



Review Article

A CONCEPTUAL STUDY ON *BUDDHI, DHEE, DHIRITI, SMRITI, SMRITIKAARANAS* AND *MEDHA* IN COMPARISON TO JEAN PIAGET’S COGNITIVE DEVELOPMENT FACTORS

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ABSTRACT

Building intricate scenarios and sharing these ideas with others, A full-fledged language capacity, as well as reasoning and planning skills are among the many cognitive abilities that distinguish man from other living beings. One of the tools of cognition and perception used to establish the precise qualities of an object according to Ayurveda is *Buddhi* (intellect). Perception occurs when the *Indriyas* (cognitive organs) perceives their objects along with *Manas* (mind), which subsequently analyze and forwards those to *Buddhi* producing knowledge. *Dhee, Dhriti, Smriti* are the components of *Buddhi* which aids for this and *Medha* is a type of intellect having the power to retain this knowledge. As per modern, cognition is the mental action or process that involves thought experiences, and the senses to acquire knowledge and understanding. The cognitive development is established through schema, assimilation, accommodation and equilibrium according to Jean Piaget’s Cognitive Development Theory. *Buddhi, Dhee, Dhriti, Smriti, Smritikaarana, Medha* can be correlated to these factors. Although the components of cognitive development theory were articulated for a developing kid, Ayurveda views these concepts as that which may be implied at any stage of life. One has to pass through each of these stages to achieve cognition. Hence, the present conceptual study thus focus on interpreting these Ayurvedic observations on the basis of modern theory of cognitive development and its factors.

INTRODUCTION

Man is an intelligent animal. Intelligence is the ability to acquire and apply the knowledge and skills. *Buddhi* is the phenomenon through which knowledge is gained. It perceives the stimulus either from sense organs or from memory and imaginations and hence it is a functional unit of human mind.^[1] *Indriya* (cognitive or sense organs)–*Indriyarthasannikarsha* (sequential interaction between the sensory organ with their object) along with *Manas* (mind) and *Atma* (soul) analyse the subject matter by the means of *Chinta* (thinking), *Grahana* (grasping), *Dharana* (retaining), *Vichara* (thought) and forwards this to *Buddhi*, which then produces decisive knowledge leading to the final action. Hence it can be said that *Buddhi* helps in the Perception and Cognition.

Cognition is defined as the mental action or process of acquiring knowledge and understanding through thought, experience, and the senses. The term comes from the Latin noun *cognito*, meaning, ‘examination,’ ‘learning’ or ‘knowledge’. Human cognition is intuitive, conceptual, concrete or abstract. It encompasses all aspects of intellectual functions and process such as memory, association, concept formation, pattern recognition, language, attention, perception, action, problem solving, and mental imagery.^[2] This has been explained under the Cognitive development theory by Piaget, where he briefs about the factors leading to cognition.

Methodology

Acharya Charaka considered *Buddhi* as one among the *Shodasha Vikara*^[3]. It is one of the *Karana* or cause of acquiring knowledge.^[4] He asserts that the *Buddhi* is what determines the precise characteristics of an object and drives a person to speak or behave accordingly. It is the initiating force behind action and resolution.^[5] The *Indriyas* perceive their objects along with mind. Subsequently the mind analyses the merits and demerits and forwards it to the *Buddhi*, which produces decisive knowledge. Then accordingly the

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person with complete knowledge endeavours to speak or to act.^[6] One can acquire knowledge, even beyond the limits of senses, with the help of *Buddhi*.^[7] *Medha*^[8], *Dhee*, *Dhriti*, *Smriti* are the faculties of *Buddhi*.^[9] *Medha* is the unobstructed, uninterrupted perception and retention of knowledge. It acquires knowledge gathered in depth from different sources.^[10] It is through constant study, discussion, consulting other treaties and devotion to the expert scholars, *Buddhi* and *Medha* can be promoted.^[11] *Dhee* is the *Yatharthanubhava*, Sensing or perceiving the matter as it is.^[12] *Dhriti* is the governing factor.^[13] It prevents *Manas* from indulging in *Ahithartha*, i.e. the control over the decisions of mind is attained only on the basis of either a new experience or retained experience and recognising the object as useful or not.^[14] *Smriti* is the remembrance of the things which are directly perceived, heard or experienced.^[15] The sources for this are *Nimitta*, *Roopagrahana*, *Sadrushya*, *Saviparyaya*, *Satvanubandha*, *Abhyasa*, *Gyanayoga*, and *Punah Shrutha*.^[16] *Nimitta* is the perception to the cause or thinking back to the events. *Roopagrahana* is the perception of form or thinking back to encounter. *Sadrushya* is assessing through similarity or comparison. *Saviparyaya* is understanding through contrast. *Satvanubandha* is the remembrance through concentration of mind or focusing on the moment. *Abhyasa* is the knowledge gained through repeated practise and the remembrance through knowledge acquisition is *Gyanayoga*. *Punah Shrutha* is memorizing through repeated hearing.^[17] The development of *Buddhi* starts at 6th month of *Garbhavastha* (Intra Uterine period).^[18]

The major mark of brain development occurs at 6th month of intra uterine life. During this period the cerebral cortex divides into two hemispheres.^[19] It has Sensory areas and Association areas. The association areas receive and analyse signals simultaneously from multiple regions of both motor and sensory cortices. The important areas include Parieto-occipitotemporal association area, the Prefrontal association area and the Limbic association areas. The Parieto-occipitotemporal association area has its own functional sub areas such as analysis of spatial coordinates, Wernicke's area, which is the most important region of the entire brain for higher intellectual function, Angular Gyrus area, which is needed for initial processing of Visual language (Reading). The Prefrontal association area is essential to carry out the thought process in the mind. The Prefrontal areas - 9, 10, 11, 12, 13, 14, 23, 24, 29, 32, are responsible for the higher functions, learning, memory, emotions, social behaviour etc. The Limbic association area is concerned with behaviour, emotions and motivation.^[20] These are attained through cognition, which develops in sophistication

through slow, systemic modifications involving various stages. The factors that influence the stages of cognitive development are Schema, Assimilation, Accommodation and Equilibrium according to Jean Piaget.^[21] Schema is an internal representation of the world that aids in understanding. It is the basic building block of intelligent behaviour. They are mental models of the world that can be understood as categories where each carry a set of perceived ideas. Assimilation is the process of placing new information into pre-existing cognitive schemas. It is how one perceives and adapts to new information. For this, there involves an existing schema. It occurs when a person encounter with a new information and refers to the previously learned information in order to understand and make sense of it. Accommodation is the process of taking new information and altering the pre-existing schemas in order to fit the new information. It happens when the existing schema does not work and needs to be changed so as to deal with the new circumstance. Equilibrium is a state of balance between individuals' mental schemata, or frameworks and their environment.^[22] When the majority of new knowledge have been assimilated by a child's schema, it can be said that equilibrium has been reached.

By looking into these, both Ayurvedic concepts of *Buddhi*, *Dhee*, *Dhriti*, *Smriti*, *Smritikaaranas*, *Medha* and modern theory of cognitive development are relatable. *Buddhi*, *Dhee*, may be correlated to the Schema as both explain the same idea, that is, how two persons perceive an object is differently. This can be further substantiated with a simile given by Acharya Charaka where he quotes, as the sounds produced by the striking of fingers, thumbs and palm (clapping), stringed musical instrument, or nails are of numerous types, similarly due to contact with *Atma*, *Indriya*, *Mana*, *Indriyarthartha*, numerous types of perceptions or intellects are seen.^[23] *Dhriti* and the factors of *Smritikaarana*, *Nimitta*, *Roopa Grahana*, *Sadrushya*, *Saviparyaya*, *Satvanubandha*, *Punah Shrutha* may be correlated with assimilation as there is thinking back to the events. *Abhyasa*, *Gyanayoga*, these factors may be correlated with different bases of accommodation as there is continuous changes happening, leading to the formation of new schema which is attained through regular practice and knowledge acquisition and Equilibrium may be correlated to *Medha* as it is the skilful knowledge which has been gathered through various sources.

DISCUSSION

Buddhi, *Medha*, *Dhee*, *Dhriti*, *Smriti*, are the factors which aid for cognition. As stated, each schema is unique and depends on an individual's experiences and cognitive processes, i.e., how a child perceives an object or situation is different from how an adult

analysis it. Taking the *Balyavastha* (childhood) into consideration, during this stage there will be *Aparipakva Avastha* (immature stage) of *Dhatu* (builds the basic structure and carry various physiological functions), *Indriya*, *Bala* (strength- physically, mentally and in terms of immune power) with the predominance of *Kapha Dosha*.^[24] This is a growing period during which a child will experience disequilibrium as they acquire new information. The state of disequilibrium motivates the child to accommodate new knowledge and achieve equilibrium. But the depth or understanding of knowledge will be limited to the demands of that particular period, and as the age advances it develops accordingly. Children depend largely on the sensory experiences to learn and acquire knowledge. In neonates, the schemas are cognitive structures underlying innate reflexes.^[25] For example, when touched or stroked near the mouth of a baby, the head turns towards the stimulus and opens the mouth widely with tongue thrusting.^[26] This can be assumed as sucking schema or innate schema. This reflex disappears gradually by 4 to 6 months as the baby slowly changes the diet, which was then solely the breast milk, to semi solid foods and later to solid foods. For having semi solids, solid foods, baby has to get adapted to chewing and swallowing. Here, baby is getting accustomed to it by the process of assimilation, accommodation and finally equilibrium that is the ability to eat by chewing food. Viewing this in Ayurvedic perspective, with the help of *Buddhi* and *Yatharthanubhava*, the baby becomes aware that he has to adapt to a new situation since his food habits are getting changed. So, next time when the food is given, with the help of *Smriti* and *Smritikaaranas*, he recollects and recognizes the situation to consume food properly. This information then will be formed and stored in the form of the *Medha* and used whenever necessary. In case of adults, they use more of their superior cognitive abilities like abstract thinking to comprehend and infer knowledge. This can be said true as the age advances, the complexity of the circumstances increases. With the already gained knowledge, memory and with the much developed physical and mental faculties they become expertise to the situation. This explains why there was no separate consideration given to the age group in Ayurveda owing to this part.

CONCLUSION

Ayurveda being an ancient science, still holds a place of great importance even in the current era. The principles and theories of *Buddhi*, *Medha*, *Dhee*, *Dhrithi*, *Smriti*, *Smritikaaranas*, how they function for attaining perception and cognition, can be stated true even now. Jean Piaget belonging to the present era had a similar opinion which was reflected in his theory of cognitive

development. But he explained these factors pertaining mainly to the childhood period. Ayurveda believed for the attainment of knowledge one has to pass through each of the explained stages regardless which age or stage of life one belongs to. So, it holds good in all the stages of life.

REFERENCES

1. Tewari PV. Caraka Samhita of Agnivesha with Ayurveda Deepika commentary by Chakrapanidatta; Varanasi: Chaukhambha Vishvabharati; 1st ed 2018. Shareerasthana; Katidhapurushiya Shareera Adhyaya: Chapter 1, Verse 33. p.308.
2. Sensation and Perception (5th edition), Coren, Stanley, Lawrence. M. Ward. and James. T. year 1999. ISBN 978-0-470-00226-1, Page No. 09. Available from: en.em.wikipedia.org/wiki/Cognition
3. Tewari PV. Caraka Samhita of Agnivesha with Ayurveda Deepika commentary by Chakrapanidatta; Varanasi: Chaukhambha Vishvabharati; 1st ed. 2018. Shareerasthana; Katidhapurushiya Shareera Adhyaya: Chapter 1, Verse 63. p.317.
4. Tewari PV. Caraka Samhita of Agnivesha with Ayurveda Deepika commentary by Chakrapanidatta; Varanasi: Chaukhambha Vishvabharati; 1st ed. Varanasi; 2018. Shareerasthana; Katidhapurushiya Shareera Adhyaya: Chapter 1, Verse 56. p.315.
5. Tewari PV. Caraka Samhita of Agnivesha with Ayurveda Deepika commentary by Chakrapandatta; Varanasi: Chaukhambha Vishvabharati; 1st ed. 2018. Shareerasthana; Katidhapurushiya Shareera Adhyaya: Chapter 1, Verse 32-3. p.317.
6. Tewari PV. Caraka Samhita of Agnivesha with Ayurveda Deepika commentary by Chakrapanidatta; Varanasi: Chaukhambha Vishvabharati; 1st ed 2018. Shareerasthana; Katidhapurushiya Shareera Adhyaya: Chapter 1, Verse 23. p.304.
7. Tewari PV. Caraka Samhita of Agnivesha with Ayurveda Deepika commentary by Chakrapanidatta; Varanasi: Chaukhambha Vishvabharati; 1st ed 2018. Sutrasthana; Mahachathushpada Adhyaya: Chapter 11, Verse 7. p.192.
8. Sanskrit text with Sarvanngasundhara commentary of Arunadutta and Ayurvedarasayana commentary of Hemadri on Ashtanga Hridaya of Vagbhata; Varanasi: Chaukamba Subharati Prakashan, 2018; Sutrasthana; Doshabedhiyaadhyaya: Chapter 12, Verse 13. p.225.
9. Tewari PV. Caraka Samhita of Agnivesha with Ayurveda Deepika commentary by Chakrapanidatta; Varanasi: Chaukhambha Vishvabharati; 1st ed 2018. Shareerasthana; Katidhapurushiya Shareera Adhyaya: Chapter 1, Verse 98. p.329.
10. Sanskrit text with Sarvanngasundhara commentary of Arunadutta and Ayurvedarasayana commentary of Hemadri on Ashtanga Hridaya of Vagbhata; Varanasi: Chaukamba Subharati Prakashan, 2018; Sutrasthana; Dravavigyaniya Adhyaya: Chapter 5, Verse 37. p.125.

11. Trikamji Jadavaji T, Susruta Samhita of Susruta with Nibandhasangraha commentary by Dalhana, Reprint ed. Varanasi: Chaukamba Orientalia; 2013. Chikitsasthana; Medhaayushkamiya Rasayana Adhyaya: Chapter 28, Verse 27. p.500.
12. Tewari PV. Caraka Samhita of Agnivesha with Ayurveda Deepika commentary by Chakrapanidatta; Varanasi: Chaukhambha Vishvabharati; 1st ed 2018. Shareerasthana; Katidhapurushiya Shareera Adhyaya: Chapter 1, Verse 98. p.329.
13. Trikamji Jadavaji T, Susruta Samhita of Susruta with Nibandhasangraha commentary by Dalhana, Reprint ed. Varanasi: Chaukamba Orientalia; 2013. Shareerasthana; Sarvabhoothachintha Shareeram: Chapter 1, Verse 18. p.343.
14. Tewari PV. Caraka Samhita of Agnivesha with Ayurveda Deepika commentary by Chakrapanidatta; Varanasi: Chaukhambha Vishvabharati; 1st ed 2018. Shareerasthana; Katidhapurushiya Shareera Adhyaya; Chapter 1, Verse 100. p.330.
15. Tewari PV. Caraka Samhita of Agnivesha with Ayurveda Deepika commentary by Chakrapanidatta; Varanasi: Chaukhambha Vishvabharati; 1st ed 2018. Shareerasthana; Katidhapurushiya Shareera Adhyaya: C Chapter 1, Verse 149. p.343.
16. Tewari PV. Caraka Samhita of Agnivesha with Ayurveda Deepika commentary by Chakrapanidatta; Varanasi: Chaukhambha Vishvabharati; 1st ed 2018. Shareerasthana; Katidhapurushiya Shareera Adhyaya: Chapter 1, Verse 148-49. p.343.
17. Tewari PV. Caraka Samhita of Agnivesha with Ayurveda Deepika commentary by Chakrapanidatta; Varanasi: Chaukhambha Vishvabharati; 1st ed 2018. Shareerasthana; Katidhapurushiya Shareera Adhyaya: Chapter 1. Verse 149. p.343.
18. Trikamji Jadavaji T, Susruta Samhita of Susruta with Nibandha sangraha commentary by Dalhana, Reprint ed. Varanasi: Chaukamba Orientalia; 2013. Shareerasthana; Garbhavakranthi Shareeram: Chapter 3, Verse 30. p.47.
19. Prenatal Brain Development Timeline and Stages, Liceth Sosa. Available from: <https://study.com/learn/lesson/prenatal-brain-development-timeline-stages-fetal.html>
20. John E Hall, Guyton and Hall Textbook of medical Physiology. Philadelphia, PA: Saunders/Elsevier; 12th ed 2011. Cerebral Cortex, Intellectual Functions of the Brain, Learning, and Memory. Chapter 57, p.697-9.
21. Renner, John (1974). Research, teaching, and learning with the Piaget model.
22. Cognition, The editors of Encyclopaedia Britannica, Jan 27, 2023. Available from: <https://www.britannica.com/science/cognitive-equilibrium.html>
23. Tewari PV. Caraka Samhita of Agnivesha with Ayurveda Deepika commentary by Chakrapanidatta; Varanasi: Chaukhambha Vishvabharati; 1st ed 2018. Shareerasthana; Katidhapurushiya Shareera Adhyaya: Chapter 1, Verse 32-34. p.308.
24. Tewari PV. Caraka Samhita of Agnivesha with Ayurveda Deepika commentary by Chakrapanidatta; Varanasi: Chaukhambha Vishvabharati; 1st ed 2018. Vimanasthana; Rogabhishagjitiya Vimana: Chapter 8, Verse 122. p.274.
25. Piaget's Stages of Cognitive Development, Background and key concepts of Piaget's Theory, Author; Saul McLeod, PhD, August 18, 2022. Available from: <https://www.simplypsychology.org/piaget.html>
26. Yoo H, Mihaila DM. Rooting Reflex. InStatPearls [Internet] 2021 May 1. StatPearls Publishing.

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