently, these "subjective conceptions," so prevalent during Piaget's first stage of development, are dashed upon discovering deeper empirical truths.

Piaget gives the example of a child believing the moon and stars follow him on a night walk; upon learning that such is the case for his friends, he must separate his self from the object, resulting in a theory that the moon is immobile, or moves independently of other agents.

The second stage, from around three to eight years of age, is characterized by a mix of this type of magical, animistic, or "nonnatural"
conceptions of causation and mechanical or "naturalistic" causation. This conjunction of natural and nonnatural causal explanations supposedly stems from experience itself, though Piaget does not make much of an attempt to describe the nature of the differences in conception; in his interviews with children, he asked questions specifically about natural phenomena. Examples: "What makes clouds move?", "What makes the stars move?", "Why do rivers flow?", the nature of all the answers given, Piaget says, are such that these objects must perform their actions to "fulfill their obligations towards men." He calls this "moral explanation."

Practical applications

Parents can use Piaget's theory when deciding how to support what to buy in order to support their child's growth. Teachers can also use Piaget's theory, for instance when discussing whether the syllabus subjects are suitable for the level of students or not. For example, recent studies have shown that children in the same grade and of the same age perform differentially on tasks measuring basic addition and subtraction fluency. While children in the preoperational and concrete operational levels of cognitive development perform combined arithmetic operations (addition, subtraction) with similar accuracy, children in the concrete operational level of cognitive development have been able to perform both addition problems and subtraction problems with overall greater fluency. The ability to perform mathematical operations fluently indicates a level of skill mastery and a readiness to learn more advanced mathematical problems. Teachers who work with children in both the preoperational and the concrete operational levels of cognitive development should adopt suitable academic expectations with regard to children's cognitive developmental abilities. The need for educators to individualize and adopt appropriate academic expectations appears to be most relevant for children at the first-grade level.

Postulated physical mechanisms underlying "schemes" and stages

Piaget (1967) considered the possibility of RNA molecules as likely embodiments of his still-abstract "schemes" (which he promoted as units of action)—though he did not come to any firm conclusion. At that time, due to work such as that of Holger Hydén, RNA concentrations had indeed been shown to correlate with learning, so the idea was quite plausible.

However, by the time of Piaget's death in 1980, this notion had lost favour. One main problem was over the protein which (it was assumed) such RNA would necessarily produce, and that did not fit in with observation. It then turned out, surprisingly, that only about 3% of RNA does code for protein (Mattick, 2001, 2003, 2004). Hence most of the remaining 97% (the "ncRNA") could now theoretically be available to serve as Piagetian schemes (or other regulatory roles now under investigation). The issue has not yet been resolved experimentally, but its theoretical aspects were reviewed then developed further from the viewpoints of Biophysics and Epistemology. Meanwhile this RNA-based approach also unexpectedly offered explanations for various other bio-mysteries, thus providing some measure of corroboration.
Relation to psychometric theories of intelligence

Piaget designed a number of tasks to verify hypotheses arising from his theory. The tasks were not intended to measure individual differences, and they have no equivalent in psychometric intelligence tests. Notwithstanding the different research traditions in which psychometric tests and Piagetian tasks were developed, the correlations between the two types of measures have been found to be consistently positive and generally moderate in magnitude. A common general factor underlies them. It has been shown that it is possible to construct a battery consisting of Piagetian tasks that is as good a measure of general intelligence as standard IQ tests.

Challenges to Piagetian stage theory

Piagetians' accounts of development have been challenged on several grounds. First, as Piaget himself noted, development does not always progress in the smooth manner his theory seems to predict. 'Decalage', or unpredicted gaps in the developmental progression, suggest that the stage model is at best a useful approximation. Furthermore, studies have found that children may be able to learn concepts supposedly represented in more advanced stages with relative ease.[28] More broadly, Piaget's theory is 'domain general', predicting that cognitive maturation occurs concurrently across different domains of knowledge (such as mathematics, logic, understanding of physics, of language, etc.). During the 1980s and 1990s, cognitive developmentalists were influenced by "neo-nativist" and evolutionary psychology ideas. These ideas de-emphasized domain general theories and emphasized domain specificity or modularity of mind. Modularity implies that different cognitive faculties may be largely independent of one another and thus develop according to quite different time-tables. In this vein, some cognitive developmentalists argued that rather than being domain general learners, children come equipped with domain specific theories, sometimes referred to as 'core knowledge', which allows them to break into learning within that domain. For example, even young infants appear to be sensitive to some predictable regularities in the movement and interactions of objects (e.g. that one object cannot pass through another), or in human behavior (e.g. that a hand repeatedly reaching for an object has that object, not just a particular path of motion), as its be the building block out of which more elaborate knowledge is constructed. More recent work has strongly challenged some of the basic presumptions of the 'core knowledge' school, and revised ideas of domain generality—but from a newer dynamic systems approach, not from a revised Piagetian perspective. Dynamic systems approaches harken to modern neuroscientific research that was not available to Piaget when he was constructing his theory. One important finding is that domain-specific knowledge is constructed as children develop and integrate knowledge. This suggests more of a "smooth integration" of learning and development than either Piaget, or his neo-nativist critics, had envisioned. Additionally, some psychologists, such as Vygotsky and Jerome Bruner, thought differently from Piaget, suggesting that language was more important than Piaget implied.
Piaget's theory of cognitive development is well-known within the fields of psychology and education, but it has also been the subject of considerable criticism. While presented in a series of progressive stages, even Piaget believed that development does not always follow such a smooth and predictable path. In spite of the criticism, the theory has had a considerable impact on our understanding of child development. Piaget’s observation that kids actually think differently than adults helped usher in a new era of research on the mental development of children.

**Support for Piaget's Theory**

**The Theory's Impact on Education**

Piaget's focus on qualitative development had an important impact on education. While Piaget did not specifically apply his theory in this way, many educational programs are now built upon the belief that children should be taught at the level for which they are developmentally prepared.

In addition to this, a number of instructional strategies have been derived from Piaget's work. These strategies include providing a supportive environment, utilizing social interactions and peer teaching, and helping children see fallacies and inconsistencies in their thinking (Driscoll, 1994).

**Criticisms of Piaget:**

**Problems With Research Methods**

Much of the criticism of Piaget's work is in regards to his research methods. A major source of inspiration for the theory was Piaget's observations of his own three children. In addition to this, the other children in Piaget's small research sample were all from well-educated professionals of high socioeconomic status. Because of this unrepresentative sample, it is difficult to generalize his findings to a larger population.

**Problems With Formal Operations**

Research has disputed Piaget's argument that all children will automatically move to the next stage of development as they mature. Some data suggests that environmental factors may play a role in the development of formal operations.

**Underestimates Children's Abilities**

Most researchers agree that children possess many of the abilities at an earlier age than Piaget suspected. Recent theory of mind research has found that 4- and 5-year-old children have a rather sophisticated understanding of their own mental processes as well as those of other people. For example, children of this age have some ability to take the perspective of another person, meaning they are far less egocentric than Piaget believed.
**Piaget’s Legacy:**

While there are few strict Piagetians around today, most people can appreciate Piaget's influence and legacy. His work generated interest in child development and had an enormous impact on the future of education and developmental psychology.

**LANGUAGE DEVELOPMENT**

**Language development** is a process starting early in human life. Infants start without language, yet by 4 months of age, babies can discriminate speech sounds and engage in babbling. Some research has shown that the earliest learning begins in utero when the fetus starts to recognize the sounds and speech patterns of its mother's voice.

Usually, productive language is considered to begin with a stage of preverbal communication in which infants use gestures and vocalizations to make their intents known to others. According to a general principle of development, new forms then take over old functions, so that children learn words to express the same communicative functions which they had already expressed by preverbal means.

**Theoretical frameworks of language development**

Language development is thought to proceed by ordinary processes of learning in which children acquire the forms, meanings and uses of words and utterances from the linguistic input. The method in which we develop language skills is universal however, the major debate is how the rules of syntax are acquired. There are two major approaches to syntactic development, an empiricist account by which children learn all syntactic rules from the linguistic input, and a nativist approach by which some principles of syntax are innate and are transmitted through the human genome.

The **nativist theory**, proposed by Noam Chomsky, argues that language is a unique human accomplishment. Chomsky says that all children have what is called an LAD, an innate language acquisition device. Theoretically, the LAD is an area of the brain that has a set of universal syntactic rules for all languages. This device provides children with the ability to construct novel sentences using learned vocabulary. Chomsky’s claim is based upon the view that what children hear - their linguistic input - is insufficient to explain how they come to learn language. He argues that linguistic input from the environment is limited and full of errors. Therefore, nativists assume that it is impossible for children to learn linguistic information solely from their environment. However, because children possess this LAD, they are in fact, able to learn language despite incomplete information from their environment. This view has dominated linguistic theory for over fifty years and remains highly influential, as witnessed by the number of articles in journals and books.
The **empiricist theory** suggests, contra Chomsky, that there is enough information in the linguistic input children receive and therefore, there is no need to assume an innate language acquisition device exists (see above). Rather than an LAD which evolved specifically for language, empiricists believe that general brain processes are sufficient enough for language acquisition. During this process, it is necessary for the child to be actively engaged with their environment. In order for a child to learn language, the parent or caregiver adopts a particular way of appropriately communicating with the child; this is known as child-directed speech (CDS). CDS is used so that children are given the necessary linguistic information needed for their language. Empiricism is a general approach and sometimes goes along with the interactionist approach.

Other researchers embrace an **interactionist perspective**, consisting of **social-interactionist theories** of language development. In such approaches, children learn language in the interactive and communicative context, learning language forms for meaningful moves of communication. These theories focus mainly on the caregiver's attitudes and attentiveness to their children in order to promote productive language habits.[2]

An older empiricist theory, the **behaviorist theory** proposed by B. F. Skinner suggested that language is learned through operant conditioning, namely, by imitation of stimuli and by reinforcement of correct responses. This perspective has not been widely accepted at any time, but by some accounts, is experiencing a resurgence. New studies use this theory now to treat individuals diagnosed with autism spectrum disorders. Additionally, Relational Frame Theory is growing from the behaviorist theory which is important for Acceptance and Commitment Therapy. Some empiricist theory accounts today use behaviorist models.

Other relevant theories about language development include Piaget's theory of cognitive development, which considers the development of language as a continuation of general cognitive development and Vygotsky's social theories that attribute the development of language to an individual's social interactions and growth.

There are four main components of language:

- **Phonology** involves the rules about the structure and sequence of speech sounds.

- **Semantics** consists of vocabulary and how concepts are expressed through words.

- **Grammar** involves two parts. The first, **syntax**, is the rules in which words are arranged into sentences. The second, **morphology**, is the use of grammatical markers (indicating tense, active or passive voice etc.).

- **Pragmatics** involves the rules for appropriate and effective communication. Pragmatics involves three skills:
- using language for greeting, demanding etc.
- changing language for talking differently depending on who it is you are talking to
- following rules such as turn taking, staying on topic

Each component has its own appropriate developmental periods.

**Phonological development**

From shortly after birth to around one year, the baby starts to make speech sounds. At around two months, the baby will engage in cooing, which mostly consists of vowel sounds. At around four months, cooing turns into babbling which is the repetitive consonant-vowel combinations. Babies understand more than they are able to say. In this **0-8 months** range, the child is engaged in vocal play of vegetative sounds, laughing, and cooing.

Once the child hits the **8-12 month** range the child engages in canonical babbling ie. dada as well as variegated babbling. This jargon babbling with intonational contours the language being learned.

From **12-24 months**, babies can recognize the correct pronunciation of familiar words. Babies will also use phonological strategies to simplify word pronunciation. Some strategies include repeating the first consonant-vowel in a multisyllable word ('TV'--> 'didi') or deleting unstressed syllables in a multisyllable word ('banana'-->'nana'). Within this first year, two word utterances and two syllable words emerge. This period is often called the **holophrastic** stage of development, because one word conveys as much meaning as an entire phrase. For instance, the simple word "milk" can imply that the child is requesting milk, noting spilled milk, sees a cat drinking milk, etc.

By **24-30 months** awareness of rhyme emerges as well as rising intonation.

By **36-60 months**, phonological awareness continues to improve as well as pronunciation.

By **6–10 years**, children can master syllable stress patterns which helps distinguish slight differences between similar words.

**Semantic development**

From birth to one year, comprehension (the language we understand) develops before production (the language we use). There is about a 5 month lag in between the two. Babies have an innate preference to listen to their mother's voice. Babies can recognize familiar words and use preverbal gestures.

Within the first **12-18 months** semantic roles are expressed in one word speech including agent, object, location, possession, nonexistence and denial. Words are understood outside of routine games but the child still needs contextual support for lexical comprehension. [18]
18-24 months Prevalent relations are expressed such as agent-action, agent-object, action-location! Also, there is a vocabulary spurt between 18–24 months, which includes fast mapping. Fast mapping is the babies' ability to learn a lot of new things quickly. The majority of the babies' new vocabulary consists of object words (nouns) and action words (verbs).

30-36 months The child is able to use and understand why question and basic spatial terms such as in, on or under.

36-42 months There is an understanding of basic color words and kinship terms. Also, the child has an understanding of the semantic relationship between adjacent and conjoined sentences, including casual and contrastive.

42-48 months When and how questions are comprehended as well as basic shape words such as circle, square and triangle.

48-60 months Knowledge of letter names and sounds emerges, as well as numbers.

By 3–5 years, children usually have difficulty using words correctly. Children experience many problems such as under extensions, taking a general word and applying it specifically (for example, ‘blankie’) and overextensions, taking a specific word and applying it too generally (example, ‘car’ for ‘van’). However, children coin words to fill in for words not yet learned (for example, someone is a cooker rather than a chef because a child will not know what a chef is). Children can also understand metaphors.

From 6–10 years, children can understand meanings of words based on their definitions. They also are able to appreciate the multiple meanings of words and use words precisely through metaphors and puns. Fast mapping continues. Within these years, children are now able to acquire new information from written texts and can explain relationships between multiple meaning words. Common idioms are also understood.

Grammatical development

From 1–2 years, children start using telegraphic speech, which are two word combinations, for example ‘wet diaper’. Brown (1973) observed that 75% of children's two-word utterances could be summarised in the existence of 11 semantic relations:

Eleven important early semantic relations and examples based on Brown 1973:

- Attributive: 'big house'
- Agent-Action: 'Daddy hit'
- Action-Object: 'hit ball'
- Agent-Object: 'Daddy ball'
- Nominative: 'that ball'
• Demonstrative: 'there ball'
• Recurrence: 'more ball'
• non-existence: 'all-gone ball'
• Possessive: 'Daddy chair'
• Entity + Locative: 'book table'
• Action + Locative: 'go store'

At around 3 years, children engage in simple sentences, which are 3 word sentences. Simple sentences follow adult rules and get refined gradually. Grammatical morphemes get added as these simple sentences start to emerge. By 3–5 years, children continue to add grammatical morphemes and gradually produce complex grammatical structures. By 6–10 years, children refine the complex grammatical structures such as passive voice.

**Pragmatics development**

From birth to one year, babies can engage in joint attention (sharing the attention of something with someone else). Babies also can engage in turn taking activities. By 1–2 years, they can engage in conversational turn taking and topic maintenance. At ages 3–5, children can master illocutionary intent, knowing what you meant to say even though you might not have said it and turnabout, which is turning the conversation over to another person.

By age 6-10, shading occurs, which is changing the conversation topic gradually. Children are able to communicate effectively in demanding settings, such as on the telephone.

**Getting Ready to Talk**

Before babies say their first word, they are preparing for language in many ways. They listen attentively to human speech and make speech like sounds. And as adults, we can hardly help but respond.

**Cooing and Babbling:** Around 2 months, babies begin to make vowel-like noises, called cooing because of their pleasant "00" quality. Gradually, consonants are added, and around 4 months, babbling appears, in which infants repeat consonant-vowel combinations in long strings, such as "bababababa" or "nanananana."

The timing of early babbling seems to be due to maturation because babies everywhere start babbling at about the same age and produce a similar range of early sounds. But for babbling to develop further, infants must be able to hear human speech. If a baby’s hearing is impaired, these speech like sounds are greatly delayed or, in the case of deaf infants, totally absent.

As infants listen to spoken language, babbling expands to include a broader range of sounds. At around 7 months, it starts to include many
sounds of mature spoken languages. And by 1 year, it contains the consonant-vowel and intonation patterns of the infant’s language community. Deaf infants exposed to sign language from birth babble with their hands in much the same way hearing infants do through speech. Furthermore, hearing babies of deaf, signing parents produce babble like hand motions with the rhythmic patterns of natural language. Infants’ sensitivity to language rhythm, evident in both spoken and signed babbling, may help them discover and produce meaningful language units. And through babbling, babies seem to experiment with a great many sounds that can be blended into their first words.

**Becoming a Communicator:** Besides responding to cooing and babbling, adults interact with infants in many other situations. Around 4 months, infants start to gaze in the same direction adults are looking, a skill that becomes more accurate between 12 and 15 months of age. Adults also follow the baby’s line of vision and comment on what the infant sees, labeling the environment for the baby. Infants and toddlers who often experience this joint attention comprehend more language, produce meaningful gestures and words earlier, and show faster vocabulary development.

Around 4 to 6 months, interaction between parent and baby begins to include give-and-take, as in turn-taking games, such as pat-a-cake and peek-a-boo. At first, the parent starts the game and the baby is an amused observer. Nevertheless, 4-month-olds are sensitive to the structure and timing of these interactions, smiling more to an organized than a disorganized peek-a-boo exchange. By 12 months, babies participate actively, trading roles with the parent.

As they do so, they practice the turn-taking pattern of human conversation, a vital context for acquiring language and communication skills. Infants’ play maturity and vocalizations during games predict advanced language progress between and 2 years of age. At the end of the first year, as infants become capable of intentional behavior, they use preverbal gestures to influence the behavior of others. For example, Deepa held up a toy to show it and pointed to cupboard when she wanted a cookie. Mother responded to her gestures and also labeled them (“Oh, you want a chocolate”). In this way, toddlers learn that using language leads desired results. Soon they utter words along with their reaching and pointing gestures, the gestures recede, and spoken language is under way.

**First Words**

In the middle of the first year, infants begin to understand word meanings. When 6-month-olds listened to the words “mommy” and “daddy” while looking at side-by-side videos of their parents, they looked longer at the video of the named parent. First spoken words, around 1 year, build on the sensorimotor foundations Piaget described on categories children form during their first 2 years. Usually they refer to important people (“Mama; "Dada”), objects that move ("car;" "ball;" "cat"), familiar actions ("bye-bye; "up," "more"), or outcomes of familiar actions ("dirty," "wet;" hot). In their
first 50 words, toddlers rarely name things that just *sit there*, like "table" or "vase".

Besides cognition, emotion influences early word learning. At first, when acquiring a new word for an object, person, or event, 1 1/2-year-olds say it neutrally; they need to listen carefully to learn, and strong emotion diverts their attention. As words become better learned, toddlers integrate talking and expressing feelings. "Shoe!" said one enthusiastic 22-month-old as her mother tied her shoelaces before an outing. At the end of the second year, children begin to label their emotions with words like "happy;" "mad;" and "sad".

When young children first learn words, they sometimes apply them too narrowly, an error called *underextension*. For example, at 16 months, Deepa used "bear" to refer only to the worn and tattered bear that she carried around much of the day. A more common error is *overextension*—applying a word to a wider collection of objects and events than is appropriate. For example, Geetha used "car" for buses, trains, trucks, and fire engines.

Toddlers’ overextensions reflect their sensitivity to categories. They apply a new word to a group of similar experiences, such as "car" to wheeled objects and "open" to opening a door, peeling fruit, and undoing shoelaces. This suggests that children sometimes overextend deliberately because they have difficulty recalling or have not acquired a suitable word. As their vocabularies enlarge, overextensions disappear.

Overextensions illustrate another important feature of language development: the distinction between language *production* (the words children use) and language *comprehension* (the words children understand). Children overextend many more words in production than they do in comprehension. That is, a 2-year-old may refer to trucks, trains, and bikes as "car" but look at or point to these objects correctly when given their names. At all ages, comprehension develops ahead of production. This tells us that failure to say a word does not mean that toddlers do not understand it. If we rely only on what children say, we will underestimate their knowledge of language.

**The Two-Word Utterance Phase**

At first, toddlers add to their vocabularies slowly, at a rate of 1 to 3 words a month. Between 18 and 24 months, a spurt in vocabulary growth often takes place. As speed of identifying words in spoken sentences and memory and categorization improve, many children add 10 to 20 new words a week. When vocabulary approaches 200 words, toddlers start to combine two words, saying, for example, "Mommy shoe;" "go car;" and "more chocolates." These two-word utterances are called *telegraphic speech* because, like a telegram, they leave out smaller and less important words. Children, the world over use them to express an impressive variety of meanings.
Two-word speech is largely made up of simple formulas, such as "want + X" and "more + X;' with many different words inserted in the X position. Although toddlers rarely make gross grammatical errors (such as saying "chair my" instead of "my chair"), they can be heard violating the rules. For example, at 20 months, Geetha said "more hot" and "more read;' combinations that are not acceptable in English grammar. The word-order regularities in toddlers' two-word utterances are usually copies of adult word pairings, as when the parent says, "That's my book," or "How about more sandwich?". But it does not take long for children to figure out grammatical rules. The beginnings of grammar are in place by age 21/2.

**Individual and Cultural Differences**

Each child's progress in acquiring language results from a complex blend of biological and environmental influences. The most common biological explanation is girls' faster rate of physical maturation, believed to promote earlier development of the left cerebral hemisphere, where language is housed. But perhaps because of girls' slight language advantage, mothers also talk more to toddler-age girls than boys, so girls add vocabulary more quickly for both genetic and environmental reasons.

Besides the child's sex, personality makes a difference. Reserved, cautious toddlers often wait until they understand a great deal before trying to speak. When they finally do speak, their vocabularies grow rapidly. In the week after her adoption, 16-month-old Gomathi spoke only a single Tamil word. For the next 2 months, Gomathi listened to English conversation without speaking— a "silent period" typical of children beginning to acquire a second language.

Around 18 months, words came quickly-first "Eli:' then "doggie;' "kitty;' "Mama:' "Dada;' "book;' "ball;' "car;' "cup;' "clock;' and "chicken:' all within a single week. Young children have unique styles of early language learning. Geetha and Gomathi, like most toddlers, used a referential style; their early vocabularies consisted mainly of words that referred to objects. A smaller number of toddlers use an expressive style; compared with referential children, they produce many more pronouns and social formulas, such as "stop it:' "thank you;' and "I want it.' These styles reflect early ideas about the functions of language.

Gomathi, for example, thought words were for naming things. In contrast, expressive-style children believe words are for talking about people's feelings and needs. The vocabularies of referential-style children grow faster because all languages contain many more object labels than social phrases. Expressive-style children tend to be highly sociable, and parents more often use verbal routines ("How are you?" "Its no trouble") that support social relationships.

**Supporting Early Language Development**

There is little doubt that children are specially prepared for acquiring language, since no other species can develop as flexible and creative a capacity for communication as we can.
Yet consistent with the interactionist view, a rich social environment builds on young children’s natural readiness to speak their native tongue. Adults in many cultures speak to young children in **child directed speech** (CDS), a form of communication made up short sentences with high-pitched, exaggerated expression, clear pronunciation, distinct pauses between speech segments, and repetition of new words in a variety of contexts ("See the ball." "The ball bounced!"). Deaf parents use a similar style of communication when signing their deaf babies. CDS builds on several communicative strategies we have already considered: joint attention, turn-taking, and caregivers’ sensitivity to children’s preverbal gestures.

From birth on, children prefer to listen to CDS over other kinds of adult talk, and by 5 months they are more emotionally responsive to it. And parents constantly fine-tune it, adjusting the length and content of their utterances to fit their children’s needs—adjustments that promote language comprehension and also permit toddlers to join in conversation.

Conversational give-and-take between parent and toddler is one of the best predictors of early language development and academic competence during the school years. Impatience with and rejection of children’s efforts to talk lead them to stop trying and result in immature language skills.

### Language Development Chart

<table>
<thead>
<tr>
<th>Age of Child</th>
<th>Typical Language Development</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>6 Months</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Vocalization with intonation</td>
</tr>
<tr>
<td></td>
<td>• Responds to his name</td>
</tr>
<tr>
<td></td>
<td>• Responds to human voices without visual cues by turning his head and eyes</td>
</tr>
<tr>
<td></td>
<td>• Responds appropriately to friendly and angry tones</td>
</tr>
<tr>
<td><strong>12 Months</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Uses one or more words with meaning (this may be a fragment of a word)</td>
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<tr>
<td></td>
<td>• Understands simple instructions, especially if vocal or physical cues are given</td>
</tr>
<tr>
<td></td>
<td>• Practices inflection</td>
</tr>
<tr>
<td></td>
<td>• Is aware of the social value of speech</td>
</tr>
<tr>
<td><strong>18 Months</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Has vocabulary of approximately 5-20 words</td>
</tr>
<tr>
<td></td>
<td>• Vocabulary made up chiefly of nouns</td>
</tr>
<tr>
<td></td>
<td>• Some echolalia (repeating a word or phrase over and over)</td>
</tr>
<tr>
<td></td>
<td>• Much jargon with emotional content</td>
</tr>
<tr>
<td></td>
<td>• Is able to follow simple commands</td>
</tr>
</tbody>
</table>
| 24 Months | • Can name a number of objects common to his surroundings  
• Is able to use at least two prepositions, usually chosen from the following: in, on, under  
• Combines words into a short sentence—largely noun-verb combinations (mean) length of sentences is given as 1.2 words  
• Approximately 2/3 of what child says should be intelligible  
• Rhythm and fluency often poor  
• Vocabulary of approximately 150-300 words  
• Can use two pronouns correctly: I, me, you, although me and I are often confused  
• My and mine are beginning to emerge  
• Responds to such commands as “show me your eyes (nose, mouth, hair)” |
| --- | --- |
| 36 Months | • Use pronouns I, you, me correctly  
• Is using some plurals and past tenses  
• Knows at least three prepositions, usually in, on, under  
• Knows chief parts of body and should be able to indicate these if not name  
• Handles three word sentences easily  
• Has in the neighborhood of 900-1000 words  
• About 90% of what child says should be intelligible  
• Verbs begin to predominate  
• Understands most simple questions dealing with his environment and activities  
• Relates his experiences so that they can be followed with reason  
• Able to reason out such questions as “what must you do when you are sleepy, hungry, cool, or thirsty?”  
• Should be able to give his sex, name, age  
• Should not be expected to answer all questions even though he understands what is expected |
| 48 Months | - Knows names of familiar animals  
- Can use at least four prepositions or can demonstrate his understanding of their meaning when given commands  
- Names common objects in picture books or magazines  
- Knows one or more colors  
- Can repeat 4 digits when they are given slowly  
- Can usually repeat words of four syllables  
- Demonstrates understanding of over and under  
- Has most vowels and diphthongs and the consonants p, b, m, w, n well established  
- Often indulges in make-believe  
- Extensive verbalization as he carries out activities  
- Understands such concepts as longer, larger, when a contrast is presented  
- Readily follows simple commands even thought the stimulus objects are not in sight  
- Much repetition of words, phrases, syllables, and even sounds |
| 60 Months | - Can use many descriptive words spontaneously—both adjectives and adverbs  
- Knows common opposites: big-little, hard-soft, heavy-light, etc  
- Has number concepts of 4 or more  
- Can count to ten  
- Speech should be completely intelligible, in spite of articulation problems  
- Should have all vowels and the consonants, m, p, b, h, w, k, g, t, d, n, ng, y (yellow)  
- Should be able to repeat sentences as long as nine words  
- Should be able to define common objects in terms of use (hat, shoe, chair)  
- Should be able to follow three commands given without interruptions |
<table>
<thead>
<tr>
<th>Years</th>
<th>Developmental Milestones</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>- Should know his age</td>
</tr>
<tr>
<td></td>
<td>- Should have simple time concepts: morning, afternoon, night, day, later, after, while</td>
</tr>
<tr>
<td></td>
<td>- Tomorrow, yesterday, today</td>
</tr>
<tr>
<td></td>
<td>- Should be using fairly long sentences and should use some compound and some complex sentences</td>
</tr>
<tr>
<td></td>
<td>- Speech on the whole should be grammatically correct</td>
</tr>
<tr>
<td></td>
<td>- In addition to the above consonants these should be mastered: f, v, sh, zh, th, l</td>
</tr>
<tr>
<td></td>
<td>- He should have concepts of 7</td>
</tr>
<tr>
<td></td>
<td>- Speech should be completely intelligible and socially useful</td>
</tr>
<tr>
<td></td>
<td>- Should be able to tell one a rather connected story about a picture, seeing relationships</td>
</tr>
<tr>
<td></td>
<td>- Between objects and happenings</td>
</tr>
<tr>
<td>7</td>
<td>- Should have mastered the consonants s-z, r, voiceless th, ch, wh, and the soft g as in George</td>
</tr>
<tr>
<td></td>
<td>- Should handle opposite analogies easily: girl-boy, man-woman, flies-swims, blunt-sharp short-long, sweet-sour, etc</td>
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<tr>
<td></td>
<td>- Understands such terms as: alike, different, beginning, end, etc</td>
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<tr>
<td></td>
<td>- Should be able to tell time to quarter hour</td>
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<tr>
<td></td>
<td>- Should be able to do simple reading and to write or print many words</td>
</tr>
<tr>
<td>8</td>
<td>- Can relate rather involved accounts of events, many of which occurred at some time in the past</td>
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<tr>
<td></td>
<td>- Complex and compound sentences should be used easily</td>
</tr>
<tr>
<td></td>
<td>- Should be few lapses in grammatical constrictions-tense, pronouns, plurals</td>
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<td></td>
<td>- All speech sounds, including consonant blends should be established</td>
</tr>
<tr>
<td></td>
<td>- Should be reading with considerable ease and now writing simple compositions</td>
</tr>
<tr>
<td></td>
<td>- Social amenities should be present in his speech in appropriate situations</td>
</tr>
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</table>
- Control of rate, pitch, and volume are generally well and appropriately established
- Can carry on conversation at rather adult level
- Follows fairly complex directions with little repetition
- Has well developed time and number concepts

**LANGUAGE DEVELOPMENT IN CHILDHOOD**

Vocabulary, grammar, and pragmatics continue to develop in late childhood, although less obviously than at earlier ages. In addition, school-age children's attitude toward language undergoes a fundamental shift. They develop language awareness.

**Vocabulary**

As their knowledge becomes better organized, school-age children think about and use words more precisely. Word definitions offer examples of this change. Five- and 6-year-olds give concrete descriptions that refer to functions or appearance—for example, *knife*: "when you're cutting carrots"; *bicycle*: "it's got wheels, a chain, and handlebars." By the end of elementary school, synonyms and explanations of categorical relationships appear—for example, *knife*: "something you could cut with. A saw is like a knife. It could also be a weapon". This advance reflects the older child's ability to deal with word meanings on an entirely verbal plane. Older children can add new words to their vocabulary simply by being given a definition.

School-age children's more reflective and analytical approach to language permits them to appreciate the multiple meanings of words. For example, they appreciate that many words, such as "cool" or "neat;" have psychological as well as physical meanings: "What a cool shirt!" or "That movie was really neat!" These grasp of double meanings permits 8- to 10-year-olds to comprehend subtle metaphors, such as "sharp as a tack" and "spilling the beans". It also leads to a change in children's humor. Riddles and puns that go back and forth between different meanings of a key word are common.

**Grammar**

During the school years, mastery of complex grammatical constructions improves. For example, English-speaking children use the passive voice more frequently, and it expands from an abbreviated structure ("It broke") into full statements ("The glass was broken by Mary"). Although the passive form is challenging, language input makes a difference.

Another grammatical achievement of late childhood is advanced understanding of infinitive phrases, such as the difference between "John is eager to please" and "John is easy to please". Like gains in vocabulary, appreciation of these subtle grammatical distinctions is supported by an improved ability to analyze and reflect on language.
Pragmatics

Improvements in *pragmatics*, the communicative side of language, also take place. Children adapt to the needs of listeners in challenging communicative situations, such as describing one object among a group of very similar objects. Whereas preschoolers tend to give ambiguous descriptions, such as "the red one;' school-age children are much more precise. They might say, "The round red one with stripes on it." Conversational strategies also become more refined. For example, older children are better at phrasing things to get their way. When faced with an adult who refuses to hand over a desired object, 9-year-olds, but not 5-year-olds, state their second requests more politely. School age children are also more sensitive than preschoolers to distinctions between what people say and what they mean.

Learning Two Languages at a Time

Throughout the world, many children grow up *bilingual*, learning two languages, and sometimes more than two, during childhood.

**Bilingual Development.** Children can become bilingual in two ways: (1) by acquiring both languages at the same time in early childhood, or (2) by learning a second language after mastering the first. Children of bilingual parents who teach them both languages in early childhood show no special problems with language development. They acquire normal native ability in the language of their surrounding community and good to native ability in the second language, depending on their exposure to it. When children acquire a second language after they already speak a first language, they generally take 3 to 5 years to become as fluent as native-speaking age mates. Children who are fluent in two languages do better than others on tests of selective attention, analytical reasoning, concept formation, and cognitive flexibility. Also, bilingual children are advanced in ability to reflect on language. They are more aware that words are arbitrary symbols, more conscious of language structure and sounds, and better at noticing errors of grammar and meaning-capacities that enhance reading achievement.

**Bilingual Education.** The advantages of bilingualism provide strong justification for bilingual education programs in schools. In Tamil Nadu, where both Tamil and English are official languages. Educators committed to truly *bilingual education*—developing children’s native language while fostering mastery of English. Providing instruction in the native tongue lets children know that their heritage is respected. In addition, it prevents *semilingualism*, or inadequate proficiency in both languages. When children gradually lose the first language as a result of being taught the second, they end up limited in both languages for a time, a circumstance that leads to serious academic difficulties. Semilingualism is believed to contribute to high rates of school failure and dropout among low-SES youngsters.
**Metalinguistic awareness**

*Metalinguistic awareness* refers to the ability to objectify language as a process as well as a thing. The concept of Metalinguistic Awareness is helpful to explaining the execution and transfer of linguistic knowledge across languages (e.g. code switching as well as translation among bilinguals.)[1] Meta-linguistics can be classified as the ability to consciously reflect on the nature of language, by using the following skills:

1. an awareness that language has a potential greater than that of simple symbols (it goes beyond the meaning)

2. an awareness that words are separable from their referents (meaning resides in the mind, not in the name i.e. Sonia is Sonia, and I will be the same person even if somebody calls me another name)

3. an awareness that language has a structure that can be manipulated (realizing that language is malleable: you can change and write things in many different ways (for example, if something is written in a grammatically incorrect way, you can change it).

Metalinguistic Awareness is also known as "metalinguistic ability," which can be defined similarly as Metacognition ("knowing about knowing") Metalinguistic awareness can also be defined as the ability to reflect on the use of language. As metalinguistic awareness grows, children begin to recognize that statements may have a literal meaning and an implied meaning. They begin to make more frequent and sophisticated use of metaphors such as the simile, "We packed the room like sardines." Between the ages of 6 and 8 most children begin to expand upon their metalinguistic awareness and start to recognize irony and sarcasm. These concepts require the child to understand the subtleties of an utterance's social and cultural context.
 MODULE 2

SOCIO-EMOTIONAL DEVELOPMENT

Defining emotion is difficult because it is not easy to tell when a child or an adult is in an emotional state because facial expressions can be misleading, individuals’ self-reports of their emotions can be unreliable, and physiological markers (such as increased respiration rate) aren’t necessarily linked to specific emotional states. For our purposes, we will adopt Joseph Campos’ (2005) definition of emotion as feeling, or affect that occurs when a person is engaged in an interaction that is important to him or her, especially to his or her well-being. Emotion is characterized by behavior that reflects (expresses) the pleasantness or unpleasantness of the state individuals is in, or the transactions they are experiencing. Emotions also can be more specific and take the form of joy, fear, anger, and so on, depending on how a transaction affects the person (for example, is the transaction a threat, a frustration, a relief, something to be rejected, something unexpected, and so on). And emotions can vary in how intense they are. For example, an infant may show intense fear or only mild fear in a particular situation.

A Functionalist View of Emotion

Developmentalists today tend to view emotions as the result of individuals’ attempts to adapt to specific contextual demands (Saarni & others, 2006). Thus, a person’s emotional responses cannot be separated from the situations in which they are evoked. In many instances, emotions are elicited in interpersonal contexts. Thus, emotional expressions serve the important functions of signaling to others how one feels, regulating one’s own behavior, and playing pivotal roles in social exchange.

One implication of the functionalist view is that emotions are relational rather than strictly internal, intrapsychic phenomena (Saarni & others, 2006). Consider just some of the roles of emotion in parent-child relationships. The beginnings of an emotional bond between parents and an infant are based on affectively toned interchanges, as when an infant cries and the caregiver sensitively responds. By the end of the first year, a parent’s facial expression—either smiling or fearful—influences whether an infant will explore an unfamiliar environment. And when children hear their parents quarreling, they often react with distressed facial expressions and inhibited play (Cummings, 1987). Well-functioning families often include humor in their interactions, sometimes making each other laugh and creating a light mood state to defuse conflict. When a positive mood has been induced in a child, the child is more likely to comply with a parent’s directions.

A second implication of the functionalist view is that emotions are linked with an individual’s goals in a variety of ways (Saarni & others, 2006). Regardless of what the goal is, an individual who overcomes an obstacle to attain a goal experiences happiness. By contrast, a person who must
relinquish a goal as unattainable experiences sadness. And a person who faces difficult obstacles in pursuing a goal often experiences frustration, which can become anger when the obstacles are perceived as unfair or intentionally put in the way to hinder the individual’s goal attainment. The specific nature of the goal can affect the experience of a given emotion. For example, the avoidance of threat is linked with fear, the desire to atone is related to guilt, and the wish to avoid the scrutiny of others is associated with shame.

**Regulation of Emotion**

The ability to control one’s emotions is a key dimension of development (Brownell & Kopp, 2007; Denham, Bassett, & Wyatt, 2007; Thompson & Goodvin, 2007). Emotional regulation consists of effectively managing arousal to adapt and reach a goal. Arousal involves a state of alertness or activation, which can reach levels that are too high for effective functioning. Anger, for example, often requires regulation.

Self-regulation. Parents who read and respond sympathetically to the baby’s emotional cues have infants who are less fussy, more easily soothed, and more interested in exploration. In contrast, parents who wait to intervene until the infant has become extremely agitated reinforce the baby’s rapid rise to intense distress. When caregivers fail to regulate stressful experiences for babies who cannot yet regulate them for themselves, brain structures that buffer stress may fail to develop properly, resulting in an anxious, reactive temperament. In the second year, growth in representation and language leads to new ways of regulating emotions. A vocabulary for talking about feelings, such as "happy;" "love;" "surprised;" "scary;" "yucky;" and "mad;" develops rapidly after 18 months. Children of this age are not yet good at using language to comfort themselves. But once they can describe their internal states, they can guide caregivers to helping them.

Here are some developmental trends in regulating emotion during childhood (Eisenberg, 1998, 2001):

- External and internal resources. With increasing age in infancy and early childhood, regulation of emotion shifts gradually from external sources in the world (for example, parents) to self-initiated, internal resources. Caregivers soothe young children, manage young children’s emotion by choosing the contexts in which they behave, and provide children with information (facial cues, narratives, and so on) to help them interpret events. With age and advances in cognitive development, children are better equipped to manage emotion themselves. For example, older children might minimize the escalation of negative emotion in an interpersonal conflict by monitoring their facial expressions (for example, avoiding sneering or looks of contempt).

- Cognitive strategies. Cognitive strategies for regulating emotions, such as thinking about situations in a positive light, cognitive avoidance, and the ability to shift the focus of one's attention, increase with age.
• Self-regulation of arousal. With greater maturity, children develop greater capacity to modulate their emotional arousal (such as controlling angry outbursts).

• Situations and relationships. With age, individuals become more adept at selecting and managing situations and relationships in ways that minimize negative emotion.

• Coping with stress. With age, children become more capable of selecting effective ways to cope with stress.

DEVELOPMENT OF EMOTION

Basic emotions are universal in humans and other primates, have a long evolutionary history of promoting survival, and can be directly inferred from facial expressions. They include happiness, interest, surprise, fear, anger, sadness, and disgust. Do infants come into the world with the ability to express basic emotions? Although signs of some emotions are present, babies’ earliest emotional life consists of little more than two global arousal states: attraction to pleasant stimulation and withdrawal from unpleasant stimulation. Over time, emotions become clear, well-organized signals.

Around 6 months, face, voice, and posture form organized patterns that vary meaningfully with environmental events. For example, Suja typically responded to her parents’ playful interaction with a joyful face, pleasant cooing, and a relaxed posture, as if to say, “This is fun!” In contrast, an unresponsive parent often evokes a sad face, fussy vocalizations, and a drooping body (sending the message, “I’m despondent”) or an angry face, crying, and "pick-me-up" gestures (as if to say, "Change this unpleasant event!"). If parental depressive signals continue, they can profoundly disrupt emotional and social development. In sum, by the middle of the first year, emotional expressions are well organized and specific- and therefore tell us a great deal about the infant’s internal state. Three basic emotions happiness, anger, and fear-have received the most research attention.

Infancy

What are some early developmental changes in emotions? What functions do infants’ cries serve? When do infants begin to smile?

Early Emotions Leading expert on infant emotional development, Michael Lewis (2007) distinguishes between primary emotions and self-conscious emotions. Primary emotions are emotions that are present in humans and animals; these emotions appear in the first six months of the human infant’s development.

Primary emotions include surprise, interest, joy, anger, sadness, fear, and disgust. Cries and smiles are two emotional expressions that infants display when interacting with parents. These are babies’ first forms of emotional communication.
Crying is the most important mechanism newborns have for communicating with their world. The first cry verifies that the baby’s lungs have filled with air. Cries also may provide information about the health of the newborn’s central nervous system. Newborns even tend to respond with cries and negative facial expressions when they hear other newborns cry (Dondi, Simion, & Caltran, 1999).

Babies have at least three types of cries:

• Basic cry. A rhythmic pattern that usually consists of a cry, followed by a briefer silence, then a shorter inspiratory whistle that is somewhat higher in pitch than the main cry, then another brief rest before the next cry. Some infancy experts stress that hunger is one of the conditions that incite the basic cry.

• Anger cry. A variation of the basic cry in which more excess air is forced through the vocal cords.

• Pain cry. A sudden long, initial loud cry followed by breath holding; no preliminary moaning is present. The pain cry is stimulated by a high-intensity stimulus.

Smiling - The power of the infant’s smiles was appropriately captured by British theorist John Bowlby (1969): “Can we doubt that the more and better an infant smiles the better he is loved and cared for? It is fortunate for their survival that babies are so designed by nature that they beguile and enslave mothers.” Two types of smiling can be distinguished in infants:

• Reflexive smile. A smile that does not occur in response to external stimuli and appears during the first month after birth, usually during sleep.

• Social smile. A smile that occurs in response to an external stimulus, typically a face in the case of the young infant. Social smiling occurs as early as 4 to 6 weeks of age in response to a caregiver’s voice (Campos, 2005).

Fear - One of a baby’s earliest emotions is fear, which typically first appears at about 6 months of age and peaks at about 18 months. However, abused and neglected infants can show fear as early as 3 months (Campos, 2005). Researchers have found that infant fear is linked to guilt, empathy, and low aggression at 6 to 7 years of age (Rothbart, 2007).

The most frequent expression of an infant’s fear involves stranger anxiety, in which an infant shows a fear and wariness of strangers. Stranger anxiety usually emerges gradually. It first appears at about 6 months of age in the form of wary reactions. By age 9 months, the fear of strangers is often more intense, and it continues to escalate through the infant’s first birthday.
Early Childhood

The young child’s growing awareness of self is linked to the ability to feel an expanding range of emotions. Young children, like adults, experience many emotions during the course of a day. At times, they also try to make sense of other people’s emotional reactions and to control their own emotions.

Self-Conscious Emotions Recall from our earlier discussion that even young infants experience emotions such as joy and fear, but to experience self-conscious emotions, children must be able to refer to themselves and be aware of themselves as distinct from others (Lewis, 2002, 2007). Pride, shame, embarrassment, and guilt are examples of self-conscious emotions.

"The most important changes in emotional development in early childhood are an increased ability to talk about their own and others’ emotions and an increased understanding of emotion (Kuebli, 1994). Between 2 and 4 years of age, children considerably increase the number of terms they use to describe emotions (Ridgeway, Waters, & Kuczaj, 1985). They also are learning about the causes and consequences of feelings.

Middle and Late Childhood

During middle and late childhood, many children show marked improvement in understanding and managing their emotions. However, in some instances, as when they experience stressful circumstances, their coping abilities can be challenged. Developmental Changes in Emotion Here are some important developmental changes in emotions during these years (Kuebli, 1994; Thompson & Goodvin, 2005; Wintre & Vallance, 1994):

• Improved emotional understanding. Children in elementary school develop an increased ability to understand such complex emotions as pride and shame. These emotions become less tied to the reactions of other people; they become more self-generated and integrated with a sense of personal responsibility. A child may feel a sense of pride about developing new reading skills or shame after hurting a friend’s feelings. Marked improvements in the ability to suppress or conceal negative emotional reactions. Children now sometimes intentionally hide their emotions. Although a boy may feel sad that a friend does not want to play with him, he may decide not to share those feelings with his parents.

The use of self-initiated strategies for redirecting feelings. In the elementary school years, children reflect more about emotional experiences and develop strategies to cope with their emotional lives.

Adolescence

Adolescence has long been described as a time of emotional turmoil (Hall, 1904). Adolescents are not constantly in a state of “storm and stress,” but emotional highs and lows do increase during early adolescence (Rosenblum & Lewis, 2003). Young adolescents can be on top of the world one moment and down in the dumps the next. In some instances, the
intensity of their emotions seems out of proportion to the events that elicit them (Steinberg & Levine, 1997). Young adolescents might sulk a lot, not knowing how to adequately express their feelings. With little or no provocation, they might blow up at their parents or siblings, a response that might reflect the defense mechanism of displacing their feelings onto another person. For some adolescents, such emotional swings can reflect serious problems. Girls are especially vulnerable to depression in adolescence (Nolen-Hoeksema, 2007). But it is important for adults to recognize that moodiness is a normal aspect of early adolescence, and most adolescents make it through these moody times to become competent adults.

Emotional fluctuations in early adolescence may be related to the variability of hormones during this period. (Chapter 3 discussed the significant hormonal changes that characterize puberty.) Moods become less extreme as adolescents move into adulthood, and this decrease in emotional fluctuation may reflect adaptation to hormone levels (Rosenbaum & Lewis, 2003).

Researchers have discovered that pubertal change is associated with an increase in negative emotions (Archibald, Graber, & Brooks-Gunn, 2003; Dorn, Williamson, & Ryan, 2002). However, most researchers conclude that hormonal influences are small and that when they occur they usually are associated with other factors, such as stress, eating patterns, sexual activity, and social relationships (Rosenbaum & Lewis, 2003; Susman & Rogol, 2004).

Indeed, environmental experiences may contribute more to the emotions of adolescence than hormonal changes. Adolescents’ emotional regulation and mood may play a pivotal role in their academic success. One study revealed that sixth- to eighth-grade students who reported more negative affect during regular academic routines had lower grade point averages than their counterparts who experienced more positive affect during these routines, even when cognitive ability was controlled (Gumora & Arsenio, 2002).

**Adulthood and Aging**

Like children, adults adapt more effectively when they are emotionally intelligent when they are skilled at perceiving and expressing emotion, understanding emotion, using feelings to facilitate thought, and managing emotions effectively.

Developmental changes in emotion continue through the adult years (Schmidt & Schulz, 2007). The changes often are characterized by an effort to create lifestyles that are emotionally satisfying, predictable, and manageable by making decisions about an occupation, a life partner, and other circumstances. Of course, not all individuals are successful in these efforts. A key theme of “emotional development in adulthood is the adaptive integration of emotional experience into satisfying daily life and successful relationships with others”
As adults become older, is their emotional life different from when they were younger? Researchers have found that across diverse samples—Norwegians, Catholic nuns, African Americans, Chinese Americans, and European Americans—older adults report better control of their emotions and fewer negative emotions than do younger adults. Stereotypes would lead us to expect that the emotional landscape for older adults is bleak, that most live sad, lonely lives. Researchers have found a different picture. Overall, compared with younger adults, the feelings of older adults mellow. Emotional life is on a more even keel, with fewer highs and lows. It may be that although older adults have less extreme joy, they have more contentment, especially when they are connected in positive ways with friends and family. In sum, researchers have found that the emotional life of older adults is more positive than stereotypes suggest (Carstensen, Mikels, & Mather, 2006).

Understanding and Responding to the Emotions of Others

Infants' emotional expressions are closely tied to their ability to interpret the emotional cues of others. Babies match the feeling tone of the caregiver in face-to-face communication. Early on, infants detect others' emotions through a fairly automatic process of emotional contagion, just as we tend to feel happy or sad when we sense these emotions in others.

Between 7 and 10 months, infants perceive facial expressions as organized patterns, and they can match the emotion in a voice with the appropriate face of a speaking person. Responding to emotional expressions as organized wholes indicates that these signals have become meaningful to babies. As skill at detecting what others are looking at and reacting to improves, infants realize that an emotional expression not only has meaning but is also a meaningful reaction to a specific object or event. Once these understandings are in place, infants engage in social referencing, in which they actively seek emotional information from a trusted person in an uncertain situation. Many studies show that the caregiver's emotional expression (happy, angry, or fearful) influences whether a 1-year-old will be wary of strangers, play with an unfamiliar toy, or cross the deep side of the visual cliff. Social referencing gives infants and toddlers a powerful means for learning. By responding to caregivers' emotional messages, they can avoid harmful situations.

Emergence of Self-Conscious Emotions

Besides basic emotions, humans are capable of a second, higher-order set of feelings, including shame, embarrassment, guilt, envy, and pride. These are called self-conscious emotions because each involves injury to or enhancement of our sense of self. For example, when we are ashamed or embarrassed, we feel negatively about our behavior, and we want to retreat so others will no longer notice our failings. In contrast, pride reflects delight in the self's achievements, and we are inclined to tell others what we have accomplished.
Self-conscious emotions appear in the middle of the second year, as the sense of self emerges. Shame and embarrassment can be seen as 18- to 24-month-olds lower their eyes, hang their heads, and hide their faces with their hands. Guilt like reactions is also evident. Besides self-awareness, self-conscious emotions require an additional ingredient: adult instruction in when to feel proud, ashamed, or guilty. Parents begin this tutoring early when they say, "My, look at how far you can throw that ball!" or, "You should feel ashamed for grabbing that toy!".

**TEMPERAMENT**

Temperament is an individual’s behavioral style and characteristic emotional response. When we describe one person as cheerful and “upbeat,” another as active and energetic, and still others as calm, cautious, or prone to angry outbursts, we are referring to Temperament - stable individual differences in quality and intensity of emotional reaction, activity level, attention, and emotional self-regulation. The temperamental differences among children are a great concern because the psychological traits that make up temperament are believed to form the cornerstone of the adult personality.

As temperament increases, the chances that a child will experience psychological problems or alternatively, be protected from the effects of a highly stressful home life. It was found that, parenting practices can modify children's emotional styles considerably.

**The Structure of Temperament**

Thomas and Chess's nine dimensions, listed in Table 2, served as the first influential model of temperament and inspired all others that followed. When detailed descriptions of infants' and children's behaviour obtained from parental interviews were rated on these dimensions, certain characteristics clustered together, yielding three types of children:

**Describing and Classifying Temperament**

Chess and Thomas’ Classification Psychiatrists Alexander Chess and Stella Thomas (Chess & Thomas, 1977; Thomas & Chess, 1991) identified three basic types, or clusters, of temperament:

- An easy child is generally in a positive mood, quickly establishes regular routines in infancy, and adapts easily to new experiences.

- A difficult child reacts negatively and cries frequently, engages in irregular daily routines, and is slow to accept change.

- A slow-to-warm-up child has a low activity level, is somewhat negative, and displays a low intensity of mood.
In their longitudinal investigation, **Chess and Thomas** found that 40 percent of the children they studied could be classified as easy, 40 percent as difficult, and 15 percent as slow to warm up. Notice that 35 percent did not fit any of the three patterns. Researchers have found that these three basic clusters of temperament are moderately stable across the childhood years.

**Kagan's Behavioral Inhibition** Another way of classifying temperament focuses on the differences between a shy, subdued, timid child and a sociable, extraverted, bold child. Jerome Kagan (2000, 2002; Kagan & Fox, 2006; Kagan & Snidman, 1991) regards shyness with strangers (peers or adults) as one feature of a broad temperament category called inhibition to the unfamiliar. Inhibited children react to many aspects of unfamiliarity with initial avoidance, distress, or subdued affect, beginning about 7 to 9 months of age.

Kagan has found that inhibition shows considerable stability from infancy through early childhood. One study classified toddlers into extremely inhibited, extremely uninhibited, and intermediate groups (Pfeifer & others, 2002). Follow-up assessments occurred at 4 and 7 years of age. Continuity was demonstrated for both inhibition and lack of inhibition, although a substantial number of the inhibited children moved into the intermediate groups at 7 years of age.

**Rothbart and Bates' Classification** New classifications of temperament continue to be forged. Mary Rothbart and John Bates (2006) argue that that three broad dimensions best represent what researchers have found to characterize the structure of temperament: extraversion/surgency, negative affectivity, and effortful control (self-regulation): Extraversion/surgency includes “positive anticipation, impulsivity, activity level, and sensation seeking” (Rothbart, 2004, p. 495). Kagan’s uninhibited children fit into this category.

- Negative affectivity includes “fear, frustration, sadness, and discomfort” (Rothbart, 2004, p. 495). These children are easily distressed; they may fret and cry often. Kagan’s inhibited children fit this category.

- Effortful control (self-regulation) includes “attentional focusing and shifting, inhibitory control, perceptual sensitivity, and low-intensity pleasure”

**Measuring Temperament**

Temperament is often assessed through interviews or questionnaires given to parents. Behaviour ratings by paediatricians, teachers, and others familiar with the child and direct observations by researchers have also been used. Parental reports have been emphasized because of their convenience and parents' depth of knowledge about the child. At the same time, information from parents has been criticized as being biased and subjective.
Nevertheless, parent ratings are moderately related to observations of children’s behaviour. And parent perceptions are useful for understanding the way parents view and respond to their child. To explore the biological basis of temperament, physiological measures are used. Most efforts have focused on inhibited, or shy, children, who react negatively to and withdraw from novel stimuli, and uninhibited, or sociable, children, who react positively to and approach novel stimuli. Heart rate, hormone levels, and electrical brain-wave recordings in the frontal region of the cerebral cortex differentiate children with inhibited and uninhibited temperaments.

**Stability of Temperament**

Even though there is long-term stability of temperament. It would be difficult to claim that temperament really exists if children’s emotional styles were not stable over time. Infants and young children who score low or high on attention span, irritability, sociability, or shyness are likely to respond similarly when assessed again a few years later and, occasionally, even into the adult years.

When the evidence as a whole is examined carefully, however, temperamental stability from one age period to the next is generally low to moderate. Although quite a few children remain the same, a good number have changed when assessed again. In fact, some characteristics, such as shyness and sociability, are stable over the long term only in children at the extremes—those who are very inhibited or very outgoing to begin with.

A major reason as to why temperament is not more stable is that temperament itself develops with age. The early months are a period of irritability and activity level, fussing and crying for most babies. As infants can better regulate their attention and emotions, many who initially seemed irritable become calm and content. At first, an active, wriggling infant tends to be highly aroused and uncomfortable, whereas an inactive baby is often alert and attentive. As infants begin to move on their own, the reverse is so! An active crawler is usually alert and interested in exploration, whereas a very inactive baby might be fearful and withdrawn. The changes shown by many children suggest that experience can modify biologically based temperamental traits (although children rarely change from one extreme to another—that is, a shy toddler practically never becomes highly sociable).

**Genetic Influences**

The word *temperament* implies a genetic foundation for individual differences in personality. It is known that identical twins are more similar than fraternal twins across a wide range of temperamental and personality traits. Heritability estimates suggest a moderate role for heredity in temperament and personality: About half of the individual differences can be traced to differences in genetic makeup.

Consistent ethnic and sex differences in early temperament exist, again implying a role for heredity. Asian babies tend to be less active, less irritable, less vocal, more easily soothed when upset, and better at quieting
themselves. From an early age, boys tend to be more active and daring and girls more anxious and timid—a difference reflected in boys’ higher injury rates throughout childhood and adolescence.

**Environmental Influences**

Heredity and environment often combine to strengthen the stability of temperament, since a child’s approach to the world affects the experiences to which she is exposed. Japanese mothers usually say that babies come into the world as independent beings that must learn to rely on their mothers through close physical contact. North American mothers are likely to believe just the opposite—that they must wean babies away from dependence into autonomy. Asian mothers interact gently, soothingly, and gesturally and discourage strong emotion in their babies, whereas Caucasian mothers use a more active, stimulating, verbal approach. These behaviors enhance cultural differences in temperament.

A similar process seems to contribute to sex differences in temperament. Within the first 24 hours after birth (before they have had much experience with the baby), parents already perceive boys and girls differently. Sons are rated as larger, better coordinated, more alert, and stronger. Daughters are viewed as softer, more awkward, weaker, and more delicate. Gender-stereotyped beliefs carryover into the way parents treat their infants and toddlers. Parents more often encourage sons to be physically active and daughters to seek help and physical closeness. These practices promote temperamental differences between boys and girls.

In families with several children, an additional influence on temperament is at work. Parents often look for and emphasize personality differences in their children. This is reflected in the comparisons parents make: “She’s a lot more active,” or “He’s more sociable”. Each child, in turn, evokes responses from caregivers that are consistent with parental views and with the child’s actual temperamental style.

**Temperament and Child Rearing: The Goodness-of-Fit Model**

It is a known fact that the temperaments of many children change with age. This suggests that environments do not always sustain or intensify a child’s existing temperament. If a child’s disposition interferes with learning or getting along with others, adults must gently but consistently counteract the child’s maladaptive behaviour.

Thomas and Chess (1977) proposed a **goodness-of-fit model** to explain how temperament and environment can together produce favourable outcomes. Goodness of fit involves creating child-rearing environments that recognize each child’s temperament while encouraging more adaptive functioning. Goodness of fit helps explain why difficult children (who withdraw from new experiences and react negatively and intensely) are at high risk for later adjustment problems. These children, at least in Western middle-SES families, frequently experience parenting that fits poorly with their dispositions. As infants, they are far less likely to receive sensitive care.
giving. By the second year, parents of difficult children tend to resort to angry, punitive discipline, and the child reacts with defiance and disobedience. Then parents often behave inconsistently, rewarding the child’s non-compliance by giving in to it, although they initially resisted. These practices maintain and even increase the child’s irritable, conflict-ridden style. In contrast, when parents are positive and involved and engage in the sensitive, face-to-face play that helps infants regulate emotion, difficultness declines by age 2.

**ATTACHMENT AND LOVE**

**DEVELOPMENT OF ATTACHMENT**

Attachment is the strong, affectional tie we have with special people in our lives that leads us to experience pleasure and joy when we interact with them and to be comforted by their nearness during times of stress. By the second half of the first year, infants have become attached to familiar people who have responded to their needs. Watch babies of this age, and notice how they single out their parents for special attention. For example, when the mother enters the room, the baby breaks into a broad, friendly smile. When she picks him up, he pats her face, explores her hair, and snuggles against her. When he feels anxious or afraid, he crawls into her lap and clings closely.

Freud first suggested that the infant’s emotional tie to the mother is the foundation for all later relationships. Erikson’s theory states how the psychoanalytic perspective regards feeding acts as the primary context in which caregivers and babies build their close emotional bond. Behaviorism, too, emphasizes the importance of feeding, but for different reasons. According to a well-known behaviourist account, as the mother satisfies the baby’s hunger, infants learn to prefer her soft caresses, warm smiles, and tender words of comfort because these events have been paired with tension relief.

Although feeding is an important context for building a close relationship, attachment does not depend on hunger satisfaction. In the 1950s, a famous experiment showed that rhesus monkeys reared with terry-cloth and wire-mesh “surrogate mothers” clung to the soft terry-cloth substitute, even though the wire-mesh “mother” held the bottle and infants had to climb on it to be fed. Similarly, human infants become attached to family members who seldom feed them, including fathers, siblings, and grandparents.

**9.4.1 Ethological Theory of Attachment**

It recognizes the infant’s emotional tie to the caregiver as an evolved response that promotes survival, is the most widely accepted view. Contact with the parent also ensures that the baby will be fed, but John Bowlby (1969) pointed out that feeding is not the basis for attachment. Instead, the attachment bond has strong biological roots.
According to Bowlby, the infant’s relationship with the parent begins as a set of innate signals that call the adult to the baby’s side. Over time, a true affectional bond develops, which is supported by new cognitive and emotional capacities as well as by a history of warm, sensitive care. Attachment develops in four phases:

1. **The preattachment phase** (birth to 6 weeks). Built-in signals—grasping, smiling, crying, and gazing into the adult’s eyes—help bring newborn babies into close contact with other humans. Once an adult responds, infants encourage her to remain nearby because closeness comforts them. Babies of this age recognize their own mother’s smell and voice. But they are not yet attached to her since they do not mind being left with an unfamiliar adult.

2. **The "attachment-in-the-making" phase** (6 weeks to 8 months). During this phase, infants respond differently to a familiar caregiver than to a stranger. As infants learn that their own actions affect the behaviour of those around them, they begin to develop a sense of trust—the expectation that the caregiver will respond when signalled. But even though they recognize the parent, babies still do not protest when separated from her.

3. **The phase of "clear-cut" attachment** (6-8 months to 18 months-2 years). Now attachment to the familiar caregiver is clearly evident. Babies display separation anxiety, becoming upset when the adult whom they have come to rely on leaves. Separation anxiety does not always occur; like stranger anxiety, it depends on infant temperament and the current situation. Besides protesting the parent’s departure, older infants and toddlers try hard to maintain her presence. They approach, follow, and climb on her in preference to others. And they use the familiar caregiver as a secure base or point from which to explore, venturing into the environment and then returning for emotional support.

4. **Formation of a reciprocal relationship** (18 months-2 years and on). By the end of the second year, rapid growth in representation and language permits toddlers to understand some of the factors that influence the parent’s coming and going and to predict her return. As a result, separation protest declines. Now children start to negotiate with the caregiver, using requests and persuasion to alter her goals.

According to Bowlby, out of their experiences during these four phases, children construct an enduring affectional tie to the caregiver that they can use as a secure base in the parents’ absence. This inner representation becomes a vital part of personality. It serves as an internal working model, or set of expectations about the availability of attachment figures and their likelihood of providing support during times of stress. This image becomes the model, or guide, for all future relationships.

**Measuring the Security of Attachment**

Although virtually all family-reared babies become attached to a familiar caregiver by the second year, the quality of this relationship differs from child to child. A widely used technique for assessing the quality of
attachment between 1 and 2 years of age is the Strange Situation. Mary Ainsworth and her colleagues said that securely attached infants and toddlers should use the parent as a secure base from which to explore an unfamiliar playroom. In addition, when the parent leaves, an unfamiliar adult should be less comforting than the parent. Observing the responses of infants researchers have identified a secure attachment pattern and three patterns of insecurity.

Secure attachment. These infants use the parent as a secure base from which to explore. When separated, they may or may not cry, but if they do, it is because the parent is absent and they prefer her to the stranger. When the parent returns, they actively seek contact, and their crying is reduced immediately.

Avoidant attachment These infants seem unresponsive to the parent when she is present. When she leaves, they are usually not distressed, and they react to the stranger in much the same way as to the parent. During reunion, they avoid or are slow to greet the parent, and when picked up, they often fail to cling.

Resistant attachment Before separation, these infants often seek closeness to the parent and often fail to explore. When she returns, they display angry, resistive behaviour, sometimes hitting and pushing. Many continue to cry after being picked up and cannot be comforted easily.

Disorganized - disoriented attachment This pattern reflects the greatest insecurity. At reunion, these infants show a variety of confused, contradictory behaviors. They might look away while being held by the parent or approach her with flat, depressed emotion. A few cry out after having calmed down or display odd, frozen postures. Infants’ reactions in the Strange Situation resemble their use of the parent as a secure base and their response to separation at home. For this reason, the procedure is a powerful tool for assessing attachment security.

Factors That Affect Attachment Security

There are four important factors that might influence attachment security: (1) opportunity to establish a close relationship, (2) quality of care giving, (3) the baby’s characteristics, and (4) family context.

Opportunity for Attachment When a baby does not have the opportunity to establish an affectional tie to a caregiver, for example institutionalized infants who had been given up by their mothers between 3 and 12 months of age. The babies when placed on a large ward where they shared a nurse with at least seven other babies. In contrast to the happy, outgoing behavior they had shown before separation, they wept and withdrew from their surroundings, lost weight, and had difficulty sleeping. If a consistent caregiver did not replace the mother the depression deepened rapidly.
These institutionalized babies had emotional difficulties because they were prevented from forming a bond with one or a few adults. When they grow up they were likely to display emotional and social problems desire for adult attention, over-friendliness to unfamiliar adults and peers and few friendships.

**Quality of Care giving Sensitive care giving** responding promptly, consistently and appropriately to infants and holding them tenderly and carefully - is moderately related to attachment security in diverse cultures. In contrast, insecurely attached infants tend to have mothers who engage in less physical contact, handle them awkwardly, behave in a “routine” manner, and are sometimes negative, resentful, and rejecting.

A special form of communication called **interact ional synchrony** separated the experiences of secure and insecure babies. It is best described as a sensitively tuned “emotional dance,” in which the caregiver responds to infant signals in a well-timed, rhythmic, appropriate fashion. In addition, both parents match emotional states, especially the positive ones.

**Infant Characteristics** Since attachment is the result of a relationship that builds between two partners, infant characteristics should affect how easily it is established. In stressed, poverty-stricken families, prematurity, birth complications, and newborn illness are linked to attachment insecurity. But when parents have the time and patience to care for a baby with special needs and view their infants positively, at-risk newborns fare quite well in attachment security.

Babies who are irritable and fearful may simply react to brief separations with intense anxiety, regardless of the parent’s sensitivity to the baby. Consistent with this view, emotionally reactive, difficult babies are more likely to develop later insecure attachments.

**Family Circumstances** Job loss, a failing marriage, financial difficulties, and other stressors can undermine attachment by interfering with the sensitivity of parental care. Or they can affect babies' sense of security directly, by exposing them to angry adult interactions or unfavourable child-care arrangements. The availability of social supports, especially assistance in care giving, reduces stress and fosters attachment security.

Parents bring to the family context a long history of attachment experiences, out of which they construct internal working models that they apply to the bonds established with their babies. Internal working models are **reconstructed memories** affected by many factors, including relationship experiences over the life course, personality, and current life satisfaction. Longitudinal studies show that negative life events can weaken the link between an individual’s own attachment security in infancy and a secure internal working model in adulthood. And insecurely attached babies who become adults with insecure internal working models often have lives that, based on adulthood self-reports, are filled with family crises. Our early rearing experiences do not destine us to become sensitive or insensitive parents. Rather, the way we view our childhoods—our ability to come to
terms with negative events, to integrate new information into our working models, and to look back on our own parents in an understanding, forgiving way—is much more influential in how we rear our children than is the actual history of care we received.

Following are four such phases based on Bowlby’s conceptualization of attachment (Schaffer, 1996):

- **Phase 1:** From birth to 2 months. Infants instinctively direct their attachment to human figures. Strangers, siblings, and parents are equally likely to elicit smiling or crying from the infant.

- **Phase 2:** From 2 to 7 months. Attachment becomes focused on one figure, usually the primary caregiver, as the baby gradually learns to distinguish familiar from unfamiliar people.

- **Phase 3:** From 7 to 24 months. Specific attachments develop. With increased loco motor skills, babies actively seek contact with regular caregivers, such as the mother or father.

- **Phase 4:** From 24 months on. Children become aware of others’ feelings, goals, and plans and begin to take these into account in forming their own actions.

Based on how babies respond in the Strange Situation, they are described as being securely attached or insecurely attached (in one of three ways) to the caregiver:

- **Securely attached babies** use the caregiver as a secure base from which to explore the environment. When in the presence of their caregiver, securely attached infants explore the room and examine toys that have been placed in it. When the caregiver departs, securely attached infants might mildly protest, and when the caregiver returns these infants reestablish positive interaction with her, perhaps by smiling or climbing on her lap. Subsequently, they often resume playing with the toys in the room.

- **Insecure avoidant babies** show insecurity by avoiding the mother. In the Strange Situation, these babies engage in little interaction with the caregiver, are not distressed when she leaves the room, usually do not reestablish contact with her on her return, and may even turn their back on her. If contact is established, the infant usually leans away or looks away.

- **Insecure resistant babies** often cling to the caregiver and then resist her by fighting against the closeness, perhaps by kicking or pushing away. In the Strange Situation, these babies often cling anxiously to the caregiver and don’t explore the playroom. When the caregiver leaves, they often cry loudly and push away if she tries to comfort them on her return.

- **Insecure disorganized babies** are disorganized and disoriented. In the Strange Situation, these babies might appear dazed, confused, and fearful. To be classified as disorganized, babies must show strong patterns of
avoidance and resistance or display certain specified behaviors, such as extreme fearfulness around the caregiver.

Some developmentalists note that too much emphasis has been placed on the attachment bond in infancy. Jerome Kagan (1987, 2000), for example, emphasizes that infants are highly resilient and adaptive; he argues that they are evolutionarily equipped to stay on a positive developmental course, even in the face of wide variations in parenting. Kagan and others stress that genetic characteristics and temperament play more important roles in a child’s social competence than the attachment theorists, such as Bowlby and Ainsworth, are willing to acknowledge (Bakermans-Kranenburg & others, 2007; Chaudhuri & Williams, 1999). Infants in agricultural societies tend to form attachments to older siblings, who are assigned a major responsibility for younger siblings’ care. Researchers recognize the importance of competent, nurturing caregivers in an infant’s development (Bornstein, 2006; Parke & Buriel, 2006). At issue, though, is whether or not secure attachment, especially to a single caregiver, is critical (Lamb, 2005; Thompson, 2006). Despite such criticisms, there is ample evidence that security of attachment is important to development (Berlin & others, 2007; Thompson, 2006). Secure attachment in infancy is important because it reflects a positive parent-infant relationship and provides the foundation that supports healthy socio-emotional development in the years that follow.

**Care giving Styles and Attachment**

Securely attached babies have caregivers who are sensitive to their signals and are consistently available to respond to their infants’ needs (Gao, Elliot, & Waters, 1999; Juffer, Bakermans-Kranenburg, & van IJzendor, 2007; Main, 2000). These caregivers often let their babies have an active part in determining the onset and pacing of interaction in the first year of life. One study found that maternal sensitivity in parenting was linked with secure attachment in infants in two different cultures: the United States and Colombia (Carbonell & others, 2002). How do the caregivers of insecurely attached babies interact with them? Caregivers of avoidant babies tend to be unavailable or rejecting (Berlin & Cassidy, 2000). They often don’t respond to their babies’ signals and have little physical contact with them. When they do interact with their babies, they may behave in an angry and irritable way. Caregivers of resistant babies tend to be inconsistent; sometimes they respond to their babies’ needs, and sometimes they don’t. In general, they tend not to be very affectionate with their babies and show little synchrony when interacting with them. Caregivers of disorganized babies often neglect or physically abuse them (Cicchetti & Toth, 2006). In some cases, these caregivers are depressed.

Mothers and Fathers as Caregivers Can fathers take care of infants as competently as mothers can? Observations of fathers and their infants suggest that fathers have the ability to act as sensitively and responsively as mothers with their infants (Parke, 1995, 2002; Parke & Buriel, 2006). Perhaps the care giving behavior of male humans resembles that of other
male primates, who show notoriously low interest in their offspring. However, when forced to live with infants whose female caregivers are absent, the males can competently rear the infants. Remember, however, that although fathers can be active, nurturant, involved caregivers with their infants, many do not choose to follow this pattern (Lamb, 2005).

**Adolescence**

Relationships between parents and children continue to be important into the adolescent years. But the adolescent's emotions may become more involved with people outside the family, especially with romantic partners. What do psychologists know about these relationships?

Attachment to Parents The initial interest in attachment focused on infants and their caregivers. Developmentalists have lately begun to explore the role of secure attachment and related concepts, such as connectedness to parents, during adolescence (Allen, Hauser, & Borman-Spurrell, 1996; Allen & others, 2003; Kenney & Barton, 2003; Kobak & others, 1993). Secure attachment to parents in adolescence may facilitate the adolescent's social competence and well-being, as reflected in such characteristics as self-esteem, emotional adjustment, and physical health (Cooper, Shaver, & Collins, Many studies that assess secure and insecure attachment in adolescence and adulthood use the Adult Attachment Interview (AAI) (George, Main, & Kaplan, 1984). This measure examines an individual's memories of significant attachment relationships. Based on the responses to questions on the AAI, individuals are classified as secure-autonomous (which corresponds to secure attachment in infancy) or as one of three insecure categories:

- Dismissing-avoidant attachment is an insecure category in which adolescents deemphasize the importance of attachment. This category is associated with consistent rejection of attachment needs by caregivers. One possible outcome of dismissing/avoidant attachment is that parents and adolescents may mutually distance themselves from each other, which lessens parents’ influence. Dismissing-avoidant attachment is linked with violent and aggressive behavior in some adolescents. Preoccupied-ambivalent attachment is an insecure category in which adolescents are hyper tuned to attachment experiences. This is thought to occur mainly because parents are inconsistently available to the adolescent, which may lead to considerable attachment-seeking behavior, mixed with anger. Conflict with parents may be too high for healthy development.

- Unresolved-disorganized attachment is an insecure category in which the adolescent has an unusually high level of fear and is often disoriented. This may result from such traumatic experiences as a parent’s death or abuse by parents.
Adulthood

Attachment and romantic relationships continue to be very important aspects of close relationships in adulthood. Let’s explore attachment first, then different types of love.

Main attachment styles in adulthood are,

- Secure attachment style. Securely attached adults have positive views of relationships, find it easy to get close to others, and are not overly concerned with, or stressed out about, their romantic relationships. These adults tend to enjoy sexuality in the context of a committed relationship and are less likely than others to have one-night stands.

- Avoidant attachment style. Avoidant individuals are hesitant about getting involved in romantic relationships and once in a relationship tend to distance themselves from their partner.

- Anxious attachment style. These individuals demand closeness, are less trusting, and are more emotional, jealous, and possessive. The majority of adults (about 60 to 80 percent) describe themselves as securely attached, and not surprisingly adults prefer having a securely attached partner.

Romantic Love

Think for a moment about songs and books that hit the top of the charts. Chances are, they’re about love. Poets, playwrights, and musicians through the ages have lauded the fiery passion of romantic love—and lamented the searing pain when it fails. Romantic love is also called passionate love, or eros; it has strong components of sexuality and infatuation, and it often predominates in the early part of a love relationship.

Well-known love researcher Ellen Berscheid (1988) says that it is romantic love we mean when we say that we are “in love” with someone. It is romantic love, she believes, that we need to understand if we are to learn what love is all about. According to Berscheid, sexual desire is the most important ingredient of romantic love.

Romantic love includes a complex intermingling of emotions—fear, anger, sexual desire, joy, and jealousy, for example (Hendrick & Hendrick, 2004). Obviously, some of these emotions are a source of anguish. One study found that romantic lovers were more likely than friends to be the cause of depression (Berscheid & Fei, 1977).

Affectionate Love

Love is more than just passion. Affectionate love, also called companionate love, is the type of love that occurs when individuals desire to have the other person near and have a deep, caring affection for the person.

There is a growing belief that as love matures, passion to give way to affection (Berscheid, 2000; Berscheid & Reis, 1998). Phillip Shaver (1986)
describes the initial phase of romantic love as a time that is fueled by a mixture of sexual attraction and gratification, a reduced sense of loneliness, uncertainty about the security of developing another attachment, and excitement about exploring the novelty of another human being. With time, he says, sexual attraction wanes, attachment anxieties either lessen or produce conflict and withdrawal, novelty is replaced with familiarity, and lovers either find themselves securely attached in a deeply caring relationship or distressed—feeling bored, disappointed, lonely, or hostile, for example. In the latter case, one or both partners may eventually seek another close relationship.

Sternberg’s Triangular Theory of Love Clearly, there is more to satisfying love relationships than sex. One theory of love that captures this idea was proposed by Robert J. Sternberg (1988). His triangular theory of love states that love has three main components or dimensions—passion, intimacy, and commitment. Passion, as described earlier, is physical and sexual attraction to another.

• Intimacy is the emotional feelings of warmth, closeness, and sharing in a relationship.

• Commitment is our cognitive appraisal of the relationship and our intent to maintain the relationship even in the face of problems. According to Sternberg, if passion is the only ingredient (with intimacy and commitment low or absent), we are merely infatuated. This might happen in an affair or a one-night stand. But varying combinations of the dimensions of love create three qualitatively different types of love:

• A relationship marked by intimacy and commitment but low or lacking in passion is called affectionate love, a pattern often found among couples who have been married for many years.

• If passion and commitment are present but intimacy is not, Sternberg calls the relationship fatuous love, as when one person worships another from a distance.

• If passion, intimacy, and commitment are all strong, the result is consummate love, the fullest type of love.

MORAL DEVELOPMENT

“Moral development is the development that involves thoughts, feelings, and actions regarding rules and conventions about what people should do in their interactions with other people.” (Santrock, Life-Span Development, 2008: 279)

TPIAGET'S STAGES OF MORAL JUDGMENT

Piaget studied many aspects of moral judgment, but most of his findings fit into a two-stage theory. Children younger than 10 or 11 years think about moral dilemmas one way; older children consider them
differently. As we have seen, younger children regard rules as fixed and absolute. They believe that rules are handed down by adults or by God and that one cannot change them. The older child’s view is more relativistic. He or she understands that it is permissible to change rules if everyone agrees. Rules are not sacred and absolute but are devices which humans use to get along cooperatively.

At approximately the same time—10 or 11 years—children’s moral thinking undergoes other shifts. In particular, younger children base their moral judgments more on consequences, whereas older children base their judgments on intentions. When, for example, the young child hears about one boy who broke 15 cups trying to help his mother and another boy who broke only one cup trying to steal cookies, the young child thinks that the first boy did worse. The child primarily considers the amount of damage—consequences—whereas the older child is more likely to judge wrongness in terms of the motives underlying the act (Piaget, 1932, p. 137).

There are many more details to Piaget’s work on moral judgment, but he essentially found a series of changes that occur between the ages of 10 and 12, just when the child begins to enter the general stage of formal operations.

Piaget (1932) proposed two stages of moral development that are heteronomous morality and autonomous morality. He derived his theory from observing, interviewing and quizzing the children on their thinking about game’s rules. He extensively observed and interview 4 to 12 years old children. He watched them play marbles, seeking to learn how they used and thought about the game’s rules.

The Piaget’s 2 stages of moral development are shown in Figure

![2 stages in Piaget’s theory of moral development](image)

**Stage 1- Heteronomous Morality (4 – 10 years old)**

- From 4 to 7 years of age, children display heteronomous morality. Children think of justice and rules as unchangeable properties of the world, remove from the control of people.
From 7 to 10 years of age, children are in transition showing some features of the first stage of moral reasoning and some features of the second stage, autonomous morality.

Because young children are heteronomous moralist, they judge the rightness or goodness of behaviour by considering its consequences, not the intentions of the actor.

For examples: Killing 10 birds accidentally is worse than killing 1 bird intentionally

Stage 2 - Autonomous Morality (10 years and above)

From about 10 years of age and older, children show autonomous morality. They became aware that rules and laws are created by people, and in judging an action. They consider the actor's intentions as well as the consequences.

The older children, moral autonomist, accept change in rules example accept change in new rules of playing marbles suggested by Piaget, contrast with younger children, they resist change because they believes that rules are unchangeable.

So older children accept change in rules and recognize that rules are merely convenient conventions, subjects to change.

Kohlberg’s Stages of Moral Development

Biographical Introduction

An outstanding example of research in the Piagetian tradition is the work of Lawrence Kohlberg. Kohlberg has focused on moral development and has proposed a stage theory of moral thinking which goes well beyond Piaget’s initial formulations.

Kohlberg, who was born in 1927, grew up in Bronxville, New York, and attended the Andover Academy in Massachusetts, a private high school for bright and usually wealthy students. He did not go immediately to college, but instead went to help the Israeli cause, in which he was made the Second Engineer on an old freighter carrying refugees from parts of Europe to Israel. After this, in 1948, he enrolled at the University of Chicago, where he scored so high on admission tests that he had to take only a few courses to earn his bachelor's degree. This he did in one year. He stayed on at Chicago for graduate work in psychology, at first thinking he would become a clinical psychologist. However, he soon became interested in Piaget and began interviewing children and adolescents on moral issues. The result was his doctoral dissertation (1958a), the first rendition of his new stage theory.

Kohlberg is an informal, unassuming man who also is a true scholar; he has thought long and deeply about a wide range of issues in both psychology and philosophy and has done much to help others appreciate the wisdom of many of the "old psychologists," such as Rousseau, John Dewey,
and James Mark Baldwin. Kohlberg has taught at the University of Chicago (1962-1968) and, since 1968, has been at Harvard University.

**KOHLMBERG'S METHOD**

Kohlberg's (1958a) core sample was comprised of 72 boys, from both middle- and lower-class families in Chicago. They were ages 10, 13, and 16. He later added to his sample younger children, delinquents, and boys and girls from other American cities and from other countries (1963, 1970).

The basic interview consists of a series of dilemmas such as the following:

**Heinz Steals the Drug**

In Europe, a woman was near death from a special kind of cancer. There was one drug that the doctors thought might save her. It was a form of radium that a druggist in the same town had recently discovered. The drug was expensive to make, but the druggist was charging ten times what the drug cost him to make. He paid $200 for the radium and charged $2,000 for a small dose of the drug. The sick woman's husband, Heinz, went to everyone he knew to borrow the money, but he could only get together about $1,000 which is half of what it cost. He told the druggist that his wife was dying and asked him to sell it cheaper or let him pay later. But the druggist said: "No, I discovered the drug and I'm going to make money from it." So Heinz got desperate and broke into the man's store to steal the drug for his wife. Should the husband have done that? (Kohlberg, 1963, p. 19)

Kohlberg is not really interested in whether the subject says "yes" or "no" to this dilemma but in the reasoning behind the answer. The interviewer wants to know why the subject thinks Heinz should or should not have stolen the drug. The interview schedule then asks new questions which help one understand the child's reasoning. For example, children are asked if Heinz had a right to steal the drug, if he was violating the druggist's rights, and what sentence the judge should give him once he was caught. Once again, the main concern is with the reasoning behind the answers. The interview then goes on to give more dilemmas in order to get a good sampling of a subject's moral thinking.

Once Kohlberg had classified the various responses into stages, he wanted to know whether his classification was reliable. In particular, he wanted to know if others would score the protocols in the same way. Other judges independently scored a sample of responses, and he calculated the degree to which all raters agreed. This procedure is called interrater reliability. Kohlberg found these agreements to be high, as he has in his subsequent work, but whenever investigators use Kohlberg's interview, they also should check for interrater reliability before scoring the entire sample.
KOHLBERG'S SIX STAGES

Level 1. Preconventional Morality

Stage 1. Obedience and Punishment Orientation. Kohlberg's stage 1 is similar to Piaget's first stage of moral thought. The child assumes that powerful authorities hand down a fixed set of rules which he or she must unquestioningly obey. To the Heinz dilemma, the child typically says that Heinz was wrong to steal the drug because "It's against the law," or "It's bad to steal," as if this were all there were to it. When asked to elaborate, the child usually responds in terms of the consequences involved, explaining that stealing is bad "because you'll get punished" (Kohlberg, 1958b).

Although the vast majority of children at stage 1 oppose Heinz's theft, it is still possible for a child to support the action and still employ stage 1 reasoning. For example, a child might say, "Heinz can steal it because he asked first and it's not like he stole something big; he won't get punished" (see Rest, 1973). Even though the child agrees with Heinz's action, the reasoning is still stage 1; the concern is with what authorities permit and punish.

Kohlberg calls stage 1 thinking "preconventional" because children do not yet speak as members of society. Instead, they see morality as something external to themselves, as that which the big people say they must do.

Stage 2. Individualism and Exchange. At this stage children recognize that there is not just one right view that is handed down by the authorities. Different individuals have different viewpoints. "Heinz," they might point out, "might think it's right to take the drug, the druggist would not." Since everything is relative, each person is free to pursue his or her individual interests. One boy said that Heinz might steal the drug if he wanted his wife to live, but that he doesn't have to if he wants to marry someone younger and better-looking (Kohlberg, 1963, p. 24). Another boy said Heinz might steal it because maybe they had children and he might need someone at home to look after them. But maybe he shouldn't steal it because they might put him in prison for more years than he could stand. (Colby and Kauffman. 1983, p. 300)

What is right for Heinz, then, is what meets his own self-interests. You might have noticed that children at both stages 1 and 2 talk about punishment. However, they perceive it differently. At stage 1 punishment is tied up in the child's mind with wrongness; punishment "proves" that disobedience is wrong. At stage 2, in contrast, punishment is simply a risk that one naturally wants to avoid.

Although stage 2 respondents sometimes sound amoral, they do have some sense of right action. This is a notion of fair exchange or fair deals. The philosophy is one of returning favors--"If you scratch my back, I'll scratch yours." To the Heinz story, subjects often say that Heinz was right to steal the drug because the druggist was unwilling to make a fair deal; he was
"trying to rip Heinz off," Or they might say that he should steal for his wife "because she might return the favor some day" (Gibbs et al., 1983, p. 19).

Respondents at stage 2 are still said to reason at the preconventional level because they speak as isolated individuals rather than as members of society. They see individuals exchanging favors, but there is still no identification with the values of the family or community.

**Level II. Conventional Morality**

**Stage 3. Good Interpersonal Relationships.** At this stage children—who are by now usually entering their teens—see morality as more than simple deals. They believe that people should live up to the expectations of the family and community and behave in "good" ways. Good behavior means having good motives and interpersonal feelings such as love, empathy, trust, and concern for others. Heinz, they typically argue, was right to steal the drug because "He was a good man for wanting to save her," and "His intentions were good, that of saving the life of someone he loves." Even if Heinz doesn't love his wife, these subjects often say, he should steal the drug because "I don't think any husband should sit back and watch his wife die" (Gibbs et al., 1983, pp. 36-42; Kohlberg, 1958b).

If Heinz's motives were good, the druggist's were bad. The druggist, stage 3 subjects emphasize, was "selfish," "greedy," and "only interested in himself, not another life." Sometimes the respondents become so angry with the druggist that they say that he ought to be put in jail (Gibbs et al., 1983, pp. 26-29, 40-42). A typical stage 3 response is that of Don, age 13:

It was really the druggist's fault, he was unfair, trying to overcharge and letting someone die. Heinz loved his wife and wanted to save her. I think anyone would. I don't think they would put him in jail. The judge would look at all sides, and see that the druggist was charging too much. (Kohlberg, 1963, p. 25)

We see that Don defines the issue in terms of the actors' character traits and motives. He talks about the loving husband, the unfair druggist, and the understanding judge. His answer deserves the label "conventional "morality" because it assumes that the attitude expressed would be shared by the entire community—"anyone" would be right to do what Heinz did (Kohlberg, 1963, p. 25).

As mentioned earlier, there are similarities between Kohlberg's first three stages and Piaget's two stages. In both sequences there is a shift from unquestioning obedience to a relativistic outlook and to a concern for good motives. For Kohlberg, however, these shifts occur in three stages rather than two.

**Stage 4. Maintaining the Social Order.** Stage 3 reasoning works best in two-person relationships with family members or close friends, where one can make a real effort to get to know the other's feelings and needs and try to help. At stage 4, in contrast, the respondent becomes more broadly
concerned with society as a whole. Now the emphasis is on obeying laws, respecting authority, and performing one’s duties so that the social order is maintained. In response to the Heinz story, many subjects say they understand that Heinz’s motives were good, but they cannot condone the theft. What would happen if we all started breaking the laws whenever we felt we had a good reason? The result would be chaos; society couldn’t function. As one subject explained,

I don’t want to sound like Spiro Agnew, law and order and wave the flag, but if everybody did as he wanted to do, set up his own beliefs as to right and wrong, then I think you would have chaos. The only thing I think we have in civilization nowadays is some sort of legal structure which people are sort of bound to follow. [Society needs] a centralizing framework. (Gibbs et al., 1983, pp. 140-41)

Because stage 4, subjects make moral decisions from the perspective of society as a whole, they think from a full-fledged member-of-society perspective (Colby and Kohlberg, 1983, p. 27).

You will recall that stage 1 children also generally oppose stealing because it breaks the law. Superficially, stage 1 and stage 4 subjects are giving the same response, so we see here why Kohlberg insists that we must probe into the reasoning behind the overt response. Stage 1 children say, "It's wrong to steal" and "It's against the law," but they cannot elaborate any further, except to say that stealing can get a person jailed. Stage 4 respondents, in contrast, have a conception of the function of laws for society as a whole—a conception which far exceeds the grasp of the younger child.

**Level III. Postconventional Morality**

**Stage 5. Social Contract and Individual Rights.** At stage 4, people want to keep society functioning. However, a smoothly functioning society is not necessarily a good one. A totalitarian society might be well-organized, but it is hardly the moral ideal. At stage 5, people begin to ask, "What makes for a good society?" They begin to think about society in a very theoretical way, stepping back from their own society and considering the rights and values that a society ought to uphold. They then evaluate existing societies in terms of these prior considerations. They are said to take a "prior-to-society" perspective (Colby and Kohlberg, 1983, p. 22).

Stage 5 respondents basically believe that a good society is best conceived as a social contract into which people freely enter to work toward the benefit of all. They recognize that different social groups within a society will have different values, but they believe that all rational people would agree on two points. First they would all want certain basic rights, such as liberty and life, to be protected. Second, they would want some democratic procedures for changing unfair law and for improving society.
In response to the Heinz dilemma, stage 5 respondents make it clear that they do not generally favor breaking laws; laws are social contracts that we agree to uphold until we can change them by democratic means. Nevertheless, the wife’s right to live is a moral right that must be protected. Thus, stage 5 respondents sometimes defend Heinz’s theft in strong language:

It is the husband’s duty to save his wife. The fact that her life is in danger transcends every other standard you might use to judge his action. Life is more important than property.

This young man went on to say that "from a moral standpoint" Heinz should save the life of even a stranger, since to be consistent, the value of a life means any life. When asked if the judge should punish Heinz, he replied:

Usually the moral and legal standpoints coincide. Here they conflict. The judge should weight the moral standpoint more heavily but preserve the legal law in punishing Heinz lightly. (Kohlberg, 1976, p. 38)

Stage 5 subjects, then, talk about "morality" and "rights" that take some priority over particular laws. Kohlberg insists, however, that we do not judge people to be at stage 5 merely from their verbal labels. We need to look at their social perspective and mode of reasoning. At stage 4, too, subjects frequently talk about the "right to life," but for them this right is legitimized by the authority of their social or religious group (e.g., by the Bible). Presumably, if their group valued property over life, they would too. At stage 5, in contrast, people are making more of an independent effort to think out what any society ought to value. They often reason, for example, that property has little meaning without life. They are trying to determine logically what a society ought to be like (Kohlberg, 1981, pp. 21-22; Gibbs et al., 1983, p. 83).

**Stage 6: Universal Principles.** Stage 5 respondents are working toward a conception of the good society. They suggest that we need to (a) protect certain individual rights and (b) settle disputes through democratic processes. However, democratic processes alone do not always result in outcomes that we intuitively sense are just. A majority, for example, may vote for a law that hinders a minority. Thus, Kohlberg believes that there must be a higher stage--stage 6--which defines the principles by which we achieve justice.

Kohlberg’s conception of justice follows that of the philosophers Kant and Rawls, as well as great moral leaders such as Gandhi and Martin Luther King. According to these people, the principles of justice require us to treat the claims of all parties in an impartial manner, respecting the basic dignity, of all people as individuals. The principles of justice are therefore universal; they apply to all. Thus, for example, we would not vote for a law that aids some people but hurts others. The principles of justice guide us toward decisions based on an equal respect for all.
In actual practice, Kohlberg says, we can reach just decisions by looking at a situation through one another’s eyes. In the Heinz dilemma, this would mean that all parties--the druggist, Heinz, and his wife--take the roles of the others. To do this in an impartial manner, people can assume a "veil of ignorance" (Rawls, 1971), acting as if they do not know which role they will eventually occupy. If the druggist did this, even he would recognize that life must take priority over property; for he wouldn’t want to risk finding himself in the wife’s shoes with property valued over life. Thus, they would all agree that the wife must be saved--this would be the fair solution. Such a solution, we must note, requires not only impartiality, but the principle that everyone is given full and equal respect. If the wife were considered of less value than the others, a just solution could not be reached.

Until recently, Kohlberg had been scoring some of his subjects at stage 6, but he has temporarily stopped doing so, For one thing, he and other researchers had not been finding subjects who consistently reasoned at this stage. Also, Kohlberg has concluded that his interview dilemmas are not useful for distinguishing between stage 5 and stage 6 thinking. He believes that stage 6 has a clearer and broader conception of universal principles (which include justice as well as individual rights), but feels that his interview fails to draw out this broader understanding. Consequently, he has temporarily dropped stage 6 from his scoring manual, calling it a "theoretical stage" and scoring all post conventional responses as stage 5 (Colby and Kohlberg, 1983, p. 28).

Theoretically, one issue that distinguishes stage 5 from stage 6 is civil disobedience. Stage 5 would be more hesitant to endorse civil disobedience because of its commitment to the social contract and to changing laws through democratic agreements. Only when an individual right is clearly at stake does violating the law seem justified. At stage 6, in contrast, a commitment to justice makes the rationale for civil disobedience stronger and broader. Martin Luther King, for example, argued that laws are only valid insofar as they are grounded in justice, and that a commitment to justice carries with it an obligation to disobey unjust laws. King also recognized, of course, the general need for laws and democratic processes (stages 4 and 5), and he was therefore willing to accept the penalties for his actions. Nevertheless, he believed that the higher principle of justice required civil disobedience (Kohlberg, 1981, p. 43).

Summary

At stage 1 children think of what is right as that which authority says is right. Doing the right thing is obeying authority and avoiding punishment. At stage 2, children are no longer so impressed by any single authority; they see that there are different sides to any issue. Since everything is relative, one is free to pursue one’s own interests, although it is often useful to make deals and exchange favors with others.

At stages 3 and 4, young people think as members of the conventional society with its values, norms, and expectations. At stage 3, they emphasize
being a good person, which basically means having helpful motives toward people close to one. At stage 4, the concern shifts toward obeying laws to maintain society as a whole.

At stages 5 and 6 people are less concerned with maintaining society for its own sake, and more concerned with the principles and values that make for a good society. At stage 5 they emphasize basic rights and the democratic processes that give everyone a say, and at stage 6 they define the principles by which agreement will be most just.

THEORETICAL ISSUES

How Development Occurs

Kohlberg, it is important to remember, is a close follower of Piaget. Accordingly, Kohlberg’s theoretical positions, including that on developmental change, reflect those of his mentor.

Kohlberg (e.g., 1968; 1981, Ch. 3) says that his stages are not the product of maturation. That is, the stage structures and sequences do not simply unfold according to a genetic blueprint.

Neither, Kohlberg maintains, are his stages the product of socialization. That is, socializing agents (e.g., parents and teachers) do not directly teach new forms of thinking. Indeed, it is difficult to imagine them systematically teaching each new stage structure in its particular place in the sequence.

The stages emerge, instead, from our own thinking about moral problems. Social experiences do promote development, but they do so by stimulating our mental processes. As we get into discussions and debates with others, we find our views questioned and challenged and are therefore motivated to come up with new, more comprehensive positions. New stages reflect these broader viewpoints (Kohlberg et al., 1975).

We might imagine, for example, a young man and woman discussing a new law. The man says that everyone should obey it, like it or not, because laws are vital to social organization (stage 4). The woman notes, however, that some well-organized societies, such as Nazi Germany, were not particularly moral. The man therefore sees that some evidence contradicts his view. He experiences some cognitive conflict and is motivated to think about the matter more fully, perhaps moving a bit toward stage 5.

Kohlberg also sometimes speaks of change occurring through role-taking opportunities, opportunities to consider others' viewpoints (e.g., 1976). As children interact with others, they learn how viewpoints differ and how to coordinate them in cooperative activities. As they discuss their problems and work out their differences, they develop their conceptions of what is fair and just.

Whatever the interactions are specifically like, they work best, Kohlberg says, when they are open and democratic. The less children feel
 pressured simply to conform to authority, the freer they are to settle their own differences and formulate their own ideas. We will discuss Kohlberg's efforts to induce developmental change in the section on implications for education.

The Stage Concept

Piaget, you will recall, proposed that true mental stages meet several criteria. They (1) are qualitatively different ways of thinking, (2) are structured wholes, (3) progress in an invariant sequence, (4) can be characterized as hierarchic integrations, and (5) are cross-cultural universals. Kohlberg has taken these criteria very seriously, trying to show how his stages meet them all. Let us consider these points one at a time.

1. Qualitative differences. It seems fairly clear that Kohlberg's stages are qualitatively different from one another. For example, stage 1 responses, which focus on obedience to authority, sound very different from stage 2 responses, which argue that each person is free to behave as he or she wishes. The two stages do not seem to differ along any quantitative dimension, they seem qualitatively different.

2. Structured wholes. By "structured wholes," Kohlberg means that the stages are not just isolated responses but are general patterns of thought that will consistently show up across many different kinds of issues. One gets a sense that this is true by reading through his scoring manual; one finds the same kinds of thinking reappearing on diverse items. For example, one item asks, "Why should a promise be kept?" As on the Heinz dilemma, children at stage 1 again speak in terms of obedience to rules, whereas those at stage 2 focus on exchanging favors that are in one's self-interest (e.g., "You never know when you're going to need that person to do something for you"). Similarly, as children proceed through the stages they keep giving responses that are similar to those to the Heinz dilemma (Gibbs et al., 1983, pp. 315-82).

In addition, Kohlberg and his co-workers (Colby et al., 1983) have obtained quantitative estimates of the extent to which subjects respond in terms of one particular stage. Since some subjects might be in transition between stages, one does not expect perfect consistency. Nevertheless, Kohlberg found that subjects scored at their dominant stage across nine dilemmas about two-thirds of the time. This seems to be a fair degree of consistency, suggesting the stages may reflect general modes of thought.

3. Invariant sequence. Kohlberg believes that his stages unfold in an invariant sequence. Children always go from stage 1 to stage 2 to stage 3 and so forth. They do not skip stages or move through them in mixed-up orders. Not all children necessarily reach the highest stages; they might lack intellectual stimulation. But to the extent they do go through the stages, they proceed in order.

Most of Kohlberg's evidence on his stage sequence comes from cross-sectional data. That is, he interviewed different children at various ages to
see if the younger ones were at lower stages than the older ones. Stages 1 and 2 are primarily found at the youngest age, whereas the higher stages become more prevalent as age increases. Thus, the data support the stage sequence.

Cross-sectional findings, however, are inconclusive. In a cross-sectional study, different children are interviewed at each age, so there is no guarantee that any individual child actually moves through the stages in order. For example, there is no guarantee that a boy who is coded at stage 3 at age 13 actually passed through stages 1 and 2 in order when he was younger. More conclusive evidence must come from longitudinal studies, in which the same children are followed over time.

The first two major longitudinal studies (Kohlberg and Kramer, 1969; Holstein, 1973) began with samples of teenagers and then tested them at three-year intervals. These studies produced ambiguous results. In both, most subjects either remained at the same stage or moved up one stage, but there were also some who might have skipped a stage. Furthermore, these studies indicated that some subjects had regressed, and this finding also bothered Kohlberg, because he believes that movement through his stages should always be forward.

Kohlberg's response to these troublesome findings was to revise his scoring method. He had already become uncomfortable with his first (1958b) scoring manual, believing that it relied too heavily on the content of subjects' answers rather than their underlying reasoning, and he had made some improvements on it. So, when these longitudinal findings emerged, he decided to develop a much more precise and adequate scoring system and, to some extent, to revise his definitions of the stages.

To create the latest scoring manual, Kohlberg and his co-workers (Colby et al., 1983) worked with seven boys from his original (1958) sample who had been retested every three or four years for 20 years. It was during this work that Kohlberg decided to drop stage 6.

Kohlberg then examined the hypothesis of invariant sequence for 51 other boys from his original sample, who also had been retested at least twice (every three or four years) over the 20-year period. This time, Kohlberg and his colleagues (Colby et al., 1983) found no stage-skipping, and only about 6 percent of the subjects showed signs of regressing. Four recent longitudinal studies have obtained similar results although, two have found somewhat more regression (up to 15 percent) (see Colby et al., 1983). In general, then, the new longitudinal studies seem to support the invariant-sequence hypothesis.

Kohlberg's new, longitudinal study has also changed the earlier picture of moral development in other ways. Stage 4 had become the dominant stage by age 16. In the new scoring system, however, it is more difficult to achieve the higher stages--the reasoning must be more clearly demonstrated--and Kohlberg finds that stage 4 does not become dominant
until the boys are in their 20s and 30s. Stage 5, too, only appears in the mid-20s and never becomes very prevalent.

4. Hierarchic integration. When Kohlberg says that his stages are hierarchically integrated, he means that people do not lose the insights gained at earlier stages, but integrate them into new, broader frameworks. For example, people at stage 4 can still understand stage 3 arguments, but they now subordinate them to wider considerations. They understand that Heinz had good motives for stealing, but they point out that if we all stole whenever we had a good motive, the social structure would break down. Thus stage 4 subordinates a concern for motives to a wider concern for the society as a whole.

The concept of hierarchic integration is very important for Kohlberg because it enables him to explain the direction of his stage sequence. Since he is not a maturationist, he cannot simply say that the sequence is wired into the genes. So he wants to show how each new stage provides a broader framework for dealing with moral issues. Stage 4, as mentioned, transcends the limitations of stage 3 and becomes more broadly concerned with social organization. Stage 5, in turn, sees the weakness of stage 4; a well-organized society is not necessarily a moral one. Stage 5 therefore considers the rights and orderly processes that make for a moral society. Each new stage retains the insights of the prior stage, but it recasts them into a broader framework. In this sense, each new stage is more cognitively adequate than the prior stage.

If Kohlberg is right about the hierarchic nature of his stages, we would expect that people would still be able to understand earlier stages but consider them inferior. In fact, when Rest (Rest et al., 1969; Rest, 1973) presented adolescents with arguments from different stages, this is what he found. They understood lower-stage reasoning, but they disliked it. What they preferred was the highest stage they heard, whether they fully understood it or not. This finding suggests, perhaps, that they had some intuitive sense of the greater adequacy of the higher stages.

Werner, we remember from Chapter 4, described hierarchic integration as a process that occurs alongside differentiation, and Kohlberg believes his stages represent increasingly differentiated structures as well. Kohlberg points out that the stage 5 value on life, for example, has become differentiated from other considerations. Stage 5 respondents say that we ought to value life for its own sake, regardless of its value to authorities (stage 1), its usefulness to oneself (stage 2), the affection it arouses in us (stage 3), or its value within a particular social order (stage 4). Stage 5 subjects have abstracted this value from other considerations and now treat it as a purely moral ideal. Their thinking, Kohlberg says, is becoming like that of the moral philosophers in the Kantian tradition (1981, p. 171).

5. Universal sequence. Kohlberg, like all stage theorists, maintains that his stage sequence is universal; it is the same in all cultures. At first
glance, this proposal might be surprising. Don't different cultures socialize their children differently, teaching them very different moral beliefs?

Kohlberg's response is that different cultures do teach different beliefs, but that his stages refer not to specific beliefs but to underlying modes of reasoning (Kohlberg and Gilligan, 1971). For example, one culture might discourage physical fighting, while another encourages it more. As a result, children will have different beliefs about fighting, but they will still reason about it in the same way at the same stage. At stage 1, for example, one child might say that it is wrong to fight when insulted "because you will get punished for it," while another says that "it is all right to fight; you won't get punished." The beliefs differ, but both children reason about them in the same underlying way, in terms of the physical consequences (punishment). They do so because this is what they can cognitively grasp. Later on, the first child might argue that fighting is bad "because if everyone fought all the time there would be anarchy," while the second child argues that "people must defend their honor, because if they don't everyone will be insulting everyone, and the whole society will break down." Once again, the specific beliefs differ, reflecting different cultural teachings, but the underlying reasoning is the same—in this case it is stage 4, where people can consider something as abstract as the social order. Children, regardless of their beliefs, will always move to stage 4 thinking some time after stage 1 thinking because it is cognitively so much more sophisticated.

Kohlberg, then, proposes that his stage sequence will be the same in all cultures, for each stage is conceptually more advanced than the next. He and other researchers have given his interview to children and adults in a variety of cultures, including Mexico, Taiwan, Turkey, Israel, the Yucatan, Kenya, the Bahamas, and India. Most of the studies have been cross sectional, but a few have been longitudinal. Thus far, the studies have supported Kohlberg's stage sequence. To the extent that children move through the stages, they appear to move in order (Edwards, 1980).

At the same time, people in different cultures seem to move through the sequence at different rates and to reach different end-points. In the United States most urban middle-class adults reach stage 4, with a small percentage using some stage 5 reasoning. In urban areas of other countries the picture is fairly similar. In the isolated villages and tribal communities of many countries, however, it is rare to find any adult beyond stage 3 (Edwards, 1980).

Kohlberg (Nisan and Kohlberg, 1982) suggests that one can understand these findings in terms of Piagetian theory. Cultural factors, in this theory, do not directly shape the child's moral thought, but they do stimulate thinking. Social experiences can challenge children's ideas, motivating them to come up with new ones. In traditional villages, however, there may be little to challenge a stage 3 morality; the norms of care and empathy work very well in governing the face-to-face interactions of the group. Thus, there is little to stimulate thinking beyond this stage.
When, in contrast, young people leave the village and go off to the city, they witness the breakdown of interpersonal ties. They see that group norms of care and empathy have little impact on the impersonal interactions of city life, and they see the need for a formal legal structure to ensure moral conduct. They begin to think in terms of stage 4 morality. Furthermore, as Keniston (1971) notes, if young people attend the universities, they may take classes in which the teachers deliberately question the unexamined assumptions of their childhoods and adolescences. Thus they are stimulated to think about moral matters in new ways.

**Moral Thought and Moral Behavior**

Kohlberg's scale has to do with moral thinking, not moral action. As everyone knows, people who can talk at a high moral level may not behave accordingly. Consequently, we would not expect perfect correlations between moral judgment and moral action. Still, Kohlberg thinks that there should be some relationship.

As a general hypothesis, he proposes that moral behavior is more consistent, predictable, and responsible at the higher stages (Kohlberg et al., 1975), because the stages themselves increasingly employ more stable and general standards. For example, whereas stage 3 bases decisions on others' feelings, which can vary, stage 4 refers to set rules and laws. Thus, we can expect that moral behavior, too, will become more consistent as people move up the sequence. Generally speaking, there is some research support for this hypothesis (e.g., with respect to cheating), but the evidence is not clear-cut (Blasi, 1980; Brown and Herrnstein, 1975).

Some research has focused on the relationships between particular stages and specific kinds of behavior. For example, one might expect that juvenile delinquents or criminals would typically reason at stages 1 or 2, viewing morality as something imposed from without (stage 1) or as a matter of self-interest (stage 2), rather than identifying with society's conventional expectations (stages 3 and 4). Again, some research supports this hypothesis, but there also are some ambiguous results (Blasi, 1980).

Several studies have examined the relationship between post conventional thinking and student protest. In a landmark study, Haan et al. (1968) examined the moral reasoning of those who participated in the Berkeley Free Speech Movement in 1964. Haan found that their thinking was more strongly post conventional than that of a matched sample of nonparticipants, but this finding was not replicated for some other protests, apparently because moral principles were not at stake (Keniston, 1971, pp. 260-61).

Blasi (1980), after reviewing 75 studies, concludes that overall there is a relationship between moral thought and action, but he suggests that we need to introduce other variables to clarify this relationship. One variable may simply be the extent to which individuals themselves feel the need to maintain consistency between their moral thoughts and actions (Blasi, 1980, Kohlberg and Candee, 1981).
Moral Thought and Other Forms of Cognition

Kohlberg has also tried to relate his moral stages to other forms of cognition. He has first analyzed his stages in terms of their underlying cognitive structures and has then looked for parallels in purely logical and social thought. For this purpose, he has analyzed his own stages in terms of implicit role-taking capacities, capacities to consider others' viewpoints (Kohlberg, 1976; see also Selman, 1976, and Rest, 1983).

At first, at stage 1, children hardly seem to recognize that viewpoints differ. They assume that there is only one right view, that of authorities. At stage 2, in contrast, they recognize that people have different interests and viewpoints. They seem to be overcoming egocentrism; they see that perspectives are relative to the individual. They also begin to consider how individuals might coordinate their interests in terms of mutually beneficial deals.

At stage 3, people conceptualize role-taking as a deeper, more empathic process; one becomes concerned with the other's feelings. Stage 4, in turn, has a broader, society-wide conception of how people coordinate their roles through the legal system.

Stages 5 and 6, finally, take a more idealized look at how people might coordinate their interests. Stage 5 emphasizes democratic processes, and stage 6 considers how all parties take one another's perspectives according to the principles of justice.

The moral stages, then, reflect expanded insights into how perspectives differ and might be coordinated. As such, the moral stages might be related to stages of logical and social thought which contain similar insights. So far, the empirical evidence suggests that advances in moral thinking may rest upon prior achievements in these other realms (Kohlberg, 1976; Kuhn et al., 1977). For example, children seem to advance to stage 2, overcoming their egocentrism in the moral sphere, only after they have made equivalent progress in their logical and social thought. If this pattern is correct, we can expect to find many individuals who are logical and even socially insightful but still underdeveloped in their moral judgment.

IMPLICATIONS FOR EDUCATION

Kohlberg would like to see people advance to the highest possible stage of moral thought. The best possible society would contain individuals who not only understand the need for social order (stage 4) but can entertain visions of universal principles, such as justice and liberty (stage 6) (Kohlberg, 1970).

How, then, can one promote moral development? Turiel (1966) found that when children listened to adults' moral judgments, the resulting change was slight. This is what Kohlberg might have expected, for he believes that if children are to reorganize their thinking, they must be more active.
Accordingly, Kohlberg encouraged another student, Moshe Blatt, to lead discussion groups in which children had a chance to grapple actively with moral issues (Blatt and Kohlberg, 1975). Blatt presented moral dilemmas which engaged the classes in a good deal of heated debate. He tried to leave much of the discussion to the children themselves, stepping in only to summarize, clarify, and sometimes present a view himself (p. 133). He encouraged arguments that were one stage above those of most of the class. In essence, he tried to implement one of Kohlberg’s main ideas on how children move through the stages. They do so by encountering views which challenge their thinking and stimulate them to formulate better arguments (Kohlberg et al., 1975).

Blatt began a typical discussion by telling a story about a man named Mr. Jones who had a seriously injured son and wanted to rush him to the hospital. Mr. Jones had no car, so he approached a stranger, told him about the situation, and asked to borrow his car. The stranger, however, refused, saying he had an important appointment to keep. So Mr. Jones took the car by force. Blatt then asked whether Mr. Jones should have done that.

In the discussion that followed, one child, Student B, felt that Mr. Jones had a good cause for taking the car and also believed that the stranger could be charged with murder if the son died. Student C pointed out that the stranger violated no law. Student B still felt that the stranger’s behavior was somehow wrong, even though he now realized that it was not legally wrong. Thus, Student B was in a kind of conflict. He had a sense of the wrongness of the stranger’s behavior, but he could not articulate this sense in terms that would meet the objection. He was challenged to think about the problem more deeply.

In the end, Blatt gave him the answer. The stranger’s behavior, Blatt said, was not legally wrong, but morally wrong—wrong according to God’s laws (this was a Sunday School Class). At this point, Blatt was an authority teaching the “correct” view. In so doing, he might have robbed Student B of the chance to formulate spontaneously his own position. He might have done better to ask a question or to simply clarify the student’s conflict (e.g., “So it’s not legally wrong, but you still have a sense that, it’s somehow wrong. . .”). In any case, it seems clear that part of this discussion was valuable for this student. Since he himself struggled to formulate a distinction that could handle the objection, he could fully appreciate and assimilate a new view that he was looking for.

The Kohlberg-Blatt method of inducing cognitive conflict exemplifies Piaget’s equilibration model. The child takes one view, becomes confused by discrepant information, and then resolves the confusion by forming a more advanced and comprehensive position. The method is also the dialectic process of Socratic teaching. The students give a view, the teacher asks questions which get them to see the inadequacies of their views, and they are then motivated to formulate better positions.
In Blatt’s first experiment, the students (sixth graders) participated in 12 weekly discussion groups. Blatt found that over half the students moved up one full stage after the 12 weeks. Blatt and others have tried to replicate these findings, sometimes using other age groups and lengthier series of classes. As often happens with replications, the results have not been quite so successful; upward changes have been smaller--usually a third of a stage or less, Still, it generally seems that Socratic classroom discussions held over several months can produce changes that, while small, are significantly greater than those found in control groups who do not receive these experiences (Rest, 1983).

One of Blatt’s supplementary findings was that those students who reported that they were most “interested” in the discussions made the greatest amount of change. This finding is in keeping with Piagetian theory. Children develop not because they are shaped through external reinforcements but because their curiosity is aroused. They become interested in information that does not quite fit into their existing cognitive structures and are thereby motivated to revise their thinking Another Kohlberg student--M. Berkowitz (1980)--is examining actual dialogues to see if those who become most challenged and involved in the tensions of moral debate are also those who move forward.

Although Kohlberg remains committed to the cognitive-conflict model of change, he has also become interested in other strategies. One is the "just Community" approach. Here the focus is not the individuals but groups. For example, Kohlberg and some of his colleagues (Power and Reimer, 1979) set up a special democratic high school group and actively encouraged the students to think of themselves as a community. Initially, little community feeling was present. The group’s dominant orientation was stage 2; it treated problems such as stealing as purely individual matters. If a boy had something stolen, it was too bad for him. After a year, however, the group norms advanced to stage 3; the students now considered stealing to be a community issue that reflected on the degree of trust and care in the group.

It will be interesting to see if the just community approach can promote further advances in moral thinking. In the meantime, this approach has aroused some uneasiness among some of Kohlberg’s associates. In particular, Reimer et al. (1983) have wondered whether Kohlberg, by explicitly encouraging the students to think of themselves as a community, is not practicing a form of indoctrination. Reimer says that he has talked to Kohlberg about this, and he has come away convinced that Kohlberg is committed to democratic groups in which students are encouraged “to think critically, to discuss assumptions, and. when they feel it is necessary, to challenge the teacher’s suggestions” (p. 252). Thus, moral development remains a product of the students’ own thinking.

**EVALUATION**

Kohlberg, a follower of Piaget, has offered a new, more detailed stage sequence for moral thinking. Whereas Piaget basically found two stages of
moral thinking, the second of which emerges in early adolescence, Kohlberg has uncovered additional stages which develop well into adolescence and adulthood. He has suggested that some people even reach a post conventional level of moral thinking where they no longer accept their own society as given but think reflectively and autonomously about what a good society should be.

The suggestion of a post conventional morality is unusual in the social sciences. Perhaps it took a cognitive developmentalist list to suggest such a thing. For whereas most social scientists have been impressed by the ways in which societies mold and shape children’s thinking, cognitive-developmentalists are more impressed by the capacities for independent thought. If children engage in enough independent thinking, Kohlberg suggests, they will eventually begin to formulate conceptions of rights, values, and principles by which they evaluate existing social arrangements. Perhaps some will even advance to the kinds of thinking that characterize some of the great moral leaders and philosophers who have at times advocated civil disobedience in the name of universal ethical principles.

Kohlberg's theory has provoked a good deal of criticism. Not everyone, first of all, is enthusiastic about the concept of a postconventional morality. Hogan (1973, 1975), for example, feels that it is dangerous for people to place their own principles above society and the law. It may be that many psychologists react to Kohlberg in a similar way, and that this reaction underlies many of the debates over the scientific merits of his research.

Others have argued that Kohlberg's stages are culturally biased. Simpson (1974), for example, says that Kohlberg has developed a stage model based on the Western philosophical tradition and has then applied this model to non-Western cultures without considering the extent to which they have different moral outlooks.

This criticism may have merit. One wonders how well Kohlberg's stages apply to the great Eastern philosophies. One also wonders if his stages do justice to moral development in many traditional village cultures. Researchers find that villagers stop at stage 3, but perhaps they continue to develop moralities in directions that Kohlberg's stages fail to capture.

Another criticism is that Kohlberg's theory is sex-biased, a view that has been thoughtfully expressed by one of Kohlberg's associates and co-authors, Carol Gilligan (1982). Gilligan observes that Kohlberg's stages were derived exclusively from interviews with males, and she charges that the stages reflect a decidedly male orientation. For males, advanced moral thought revolves around rules, rights, and abstract principles. The ideal is formal justice, in which all parties evaluate one another's claims in an impartial manner. This conception of morality, Gilligan argues, fails to capture the distinctly female voice on moral matters.

For women, Gilligan says, morality centers not on rights and rules but on interpersonal relationships and the ethics of compassion and care. The ideal is not impersonal justice but more affiliative ways of living. Women's
morality, in addition, is more contextualized, it is tied to real, ongoing relationships rather than abstract solutions to hypothetical dilemmas.

Because of these sex differences, Gilligan says, men and women frequently score at different stages on Kohlberg's scale. Women typically score at stage 3, with its focus on interpersonal feelings, whereas men more commonly score at stages 4 and 5, which reflect more abstract conceptions of social organization. Thus, women score lower than men. If, however, Kohlberg's scale were more sensitive to women's distinctly interpersonal orientations, it would show that women also continue to develop their thinking beyond stage 3.

Gilligan has made an initial effort to trace women's moral development. Since she believes that women's conceptions of care and affiliation are embedded in real-life situations, she has interviewed women facing a personal crisis--the decision to have an abortion. Through these interviews, Gilligan has tried to show that women move from a conventional to a postconventional mode of thinking. That is, they no longer consider their responsibilities in terms of what is conventionally expected, of them but in terms of their own insights into the ethics of care and responsibility.

Not everyone agrees with Gilligan's critique. Rest (1983), in particular, argues that Gilligan has exaggerated the extent of the sex differences found on Kohlberg's scale. An evaluation of this question, however, must await closer reviews of the literature.

In the meantime, Gilligan has raised an interesting theoretical possibility. Like Werner, she is suggesting that development may proceed along more than one line. One line of moral thought focuses on logic, justice, and social organization, the other on interpersonal relationships. If this is so, there is the further possibility that these two lines at some point become integrated within each sex. That is, each sex might become more responsive to the dominant orientation of the other. Perhaps, as Gilligan briefly suggests (1982, Ch. 6), this integration is a major task of the adult years. (For further thoughts in this vein, see Chapter 14 on Jung's theory of adult development.)

There are other criticisms of Kohlberg's work. Many of these have to do with empirical matters, such as the problem of invariant sequence, the prevalence of regression, and the relationships between thought and action. Since I have mentioned these earlier, I would like to conclude with a more general question. Kohlberg writes in a forceful manner and he promotes stage 6 as if it provides the decision-making tools we need for the toughest ethical dilemmas. However, there may be issues that the principles of justice frequently fail to resolve. One such issue is abortion. Stage 6 would ask us to consider the physical life of the fetus as well as all the parties' right to fulfilling lives, but does stage 6 routinely lead to decisions that we feel are right? Kohlberg's students, Reimer et al. (1983, pp. 46-47, 88-89) discuss a stage 6 approach to a hypothetical abortion decision without reaching much of a conclusion. The decision, they say, will have to vary with the situation.
Stage 6. of course, is not intended to provide a set of answers—it is a mode of decision-making. Still, Kohlberg sometimes seems to skim over the incredible difficulty that some ethical problems present—a difficulty that is more directly expressed in the writing of Kant (1788).

Nevertheless, whatever criticisms and questions we might have, there is no doubt that Kohlberg’s accomplishment is great. He has not just expanded on Piaget’s stages of moral judgment but has done so in an inspiring way. He has studied the development of moral reasoning as it might work its way toward the thinking of the great moral philosophers. So, although few people may ever begin to think about moral issues like Socrates, Kant, or Martin Luther King, Kohlberg has nonetheless provided us with a challenging vision of what development might be.

Moral Behavior

1. Basic Processes
2. Resistance to Temptation and Self-Control
3. Social Cognitive Theory

Basic Processes

Behavioral View: Reinforcement and punishment are environmental determinants of behavior. Models (i.e. imitation) of moral behavior are also important, and moral behavior is situationally dependent

Resistance to Temptation and Self-Control

-Mischel argues that cognitive factors affect self-control. Providing rationales for not engaging in a behavior are more effective in helping children demonstrate self-control and resist temptation than are punishments that do not use reasoning

Social Cognitive Theory


Moral Competencies: include what children are capable of doing, what they know, their skills, awareness of moral rules, and their cognitive ability to construct behaviors.

Moral Performance: determined by motivation and the rewards or incentives to act in a specific moral way.

Moral Feeling

1. Psychoanalytic Theory
2. Empathy
Psychoanalytic Theory

Ego ideal rewards the child with pride when the child behaves appropriately, whereas the conscience punished the child when the child misbehaves by making the child feel guilty and worthless

Empathy

Empathy means reacting to another’s feelings with an emotional response that is similar to the other’s feelings.

Moral Personality

Thoughts, behavior, and feelings can all be involved in an individual’s moral personality.
Three aspects of moral personality that have recently been emphasized are:
1. Moral identity
2. Moral Character
3. Moral Exemplars

Moral Identity

Individuals have a moral identity when moral notions and commitments are central to one's life. In this view, behaving in a manner that violates this moral commitment places the integrity of the self at risk.

Moral Character

Moral character involves having the strength of your convictions, persisting, and overcoming distractions and obstacles. It presupposes that the person has set moral goals and that achieving those goals involves the commitment to act in accordance with these goals. Moral motivation involves prioritizing moral values over other personal values.

Moral Exemplars

Moral exemplars are people who have lived exemplary lives. They have a moral personality, identity, character, and a set of virtues that reflex moral excellence and commitment. There are brave, caring, and just exemplars.

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