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Is 'Intuition' a Gift or a Skill: Some Reflections

Dr. Uma Dhar

Post-Doctoral Research Scholar

Philosophy

Darshan Bhavan

Jadavpur University

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Abstract

Investigations on the effect of Yoga and Meditation on the body, brain and mind in terms of basic processes, leads to an analytical understanding of the concept of 'Intuition'. This has been understood in the lights of '*Prajñā*', as discussed by Patañjali in the *Yoga Sutra*, in this paper. A group of scientists prefer to believe that Intuition is more akin to instinct, which fundamentally is a basic trait found even in lower animals and roughly allocated to the reptilian cortex of the brain; on the other hand there are scientists who hold that it is a sublime faculty belonging to higher cortical regions of the brain. Admittedly, this is a debate which is far from resolved at this stage of development of science. Still one cannot overlook the fact of its freak existence in some human cognitive experiences. Hence in this paper, after a brief survey of the scientific findings on this topic, effort has been made to understand the same in the lights of *Yoga Sutra* by Patañjali. There it is established that *Prajñā* is definitely a skill of the human psychical stuff which can be nurtured and enhanced by prescribed practices. In so far as the ontological status of the mind or intellect is concerned, both science and Yoga agree that it is a physical or material one; though, it is a known fact that, Yoga metaphysics admits of a taxonomy of material existence from the grossest to the subtlest, which science does not. Thus a comparative analysis of both the traditions – Modern Western Science and Traditional Indian Science – has been attempted here to comprehend the concept as a purely cognitive one, albeit esoteric, instead of a supernatural enigma.

Key Words: Brain, Neuroscience, Meditation, Mind, *Samprajñāta Samadhi*, *Yoga Sutra*.

Introduction:

Basic cognitive processes that are involved in obtaining and storing knowledge consist of a variety of functions. However the most important ones are attention and inattention, perception, apperception, learning, believing, memory, remembering, categorization and discrimination, representational processes and intuition. Intuitive knowing (without the use of rational processes) has within its sway concepts like gnosis (intuitive knowledge of spiritual truths), insight, sixth sense, direct immediate awareness. According to the Oxford English Dictionary, intuition is "the ability to understand or know something immediately, without conscious reasoning." Most people would agree that intuitive responses appear as ideas or feelings that subsequently guide our thoughts and behaviors. It is this cognitive process of 'intuition' which some people think is directly related to the most intense state of meditative mind and henceforth worth exploring.



“Yoga is the supreme gift of India to the world at large. Yoga does not quarrel with science; it supplements it. Yoga is a methodical way to attain perfection, through the control of the different elements of human nature -both physical and psychical.” The *Yoga Sutra* of Patañjali is an iconic text which relates to this traditional science of India. It is therefore important to refer to it in order to gain a comprehensive understanding of *ādhyātmyavidyā*: the ‘Science and Spirituality of Man-in-Depth’. With regard to ‘Intuition’ we find that Patañjali has used the technical term *prajñā* in *Yoga Sutra* which has been translated in most English versions in the sense of ‘intuitive knowledge’; the knowledge that transcends the limitations of time and space. Therefore this paper explores how we understand intuition in terms of cognitive science vis a vis how it has been explained in the *Yoga Sutra* and how meditation can affect this potential of a person, if at all.

Neuro-scientific Explanations of ‘Intuition’:

Scientists have discovered that humans appear to have two very different ‘operating systems’. System 1 is our quick, instinctual, and often subconscious way of operating – it is controlled by our right brain and by other parts of our brain that have been around since prehistoric times, known as the ‘limbic’ and ‘reptilian’ parts of our brain. System 2 is our slower, more analytical and conscious way of operating – it is controlled by our left brain and by newer parts of our brain that have only developed later, the neocortex.ⁱ Researchers have found that intuition is part of System 1, which is why it comes on so rapidly and often does not make rational sense to us. In other words, intuitive decisions are not something that we have thought out carefully with reason, but rather choices that arise quickly out of instinctⁱⁱ. Researchers have found that intuition is part of System 1, which is why it comes on so rapidly and often does not make rational sense to us. Most of us have experienced the vague feeling of knowing something without having any memory of learning it. This phenomenon is commonly known as a ‘gut feeling’; more accurately though, it is described as implicit or unconscious recognition memory, to reflect the fact that it arises from information that was not attended to, but which is processed, and can subsequently be retrieved, without ever entering into conscious awareness.

It has been proposed by researchers that people continuously without conscious attention recognize patterns in the stream of sensations that impinge upon them. What exactly is being recognized is not clear yet, but it is assumed that people detect potential content based on only a few aspects of the input (i.e., the gist). The result is a vague perception of coherence which is not explicitly describable but instead embodied in a ‘gut feeling’ or an initial guess, which subsequently biases thought and inquiry.ⁱⁱⁱ

Antonio Damasio in his research concerning how rationality, emotion, and our physical bodies are all intertwined in the way we make decisions says that rather than being opposed, emotion and reason are deeply interrelated: sound and rational decision making needs a prior emotional processing. Then our emotions accelerate our decision-making—in the form of intuitions, hunches, and ‘gut feelings’.

There are neuroscientists who have also identified intuition not only as ‘gut feeling’ but a higher creative insight. The ‘representational change theory’ proposes that insight occurs through relaxing self-imposed constraints on a problem and by decomposing chunked items in the



problem. The 'progress monitoring theory' proposes that insight is only sought once it becomes apparent that the distance to the goal is unachievable in the moves remaining

A group of scientists who have studied aspects of intuition found that when people do it in a sort of creative way, there is a particular area in the right side of the brain that lights up. This was measured in participants solving visuo-spatial creativity problem involving divergent thinking. Electrophysiological recording that measure neural activity and fMRI imaging were used to identify these results. However, I would like to hold on to my conjecture that creative insight is cultivated in a holistic development and training of the mind/brain. Even though the right brain is supposedly the 'intuitive brain', in order to translate that insight in terms of language, reason and application one cannot ignore the role of the 'logical left brain'.

Evidently, neuro-scientific research seems inclined to treat intuition as an instinctive, 'gut feeling', a reflexive subconscious/unconscious and visceral process deeply intertwined with emotions. It is rarely considered as something that belongs to a higher faculty, the realm of the 'superconscious' as *yogis* assert. I would like to propose here that in the preliminary stages it may be manifested as 'gut feeling' which we all possess in varying magnitude; however it may be enhanced to higher degrees where it would accommodate concepts like creativity and genius. It has greater potentials than to endow us with only credible hunches or instinctive premonitions. The 'gut feeling' can be made to evolve to the stature of immediate intuitive wisdom, technically called *Prajñā* in the Yoga scriptures. *Prajñā* is the realm of creativity, of the 'Eureka' moments of discovery and inventions. And the *Yoga Sutra* testifies that *Prajñā* can be attained through meditation.

'Prajñā' as explained in the Yoga Sūtra:

Prajñā is explained by Patanjali in terms of *samprajñāta samādhi* which involves the most intense concentration on an object of contemplation. The aspects of *samprajñāta samādhi* are *vikalpa*, *vicāra*, *ānanda* and *asmitā*; i.e. concentration on gross words, subtle analysis, a feeling of felicity and the I-sense, respectively: "*Vitarkavicārānandāsmītarūpānugamātsamprajñātaḥ*"- YS I.17. Again in YS II.27 we find: "*saptadhātasyaprāntabhūmiḥ prajñā*"- A seven-fold (*saptadhā*) (and) ultimate (*prāntabhūmiḥ*) deep understanding (*prajñā*) (comes) to that (Yogī who has attained discriminative knowledge) (*tasya*). Here, discriminative knowledge is *vivekakhyaṭi*, the realization of the utter incommensurability of *purūṣa* and *Prkṛti*. Apparently, *prajñā* is a functional manifestation of that state.

Conscious concentration or *samprajñāta samādhi* technically involves the practice of *saṁyama* (*dhāraṇā-dhyāna-samādhi* or *fixity-meditation-concentration*) on the same object leading to a three-fold mutation of the psychical stuff, *citta*. The YS III.5 says "*Tajjayātprajñālokaḥ*": through the conquest (*jayāt*) of that (*Samyama*) (*tad*), the Light (*ālokaḥ*) of Wisdom (*Prajñā*) (dawns). The important point to be noted is that the light of knowledge referred to here is not supernormal knowledge of the cosmic order, like *vibhūti*. The *citta* during this stage is *ekāgra* (one-pointed) but not *nirūddha* (arrested). It is a realistic and sensible cognitive process potentially achievable by all. It refers to the ultimate knowledge of (i.e. *samāpatti*) in the *Tattvas*. Vyasa explains that when the 'faculty of knowing' is directed to only one object to the total exclusion of other objects, ultimate knowledge of that object will certainly be gained. On the other hand if the faculty of



knowing fluctuates moving constantly from one object to another, full knowledge of any one of them is not acquired. In *samprajñāta samādhi*, the concentration of a one-pointed mind, the 'faculty of knowing' (*grahana*) and the 'knowable' (*grāhya*) fuse together, as it were, and do not appear to be separate. By such 'focused attention'^{iv} the mind is brought under control, stilled, *vaśīkāra* (Y.S. I. 40-44). The focused mind, as the knowing faculty is itself transformed into the likeness of the knowable object; thus it becomes a tool that can be used as an instrument to explore the subtler components of the mind field, including the *samskāras*-s themselves, which are the deep impressions that control our *karma* (actions).

It is also mentioned in the *Yoga Sutra* that the knowledge derived from inference, testimony, and ordinary direct perception is not 'pure' (Y.S.I.43). The knowledge of an object based on the reflective analysis of its manifested properties (space, time and causation) will also not lead to the *Prajñā* state (Y.S. I.44). It is said that a 'thoughtless' mind is an intuitive mind. Here 'thoughtless' implies the nurturing of only one *vṛttih* with the total exclusion of all others that constantly invade our consciousness like a whirl pool. In that sense also it is "*cittavṛttihnirodha*", as Patanjali has defined both *samprajñāta* and *asamprajñāta samādhi* with the same *lakṣaṇa*. *Prajñā* arises naturally and spontaneously when the mind is unburdened by fixations or compelling constructs of thought. When awareness is free, open and still, the subtler, intuitive mind gently emerges. Interpreted in this way *samādhi* no longer remains a mystic or transcendental phenomenon pursued only for *mokṣa*. It is a practical support for excellence in a desired field.

In other words, when the mind is calmed, attention is focused, memory is 'purified' and 'the mind appears to be devoid of its own nature' (reflective consciousness) one becomes receptive to higher intuition. This process is very similar to *vipaśyanā* meditation which, very aptly, is also known as 'Insight' meditation which enables one to explore and discern 'formations' or 'conditioned phenomena' based on the five aggregates /*skandhas*.^v

Like modern day neuroscientists Yoga recognizes the importance of emotions and how it is related to the above-mentioned cognitive processes for the successful deployment of the intuitive faculty. Apart from the concept of *sānandasamāpatti* (felicity) mentioned in the means to *samprajñāta samādhi*, Patanjali says in YS I.21 "*Tīvrasamvegānāmāsannaḥ*". That is yogins with 'intense ardor' (*samvega*) achieve concentration and the result thereof, quickly. Such a concept is also found in Buddhist literature. It means not just an attitude of detachment but an aptitude combined with feelings of reverence and full of enthusiasm and energy is required for cultivating intuition.

Relation between Intellect and Intuition:

The *Yoga Sutra* mentions *buddhi* the first pristine evolute of *Prakṛti*. It is also characterized as a *vṛttih*, albeit of the purest *sāttvik* form. But if *buddhi* is understood as 'Intellect' how does it compare to *prajñā*? Are the two terms same or different? Moreover, only the self/*puruṣa* is said to 'consciousness' or 'pure intelligence' – *caitanyaśvarūpa*. All the evolutes of *Prakṛti* are essentially *jada* or unconscious. Obviously, in the framework of the *Sāṃkhya* – *Yoga* metaphysics, it is very important to identify and note the nuances of each and every technical term.



To begin with, it must be held in mind that all aspects of the psychical stuff or *citta* - *buddhi*, *ahaṅkāra* and *manas* - are naturally material in nature. They “appear conscious” due to the “reflection” of pure consciousness, *puruṣa*, on the mental modes which are predominantly *sattvagūṇa* and hence reflective. Ordinary error free cognition in terms of *Pratyakṣa*, *Anumāna* and *Śabda* may tantamount to ‘rationality’, leading to *pramāṇa vṛttih*. This state of the *cittais* not defined to be habitually *ekāgra* or one-pointed. But when the *cittabhūmi* evolves from *samala* to *nirmala* state, it leads to *tattvasākṣātkāra* (realization of the essences). The modifications of the *cittavṛttih* at this juncture are described as ‘*prajñāvṛttih*’. Hence one can say that all *prajñāvṛttih*-s are *pramāṇāvṛttih*-s but not vice versa.

Therefore it may be said that ‘rationality’ is a type of reflective thought attainable without *cittaśuddhi* and is sense dependent. On the other hand, ‘intuition’ as per *Yoga Sutra* is a super-reflective and calm state of an evolved *citta* with the intrinsic quality of clarity (*svachhatā*), whereby knowledge arises by a flash of insight (*sphūta*). The process does not involve a succession of cognitive modes but is direct and simultaneous (*kramānanurodhijugopadityarthah*) due to the extreme effulgence of the *sattvagūṇa* in the mind stuff (*prakāśātmanobuddhisattvaswa* – YS. I. 47).

In Y.S. I.48.Patanjali has described this type of *prajñā* as *ṛtambharā prajñā* – the direct, infallible, truth-bearing insight.

The ‘Process’ from Neuro-scientific Perspective:

According to *Aṣṭāṅga Yoga* the first step is to de-stress the body and mind, by balancing and harmonizing the sympathetic and parasympathetic nervous systems. This is achieved by the initial stages of *aṣṭāṅga yoga*: *āsana*, *prāṇāyāma* and *pratyāhāra*. Thereafter the instinctive and reflexive responses of the physical body are refined by *asana* (“*Sthirasukhamāsanam*”, YS II. 46). Sitting in an erect and comfortable posture provides internal feedback to the reticular formation in the brain stem which makes the person wakeful and alert. *Prāṇamaya* revs up the brain by increasing the oxygen saturation in blood. Besides, the *yogins* realizing the connection between the rate of breathing and the state of mind had enumerated many *prāṇāyāma*-s or conscious breathing techniques. Some aim at synchronizing both the hemispheres of the brain: for e.g. *nāḍīsodhanā* (alternate nostril breathing) and *anulom-vilomprāṇāyāma*. Synchronicity means use of the entire brain. Contrary to what common sense tells us Yoga does not mean to emphasize only on the right hemisphere of the brain, which is generally accepted to be the ‘intuitive’ part. One can assimilate and process large amounts of information, speed up that assimilation and processing, and enhance creativity through ‘whole-brain’ thinking. Meditation is a focused activity where the brainwaves in the right and left hemispheres synchronize - literally, harmonize - with each other. This may be the foundation for the feeling of well-being that is brought about by meditation; a feeling of harmony rather than dissonance. Also when breath is focused upon, initially at least, it leads to a unified whole body awareness which supports ‘singleness of mind’, *ekāgratā*. Thus one enters the state of *dhāraṇā*/concentration - “*Dhāraṇāsucayogyatāmanasaḥ*” - YS II. 53.

Thus a state of relaxation is reached which is a key concept with regard to intuition. When we are diligently focused, our attention tends to be directed outward, toward the details of the problems



we are trying to solve. While this pattern of attention is necessary when solving problems analytically, it actually prevents us from detecting the connections that lead to insights. On the other hand when our minds are at ease, alpha waves ripple through the brain and we are more likely to direct the spotlight of attention inward, toward that stream of remote associations emanating from the right hemisphere. Verily many studies on contemplative practices have linked lower frequency alpha and theta waves to meditation.

Relaxation is followed by an 'intention', a conscious effort to contemplate on an object with interest and zeal and fervor. It goes without saying that the more the positive emotion the lesser will be the effort required to focus. Consequently the brain-stem, the limbic system and the cortex - all are primed and harmoniously activated.

As the practitioner enters the direct means to *samprajñāta samādhi*, that is *śamya*, 'mindfulness' is crucial together with 'focused attention' and 'relaxation'. Prima facie it may seem to be counter intuitive to postulate a state where the practitioner is both focused and relaxed. However this is the ideal state and only this quality makes possible the shifting from the usual automatic/instinctive 'bottoms up' functioning of the brain to a conscious and aware 'top down' function of the same. In other words, one switches off the auto-pilot mode and reclaims one's executive control. The cortical area in general and the ACC^{vi} and amygdala^{vii} in particular are important brain areas that are mentioned by contemplative researchers. Most concentrative meditation techniques require focusing the mind and the ACC is the primary overseer of our attention skill. Mindfulness of our inner and outer states activate the midline regions of our brain and helps increase the coordination between the PFC and the limbic system; the key neural substrates of stability and security^{viii}.

Further, it is believed that the *cakra* system spoken of in the Yoga scriptures correspond to the main nerve plexuses in our bodies; and the predominant *āsana*-s, *mudrā*-s and *prāṇāyāma*-s that aim at activating the *ajñācakra* revolve around the region of the hypothalamic-pituitary-adrenal axis (HPAA); popularly known as the pineal gland. The pituitary secretes dopamine; the pineal gland, which is a light 'transducer', hence also known as the 'third eye', is responsible for the manufacture of melatonin and serotonin. According to neuroscientist Alice Flaherty, people vary in terms of their level of creative drive according to the activity of the dopamine pathways of the limbic system. An 'absorbed' person unknowingly knots his brow for concentration and clarity. However, one must not overlook the fact that if there is a connection between intuitive insight and such special yogic methods for *ajñācakra* activation and the neurotransmitters, it is not yet conclusively proven. It therefore remains an open field for exploration into the phenomenon of intuition in the light of Yoga and neuroscience.

Another significant point to note is that the *Prajñā* state of Yoga does not fall in the 'Null Domain' which is characterized as an empty state devoid of phenomenological contents - a non-cognitive/non-affective enhanced mental state (NC/NA EMS) as in the case of *asamprajñāta samādhi*. It definitely can be classified as a Cognitive Directed Method (CDM) typified by traditional methods such as *śamatha* and *vipāśyanā*, and purports to engender an enhanced cognitive state (ECS) i.e., one-pointedness, mindfulness, insight and intuition. The endeavor is in no way soteriological but extremely pragmatic in all its scope and applications.



Conclusion

Based on the research findings as discussed above, it may be tentatively hypothesized that *samādhi* (at least *samprajñāta*) can be 'naturalized' in terms of brain activities which are totally in line with Buddhist contemplative research on one hand and Neuroscience on the other. On a lighter note it may be conjectured that maybe it wasn't just a matter of fancy why René Descartes described his philosophical treatise as '*Meditationes*' (Meditations) !

An extraordinary human mind like Albert Einstein's can "come up" with revolutionary ideas and theories that correctly adheres to the law of physics. On the other hand, another mind cannot even understand this theory, let alone "create" or come up with one. From the above discussions it is pacifying to know that one can probably develop this elusive property of the mind with specialized esoteric training. Today Buddhist meditative practices like Insight Meditation, seriously studied under laboratory conditions under the umbrage of Dalai Lama, bear testimony to this fascinating 'neuroplastic' ability of the human brain, which can be 'trained' to function at more evolved domains, hitherto unknown. It may be concluded, therefore, that Yoga and meditation surely needs to be studied intensively, especially as it claims to give us the methods that might be helpful in developing intuition and apply it as a skill in various fields of life. Intuition is an achievable 'state' which may transform into a 'trait' with meditation.

References

Aranya, Swami Haiharananda, (2000), *Yoga Philosophy of Patanjali with Bhasvati*, 4th Enlarged Edition, Calcutta University Press, Kolkata, West Bengal, India.

Hanson, Rick & Mendius, Richard, (2009), *Buddha's Brain, The Practical Neuroscience of Happiness, Love, and Wisdom*, New Harbinger Publications; Oakland CA.

Jha, Ganganatha, (2011), *Yoga Darsana: Sutras of Patanjali with Bhasya of Vyasa*, Dev Publishers & Distributors, India.

Jones, G., "Testing Two Cognitive Theories of Insight", (2003), *Journal of Experimental Psychology: Learning, Memory and Cognition*, September, 29(5):1017-27.

Lisa Aziz-Zadeh, Sook-Lei Liew, & Francesco Dandekar, (2013-04-12), " Exploring the Neural Correlates of Visual Creativity", *Oxford Journals, Social and Cognitive Neuroscience*,

Nash, JD and Newberg, A, (2013), "Toward a unifying taxonomy and definition for meditation", *Frontiers in Psychology*, Nov 20; 4:806.doi: 10.3389/fpsyg.2013.00806.

Siegel, D. J., (2007), *The Mindful Brain: Reflection and Attunement in the Cultivation of Well-Being*, New York: W. W. Norton and Co.

Swami,

Shivananda, http://sivanandaonline.org/public_html/?cmd=displaysection§ion_id=957.



Turner, Kelly, A., (2014), *Radical Remission: Surviving Cancer Against All Odds*, Harper Collins Publishers, New York.

Volz KG, von Cramon DY, (2006), "What neuroscience can tell about intuitive processes in the context of perceptual discovery", *Journal of Cognitive Neuroscience*, Dec; 18(12):2077-87.

ⁱbigthink.com

ⁱⁱTurner, Kelly, A., *Radical Remission: Surviving Cancer Against All Odds*, Harper Collins Publishers, New York, 2014

ⁱⁱⁱVolz KG, von Cramon DY, "What neuroscience can tell about intuitive processes in the context of perceptual discovery", *Journal of Cognitive Neuroscience*, 2006 Dec; 18(12):2077-87.

^{iv}Focused Attention/FA is one of the main meditation techniques employed and researched in laboratory settings these days. It is followed by open monitoring (OM) which typically builds upon the stability of attention one has cultivated in FA practice.

^v*Vipassyanā* meditation is a method for purifying the mind of the mental factors that cause distress and pain. It cuts through conventional perception to perceive mind and matter as they actually are: impermanent, unsatisfactory, and impersonal and claims to deliver insights into the 'real nature' of things. It is also called 'Mindfulness meditation' as it calls for extreme attention. The other type of meditation followed by Theravada Buddhists is *śamatha* which primarily aims at calming the mind. However, we find that all the requisitions viz. calmness, focus, non-reflectivity, et al. have been considered also in the *Yoga Sutra*.

^{vi} The anterior cingulate cortex (ACC) is the frontal part of the cingulate cortex that resembles a collar surrounding the frontal part of the corpus callosum. It consists of Brodmann areas 24, 32 and 33. It is also involved in rational cognitive functions such as reward anticipation, decision-making, empathy, impulse control and emotions.

^{vii} There are two amygdalae per person normally, with one amygdala on each side of brain. They are thought to be a part of the limbic system within the brain, which is responsible for emotions, survival instincts, and memory.