

Psyc 4070 ch. 6



**ASSIGN
BUSTER**

sensorimotor intelligence Adaptation, according to Piaget, is the core of intelligence. Piaget described four distinct periods of cognitive development.

The first begins at birth and ends at about 24 months. Piaget called it _____ because infants learn through their senses and motor skills. This two-

year-long period is subdivided into six stages. primary circular reactions

The first of three types of feedback loops in sensorimotor intelligence, this one

involving the infant's own body. The infant senses motion, sucking, noise,

and other stimuli, and tries to understand them. ONPSYC 4070 CH. 6

SPECIFICALLY FOR YOU FOR ONLY \$13.90/PAGE Order Now stage 1 of

sensorimotor intelligence stage of reflexes stage of reflexes This stage lasts for

only one month. It includes senses as well as motor reflexes, the foundations

of infant thought. Reflexes become deliberate; sensation leads to perception

and then to cognition. stage 2 of sensorimotor intelligence stage of first

habits stage of first habits Adaptation is cognitive; it includes both

assimilation and accommodation, which people use to understand their

experience. Infants adapt their reflexes as repeated responses provide

information about what the body does and how that action feels.

Once an adaptation is successful, it sticks. For instance, breast-fed babies

may reject milk from a bottle, and if the parent of a three-month-old thumb-

sucker decides that a pacifier would be better, the infant may refuse.

secondary circular reactions This feedback loop involves people and objects.

Infants respond to other people, to toys, and to any other object they can

touch or move. stage 3 of sensorimotor intelligence making interesting

events last making interesting events last During stage three (4-8 months),

infants attempt to produce exciting experiences.

Ex. Realizing that rattles make noise, they wave their arms and laugh whenever someone puts a rattle in their hand. stage 4 of sensorimotor intelligence new adaptations and anticipations new adaptations and anticipations Stage 4 (8 months-1 year), also called the means to the end because babies have goals that they try to reach. Often they ask for help (fussing, pointing, gesturing) to accomplish with they want.

Ex. Instead of always smiling at Daddy, an infant might first assess Daddy's mood, and they try to engage. three Stage ___ babies know how to continue an experience four Stage ___ babies initiate and anticipate These examples reveal goal-directed behavior - purposeful action. The baby's obvious goal-directedness stems from

1. An enhanced awareness of cause and effect

2. Memory for actions already completed

3. Understanding of other people's intentions tertiary circular reactions The third feedback loop which involves active exploration and experimentation.

Infants explore a range of new activities, varying their responses as a way of learning about the world. object permanence The realization that objects still exist when they can no longer be seen, touched, or heard. As Piaget

predicted, not until about 8 months do infants search for toys that have fallen from the crib, rolled under a couch or disappeared under a blanket.

stage 5 of sensorimotor intelligence new means through active experience new means through active experience New Means through Active Experience - Toddlers (12-18 months) have new, more expansive and creative goals and activities.

Ex. Toddlers delight in squeezing all the toothpaste out of the tube, taking apart your iPod, uncovering the anthill - " little scientist" stage 6 of sensorimotor intelligence mental combinations mental combinations Toddlers

(18-24 months) begin to anticipate and solve simple problems. Children are able to combine ideas.

Ex. They know a baby is not a real baby but can instead be a pretend baby, belted into a stroller and taken for a walk. differed limitationA sequence in which an infant first perceives something that someone else does and then performs the same action a few hours or days later. infant studyInfants reach the various stages of sensorimotor intelligence earlier than Piaget predicted. Not only do many 5-month olds show surprise when object permanence seems compromised, but many babies pretend and defer imitation before 1 year.

- Piaget underestimated infant cognition because his basic insights were based on his own infants. Direct observation of three children is a start, and Piaget's observations were extraordinarily meticulous and creative, but no contemporary researcher would stop there. Given the immaturity and variability of babies, dozens of infants must be studied in creative yet logical ways. habituationThe process of getting used to an object or even through repeated exposure to it.

- Using habituation as a research strategy involves repeating one stimulus until babies lose interest and then presenting another, slightly different stimulus. Babies can indicate in many ways that they detect a difference between the two stimuli. fMRIFunctional magnetic resonance imaging, a measuring technique in which the brain's electrical excitement indicates activation anywhere in the brain; fMRI helps researchers locate neurological responses to stimuli. fMRI studies show- Based on such advanced methods, scientists are convinced that infants have memories, goals, deferredinformation processing theoryA perspective that compares human

thinking processes, by analogy, to computer analysis of data, including sensory input, connections, stored memories, and output. affordances and memory Instead of the newborn's reflexive cry of hunger, a slightly older hungry infant might perceive a bottle, reach, and then suck. Each step of this process requires information to be processed; older infants are much more thoughtful and effective than newborns because of more advanced information processing.

The information-processing perspective helps tie together many aspects of infant cognition. We review two of these now: _____ and _____ affordance An opportunity for perception and interaction that is offered by a person, place, or object in the environment.

- Which particular affordance is perceived and acted on depends on four factors: sensory awareness, immediate motivation, current development, and past experience. An important concept for developmentalists that age affects affordances. Selection perception is characteristic of every age and culture, as psychologists have realized and as a visitor to another nation may be shocked to discover. perception The fact that experience affects which affordances are perceived is quite apparent in studies of depth _____.

Research that demonstrates this fact began with an apparatus called the visual cliff. visual cliff An experimental apparatus that gives an illusion of a sudden drop-off between one horizontal surface and another.

Researchers once thought that a visual deficit prevented young babies from seeing the drop. Later research disproved that interpretation - Even 3 month olds noticed a drop. dynamic perception Perception that is primed to focus the movement and change.

As soon as they can, infants begin moving their bodies - grabbing, scooting,

crawling, and walking. Infants' interest in motion was the beginning of another experiment that sought to learn what affordances were perceived by babies too young to talk or walk. A ball was moved at various speeds in front of infants aged 3 to 9 months. Most tried to touch or catch the ball as it passed within reach. However, marked differences appeared in their perception and their perception of the affordance of "catchability." people preferences A universal principle of infant perception, consisting of an innate attraction to other humans, which is evident in visual, auditory, tactile, and other preferences.

Very young babies are particularly interested in the emotional affordances of their caregivers, using their limited perceptual abilities and intellectual understanding to respond to smiles, shouts, and so on.

- Infants connect facial expressions with tone of voice long before they understand language. infant memory Infants have a great difficulty storing new memories in their first year, and older children are often unable to describe events that occurred when they were younger. One reason is linguistics. People use words to store (and sometimes distort) memories, so preverbal children have difficulty with recall, and adults cannot access early memory. A series of experiments reveals that very young infants can remember even if they cannot put into words. Memories are particularly evident in these conditions: 1. Environmental conditions are similar to those of a real life

2. Motivation is high

3. Retrieval is strengthened by reminders and repetition reminder session A perceptual experience that is intended to help a person recollect an idea, or and experience, without testing whether the person remembers it at the

moment. 6After about ____ months, infants retain information for a longer time than younger babies do, with less training or reminding. implicit memoryUnconscious or automatic memory that is usually stored via habits, emotional responses, routine procedures, and various sensations. explicit memoryMemory that is easy to retrieve on demand (as in a specific test), usually with words. Most explicit memory involves consciously learned words, data and concepts. brain organization and hearingInfants begin learning language before birth, via ____ ____ and _____. Habituation of noises has been demonstrated in fetuses several weeks before birth, which suggests that listening and remembering are inborn, basic to being human. newborns____ look closely at facial expressions and prefer to hear speech over other sounds. Infants have an early preference for the sights and sounds that humans use to communicate. child-directed speechthe high-pitched simplified and repetitive way adults speak to infants No matter what term is used, child-directed speech fosters early language learning. Even at 7 months of age, infants begin to recognize words that are highly Bottle, dog, mama, for instance, might be more distinguished from one another before words that sound alike. Also within the first months, infants' listening becomes more selective. Not only do infants prefer child-directed speech, they like alteration, rhymes, repetition, rhythm, and varied pitch. babblingThe extended repetition of certain syllables, such as ba-ba-ba, that begin when babies are between 6 and 9 months old.

Babbling is experience-expectant; all babies do it, even deaf ones. Deaf babies stop babbling because they cannot hear responses; hearing babies continue. Towards the end of the first year, babbling begins to sound like infant's native language; infants imitate what they hear in accents,

consonants, and so on. holophrase A single word that is used to express a complete, meaningful thought. naming explosion A sudden increase in an infant's vocabulary, especially in the number of nouns, that begins at about 18 months of age. grammar All the methods - word order, verb forms, and so on - that languages use to communicate meaning, apart from the words themselves.

- Grammar is obvious when two-word combinations begin, at about 21 months. The sentences "Baby cry" or "More juice" follow the proper English word order rather than the reverse. A child's grammar correlates with the size of his or her vocabulary. 3 theories of how language is learned easily

1. Infants Need to Be Taught

2. Social Impulses Foster Infant Language

3. Infants Teach Themselves
Theory One: Infants Need to Be Taught

The seed of the first perspective were planted more than 50 years ago, when the dominant theory in North American psychology was behaviorism, or learning theory.

The core ideas of this theory are the following:

- Parents are expert teachers, although other caregivers help
- Frequent repetition is instructive, especially when linked to daily life
- Well-taught infants become well-spoken children

Behaviorists note that some 3 year-olds converse in elaborate sentences; others just barely put one simple word with another. Such variations correlate with the amount of language that child has heard. 2. Theory Two: Social Impulses Foster Infant Language
The second theory is called social-pragmatic. It arises from the sociocultural reason for language:

communication. According to this perspective, infants communicate because humans are social beings, dependent on one another for survival and joy. Each culture has practices that further social interaction; talking is one of those practices.

It is the emotional message of speech, not the words that are the focus of early communication, according to this perspective.

Ex. Suppose an 18 month-old is playing with an unnamed toy and an adult utters a word. Does the child connect that word to the toy? A behaviorist, learning-by association prediction would be yes, but the answer is no. In an experiment, when toddlers played with a fascinating toy and adults said a word, the toddlers looked up, figured out what the adult was looking at, and assigned the new word to that, not the fascinating toy. This supports theory two: The toddlers wanted to know what the adults intended. Theory Three: Infants Teach Themselves A third theory holds that language learning is innate; adults need not teach it, not is it simply a by-product of social interaction. The seeds of the perspective were planted soon after Skinner proposed his theory of verbal learning.

Language Acquisition Device - Chomsky's term for a hypothesized mental structure that enables humans to learn language, including the basic aspects of grammar, vocabulary, and intonation.

Noting that all young children master basic grammar at about the same age, Chomsky cited this universal grammar as evidence that humans are born with a mental structure that prepares them to seek some elements of human language. hybrid theory Perhaps all three perspectives are correct. These researchers' interpretation was that how language is learned depends on the age of the child as well as on the particular circumstances. Behaviorism may

work for some children, social learning for slightly older ones. Infants are active learners, not only of language, concepts, objects, and goals as explained but also of the motor skills and social understanding.