dhyAna and samAdhi in Advaita

- Their Effect on Mind and Body
- Their role and relevance in *jnAna mArga*

-- Dr. Ramesam Vemuri. May 2016

General Outline

(To be interspersed with Discussions)

- Introduction
- Concepts and Clarifications
- Meditation, Mind and Brain
- dhyAna and samAdhi in Advaita
 - -- Defintions
 - -- Role and Relevance in
 The Knowledge Path (*jnAna mArga*)
 - -- Short Exercises

What is it we are concerned with here?

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- jIvabrahmaikyatva jnana
 - Realization of
 - "I am brahman"

- Not a goal to be reached
- Not a result or fruit of an Action Taken
- Not something you have to acquire
- Not something Unknown to you
- It is more like dropping a veiling curtain
- You are already what you seek

Advaita is not about Goals and Gains

Advaita is about "Remembering" who you are

Inquiry into the Ultimate Truth:

- The *sine qua non* are a healthy body and a sane mind in the pursuit of inquiring the ultimate Reality
- Body needs balanced and nutritious food and reasonable physical exercise.
- Mind needs calm and positive thoughts and some "exercise."
- The exercise for the mind is *dhyAna*.

Meditation and Brain

The Indian Seers and Sages had known the efficacy of meditation in influencing the behavior, temperamental attitude and bodily health of a person ever since the Vedic times. Various techniques of meditation taking the breath, thought or a mantra as a prop were extensively developed and people were taught to seamlessly sew these practices into their daily routine like having a bath or eating food.

A working definition for the Mind:

Mind is what the brain does

There is nothing fancy or mysterious about mind. Mind is as much physical as the body is. In the olden times they placed the mind in the heart.

The Vedantic definition for the mind varies – from the 'current thought' to the entire 'perceived world.'

Real Human Brain:

Brain With Spinal Cord (Jill Bolte Taylor, 2008)



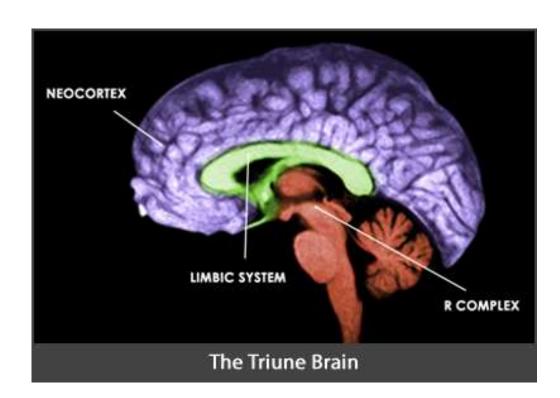
The Two Hemispheres of the Brain -



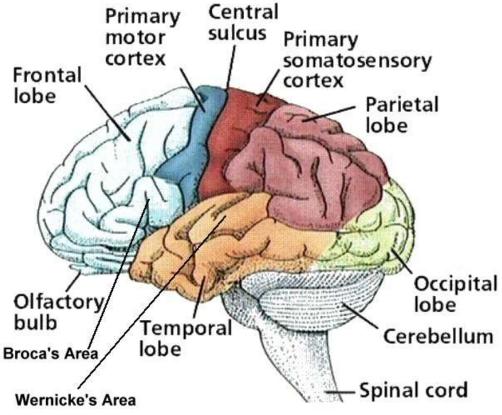


Pleasure of Sex vs. Bliss of Self:

- -- The frontal lobe (behind the forehead) has the overseeing and decision making function.
- -- Well developed in humans.
- -- The right hemisphere is concerned with 'NOW', i.e. the present moment.
- -- The left hemisphere thinks analytically.
- -- Constant intercommunication between both the hemispheres provides a meaning to what we perceive.
- -- Activities like sex or meditation involve many parts of the brain.

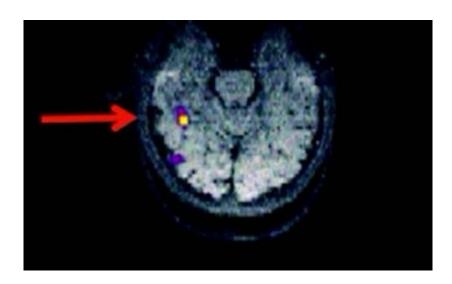


Brain - Principal Lobesof The Cortex



Fusiform Face Area:





How much brain do you need?

How much body do you need? Mr. Abbas – limbs lost in Iraq war

Many excise parts of internal organs – stomach, intestines, urinary bladder etc.

Even half the brain is adequate.

2003



2012



Girl, 9, with miraculous recovery after half her brain (right side) is removed during surgery on 26th March 2010





Headless Chicken

Just the brain stem is enough

- -- lived for about 18 months in Colarado, USA
- since basic functions (breathing, heart-rate, etc.) as well as most of the chicken's reflex actions are controlled by the brain stem, it was able to remain quite healthy

(Sep 1945)



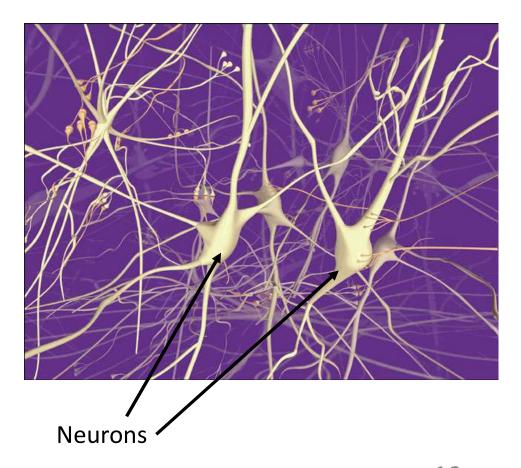
Meditation and Brain

We now know that every action, every thought and even the morning cup of coffee you drink changes the connections between different brain cells, redefining the sum total of what you are every moment.

Our brains are not like rigid printed circuit boards. The cell connectivities are highly labile and constantly re-forming.

Neural Plasticity

The changes that take place in the brain in its neural pathways and synapses due to changes in behavior, environment and neural processes is called as "Neural Plasticity."



Neural Plasticity:

The neuronal connections in the brain are governed by two principal mantras:

"Neurons that fire together wire together."

"Use it or lose it."

Meditation and Brain

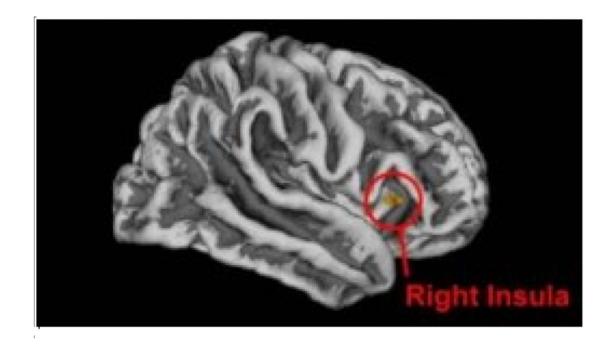
vivekacUDAmaNi says, "As gold purified in the furnace, rids itself of dross and reaches the quality of its own self, so the mind ridding itself of the dross of substance and darkness, through meditation, enters into reality."

Meditation strengthens the Brain

Long-term Meditators have more folds in the cortex – folds help in faster processing of information.

Meditators have better emotional-control, self-regulation, introspection and alertness.

Longer meditation means more folds in the Insula. (Insula is the hub for autonomic, affective and cognitive integration).



E. Luders et al, Front. in Human Neurosc., 2012

Meditation reshapes our Brain:

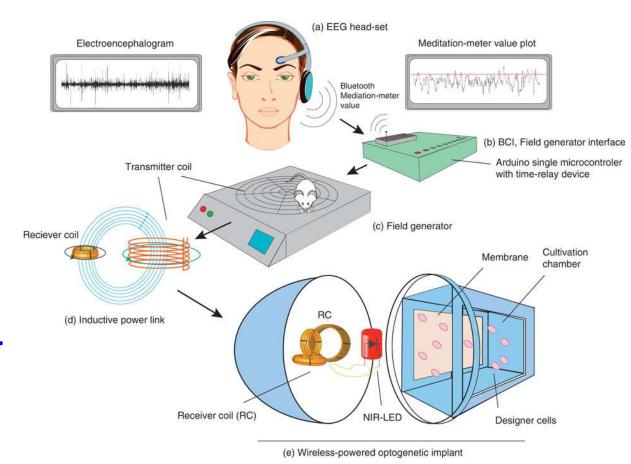
(Video clip from Sara Lazar, 2011)



Control Genes With Your Thoughts

The technological possibility is established through a 'Proof of Concept' research paper in 2014.

(After M. Folcher et al, Nature Commn, 2014)



Transcendental Meditation:

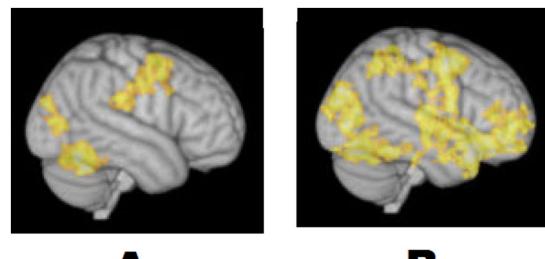
Some of the benefits from TM are:

- More widely distributed somatosensory stimuli across the cortex;
- Higher mean EEG coherence over all brain areas;
- State of deep rest with reduced respiration rate and reduced skin conductance;
- Reduced blood pressure and cholesterol levels;
- Younger biological age.

Mind Wandering and Focused Meditation

A – Brain during concentrated Meditation

B – Brain during Non-directive Meditation. More activity in episodic memory and emotional areas

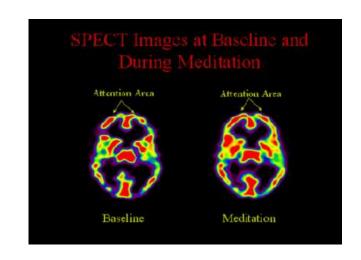


(J. Xu et al, 2014, Frontiers in Human Neuroscience)

Franciscan nuns – Focused Meditation. Activity in the parietal lobe (which orients us in space) goes down.

Activity in the frontal lobe involved in paying attention goes up.

Dr. A. Newberg opines that loss of orientation together with focused attention cause a feel of 'oneness' with the object of meditation.



SPECT Image During Meditation (After A. Newberg, 2008

Pentecostal nuns - do not focus on any particular object in their prayers showed lower activity in the forebrain.

Carmelite nuns who achieved Mystical Union - brain showed activity in those brain regions that are connected to learning, falling in love and social emotions

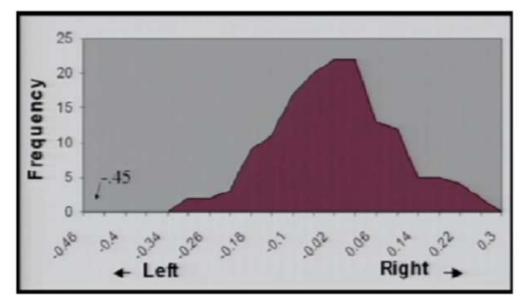
- Compassion Meditation –
 Buddhist monk Matthieu Ricard had excessive activity in the left prefrontal cortex (just inside the forehead).
- -- Generally people with happy temperaments exhibit a high activity in the left prefrontal cortex, an area associated with happiness, joy and Enthusiasm.
- -- Compassion could be learned the same way as playing a musical instrument (R. Davidson, Wisconsin)

Compassion Meditation And Happiness

Left Prefrontal Activation An Adept Meditator vs. 150 controls:

Biochemist and Monk Dr. Matthieu Ricard





Mindfulness Meditation

A few minutes of mindfulness meditation can help reduce normal everyday anxiety

During meditation, there was more activity in the ventromedial prefrontal cortex, the area of the brain that controls worrying. In addition, when activity increased in the anterior cingulate cortex -- the area that governs thinking and emotion -- anxiety decreased.

F. Zeidan et al, 2013, Soc. Cogn. Affect. Neurosc

Mindfulness Meditation

Mindfulness Meditation Reduces Interleukin-6

(Interleukin-6 is an inflammatory health biomarker)

J.D. Creswell et al, 2016, Biolog. Psychiatry

Transcendental Meditation (TM), essentially as a relaxation meditation, did not show much activity.

Yoga and Meditation

People who practice yoga and meditation long term can learn to control a computer with their minds faster and better than people with little or no yoga or meditation experience

K. Cassady et al, 2014, TECHNOLOGY, 2014

Meditation and Aerobic Exercise

Meditation and aerobic exercise done together helps reduce depression B. L. Alderman, 2015, Trasnactional Psych.

Meditation and Pain Reduction:

Meditation produced a greater reduction in pain

Morphine or other pain-relieving drugs typically reduce pain ratings by about 25 percent.

A little over an hour of meditation training can dramatically reduce both the experience of pain and pain-related brain activation.

Meditation showed about a 40 percent reduction in pain intensity and a 57 percent reduction in pain unpleasantness.

F. Zeidan et al, 2011, Jour. Of Neurosc.

Can
Neuroscience
tell us who
we are?
Prof. Nancy
Kanwisher, MIT, 2014:

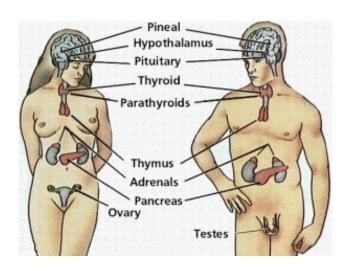


Mind control is self-control

-- Swami Krishnananda

Six passions of the mind called Arishadvargas were depicted as the internal enemies of the man on the path to attaining moksha (liberation).

These correspond to the hormones produced at the six major nerve plexuses

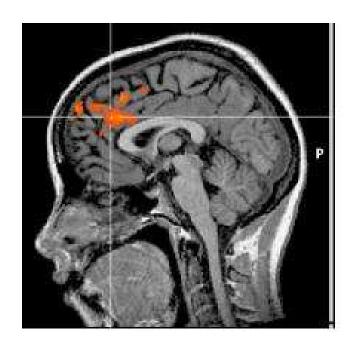


Self Control:

Neuroscientist W. Hedgcock of Iowa University confirms that self-control is a finite source and gets exhausted by use.

Self control is more like a pool. Once the waters are dried up, we can hardly keep the cool when a demand is made on the resource. The source gets recharged in time especially in a low conflict environment.

Anterior cingualte cortex recognizes a situation that demands self-control. Dorsolateral prefrontal cortex actually manages self-control



(Univ of Iowa, 2012)

A Suggested Equivalence of the arishadvarga-s:

Trait	Passions	Chakras	Plexuses	Glands
Kama	Sex/Desire	Muladhara	Coccygeal	Gonads
Krodha	Fear/Anger	Svadhistana	Prostatic	Adrenalin
Lobha	Greed	Manipura	Solar	Pancreas
Moha	Infatuation	Anahata	Cardiac	Thymus
Mada	Pride	Visuddha	Laryngeal	Thyroid / Parathyroid
Matsarya	Jealousy	Ajna	Cavernous	Pituitary
		Sahasrara)	Pineal	Pineal (?)

(Prepared by me in 2006 and needs revision)

Two Interesting Stories on Mindfulness meditation:

Dr. Jeffrey Schwartz, Psychiatrist and Worry Circuit:

Patients experience "upsetting, intrusive, unwanted thoughts such as worrying that the stove is still on or believing that stepping on a sidewalk crack will trigger some calamity. Their brains show a hyperactive "worry circuit" (comprising orbital frontal cortex (responsible to notice if something is wrong), the striatum and amygdala). Such patients are asked to observe their thoughts and feelings non-judgmentally as if they are an unconcerned third party. After practice, Neuroimaging corroborated the dramatic fall in the activity of the "worry circuit."

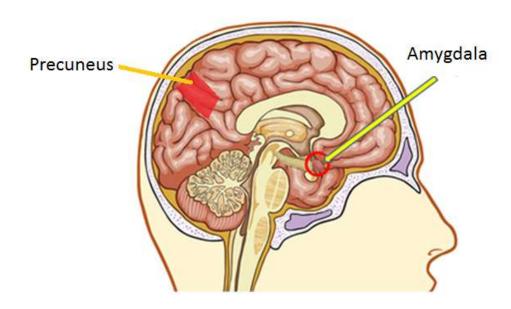
Two Interesting Stories on Mindfulness meditation:

Dr. R. Davidson, Nueroscientist on how 'mere' thought can change the brain:

The virtual piano Experiment at Harvard:

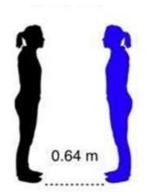
Scientists had half the volunteers practice a piano piece for several weeks and had the other half of volunteers only imagine playing the notes; they did not actually touch the ivories. The region that controls the fingers of the right hand had expanded in the virtual pianists just as it had in those who had actually played the piano. Thinking, and thinking alone, had increased the amount of space the motor cortex devoted to a specific function.

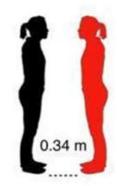
Emotional Center - Amygdala



Amygdala plays a key role in our feelings of attachments and fear of death. Does one obtain a balanced mind and be not subjected to emotional turmoil if one gets rid of the amygdale?

Precuneus - Autobiographic memory Amygdala - Emotions





The Lady in Red has no amygdale

sAdhana catuShTaya sampatti (The fourfold Aids of Seeking):

Key elements in the preparatory steps are:

Self-control (citta vRitti nirodha):

Emotional Maturity (Equanimity)

When the body and mind are ready, the final Advaita message is imparted.

Shankara on obtaining 'knowledge':

kartru tantra jnAna

Depends on the Doer

-- May do or Not do or Do differently 'knowledge' obtained through Senses / Mind Individual experience

E.G. japa, dhyAna, upAsana etc. sAdhana-s

Shankara on obtaining 'knowledge':

vastu tantra jnAna
Depends on That Thing (brahman)
Intuitive experience
sArvatrika pUrNAnubhava (Universal)
brahma jnana by enquiry only

Attention and Inattention:

At any given time, a massive flow of sensory stimulation reaches our senses, but our conscious mind seems to gain access to only a very small amount of it.

Out of countless potential thoughts, what reaches our conscious mind is la crème de la crème, the outcome of the very complex sieve that we call attention.

Inattention can make virtually any object vanish from our consciousness.

[From: Consciousness and the Brain – Deciphering How the Brain Codes Our Thoughts by Stanislas Dehaene, Viking, 2014]

How attentive Are You?

Watch the 1:54 min Video



I suggest that:

The "consciousness" that is spoken of in Neuroscience is like a spotlight on the Stage illuminating a finite and limited field / entity much like "attention."

The "Consciousness" that Advaita speaks about is Un-dimensional (dimensionless) illuminating the entire Stage of the Theater in all periods of time.

dhyAna:

In Patanjali Yoga Sutra-s dhyAna is objective.

In vEdAnta, dhyAna is svasvarupAnusandhAna

(Oneness with One's own form) born out of

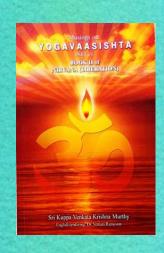
vEdAnta vAkya shravaNa (listening to scriptural statements).

Definitions: aparokshAnubhUti

123. dhyAna, meditation, is the independence from objects brought about by complete confidence in the thought "I am limitless Awareness.' It produces supreme bliss.

124. samAdhi, also known as Self knowledge, is the nonattachment to thought brought about by complete identification with the thought "I am the Self, limitless Awareness."

125. This samAdhi reveals one's natural bliss which arises spontaneously as one clings to the thought "I am limitless Awareness."



Yogavaasishta Part VI – Book II Nirvana, K. V. Krishna Murthy, Avadhoota Datta Peetham, Ooty Road, Mysore 570025, India, English rendering: Ramesam Vemuri, 2013

Defintions:

- Section 18. SamAdhi p: 60-63 (Conversation between Sage Vasishta and Rama)
- Free pdf Download of the Book: <u>http://www.advaita.org.uk/discourses/downloads/yogavasishta_vii.pdf</u>
- Word Glossary:

 http://www.advaita.org.uk/discourses/downloads/word_glossary.pdf

Meditation:

Sage Vasishta:

Meditation is useless without Detachment Meditation is meaningless with Detachment

Total Detachment is fundamental for Nirvana.

-- yogavAsiShTha, Ch: VI, book-2, sarga 46, verse 17

samAdhi:

samAdhi is the internalization by the mind of the Truth (Knowledge) that the observer (*drasTa*) and the observed (*drisya*) are non-different.

No sooner than this Truth is realized, the mind becomes tranquil within the Self. Such tranquility is possible only for one who discarded the desires. This Knowledge comes naturally to him.

samAdhi:

Two Important Questions:

- -- Is nirvikalpa samAdhi a necessary prelim step to liberation?
- -- Does samAdhi result in jlvabrahmaikyajnAna (liberation)?

nirvikalpa samAdhi in vivekacUDAmaNi:

Verses 255 to 264 in vivekachUDAmaNi end with 'brahma tattvamasi bhAvayaAtmani', which means 'you are that brahman; meditate on this in your mind', it is seen that Shankara is speaking of nididhyAsana which follows the hearing (shravaNa) of the mahAvAkya 'tat tvam asi' and reflection (manana) thereon.

The verses 363 – 367 are also relevant in this context.

The 'samAdhi' here means the cause for the elimination of all vAsana-s such as the notion 'I' (Commentary of the 33rd Pontiff of Sringeri on vivekachUDAmaNi).

It is clear from this that nirvikalpasamAdhi is only the perfection of nididhyAsana and has nothing to do with Patanjali's yoga.

Patanjali's yoga sutrA-s:

yogasUtra talks of svarUpapratiShTha (abiding in one's own nature) as the final aim and goal, but it does not say that this svarUpa is the Non-dual brahman (brahmAtmaikatva).

Ramana on nirvikalpa samAdhi:

(From: Mahayoga by Who)

There are two types – *kevala* and *sahaja*

He that has won the Natural state is the true Sage. He is free once for all, and cannot be bound again.

Difference between sahaja and kevala: sahaja is like a river that has joined the Ocean – cannot come back again. kevala is like a bucket immersed into a water well.

It can be hauled up again by the rope (mind).

The mind of the yogi can get pulled back into the world.

Shankara in *yogatArAvali*:

"Samadhi and distraction are conditions of the mind and not of the Atman. The Atman is ever changeless and of the nature of consciousness. Samadhi and distraction do not affect it in any way. It is because this yogin is not free from identification with the mind that he sees himself as influenced by changes in the state of the mind He who has fully realised that he is the changeless Reality remains established in the Reality and unaffected regardless of whether his mind is in a focused, agitated or dull condition."

Shankara on Yoga:

Shankara does advocate patanjala yOga to some extent.

The first five limbs (yama, niyama, Asana, praNAyAma & pratyAhAra) of PY's ashtAnga yOga do find a place in Shankara's prasthAna trayi bhAshya as a *sAdhana.*

But from the philosophical point of view, Shankara categorically rejects both yOga & sAnkhya shAstra since both are dualistic schools (dvaita darshana-s) which do not accept jlva brahmaikatva.

Shankara in his Commentary in *kaThopanishad*:

Therefore, efforts should be made for the realization of the Self here itself.

Dr. V. Sundaresan on Yoga in Advaita:

Shankara rejects the contention that cittavRitti nirodha is enjoined on the seeker. But this is not an injunction.

The practice of yoga is seen by Shankara as preparatory to Self-knowledge

Thus there has been a significant accommodation of yoga within Advaita,
not only in the post-Shankara but even in pre-Shankara development of Vedantic darshana

(From: Yoga: The Indian Tradition, edited by Ian Whicher and David Carpenter,

Routledge Curzon, 2003)

Not by Action: -- vivekacUDAMaNI, 11

चित्तस्य सुद्धये कर्म न तु वस्तूपम्ब्धये। वस्तु शुद्धिर्विचारेण निकंचित्कर्म कोटिभि:।।

Karma is intended for purification of the mind, not for understanding the nature of an object. Knowledge can be obtained only by reflection; not even a little bit of it can be known by performing even a crore of karma's.

Not by Action: Bhagavad-Gita Ch. XI, verse 53

नाहं वेदैर्न तपसा न दानेन न चेच्यया।

शक्य एवंविधो द्रष्टुं दृष्टवानसि मां यथा ॥ ५३ ॥

The form which you are seeing cannot be understood simply by studying the Vedas, nor by undergoing serious penances, nor by charity, nor by worship. It is not by these means that one can see Me as I am.

Action → citta sudddhi → citta naishcalyaM → brahmajnAna:

First at physical level:

karma yoga for a Raw person (because not a moment goes without us engaging in some action) → the directive is perform action as an 'offering.'

He ideally weans himself away from all the unwanted, inimical, slavish actions.

He becomes polished now and greatly regulated, actionwise, physically.

He is said to have now attained cittashuddhi.

Action → citta sudddhi → citta naishcalyaM → brahmajnAna

Next at mind level:

He has to essentially acquire citta-naishchalyam (upasana/dhyana gives citta naishchalyam (essentially nothing but citta ekagrata (one pointed mind).

Because a *cala-chittam* (wavering mind) is unfit for contemplating the Subtle Truth.

Action \rightarrow citta sudddhi \rightarrow citta naishcalyaM \rightarrow brahmajnAna:

Finally Meditation to get established in tranquility.

By continuous dwelling, with ardor (See BG VI - 3) on the formless Truth.

The Shankara bhAShyam says: tranquility is the very nature of brahman.

Bhagavad-Gita XIV - 22-25:

One who feels no resentment at the appearance of the illumination, activity as well as illusion, nor desires their cessation; one who neutrally situated is not disturbed by the three modes of material nature, one who remains firmly poised without wavering knowing that the modes of material nature are the performer. One who is equipoised in happiness and distress, firmly situated internally, regarding equally a lump of earth, a stone or gold, equally disposed towards the desirable and the undesirable, in honor and dishonor, equal to both friends and enemies, abandoning all endeavors for activity and renunciation,

one is declared transcendental to the three modes of material nature.

The three phases in the study of Advaita (brih up):

<u>Phase</u>	<u>Objective</u>	Texts followed	Understanding
			to be Achieved
shravaNa	Learning the message	Upanishads with Bhashyas	'tat tvam asi'
	(upadesa)	and special Advaitic	(You and Brahman are the
		Monographs	same)
manana	Reflection on what is	Brahmasutra Bhashya and	ʻaham brahmasmi'
	learnt using logic	Monographs and Treatises	(I am Brahman)
	(yukti)		
nididhyAsana	Unbroken abidance in the	Bhagavad-Gita	'neha naanaasti kincana'
	Knowledge of Self		(There is no multiplicity
	(sAdhana)		here preceded by total
			'padArtha abhAvana'
			(Non-configuration of
			objects).

The first four brahma sUtra-s are:

- 1. जिज्ञासाधिकरणम् -- अथातो ब्रह्मजिज्ञासा ॥ (Now, therefore, the inquiry of *brahman* (begins)).
- 2. जन्माद्यधिकरणम् -- जन्माद्यस्य यतः ॥ (From which the origin etc. (sustenance and dissolution) of the world (happens)).
- 3. शास्त्रयोनित्वाधिकरणम् -- शास्त्रयोनित्वात् ॥ (The scriptures being the means of right Knowledge).
- 4. समन्वयाधिकरणम् -- तत्तु समन्वयात् ॥ (But that because It (brahman) is the main purport (of all scriptural texts)).

The cryptic wording of each *sUtra* enwraps a detailed teaching:

<u>sUtra</u>	The Teaching
sUtra 1.	One must acquire the Knowledge of brahman through inquiry.
sUtra 2.	The efficient and material cause of the universe is brahman.
sUtra 3.	The scripture is the means of obtaining the right knowledge.
sUtra 4.	The main purport of all the Vedanta texts converges to direct our attention towards <i>brahman</i> .

Meditation is not what you "do."

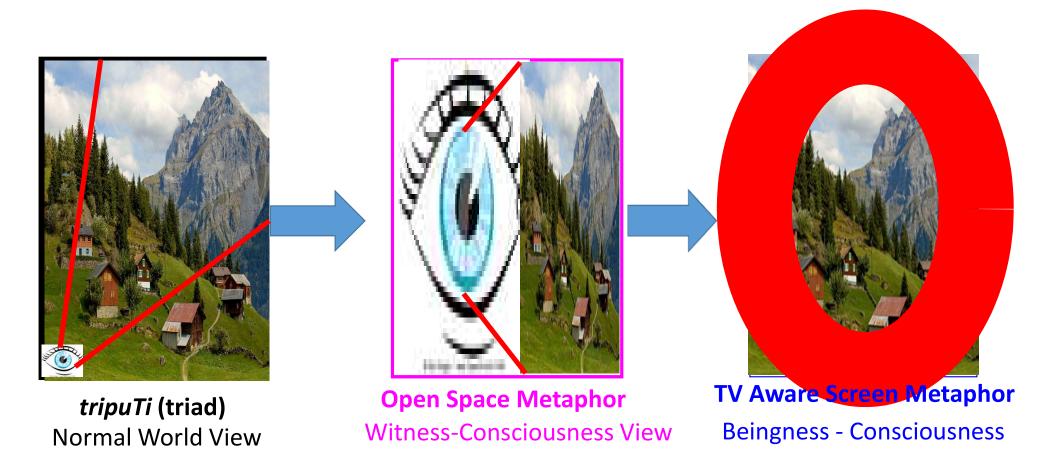
Meditation is what you "Are."

No more the Triad

Observer – observing – The observed

What remains is just That – whatever goes on at the moment of perception.

Prior to space-time and causation History-lessly



It's a world of Gerunds:

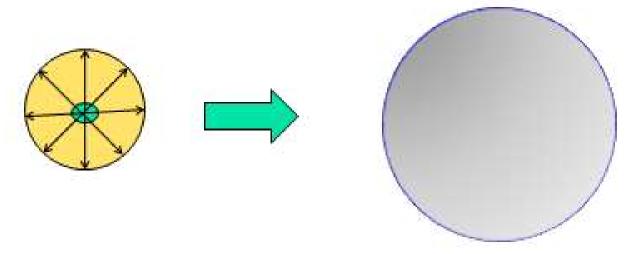
When there is no 'doer'--

No *tripuTi*There is no subject- object
No nouns
All 'acting' only

You do not see a car — it's just car-ing happening You do not see a tree — it's just tree-ing happening I don't eat — eating happening — not only by this body but by so many others

'prajnAnam brahma'

- aita. up. V - iii



aham asmi
I am a karta (doer)
of actions

brahmaiva brahma vit All things just 'happen' – no doer

अघमर्षण मन्त्र (aghamarShaNa mantra):

आर्द्रं ज्वलतिज्योतिरहमस्मि । ज्योतिज्वॅलति ब्रह्माहमस्मि । योऽहमस्मि । अहमस्मि ब्रह्माहमस्मि । अहमेवाहं मां जुहोमि स्वाहा ॥

-- 67, तैत्तिरीयनारायण वल्ली (महानारायण उपनिष्द्)

ArdraM jwalati jyotirahamasmi. Jyotir jwalati brahmAhamasmi.

Yo ahamasmi. Ahamasmi brahmAhamasmi. AhamewAhaM mAM juhomi swAhA.

-- 67, taittirlya nArAyaNa valli, mahAnArAyaNa upanishad

अघमर्षण मन्त्र (aghamarShaNa mantra):

Meaning: The Supreme Light which shines as the substratum of the liquid element — I am that Supreme Light. I am that supreme light of Brahman which shines as the inmost essence of all that exists. In reality I am the same infinite Brahman even when I am experiencing myself as a finite self owing to Ignorance. Now by the onset of knowledge I am really that Brahman which is my eternal nature. Therefore I realise this identity by making myself, the finite self, an oblation into the fire of the infinite Brahman which I am always. May this oblation be well made.

⁻⁻ I-67, mahAnArAyaNa Upanishad (Swami Vimalananda, R.K. Math, Chennai)

'na mumukshur na vai muktah ityeShA paramArthatA'

- Mand. Up. Karika, II – 32

THANK YOU FOR THE KIND ATTENTION