A Literary Study on Action and Perception of Artha (Knowledge) through Pancha Jnanendriya (Five Sensory Organs): A Brief Review Study

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**Abstract**

**Background** Buddhi gives affirmative information. Buddhi is regarded as the vision gland. The fundamental wisdom or information that generates Pancha Indriya Gyana are the Pancha Indriya Buddhis (Chakshu Buddhi, Shroatra Buddhi, Ghrama Buddhi, Rasana Buddhi, and Sparshana Buddhi) (knowledge related to five sensory organs). The therapeutic importance of Pancha Indriya Buddhi has been understudied. The functions of Pancha Indriya Buddhis are similar to those of the brain's attachment cortices, and the abnormal states of Indriya Buddhis indicate various forms of Agnosia. **Aim and Objective** To evaluate the study on Action and Perception of Artha (Knowledge) through Pancha Jnanendriya, **Methodology – Source of Collection of Data** - Vivek Ayurvedic College Library, Bijnor, UP., the collection of material from, Agnivesha Charka Samhita, Principles of Anatomy and Physiology text book, Clinical Neuropsychology text book, Human cortical gustatory areas -Neuro report, different articles, Magazine’s, and different other authentic websites like PubMed, data base. **Conclusion** The association cortices of the brain are represented by the Pancha Indriya Buddhis. In Ayurvedic classics, the functions of the traditional integrative area and prefrontal cortex or frontal attachment area specifically denote the functions of "Buddhi." Different forms of "Agnosia" are caused by the pathological states of Indriya Buddhis.

**KEYWORDS:** Pancha Indriya Buddhi, Association cortices, Ayurveda.

**Introduction**

Buddhi (intellect/cognition) is regarded as a distinct being in Ayurveda, working in tandem with the Manas (mind). After a thorough examination, Buddhi gives affirmative information. Buddhi is regarded as the vision gland.¹ "Buddhi," according to "Dalhana," is an individual that comes to final decisions after weighing the pros and cons of an individual.² The Jnanendriya (sensory organs) are said to come into contact with their
respective faculties in Ayurveda. Atma is referred to as the "preceptor" or "doer" in this context, and information is gained by the use of instruments or Karana Manas, Buddhi, and Indriya are the instruments in question (BuddhiIndriya and Karmendriya). There would be no understanding if these devices of perception are either missing or obstructed. Manas (mind) for learning the subsequent insight following the Indriya Buddhis' study. [3] The empirical soul (Atma) is endowed with the strength of perception, according to "Charaka." As the mind, intelligence, and sense faculties are connected, it (Atma) perceives objects. Atma is referred to as the "preceptor" or "doer" in this context, and information is gained by the use of instruments or Karana Manas, Buddhi, and Indriya are the instruments in question (BuddhiIndriya and Karmendriya). There would be no understanding if these devices of perception are either missing or obstructed. [4]

The need for information arises in Atma during the vision process, and is then passed to Manas. Manas perceives the respective Indriya Artha or object of thought in conjunction with Indriya. Following that, the realistic benefits or drawbacks are determined. The Buddhi (intellect), which defines the object's basic properties, motivates people to communicate and behave intelligently (complex information processing/cognition/higher mental functions). Thus, the four essential components of awareness are Atma, Manas, Indriya, and Indriyaartha. The person with "Buddhi Vibhrama" (intellectual impairment) would be unable to assess things properly. [5]

“Indriya Pancha Panchaka” (five senses) is a list of 25 Indriya-related elements (terms) (sensory organs). They characterise Indriyas' structural and functional elements. Pancha Indriya Dravya (five sensory material), Pancha Indriya Adhisthana (five sense organs Location), Pancha Indriya Artha (objects of perception/five sensory stimuli), and Pancha Indriya Buddhi comprise the “Indriya Pancha Panchaka” (five sensory perceptions). Indriya Buddhis are the Indriyas' essential intellect or awareness, which allows them to comprehend knowledge of the associated entity. This Indriya Buddhi aids in the perception of knowledge relevant to an Indriya. Pancha Indriya Buddhis include Chakshu, Shrotra, Ghrana, Rasana, and Sparshana. [6] Using recent science and literature, the current thesis aims to gain a greater understanding of the Pancha Indriya Buddhis and their therapeutic importance.

**Aim and Objective**

To evaluate the study on Action and Perception of Artha (Knowledge) through Pancha Jnanendriya

**Methodology –**

**Source of Collection of Data** - Vivek Ayurvedic College Library, Bijnor, UP.

In this article, the collection of material from, Agnivesha Charak Samhita, Tortora GJ, Principles of Anatomy and Physiology text book, Clinical Neuropsychology text book, Human cortical gustatory areas -Neuro report, different articles, Magazine's, and different other authentic websites like PubMed, data base.

**Association cortices (Pancha Indriya Buddhi)**

The sensory sensations are obtained through Indriyas (sense organs), which are similar to doors. Jnanendriya (sensory faculties) and Karmendriya (intellectual faculties) are two types of faculties identified in Ayurveda
The cognitive process benefits from Jnanendriya, while the conative process benefits from Karmendriya. Shrotra (auditory sense organ) and Chakshu (visual sense organ) are the two most essential Jnanendriya in cognition and learning. Other sense organ perceptions, such as olfactory, gustatory, and tactile/somatosensory perceptions, are processed as Anubhuta (memory). Shabda (sound), Sparsha (touch), Rupa (vision), rasa (taste), and Gandha (smell) are the five essential artefacts of perception that are sensed by their respective sense organs. There are certain intrinsic sensations that can be sensed without the aid of any other sensory faculty by Manas. [7] Pancha Indriya Buddhis are useful for the recognition of artefacts (Chakshu, Shrotra, Ghrana, Rasana, and Sparshana Buddhis).

**Chakshu Buddhi**

Chakshu Indriya Buddhi/Chakshu Buddhi offers the insight, details and understanding of Rupa (sight, vision.,). The visual cortex (area VI) primary lets us visually see the stimuli and the cortex visually linked helps us to perceive the things seen. Visual cortex is the alternate name for visual association. Visual cortex interaction gives the visual impressions significance. The lesions in region VI lead to blindness while those in the 'visuopsychic' cortex lead to 'mental blindness' syndrome, later called a 'Agnosis,' a disorder that allows a patient to 'see' but not 'understand' what is seen. The primary field of vision is specialised in sensory stimuli and the visual field of association helps in developing and processing these primary visual sensations. Area VI is an important part of the continuum that allows for an awareness of vision and conscious experience. In the occipital lobe the field of visual contact (Areas 18 and 19) derives impulses from the main visual area and even from the thalamus. These fields of visual association connect current and past visual encounters and are important to the recognition and evaluation of what is seen. [9] Visual association feature is similar to "Chakshu Buddhi" definition.

**Buddhi Shrotra**

Shrotra Indriya Buddhi/Shrotra Buddhi offers Shabda (sound) insight or awareness and aids hearing and understanding of auditory stimulation. The auditory principal cortex is tonotopic and is the first auditory input cortical area of Heschl's gyrus. Auditory interaction cortex obtains information from the main auditory cortex and as an intermediate step of hierarchical production of auditory sounds is involved in the processing of complex sounds. The adaptation to tones takes place primarily in the primary auditory cortex, while in the audition cortex of the brain adaption to complex sounds happens. [10] The region of the audio combination (area 22), which is inferior and post-primary in the cortex, enables one to perceive a signal as voice, music or noise. In the area of Wernicke's, a large zone in the left temporal and parietal lobes (area 22 and areas 39, 40), Wernicke understands the sense of speech by acknowledging the meanings of spoken language. The auditory interaction cortex's functions are identical to those of "Shrotra Buddhi."

**Buddhi Ghrana**

Ghrana Indriya Buddhi/Ghrana Buddhi offers Gandha (odour /smell) insight or awareness and supports the identification of olfactory sensations. The cortex orbit-frontal on the side of the frontal lobe is filled with sensory stimuli from the main olfactory region. This field allows one to recognise smells and distinguish
between various smells. The orbitofrontal cortex of the right hemisphere has more activation than the left during olfactory processing. The work of piriform cortex is heterogeneous and involves many facets of olfactory learning and memory. The amygdala is also functionally complex, encrypts the emotionality of the scent stimuli and helps connect environmental and biological odours. As the main neo-cortical objective of the primary olfactory cortex, the orbitofrontal cortex performs a broad range of higher-level functions relating to the synthesis, rewarding memory and associative learning.\[11\] The hippocampus was activated by odour discrimination, which involved a potential role in the olfactory work memory. Broca's field and the lower left frontal lobe included smell identifying, suggesting a mixture of sub vocal articulation and semantic connections. The hippocampus was discriminated against and had their part in serial smell comparisons (olfactory working memory).\[12\] The activities of the olfactory are similar to "Ghrana Buddhi," piriform cortex, amygdale, orbitofrontal regions and hippocampus.

**Rasana Buddhi**

*Rasana Indriya Buddhi/Rasana Buddhi* offers rasa (taste) information and aids in the identification of gustatory stimuli. The gustatory system's two taste areas are linked to various functions. The primary subcortical production area for gustatory feedback associated with flavour is the insula / operculum.\[13\] The parietal opercula zone (in the postcentral gyrus, directly adjacent to the somatosensory representation of the tongue), the insula, and the anterior temporal lobe are all linked to human cortical gustatory representation. The insula/opercula cortical portion of the human brain contains several gustatory regions. In contrast to principal taste areas, the ventral insula and parietal opercula cortex are secondary taste regions. The right hemisphere houses the human secondary gustatory region (caudolateral orbitofrontal cortex). This is consistent with other studies, implying that the right hemisphere has functional specialisation in gustation and olfaction.\[14\] The functions of "Rasana Buddhi" are similar to the functions of the insula/operculum, anterior temporal lobe, and secondary gustatory regions of the brain.

**Buddhi Sparshana**

*Sparshana Indriya Buddhi/Sparshana Buddhi* helps to sense the touch, recognise objects by touch, and recognise different somatosensory sensations by providing awareness or details of Sparsha (touch). The somatosensory integration area (areas 5 and 7) is located just below the main somatosensory area and receives input from the thalamus and other brain regions. This field allows us to feel an object's precise form and structure, as well as assess its position in relation to other objects and sense the interaction between body parts. The somatosensory connection region is where impressions of prior somatic sensory experiences are stored, allowing one to equate present stimuli to previous ones. We can identify objects like a pencil and a comb simply by touching them thanks to the somatosensory connection region. Somatosensory association areas have roles that are identical to those in "Sparshana Buddhi."

Somatosensory, visual, and auditory association areas surround the typical integrative region (areas 5, 7, 39, and 40). These zones, as well as the primary gustatory region, the primary olfactory area, the thalamus, and portions of the brain stem, send impulses to it. This field combines sensory interpretations from the
association centres with impulses from other parts of the brain, allowing for the creation of thoughts dependent on a variety of sensory inputs. It then sends messages to other areas of the brain, instructing them to respond appropriately to the sensory signals it has decoded. Humans have a well-developed prefrontal cortex, also known as the frontal association layer, which is located in the anterior portion of the frontal lobe (areas 9, 10, 11, and 12). The cerebral cortex, thalamus, hypothalamus, limbic system, and cerebellum all have extensive connections with this region. The cortex pre-frontal concerns the shaping of the personality, intelligence, diverse learning skills of an individual, knowledge recollection, initiative, judgement, foresight, thinking, awareness, imagination, temperament, preparation and creation of abstract concepts. "Buddhi," as described in Ayurvedic Classics, simply indicates the functions of the traditional integrative region and prefrontal cortex / frontal area of association.

Pathologies Regarding Indriya Buddhi

Indriya Buddhi Vibhrama [Agnosia of Sensory Organs]

Agnosia is a visual condition that preserves feeling, but loses the capacity to identify or interpret a signal or realise its significance. Agnosia means "Sans cognisance." Agonised patients/ Rogi cannot perceive or acknowledge or remember what they see, hear, or experience. A gnosia results from lesions which detach and isolate high-level processing visual, additive, and somatosensory information. It is critical that the sensations are retained in the evaluation of agnosia: the sufferer is conscious, intellect is intact (or near intact) without any memory or language distress. Aperceptive or associative form may be agnosis. Aperceptive agnosia identifies an object detection deficiency mostly due to difficulties with early perceptive perception. The object is used as an object, but its significance is irrelevant. [15] Agnosia refers to a deficiency in the identity or essence of sensory sensations obtained. [16]

Chakshu Buddhi Vibhrama [Agnosia of Visual Organ]

Visual agnosia is a deficiency in visual mode object perception despite intact basic visual functions and without any linguistic, memory or intelligent decline issues. Two wide categories are available; visual agnosia, appreciative and associative. Visual agnosia is characterised by a basic sensory level with preserved visual capacity. Visible object agnosia’s (unable to recognise objects), simultaneous diagnostics (incapable of understanding the overall meaning of an object), prosopagnetics (incapable of recognising known faces), agnosia of the colour (deficiency of recognition, naming or other use of colour) and optic aphasia (incapable of "naming" a visual object) are different types of object; etc. [16]

Shrotro Buddhi Vibhrama [Agnosia of Auditory Organ]

Auditory agnosia is not able, through usual perceptions of pure tones, to understand the context of the voice. Nonverbal and verbal forms may either occur or coexist separately. Cortical deafness (incapable for verbal and nonverbal hearing sounds to be recognised or to be understood), plain word deafness (capable of comprehending the spoken language when a patient is relatively normal at reading, writing and talking) etc., are various kinds of auditory agnosia. [16]
Sparshana Buddhi Vibhrama [Agnosia of Tactile Organ]

Despite intact main and discrimination somesthetic sensations, selective failure in object awareness by contact is noted in tactile agnosia. It is a one-sided condition commonly caused by inferior contralateral parietal cortex lesions. There is a valuable therapeutic difference between "cortical and tactile agnosia" conditions. Aperceptive agnosia’s generally require greater damages to the cortex of sensory association when association agnosia’s are caused by cortico-cortical pathway defects or impairments in areas where semantic representation of items is processed.\footnote{16} All different types of tactile agnosia denoted as a Sparshana budget (disease of recognition for objects of distinguishing characteristics as weigh, density, structure and thermal properties) and all types of tactile agnosis

Ghrana Buddhi Vibhrama [Agnosia of Olfactory Organ]

In the presence of normal acuity, the failure to detect typical odours is known as olfactory agnosia. The ability to sense an odour can be determined as the olfactory acuity. The detection of Olfactory is the capacity to name a particular smell with an odouring agent. The olfactory system is hierarchical, with peripheral sensory functions coming before the more central, higher-order information processing necessary for odour detection.\footnote{17}

Rasana Buddhi Vibhrama [Agnosia of Gustatory Organ]

Gustatory agnosia is a relatively uncommon disorder. Patients of long-term bilateral temporal lobe dysfunction following surgical resection for seizure control have been known to develop it. Gustatory agnosia is a condition in which a patient may label an object but not determine whether or not it is edible.\footnote{18} The anteromedial temporal lobe plays a significant part in flavour level recognition. Gustatory agnosia is similar to “Rasana Buddhi Vibhrama,” or “Rasana Buddhi Vibhrama.” When sensory input is integrated into the texture of perception, it undergoes comprehensive associative elaboration and attentional regulation.\footnote{19} The role of specialised higher order association areas of the neocortex was to integrate such disparate cortical knowledge.\footnote{20,21} Adult patients/ Rogi with damage to various variations of these brain regions often develop Aperceptive and associative agnosia’s.\footnote{22}

Discussion

The need for information arises in Atma during the vision process, and is then passed to Manas. Manas perceives the respective Indriya Artha or object of thought in conjunction with Indriya. Following that, the realistic benefits or drawbacks are determined. The Buddhi (intellect), which defines the object's basic properties, motivates people to communicate and behave intelligently (complex information processing/cognition/higher mental functions). The sensory sensations are obtained through Indriyas (sense organs), which are similar to doors. Jnanendriya (sensory faculties) and Karmendriya (intellectual faculties) are two types of faculties identified in Ayurveda (motor faculties). The cognitive process benefits from Jnanendriya, while the conative process benefits from Karmendriya. Shrotra (auditory sense organ) and Chakshu (visual sense organ) are the two most essential Jnanendriya in cognition and learning. Other sense
organ perceptions, such as olfactory, gustatory, and tactile/somatosensory perceptions, are processed as Anubhuta (memory). Shabda (sound), Sparsha (touch), Rupa (vision), rasa (taste), and Gandha (smell) are the five essential artefacts of perception that are sensed by their respective sense organs.

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Conclusion

The association cortices of the brain are represented by the Pancha Indriya Buddhis. The visual, auditory, and somatosensory interaction areas of the brain are represented by Chakshu, Shrotra, and Sparshana Buddha, respectively, while the piriform cortex, amygdale, and orbitofrontal regions of the brain are represented by Ghrana Buddha, Rasana Budhi represents the insula/operculum/anterior temporal region of the brain's gustatory functions. As explained in Ayurvedic classics, the functions of the traditional integrative area and prefrontal cortex or frontal attachment area specifically denote the functions of "Buddhi." Different forms of "Agnosia" are caused by the pathological states of Indriya Buddhis.

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