Chapter 1 : Perception and its Development in Merleau-Pontyâ€™s Phenomenology

Perception and its Development in Merleau-Ponty's Phenomenology (henceforth Perception and its Development) is a volume of fifteen papers from different authors, each addressing the most significant (or at least the most explicitly addressed) topic of the philosophical path of Maurice Merleau.

Creating a strategy for product development is an important and often multifaceted segment of running a successful enterprise, and it brings together a range of different principles, such as research and development, marketing, engineering, design, materials, and manufacturing. In most cases, an industrial product development strategy will depend on two main goals: For evaluating the success of an existing product, factors such as sales, customer response, profits, competition, and market acceptance are usually involved. Product development is usually based upon these criteria, and putting together a strategy helps to determine which products need to be modified, continued, or discontinued. In addition, development analysis can set guidelines for new products to be introduced. When working on product development, it can be helpful to remember that an industrial product is often more than just a tangible good, but also a set of technical, economic, legal, and personal relations between the consumer and the seller. Customer Perception Consumers can evaluate a product along several levels. Its basic characteristics are inherent to the generic version of the product and are defined as the fundamental advantages it can offer to a customer. Generic products can be made distinct by adding value through extra features, such as quality or performance enhancements. The final level of consumer perception involves augmented properties, which offer less tangible benefits, such as customer assistance, maintenance services, training, or appealing payment options. For example, when manufacturing automotive parts, a high-performing product will provide the customer base with basic benefits, while adding spare parts, technical assistance, and skill training will offer enhanced properties to create a total package with increased appeal to consumers. Changing Product Strategies In industrial product development, a marketing strategy that is flexible and adaptive to changing market circumstances stands a greater chance of being effective in the long-term. Products and consumer perceptions are variable, so changes in strategy may be required to better address customer needs, technological developments, new laws and regulations, and the overall product life-cycle. By monitoring external conditions and shifting product development accordingly, a company can better target its consumers and learn to react to their needs. The major factors that can necessitate a change in product strategy include: Fluctuations in the cost of materials, new application requirements, and changing brand awareness are just a few of things that can cause consumer needs to change. Keeping close track of customer response to a product and taking their demands into consideration are important for maintaining market share. A new technological development can engender a change in a product line, causing products to need modification in order to remain competitive or rendering some products obsolete. For example, fiber optic cables have replaced older cables in certain applications and many businesses have switched from main frame computers to personal computers. Being aware of these advances can help a business stay ahead of the curve. The implementation of new governmental regulations can cause certain products or manufacturing methods to be restricted, limiting their consumer appeal. Conversely, new laws can also lend an advantage to certain business and deregulation can sometimes benefit production standards. Product development strategies must shift according to the legal landscape. To preserve the rate of growth in profit and sales, many industrial companies decide to alter, discontinue, or replace older products with newer models or more recent upgrades. These changes are usually made periodically, allowing existing products that reach maturity or decline to be phased out or modified, thus retaining their appeal.

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Chapter 2 : Visual Perception | Simply Psychology

Anne D. Pick University of Minnesota. We have acquired important new knowledge about the nature and development of perception in recent years, and the insights of Eleanor Jack Gibson have had a prominent role in guiding the search for that knowledge.

Classical problems Sensing and perceiving Many philosophers and psychologists have commonly accepted as fundamental a distinction made on rational grounds between sensing and perceiving or between sensations and percepts. To demonstrate empirically that sensing and perceiving are indeed different, however, is quite another matter. It is often said, for example, that sensations are simple and that percepts are complex. Clearly, the arbitrary basis for the initial categorization itself cannot be subjected to empirical test. See also sensory reception. Problems of verification aside, the simplicityâ€"complexity distinction derives from the assumption that percepts are constructed of simple elements that have been joined through association. Presumably, the trained introspectionist can dissociate the constituent elements of a percept from one another, and in so doing, experience them as simple, raw sensations. Efforts to approach the experience of simple sensations might also be made by presenting very simple, brief, isolated stimuli; e. Another commonly offered basis for distinction is the notion that perceiving is subject to the influence of learning while sensing is not. It might be said that the sensations generated by a particular stimulus will be essentially the same from one time to the next barring fatigue or other temporary changes in sensitivity , while the resulting percepts may vary considerably, depending on what has been learned between one occasion and the next. Some psychologists have characterized percepts as typically related to external objects and sensations as more nearly subjective, personal, internally localized experiences. The above definitional criteria all relate to properties of experience; that is, they are psychological. An alternative way of distinguishing between sensing and perceiving that has become widely accepted is physiological-anatomical rather than psychological. This assignment of anatomical locations to sensory and to perceptual processes seems consistent with psychological criteria. That is, the complexity and variability of percepts both a product of learning are attributed to the potential for physiological modification inherent in the vastly complex neural circuitry of the brain. Temporal time relations Clearly, many subjective processes such as problem solving take time to run their courses. This is true even for such relatively simple activities as perceptual discriminations in the size of different objects. It is not readily apparent, however, whether percepts themselvesâ€"which, for example, might enter as elements in problem solvingâ€"take time to form. Yet, experimental evidence suggests that percepts, even of simple geometric forms, follow a measurable, developmental time course. In some instances the temporal development of percepts is relatively long on the order of seconds , and in some it is quite brief on the order of thousandths of a second. Pictures that are incomplete or ambiguous provide good examples of relatively long-term temporal development of percepts. Look at Figure 1 and continue looking until you see something more than a pattern of black, gray, and white patches. Abruptly, you probably will perceive a familiar face that, on subsequent viewing, will reappear to you without difficulty. How long it takes for such a percept to develop will vary considerably from one person to another, perhaps revealing fundamental differences among individuals in their speed of perceptual processing. It might be instructive to show Figure 1 to several people, and with the aid of a stopwatch, measure the time it takes each of them to achieve the desired percept, both initially and then on some later occasion. Figure 1 commonly is seen by most people as the face of Abraham Lincoln. A somewhat different way in which percepts may change with time is illustrated in illusion and hallucination. On initial viewing of this type of drawing, one will probably immediately see a meaningful picture. After continued gazing at the drawing, the initial percept may abruptly be replaced by another. Thereafter, the two percepts should alternate with the passage of time. Stimuli of this sort which can yield more than one percept raise such questions as, for example, what determines the initial percept; why do some people first see a vase whereas others see two profiles; why does the initial percept give way to the alternate; what determines the rate of fluctuation from one percept to the other; do differences from one person to another in the rate of fluctuation of ambiguous figures indicate fundamental differences in perceptual activity?

Tentative answers to such questions continue to be proposed. Instances of slowly developing percepts require relatively simple procedures to uncover. Those percepts with a very rapid time course may be studied with the aid of instruments known as tachistoscopes that permit the durations of visual stimuli to be precisely controlled. Sophisticated electronic tachistoscopes flash reliably for periods as brief as one millisecond one-thousandth of a second. Such precision permits study of the short-term development microgenesis of such percepts as those of simple geometric figures. Thus, it has been found that perception of a small black disk is disrupted masked by the rapidly successive tachistoscopic presentation of a second stimulus: Indeed, as far as experimental subjects can tell, the disk target simply does not appear, though when flashed without being followed by the ring, it is readily detectable. Other target and mask stimuli also have been successfully employed. Unless the viewer becomes aware of its contour, the disk theoretically cannot be perceived. This interpretation is consistent with evidence of an optimal time interval between disk and ring onsets about 30 to 50 milliseconds for the best masking effect. If the ring is presented too soon or too late, theoretically, the contour absorption on which masking presumably depends is ineffective. While such theories are controversial, masking experiments in general do clearly indicate that in human beings there is a brief period to milliseconds at most during which a percept is highly vulnerable to disruption. Whatever its exact mechanism, the phenomenon of masking manifestly demonstrates that percepts do not emerge instantaneously and full-blown at the moment of sensory stimulation. Thus, assuming that percepts are synthesized from simpler elements, relatively complex percepts would be expected to take longest to develop and, hence, to be most vulnerable to masking. Yet empirical studies show just the opposite, indicating that the more complex the visual target, the more difficult it is to mask. Other theorists particularly Gestaltists stress the view that perceptual organization is physiologically inborn, being inherent in innate aspects of brain functioning rather than depending on a synthesizing process of learning to combine simpler elements into more complex, integrated wholes. One way of resolving such theoretical disputes would be to deprive people from birth of all visual sensory experience and, hence, of all opportunity for visual perceptual learning. Then at the time normal sensory function was restored, they would need to be tested to determine what perceptual functions, if any, were intact. Such a strategy was proposed in a letter to the British philosopher John Locke by a fellow philosopher William Molyneux in After removal of their cataracts, such newly sighted people are found to be normally sensitive to changes in intensity of illumination and to colour. Though they are able initially to tell when a figure is present, they cannot at first discriminate one simple shape from another, nor can they readily remember the shape of a just-exposed object. Only after a long and painstaking period of experienceâ€”perhaps of several months durationâ€”do such seemingly primitive visual performances as discriminating a square from a triangle come easily. Until then, the person must count corners, for example, to achieve accurate discrimination. Findings derived from cataract surgery have provided a rich source of hypotheses for further research, including posited neurophysiological mechanisms e. This situation led to experimental attempts to show how, through repeated stimulation, the perceptual system could progress from performance of only very primitive functions to the highly complex operations such as form identification and discrimination that are characteristic of the mature organism. A host of experiments using laboratory animals as subjects e. By analogy with humans born with cataract, such animals were deprived of visual experience from as close to birth or hatching as possible; e. In another type of experiment, animals were reared in environments that provided more than the normal amount and variety of stimulation or were exposed to specific stimuli they might not ordinarily encounter. These research strategies are said to provide impoverished or enriched environments. Experiments of both sorts have consistently provided verification of the general hypothesis that early perceptual experience plays an important role in later perceptual as well as intellectual and emotional development , even producing changes in brain weight and biochemistry. This research also offers a strong scientific rationale for efforts to enrich the environments of so-called disadvantaged or culturally deprived children. Rather, even infants one or two days old are capable of refined visual discriminations. Research employing this technique shows that preferences among various visual patterns or shapes generally are related to the complexity and novelty of the stimuli, for infants and for older human subjects as well. Similar research has dealt with visual depth perception in laboratory animals and human babies. One technique the visual cliff depends on the evident reluctance of young animals to step off the edge of what seems to be a steep cliff. The so-called visual cliff apparatus in one of its versions consists of a narrow platform on which the subject is placed and two wide platforms on either side of it. Although both flanking platforms are equally and only slightly lower than the central platform, the subject sees visual patterns designed so that one looks much deeper than the other. Typically, the subject explores the central platform and then investigates the flanks, finally stepping down onto the shallow-appearing side. By this response, the subject indicates sensitivity to visual depth cues. To discover if prior visual experience is necessary for the typical avoidance of the flanking platform that looks deepest requires subjects able to locomote well from the start e. These data together suggest that some basic visual functions, including pattern perception, are built in but that visual experience serves to maintain and elaborate them. To establish this way of treating experience required careful training. But the problem remains interesting: If percepts are indeed syntheses of simpler elements, can those elements be made to appear in experience? If so, what will they turn out to be? Evidence that percepts have constituent elements emerged serendipitously from research on stabilized retinal images. The image cast on the retina of the eye by a fixed object normally is continually moving because the perceiver himself is always in motion. Even when dampened by physical restraint, some residual movement will be left, attributable largely to high-frequency tremors nystagmus of the eyeballs. If the perceiver functioned as if he were a camera, the normal instability of the retinal image would produce a blurred percept and a concomitant impairment of visual acuity. It is not feasible to eliminate eye movements, but it is possible to stabilize or fix the location of the retinal image by coupling the source of the image to the eyeball itself. An optical lever system can be so adjusted that when the eye moves the image source moves with it, and potential motion in the retinal image is eliminated. As expected, visual acuity is slightly enhanced when the retinal image is kept motionless. A remarkable, unexpected finding, however, was that such stabilized images rapidly seem to disappear, the perceiver losing awareness of them. It would seem that some movement in retinal image is needed to maintain perception over extended periods of time. One limitation of the optical lever system is that it permits the use of only very simple targets, such as straight, vertical lines. With a different device in effect, a miniature projector attached to the eyeball , stabilized images of complex patterns may be presented. Complex patterns are found to produce percepts that are relatively slow to deteriorate; furthermore, they do not disappear in toto. The manner of the fragmentation is perhaps revealing of the way in which complex percepts are synthesized. Indeed, under retinal stabilization, single lines seem to disappear and reappear in a unitary altogether fashion. In a figure comprised of several lines say, a square , percepts of parallel lines are likely to disappear and reappear together; proximity also affects the joint perceptual fate of pairs of lines. Retinally stabilized segments of such geometric figures as circles and triangles can seem to disappear and reappear without implicating the entire figure. In the disappearance of percepts of triangles, lines rather than angles are the functional units. This finding is embarrassing to earlier theorizing about the crucial role of angles in the development of the neural network underlying the percept of a triangle. Clearly, with stabilized images, the constituent perceptual elements of complex geometric forms are lines, straight or curved; and lines with the same orientation are likely to have similar perceptual fates, as though forming a higher-order component of complex patterns than do individual lines. These conclusions are remarkably similar to those drawn from studies of the effect of visual stimuli on the electrical activity of single neurons in the cerebral cortex. A finding of major theoretical significance is the failure of percepts of circles, squares, and triangles to act as units. Such percepts are treated in classical Gestalt theory, however, as though they are basic and unitary and not readily decomposable. Page 1 of 2.

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Chapter 3 : Perception | calendrierdelascience.com

Notre Dame Philosophical Reviews is an electronic, peer-reviewed journal that publishes timely reviews of scholarly philosophy books. Perception and its Development in Merleau-Ponty's Phenomenology // Reviews // Notre Dame Philosophical Reviews // University of Notre Dame.

What Client Needed from the Perception System? The client was in search of a dedicated web development company to create a generic ERP application solution for workflow management and eDiscovery needs among diverse industry segments. The client wants the proposed web system befitting itself in any segment of distinguishing workflow establishments as per their needs for routine business processes and goals achievements along with the maximum productivity. The main purpose was to provide complete control of the internal processes serving the customers of the business. We have applied standard requirements gathering strategies and techniques. The cooperation from client-side was praiseworthy. Below are our key findings for the client needs. We have found following prerequisites during requirement research: The need for ERP web application development aroused to alleviate bottlenecks come into the way of project management. The targeted diverse industry segments were government sectors, corporates, law firms, security agencies, and service providers. In these industries changes in workflow, patterns were rampant. So, concession over creating a generic platform was a big challenge. We have selected a right platform for technology stacks to reduce workload and minimized chances of failures or iteration. Our technical experts have checked the elevation view of project volume. We had determined the complexity involved in the project After having detail research, we decided to choose Yii framework as the backbone to script execution. Sincere Approaches Taken by Perception System The client has selected Perception System as its web development partner considering it as an unmatched team of web developers with a successful portfolio. We had set up a series of conferences with the client-side team and try to understand existing workflows of their targeted businesses for the system. Research We had applied standard research and analysis strategies and methodologies to know the exact requirements and formulated development strategy accordingly. Project Planning We have planned inclusion of features and functionality targeting interests of doctors as well as patients. We also have considered opportunities to include other dental clinics to provide location-based services and generate ads revenue. Project architecture Perception System has defined the hardware and software architecture of the system for kiosks. Deployment After successful testing, we had handed over the system to the client and deployed on their server as per instructions. Our Journey towards Is-A-Task was full of the maze and with enough complications to deal with in the development process. System Analysis We evaluated root needs and dependencies, identified the segments which can be automated to human efforts Implementation We divided a whole system in the sprint of work, containing tasks, sub-modules, modules for project deliverables. Selection of the Platform We checked the elevation view of project volume, its complexity and based on all we decided to choose Yii framework as the backbone to script execution. Breakdown the System We identified the break-down of different segments major process and life-cycles at its code and prepared the sprint execution pattern accordingly. The Major Heads Strategic goals, legacy systems and the detection of technical debt Organizational and architectural methods for evolving a successful platform.

Chapter 4 : Perception: Its Development and Recapitulation | American Journal of Occupational Therapy

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Return to Contents Perception refers to the process of taking in, organizing, and interpreting sensory information. Perception is multimodal, with multiple sensory inputs contributing to motor responses Bertenthal Gross motor actions include the movement of large limbs or the whole body, as in walking. Fine motor behaviors include the use of fingers to grasp and manipulate objects. Motor behaviors such as reaching, touching, and grasping are forms of exploratory activity Adolph As infants develop increasing motor competence, they use perceptual information to inform their choices about which motor actions to take Adolph and Joh For example, they may adjust their crawling or walking in response to the rigidity, slipperiness, or slant of surfaces Adolph Motor movements, including movements of the eyes, arms, legs, and hands, provide most of the perceptual information infants receive Adolph and Berger As infants grow, their body fat and muscle mass are redistributed. This dramatic physical development occurs within the broad context of overall development. As infants master each challenge, their perceptual and motor behavior reflects their ever-present interpersonal orientation and social environment. The extent and variety of infant perceptual and motor behavior are remarkable. Infants and toddlers spend a significant part of their days engaged in motor behavior of one type or another. By three and a half months of age, infants have made between three and six million eye movements during their waking hours Haith, Hazen, and Goodman Infants who crawl and walk have been found to spend roughly half of their waking hours involved in motor behavior, approximately five to six hours per day Adolph and Joh , They travel over nearly a dozen different indoor and outdoor surfaces varying in friction, rigidity and texture. Early research in motor development involved detailed observational studies that documented the progression of infant motor skills and presented an understanding of infant motor behavior as a sequence of universal, biologically programmed steps Adolph and Berger ; Bertenthal and Boker ; Bushnell and Boudreau ; Pick In comparison, current research in motor development often emphasizes action in the context of behavior and development in the perceptual, cognitive, and social domains Pick In particular, contemporary accounts of infant motor development address 1 the strong relationship between perception and action Bertenthal ; Gibson ; Thelen , 2 the relationship between actions and the environment Gibson ; Thelen , and 3 the importance of motives in motor behavior, notably social and explorative motives von Hofsten Children whose disabilities affect their perceptual or motor development still want to explore and interact with the people and environment around them. Pioneering researchers in infant motor development used novel and painstaking methods to study the progression of infant skill acquisition Adolph and Berger ; Adolph Their findings were presented for both professionals and the public in the form of milestone charts that depicted motor skill acquisition as a clear progression through a series of predictable stages related to chronological age Adolph ; Adolph, Weise, and Marin More recent research in the area of perceptual and motor development has indicated substantial variability between children in the pathways to acquiring major motor milestones such as sitting and walking Adolph ; Adolph Each child may take a unique developmental pathway toward attainment of major motor milestones Adolph and Joh Crawling, for example, is not a universal stage. Research clearly shows that not all children crawl before they walk Adolph Although most children walk independently around age one, the normal range for acquisition of this behavior in western cultures is very broad, between 9 and 17 months of age Adolph Age has traditionally been treated as the primary predictor of when landmark motor behaviors occur, but studies now indicate that experience may be a stronger predictor than age is in the emergence of both crawling Adolph and Joh and walking Adolph, Vereijken, and Shrout It is important to recognize that, though developmental charts may show motor development unfolding in the form of a smooth upward progression toward mastery, the development of individual children often does not follow a smooth upward trajectory. Infant motor development can be understood as a process in which change occurs as the infant actively adapts to varying circumstances and new tasks Thelen Thelen demonstrated this experimentally in her well-known study in which three-month-old babies, still too young to coordinate their movements to be able to sit, reach, or crawl, learned to coordinate their kicks in order to engage in the novel task of making a mobile move. For years, researchers, educators, and early childhood professionals have emphasized the interrelatedness of the developmental domains. The current research supports an even greater appreciation of the profound role of interrelatedness and interdependence of factors, domains, and processes in development Diamond The developmental domains are linked not only with one another, but also with factors such as culture, social relationships, experience, physical health, mental health, and brain functioning Diamond In the case of perceptual and motor behavior, Diamond has observed that perception, motor behavior, and cognition occur in the context of culture, emotion, social relationships, and experience, which in turn influence physical and mental health as well as overall brain functioning. Bertenthal has proposed that perception and motor action are interrelated rather than autonomous processes. They may be best viewed as different components of an action system. Common behaviors such as reaching and turning the head for visual tracking illustrate the interrelatedness of the motor, perceptual, cognitive, and social-emotional domains in infant development. Even as very young infants, children are highly motivated to explore, gain information, attend, and engage their physical and social environments Gibson As Gibson , 5 explains: Infants use perception to distinguish features of the environment, such as height, depth, and color. The ability to perceive commonalities and differences between objects is related to the cognitive domain foundation of classification. Infants explore objects differently depending upon object features such as weight, texture, sound, or rigidity Palmer Parents and professionals may have observed young children exploring a slope, such as a slide, by touching it with their hands or feet before they decide whether to slide down it or not. Perception is also strongly related to the social-emotional domain, such as when young children perceive the differences between various facial expressions and come to understand what they may mean. Return to Top Gross Motor Development Gross motor development includes the attainment of skills such as rolling over, sitting up, crawling, walking, and running. Gross motor behavior enables infants to move and thereby attain different and varied perspectives on the environment. Behaviors such as pulling to stand and climbing present children with new learning opportunities. When infants push a toy stroller or shopping cart, they are also engaging in processes related to cognitive development, such as imitation. Return to Top Fine Motor Development Through touching, grasping, and manual manipulation, infants experience a sense of agency and learn about the features of people, objects, and the environment. Fine motor development is related to the ability to draw, write, and participate in routines such as eating and dressing. Common early childhood learning materials, such as pegboards, stacking rings, stringing beads, and puzzles, offer opportunities for infants to practice their fine motor skills. Fine motor movements of the hands are coordinated with perceptual information provided through movements of the eyes, as when seven- to nine-month-old infants use visual information to orient their hands as they reach for an object McCarty and others Return to Top References Adolph, K. Human Perception and Performance, Vol. An Advanced Textbook Fifth edition. Cognition, Perception, and Language Sixth edition. John Wiley and Sons. Normal Development of Functional Motor Skills. American Academy of Pediatrics. Caring for Your Baby and Young Child: Birth to Age 5 Fourth edition. Early Language Milestone Scale Second edition. Infant, Family, and Society Fourth edition. Denver II Screening Manual. Strategies of Representation in Young Children: Analysis of Spatial Skill and Drawing Processes. Introduction to Infant Development. Standards for the Developmental Profiles Birthâ€”42 Months. Hawaii Early Learning Profile: Administration and Reference Manual.

Chapter 5 : Perception: Meaning, Definition, Nature and Importance

Perception and Its Development in Merleau-Ponty's Phenomenology brings together essays from fifteen leading Merleau-Ponty scholars to demonstrate the continuing significance of Merleau-Ponty's analysis.

Vision provides information about our environment without the need for proximity involved in taste, touch and smell. Vision has an overriding importance in every aspect of our day-to day-lives. Subject Different brain areas, as well as different processes of perception, are responsible for particular visual functions, such as perception of movement, colour and depth. There are even specific brain regions that deal only with facial recognition or biological i. Localized brain damage affecting these regions can lead to specific disorders, such as prosopagnosia, in which the ability to recognize faces is lost, while object recognition is unaffected. Vision would therefore seem to be a good starting place for studying the functional manifestations of brain development. Problems It is difficult to determine whether changes in visual abilities during development are due to limitations in peripheral structures, such as the eye, lens and muscles, or whether they are due to changes within the brain. The perceptual capacities of young infants are clearly limited by immaturities in peripheral sensory systems e. What is the major constraint on the development of perception? Research Context Visual sensitivity is poor in newborn primates and develops gradually to adult levels during the early postnatal years. Numerous studies of visual development have described this process. Generally, contrast sensitivity and acuity, measured psychophysically, are mature by 5 to 6 years in humans and by 1 year in monkeys. Behavioural measurements show sensitivity and acuity improving together, but electrophysiological measurements suggest that the contrast sensitivity of neural elements may mature considerably sooner. It has become obvious that visual function includes various aspects that begin and mature at different times and that the visual system includes several cortical and subcortical areas , each with its own role in processing specific aspects of visual information. This has allowed us to establish the onset and maturation of each of these aspects in normal infants, providing age-dependent normative data. Several recent studies have provided evidence that normal development of vision depends on the integrity of a complex network which includes not only optic radiations and the primary visual cortex but also other cortical and subcortical areas, such as the frontal or temporal lobes or the basal ganglia , which are known to be associated with visual attention and with other aspects of visual function. In the 70s, Bronson suggested a model for human visual development, in which newborn vision is mainly controlled at a subcortical level, with the cortex starting to mature at about 2 months postnatally. The two streams, morphologically distinct at ganglion cell and lateral geniculate nucleus levels, project to different parts of primary visual cortex, V1, and continue within independent cortical streams to the colour-specific area, V4, and to the motion-selective area, V5. While the parvocellular-based system is used for form and colour vision, the magnocellular system subserves movement perception and some aspects of stereoscopic vision. In other words, one system is devoted to deciding what and who we are looking at, and the other one decides the appropriate responses and actions to be made. In the early months of life, the visual system is still developing. The following information gives indicators of normal visual development in young children from birth to 3 years and the relative brain functional implications. In a premature infant depending on the extent of prematurity: The pupils are not yet able to dilate fully; the curvature of the lens is nearly spherical; the retina especially the macula is not fully developed; the infant is moderately farsighted and has some degree of astigmatism. Between 6 and 9 months: Acuity improves rapidly to near mature levels ; the infant "explores" visually examines objects in hands visually and watches activity in surroundings ; can transfer objects from hand to hand and may be interested in geometric patterns. Between 9 months and 1 year: The child can visually spot a small mm object nearby; watches faces and tries to imitate expressions; searches for hidden objects after observing the "hiding"; is visually alert to new people, objects, surroundings; can differentiate between familiar and unfamiliar people; vision motivates and monitors movement toward a desired object. At years of age: However, further development of brain mechanisms for analyzing complex visual scenes, specific objects and faces will occur later. While basic understanding of the social world is good, further development in the ability to predict the intentions and goals of others will continue to occur.

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Retinal tissue is mature; the child can complete a simple form board correctly based on visual memory , do simple puzzles, draw a crude circle and put 2. It is known that the basic functions of early sensory areas of the cortex have completed their development; nevertheless, the functional development of brain substrates for perception of complex visual scenes takes still longer. These changes involve continuing myelinization of connections and changes in the density of synapses within the prefrontal cortex. Specifically, there is a spurt of synapse growth followed by a period of pruning around the time of puberty. Conclusions The contribution of peripheral system retinal development in the emergence of basic visual functions can only partially explain improvements in visual behaviour, indicating that brain changes are also important. Turkewitz G, Kenny PA. Limitations on input as a basis for neural organization and perceptual development: Developmental Psychobiology ;15 4: The physical limits of grating visibility. Vision Research ;27 The quantum efficiency of vision. Cambridge University Press, Intrinsic noise and infant visual performance. Journal of the Optical Society of America ;16 3: Atkinson J The developing visual brain. Oxford University Press, Development of grating acuity and contrast sensitivity on the central and peripheral visual field of the human infant. Vision Research ;36 Correlation between cerebral visual impairment and magnetic resonance imaging in children with neonatal encephalopathy. Developmental Medicine and Child Neurology ;38 2: The postnatal growth of visual capacity. Child Development ;45 4: Visual function in the newborn infant: The distribution of wavelenght and orientation selective cells in different areas of monkey visual cortex. Human visual development over the first six months of life. A review and a hypothesis. Human Neurobiology ;3 2: Ungerleider LG, Mishkin M. Two cortical visual systems. Analysis of visual behaviour. A vision of the brain. Blackwell Scientific Publications; Hierarchical organization and functional streams in visual cortex. Trends of Neuroscience ;6 9: Livingstone M, Hubel DH. Segregation of form, colour, movement and depth: The visual brain in action. How to cite this article: Farroni T, Menon E. Visual Perception and Early Brain Development. Paus T, topic ed. Encyclopedia on Early Childhood Development [online]. Accessed November 10,

Chapter 6 : Customer Perception and Product Strategy

Perception: Its Development and Recapitulation You will receive an email whenever this article is corrected, updated, or cited in the literature. You can manage this and all other alerts in My Account.

Meaning, Definition, Nature and Importance Article shared by: Read this article to learn about the meaning, nature and importance of perception. Meaning and Definition of Perception: This input of meaningful information results in decisions and actions. The study of these perpetual processes shows that their functioning is affected by three classes of variablesâ€"the objects or events being perceived, the environment in which perception occurs and the individual doing the perceiving. But what is seen is influenced by the perceiver, the object and its environment. The meaning of perception emphasises all these three points. Perception has been explained by Ajit Singh as follows: In other words, sensation involves detecting the presence of a stimulus whereas perception involves understanding what the stimulus means. For example, when we see something, the visual stimulus is the light energy reflected from the external world and the eye becomes the sensor. This visual image of the external thing becomes perception when it is interpreted in the visual cortex of the brain. Thus, visual perception refers to interpreting the image of the external world projected on the retina of the eye and constructing a model of the three dimensional world. It correlates, integrates and comprehends diverse sensations and information from many organs of the body by means of which a person identifies things and objects, the sensations refer to. Perception is determined by both physiological and psychological characteristics of the human being whereas sensation is conceived with only the physiological features. Perception is a subjective process, therefore, different people may perceive the same environment differently based on what particular aspects of the situation they choose to selectively absorb, how they organize this information and the manner in which they interpret it to obtain a grasp of the situation. It is because what we hear is not what is really said, but what we perceive as being said. When we buy something, it is not because it is the best, but because we take it to be the best. Thus, it is because of perception, we can find out why one individual finds a job satisfying while another one may not be satisfied with it. One person may be viewing the facts in one way which may be different from the facts as seen by another viewer. Like the mirrors at an amusement park, they distort the world in relation to their tensions. This problem is made more complicated by the fact that different people perceive the same situation differently. In order to deal with the subordinates effectively, the managers must understand their perceptions properly. Thus, for understanding the human behaviour, it is very important to understand their perception, that is, how they perceive the different situations. The world as it is perceived is the world that is important for understanding the human behaviour.

Chapter 7 : Perception - Wikipedia

The perceptual process is a sequence of steps that begins with the environment and leads to our perception of a stimulus and an action in response to the stimulus. This process is continual, but you do not spend a great deal of time thinking about the actual process that occurs when you perceive the many stimuli that surround you at any given.

This enhancement continues into adolescence with major developments in short term memory , working memory , long term memory and autobiographical memory. There is contradicting evidence on whether causal perception is innate and present at birth or whether it is a result of perception development. Through research with very young infants, many studies have shown support for the theory that humans are born with the mechanisms needed for the perception of causality. Object permanence[edit] Object permanence is the understanding that an object continues to exist, even when one cannot see it or touch it. It is an important milestone in the stages of cognitive development for infants. Numerous tests regarding it have been done, usually involving a toy and a crude barrier which is placed in front of the toy, and then removed repeatedly peekaboo. In early sensorimotor stages , the infant is completely unable to comprehend object permanence. Psychologist Jean Piaget conducted experiments with infants which led him to conclude that this awareness was typically achieved at eight to nine months of age. Infants before this age are too young to understand object permanence, which explains why infants at this age do not cry when their mothers are gone â€" "Out of sight, out of mind". A lack of object permanence can lead to A-not-B errors , where children look for an object at the location where they first discovered it rather than where they have just seen it placed. Depth perception[edit] Studies in psychology [21] also suggest that three dimensionality and depth perception is not necessarily fully intuitive , and must be partially learned in infancy using an unconscious inference. The acquisition of depth perception and its development in infant cognitive systems was researched by Richard D. Walk found that human infants is able to discriminate depth well from an "innate learned" point of view, they are able to discriminate depth from the age at which they can be tested. However, their visual mechanisms are still maturing. Walk discovered that infants are better able to discriminate depth when there is a definitive pattern separating the deeper and shallower areas, than if either one is at all indefinite, and the depth and distance must be of a certain level of distance in order to be successfully distinguished by the infant. According to Walk there is a clear development of perceptual behaviour, as with increasing age it is shown that children are able to discriminate between depths more accurately, and gauge more subtle differences between depths. Much of this research depends on carefully observing when infants react as if events are unexpected. For example, if an infant sees an object that appears to be suspended in mid-air, and behaves as if this is unexpected, then this suggests that the infant has an understanding that things usually fall if they are not supported. Language acquisition From birth, babies are learning to communicate. The communication begins with crying and then begins to develop into cooing and babbling. Infants develop their speech by mimicking those around them. Gestures and facial expressions are all part of language development. In the first three months of life babies will generally use different crying types to express their different needs, as well as making other sounds such as cooing. They will begin mimicking facial expressions and smiling at the sight of familiar faces. From 7 months to the end of their first year babies are able to understand frequently heard words and can respond to simple requests. Their babbling becomes more complex and they communicate with it as if they are making sense, they use babbling to express their desires. Non-verbal communication also develops and actions such as waving goodbye are produced.

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Chapter 8 : Infant cognitive development - Wikipedia

Perception refers to the process of taking in, organizing, and interpreting sensory information. Perception is multimodal, with multiple sensory inputs contributing to motor responses (Bertenthal). An infant's turning his head in response to the visual and auditory cues of the sight of a face.

Perception develops through information that is gathered from the senses, which allows children to make sense of their environment. As they grow, babies and young children learn to discern information from the environment that is significant to them. This ability to filter information helps children interpret and attach meaning to objects and events. Simple Reflexes The simple reflexes substage is from birth to one month of age. At this age, infants begin to coordinate their inborn reflexes through sensation and action. They are born with reflexes that allow them to suck and grasp and they begin to follow objects with their eyes. Primary Circular Reactions From one to four months of age, infants begin to coordinate information from their senses. Infants intentionally repeat actions that occur automatically as reflexes. In this way, infants repeat behaviors they perceive as pleasurable, such as thumb sucking. Babies this age can also coordinate auditory and visual sensations by turning toward sounds. Secondary Circular Reactions This substage is from four to eight months of age. At this age, infants develop more coordination between vision and movement. Infants repeat actions that bring about interesting results, such as dropping a cup on the floor to see mom pick it up. Infants this age intentionally grasp objects. As they become mobile, their perception develops, and they gain spatial knowledge. Coordination of Secondary Circular Reactions At eight to twelve months of age, babies develop object permanence, meaning taht they understand that objects still exist when they are out of sight. Their spatial perception develops, so they are able to crawl or walk toward interesting objects. Their coordination between vision and movement allows them to perceive behaviors as means to an end. In this way, their actions become goal oriented, and they may push a button on a toy to hear the sound it makes. Tertiary Circular Reactions At 12 to 18 months of age, toddlers begin to experiment with new behaviors. They intentionally vary their actions to get interesting results. For example, a child this age may shake different rattles to hear the variations in sound from each one. They also perceive the different properties of objects and are curious about them. Mental Combinations From 18 to 24 months of age, children develop symbolic thought. They can mentally represent events in their minds, allowing them to anticipate and perceive the consequences of certain actions. They are not confined to trial-and-error methods to obtain desired results because their perceptions of objects and events are stored in their memories. Preoperational Stage Between two and seven years of age, mental representations improve and objects do not have to be present for children to think about them. Younger children do not understand that others may perceive objects differently than they do. Older children are limited by centration. COM, and areas of special knowledge include child and adolescent growth and development, and, in particular, the academic and emotional needs of children with disabilities. Cite this Article A tool to create a citation to reference this article Cite this Article.

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Chapter 9 : Case Study of Communication Industry Workflow Development

Perception develops through information that is gathered from the senses, which allows children to make sense of their environment. As they grow, babies and young children learn to discern information from the environment that is significant to them.

Saul McLeod , published In order to receive information from the environment we are equipped with sense organs e. Each sense organ is part of a sensory system which receives sensory inputs and transmits sensory information to the brain. A particular problem for psychologists is to explain the process by which the physical energy received by sense organs forms the basis of perceptual experience. Sensory inputs are somehow converted into perceptions of desks and computers, flowers and buildings, cars and planes; into sights, sounds, smells, taste and touch experiences. A major theoretical issue on which psychologists are divided is the extent to which perception relies directly on the information present in the stimulus. Psychologists distinguish between two types of processes in perception: Bottom-up processing is also known as data-driven processing, because perception begins with the stimulus itself. Processing is carried out in one direction from the retina to the visual cortex, with each successive stage in the visual pathway carrying out ever more complex analysis of the input. Top-down processing refers to the use of contextual information in pattern recognition. For example, understanding difficult handwriting is easier when reading complete sentences than when reading single and isolated words. This is because the meaning of the surrounding words provide a context to aid understanding. Gregory and Top Down Processing Theory Psychologist Richard Gregory argued that perception is a constructive process which relies on top-down processing. Stimulus information from our environment is frequently ambiguous so to interpret it, we require higher cognitive information either from past experiences or stored knowledge in order to makes inferences about what we perceive. For Gregory perception is a hypothesis, which is based on prior knowledge. In this way we are actively constructing our perception of reality based on our environment and stored information. Therefore, the brain has to guess what a person sees based on past experiences. We actively construct our perception of reality. Richard Gregory proposed that perception involves a lot of hypothesis testing to make sense of the information presented to the sense organs. Our perceptions of the world are hypotheses based on past experiences and stored information. Sensory receptors receive information from the environment, which is then combined with previously stored information about the world which we have built up as a result of experience. The formation of incorrect hypotheses will lead to errors of perception e. Such a mask is generally seen as normal, even when one knows and feels the real mask. An assumption based on past experience. Perceptions can be ambiguous The Necker cube is a good example of this. It becomes unstable and a single physical pattern can produce two perceptions. Gregory argued that this object appears to flip between orientations because the brain develops two equally plausible hypotheses and is unable to decide between them. When the perception changes though there is no change of the sensory input, the change of appearance cannot be due to bottom-up processing. It must be set downwards by the prevailing perceptual hypothesis of what is near and what is far. Perception allows behavior to be generally appropriate to non-sensed object characteristics For example, we respond to certain objects as though they are doors even though we can only see a long narrow rectangle as the door is ajar. What we have seen so far would seem to confirm that indeed we do interpret the information that we receive, in other words, perception is a top down process. In some cases it would seem the answer is yes. For example, look at the figure below: This probably looks like a random arrangement of black shapes. In fact there is a hidden face in there, can you see it? The face is looking straight ahead and is in the top half of the picture in the center. Now can you see it? The figure is strongly lit from the side and has long hair and a beard. Once the face is discovered, very rapid perceptual learning takes place and the ambiguous picture now obviously contains a face each time we look at it. We have learned to perceive the stimulus in a different way. Although in some cases, as in the ambiguous face picture, there is a direct relationship between modifying hypotheses and perception, in other cases this is not so evident. For example, illusions persist even when we have full knowledge of them e. The current hypothesis testing theories cannot explain this lack of a relationship between learning and perception. Relying on individual constructs for making sense of the world makes perception a very individual and chancy process. The constructivist approach stresses the role of knowledge in perception and therefore is against the nativist approach to perceptual development. However, a substantial body of evidence has been accrued favoring the nativist approach, for example: Constructivists like Gregory frequently use the example of size constancy to support their explanations. That is, we correctly perceive the size of an object even though the retinal image of an object shrinks as the object recedes. They propose that sensory evidence from other sources must be available for us to be able to do this. However, in the real world, retinal images are rarely seen in isolation as is possible in the laboratory. There is a rich array of sensory information including other objects, background, the distant horizon and movement. This rich source of sensory information is important to the second approach to explaining perception that we will examine, namely the direct approach to perception as proposed by Gibson. This is crucial because Gregory accepts that misperceptions are the exception rather than the norm. Illusions may be interesting phenomena, but they might not be that informative about the debate. This suggests that perception is necessary for survival â€" without perception we would live in a very dangerous environment. Our ancestors would have needed perception to escape from harmful predators, suggesting perception is evolutionary. James Gibson argues that perception is direct, and not subject to hypotheses testing as Gregory proposed. There is enough information in our environment to make sense of the world in a direct way. There is no need for processing interpretation as the information we receive about size, shape and distance etc. Gibson argued that perception is a bottom-up process, which means that sensory information is analyzed in one direction: Light rays reflect off of surfaces and converge into the cornea of your eye. Because of movement and different intensities of light shining in different directions it is an ever changing source of sensory information. Therefore, if you move, the structure of the optic array changes. According to Gibson, we have the mechanisms to interpret this unstable sensory input, meaning we experience a stable and meaningful view of the world. Changes in the flow of the optic array contain important information about what type of movement is taking place. The flow of the optic array will either move from or towards a particular point. If the flow appears to be coming from the point, it means you are moving towards it. If the optic array is moving towards the point you are moving away from it. Invariant Features the optic array contains invariant information that remains constant as the observer moves. They supply us with crucial information. Two good examples of invariants are texture and linear perspective. Another invariant is the horizon-ratio relation. The ratio above and below the horizon is constant for objects of the same size standing on the same ground. Affordances Are, in short, cues in the environment that aid perception. Important cues in the environment include: The patterns of light that reach the eye from the environment. The grain of texture gets smaller as the object recedes. Gives the impression of surfaces receding into the distance. When an object moves further away from the eye the image gets smaller. Objects with smaller images are seen as more distant. If the image of one object blocks the image of another, the first object is seen as closer. A large number of applications can be applied in terms of his theory e. His theory is reductionist as it seeks to explain perception solely in terms of the environment. There is strong evidence to show that the brain and long term memory can influence perception. However, his theory cannot explain why perceptions are sometimes inaccurate, e. He claimed the illusions used in experimental work constituted extremely artificial perceptual situations unlikely to be encountered in the real world, however this dismissal cannot realistically be applied to all illusions. For example if you stare for some time at a waterfall and then transfer your gaze to a stationary object, the object appears to move in the opposite direction. Bottom-up or Top-down Processing? Neither direct nor constructivist theories of perception seem capable of explaining all perception all of the time. Research by Tulving et al manipulated both the clarity of the stimulus input and the impact of the perceptual context in a word identification task. As clarity of the stimulus through exposure duration and the amount of context increased, so did the likelihood of correct identification. However, as the exposure duration increased, so the impact of context was reduced, suggesting that if stimulus information is high, then the need to use other sources of information is reduced. Science, , The Senses Considered as Perceptual Systems. A Theory of Direct Visual Perception. The Psychology of Knowing. Concepts and Mechanisms of Perception. Infant Behavior and Development, 13 1 , How to reference this article: