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Yoga

Yoga has at least 3 steps: Hathyoga, Prāṇāyāma, and meditation.

Suggested Order is as follows:

- [1] Hathyoga: <u>Surya-namaskaar</u>-10 times, 10 Yogasans, antah and bahya kumbhak for maha-bandhas: <u>2 kinds</u> of <u>maha-bandhas</u>; see also https://www.youtube.com/watch?v=vcAV7NaglZw and Bandh Practical Moolbandh, Udiyan & Jalandhar, and Mahabandh: https://www.youtube.com/watch?v=EGdk72V2o9g
- [2] Prāṇāyāma (please see below).

[3] Meditation: SM; MFM (20-min Audio), SKY and TM are optional (see below the techniques)

https://en.wikipedia.org/wiki/Herbert_Benson https://en.wikipedia.org/wiki/The_Relaxation_Response

1. Hathyoga asanas

Surya Namaskara matsyasana Sarvangasana Halasana paschimottanasana

Bhujangasana Salabhasana dhanurasana

<u>Sirsasana</u> <u>Bharadvajasana</u> Kakasana

Other yogasans are in the Endnote.1

2. Prāṇāyāma

https://en.wikipedia.org/wiki/Pranayama

- 3 Bhastrika, 3 Anuloma-viloma, 175 Kapalabhati, 3 Ujjayi, 3 Udgeeth, 3 Bhramari, 6 Visama vṛtti and 3 Shitali-Shitkari prāṇāyāmas.
- 1. Bhastrika prāṇāyāma "Bellows breath" Fast and forceful inhales and exhales driven by diaphragmatic breathing. Technically not a prāṇāyāma, rather a 'kriya' (cleansing technique) to clear the nadis, nostrils and sinuses for prāṇāyāma.
- 3. Anuloma-viloma prāṇāyāma- A form of alternate nostril breath (distinct from nadi shodhana we need to inhale in left exhale in right, then inhale in right and exhale in left: 200 times)

- 3. Kapalabhati prāṇāyāma "Skull shining breath" Similar to Bhastrika, but with a passive inhale and a forceful exhale, powered mainly by the diaphragm abdominals and obliques.
- 4. <u>Ujjayi prāṇāyāma</u> also known as "victorious or conquering breath" is breathing with the glottis slightly engaged, producing a soft sound. Considered to be the only prāṇāyāma one can safely practice while walking or engaged in other activities (e.g. during āsana practice. Some older versions require digital prāṇāyāma (the fingers controlling the nostrils).
- 5. Udgeeth prāṇāyāma "Chanting prāṇāyāma" often done with the chanting of the Om mantra and concentratingin 3rd eye.
- 6.Shitali prāṇāyāma "Cooling breath" Inhalation is drawn over the curled and extended tongue. Shitkari prāṇāyāma Similar to shitali but the tongue is held between the teeth.
- 7. Bhramari prāṇāyāma "Bee breath" The yogin makes a humming sound while breathing
- 8. Visama vṛtti "Uneven breathing" where specific ratios (e.g. 1:4:2) are maintained between inhale, retention, and exhale.

3. Soham Meditation (SM), Mindful Meditation (MFM), SKY, and TM

Follow the technique(s) that suits you the best. One of the main goals of meditation is to silence thoughts. In 3-4 hrs, if you are successful in silencing your thoughts, you will have out-of-body experience (OBE). As thoughts decrease, OBEs becomes stronger, meaning a feeling of leaving body further and further, first near your brain-body, then in the room, then out of room, then further distance to your town, your country, then whole world to whole universe. This does not mean your 'self' or 'soul' is out of body; it is just an experience, similar to any other experience, because each experience has its neural basis; self resides inside your brain, but you will feel as if you are out of body. It is possible that you will get information thru hypothetical unknown 6th sense; so it may be possible to 'know' what others are doing or thinking. It will also activate your pleasure centers and visual system in the brain and experience bliss/ānanda and pleasant light. You may not feel mundane sufferings even if there are present because the strength of bliss is much higher than your pain/suffering. Slowly, you will acquire godly virtues, such as unconditional love, humility, and compassion for all.

[A] Soham Meditation (SM)

Sit comfortably without pain; chair is fine with upright back.

Mentally say 'SO' (or HAM) during inhale and 'HAM' (or SO) during exhale; Soham = So+ham = sah+anham = I am That = I am Brahman. Focus on mantra synchronized with breathing without thinking anything.

Listen 8 min guided meditation with So-Ham/Sooooooo-Hummmmmm mantra: https://www.youtube.com/watch?v=JKNzaWGm008

See also http://www.swamij.com/soham-mantra.htm for other information. http://www.swamij.com/sohum-mantra-108.htm for diaphragm, spine, between two chakras, and nostril breathing and all three methods (diaphragm, spine, and nostril breathings).

[B] Mindful Meditation (MFM): Buddhist meditation

Free Guided Meditation list see: http://marc.ucla.edu/body.cfm?id=22 I usually do 19 min complete meditation audio.

The MFM is based on being in 'NOW', which is the source of relaxation. Thinking about past and/or future is the sources of stress/tension.

[C] SKY

SKY Sudarshan Kriya Yoga of Pandit Ravi Shankar: 3 cycles of [20-times slowest (as slow as possible for u) breathing, then 40 times normal breathing, then 40 times fastest (as fast as you can) breathing. You can do on supine position (lying with the face up) or lying on left or right side during pregnancy on bed also or sitting on bed or chair.

[20slowest-40normal-40fastest] three to 5 cycles

[D] TM (Transcendental Meditation of Maharishi Mahesh yogi)

The following are the three-step relaxation method:

(1) Sit down comfortably (preferably lotus posture; if it gives pain then you can use chair) or supine position (lying with the face up) or lying on left or right side is also fine

- (2) Close the eyes and repeat any (preferably meaningless) word. The word 'OM' (or whatever you like) works fine for some.
- (3) If thoughts come, ignore them, do not fight with them, but let them go away. Do not concentrate; just try to repeat the selected word. You will enter into relaxation type sleep (yoga-nidra, yoga sleep, your head will go down) in 10-15 min and then you will be awake. Repeat the step-3 for 30 minutes twice a day or anytime you feel tired, anxious, or cannot fall sleep.

4. ENJOY 8 POWERS BY RAJYOGA MEDITATION "राजयोग से प्राप्ति-अष्ट शक्तियां"

राजयोग के अभ्यास से अर्थात मन का नाता परमिपता परमात्मा के साथ जोड़ने से, अविनाशी सुख-शांति कि प्राप्ति तो होती ही है, साथ ही कई प्रकार की अध्यात्मिक शक्तियां भी आ जाती है इनमे से आठ मुख्य और बहुत ही महत्वपूर्ण हैं।

१."सिकोड़ने और फैलानी की शक्ति"

जैसे कछुं आ अपने अंगो को जब चाहे सिकोड़ लेता है, जब चाहे उन्हें फैला लेता है, वैसे ही राजयोगी जब चाहे अपनी इच्छानुसार अपनी कर्मेन्द्रियों के द्वारा कर्म करता है और जब चाहे विदेही एवं शांत अवस्था में रह सकता है | इस प्रकार विदेही अवस्था में रहने से उस पर माया का वार नहीं होगा |

२. "समेटने की शक्ति"

इस संसार को मुसाफिर खाना तो सभी कहते है,लेकिन व्यवहारिक जीवन में वे इतना तो विस्तार कर लेते है कि अपने कार्य और बुद्धि को समेटना चाहते हुए भी नहीं कर पाते, जबिक योगी अपनी बुद्धि को इस विशाल दुनिया में न फैला कर एक परमपिता परमात्मा की तथा आत्मिक सम्बन्ध की याद में ही अपनी बुद्धि को लगाये रखता है I वह किलयुगी संसार से अपनी बुद्धि और संकल्पों का बिस्तर व् पेटी समेटकर सदा अपने घर-परमधाम- में चलने को तैयार रहता है I

३ ."सहन शक्ति"

जैसे वृक्ष पर पत्थर मारने पर भी मीठे फल देता है और अपकार करने वाले पर भी उपकार करता है, वैसे ही एक योगी भी सदा अपकार करने वालो के प्रति भी शुभ भावना और कामना ही रखता है I

४ . "समाने की शक्ति"

योग का अभ्यास मनुष्य की बुद्धि विशाल बना देता है और मनुष्य गंभीरता और मर्यादा का गुण धारण करता है I थोड़ी सी खुशिया, मान, पद पाकर वह अभिमानी नहीं बन जाता और न ही किसी प्रकार की कमी आने पर या हानि होने के अवसर पर दुखी होता है वह तो समुद्र की तरह सदा अपने दैवी कुल की मर्यादा में बंधा रहता है और गंभीर अवस्था में रहकर दूसरी आत्माओं के अवगुणों को न देखते हुए केवल उनसे गुण ही धारण करता है।

५ ."परखने की शक्ति"

जैसे एक पारखी (जौहरी)आभूषणों को कसौटी पर परखकर उसकी असल और नक़ल को जान जाता है,

ऐसे ही योगी भी, किसी भी मनुष्यात्मा के संपर्क में आने से उसको परख लेता है और उससे सच्चाई या झूठ कभी छिपा नही रह सकता। वह तो सदा सच्चे ज्ञान-रत्नों को ही अपनाता है तथा अज्ञानता के झूठे कंकड़, पत्थरों में अपनी बुद्धि नहीं फँसाता।

६ ."निर्णय शक्ति"

यह शक्ति स्वत: प्राप्त हो जाती है। वह उचित और अनुचित बात का शीघ्र ही निर्णय कर लेता है। वह व्यर्थ संकल्प और परचिन्तन से मुक्त होकर सदा प्रभु चिंतन में रहता है।

७. योग के अभ्यास से मनुष्य को "सामना करने की शक्ति" भी प्राप्त होती है। यदि उसके सामने अपने निकट सम्बन्धी की मृत्यु-जैसी आपदा आ भी जाये अथवा सांसारिक समस्याए तूफान का रूप भी धारण कर ले तो भी वह कभी विचलित नहीं होता और उसका आत्मा रूपी दीपक सदा ही जलता रहता है तथा अन्य आत्माओं को ज्ञान-प्रकाश देता रहता है। अन्य शक्ति, जो योग के अभ्यास से प्राप्त होती है, वह है ...

८."सहयोग की शक्ति"

एक योगी अपने तन, मन, धन से तो ईश्वरीय सेवा करता ही है, साथ ही उसे अन्य आत्माओं का भी सहयोग स्वत: प्राप्त होता है, जिस कारण वे कलियुगी पहाड़ (विकारी संसार) को उठाने में अपनी पवित्र जीवन रूपी अंगुली देकर स्वर्ग की स्थापना के पहाड़ सरीखे कार्य में सहयोगी बन जाते हैं.

5. OBEs, 6th sense and neural basis: Discussion on out-of-body experiences (OBEs) and their neural correlates

This <u>Section</u> is reproduced from (Vimal, 2016b).

5.1.Vimal (13 Jan 2017)

We would like to investigate out-of-body experiences (OBEs) and their neural correlates during meditation. Ιf you try а thought-silencing meditative technique (such as 'so' (or 'ham') during exhaling and 'ham' ('so') during inhaling: Soham=sah-aham), you will start experiencing OBE within 3-4 hrs. This gets stronger (you feel like that you are going further from your body) as thoughts diminish.2 However, since you still have experience of OBE, so it is still within the realm of mind-brain system. All kinds of experiences (in all mind-brain systems) states have their respective basis. Unfortunately, our great yogis were not neuroscientists; their very strong OBEs (such as feelings of roaming all over the universe and sometimes observing what others are doing/thinking as per Vinod Sehgal) misled them to propose soul, God, and life-after-death as usually understood. This is because all experiences have their respective neural basis and hence all are within the realm of mind-brain system.

5.2. Sehgal (14 Jan 2017)

Real OBEs do not come with mere thoughts silencing. During deep sleep and anesthetic conditions also, all thoughts are silenced but such state cannot be treated as OBEs. Real OBEs come when apart from silencing of the thought process, consciousness starts withdrawing from the physical body and starts ascending to higher subtle realms of nature. In such realms, no experience/feeling leaves its impact on the physical brain in form of NNs. However, in the consciously awakened stage when consciousness does reside in the physical body, every experience/feeling leads to NN built up in the brain.

Apart from having experience of Self, Soul, Cosmic Consciousness (God) and Astral body in the state of Samādhi while in living in the physical body, Great Yogis can also have such knowledge and roam in and know of the universe even after leaving the physical body (i.e., after death). Therefore, the conjecture of neuroscientists that experience of Self, Soul, God, Astral body are some OBEs and born out NNs of the brain is shortsightedness arising out due to ignorance of the real knowledge of the fundamental and independent existence of Astral, causal bodies and of cosmic consciousness. Yes, most of the Yogis/sages who have and had experiences of the highest state of Samādhis were not aware of the intricacies of the NNs (since that was not relevant to them) but they were aware of the fundamental and independent existence of Astral body and Consciousness.

When a Yogi ascends above the physical body to Astral body by withdrawing consciousness in a voluntarily and controlled manner, this process is the same as happens to an average normal person at the time of death. However, there is one big difference. In the case of Yogi, the process is under the conscious state in controlled and systematic fashion. However, in the case of the normal person, at the time of the death, in the majority of cases, unconscious state arrives and it is uncontrolled and unsystematic. A majority of the studies undertaken by neuroscientists for OBEs pertains to NDEs; as such, these descriptions are incoherent and non-reproducible. However, in the case of Samādhi experiences in of advanced level Yogis, experiences are vivid, coherent, systematic, under control, and reproducible. These are not any illusions born out of NNs mechanisms in the physical brain and, as such, independent of the brain.

5.3. Vimal

[1]. I meant thought silencing during conscious state (not deep sleep or anesthesia). During meditation also, sometimes we enter in sleep mode, which is also not counted towards OBEs.

Real strong OBEs led to yogis (i) to feel 'consciousness' (*Puruṣa*) is withdrawn from the physical body and (ii) to propose causal and astral world, soul, and God independent of yogi's mind-brain system.

- [2] Unless we rigorously test, we cannot claim, "Real OBEs come when apart from silencing of the thought process, consciousness starts withdrawing from the physical body and starts ascending to higher subtle realms of nature."
- [3] Let us search for such yogis and test them with the available technology. It is possible, technology is still not developed to measure such sixth sense, but unless we try, we never know. This means we should practice necessary meditation and critically investigate further because we now know enough about neuroscience.

5.4. Sehgal (14 Jan 2017)

- [1] In the highest state of SS [Savikalpa Samādhi] and NSs [Nirvikalpa Samādhi], astral world/body and its contents (parts) are viewed in quite vivid, objective and reproducible (subjective reproducibility) manner. Therefore, there is no question of such experiences arising out of the NNs of the brain system. Regarding consciousness [Self], it is never viewed in an objective manner since it is the ultimate subject for everything --physical as well as astral world/bodies including our thoughts. Consciousness is experienced when consciousness gets embedded in itself by snapping its identification with senses, mind, and intellect. Such experience is unique in the sense that it is not dependent upon mind.
- [2] One of the major issues hampering the convergence of Science and Spirituality is due to different tools employed by the two disciplines. Science is basically based upon objective methodology having logical interpretation and empirical experimentation. Spirituality is based primarily upon subjective methodologies of Self-experiences. So here the question is the objectification of subjectivity which not easy to solve.
- [3] Before testing such Yogis, it will be worth to have enough theoretical understanding and clarity of the Fundamental existence of Astral body and world. This can be done by learning about the biographical and autobiographical accounts and narrations of such people who had real practical experience of transcendental Astral and Causal bodies/worlds and of cosmic consciousness. This will serve the two-fold purpose. First, by a systematic account of such studies, we can know to what extent such narrations are credible. Secondly, it will also tell us whether our own experiences in meditation are really OBEs.

Yes, we know enough about neuroscience (though still, a lot has to be known) and during past 40-50 years, powerful imaging techniques have been

developed to study dynamics of the brain. However, the key question is if the energy signal, upon which such techniques are based upon, can pierce into the astral realm of Nature? I think energy signal of e.m. energy or other energies is unable to pierce thru the astral realm of nature. Therefore, current imaging techniques of neuroscience will not be able to know about the astral realm. This problem is akin to the problem of search of dark matter by Physicists. During the past about 30-40 years, thousands of Physicists have invested billions of dollars and years of their precious time in mega accelerators and underground detectors, but there is no trace of dark matter either as WIMPS or AXIONS or as some non-particle. This is primarily due to reasons that dark matter lies in the dark matter realm from/which signals of e.m. energies and other known physical energies are unable to propagate into/out. Same is the problem with Astral body/realm, which though having its own Fundamental existence and can be known vividly and reproducibly by subjective means of Samādhis but unable to be established thru empirical experimentation due to probably same reasons as for the dark matter.

However, while during thought process by the interaction of astral mind and physical brain, there is a constant interface between the two. I am not aware of the exact mechanism in scientific terms by which interface between Physical brain and Astral mind takes place and sustained. This is for some future scientists/neuroscientist who has a strong theoretical understanding of both Astral Realm and contemporary Physics/Neuroscience.

5.5. Vimal: Problems of Sānkhya and Passive Puruṣa (14 Jan 2017)

[1] Your term consciousness means *Puruṣa* independent of *Prakṛti* in *Sāṅkhya* metaphysics that has 8 serious problems as elaborated in (Vimal, 2010), (Vimal, 2013) and (Vimal, 2012), but you are firmly committed to this philosophy. The *Puruṣa* acts like **passive** witness/*Dristā*/experiencer and does nothing else. Your hypothesis is that "real strong OBEs" means that since *Puruṣa* is independent of the body, he has to be withdrawn from the physical bodies. You have been trying your best to defend this problematic metaphysics without addressing its 8 problems in a satisfactory manner that is acceptable to all.

5.6. Sehgal (15 Jan 2017)

You please elaborate on 8 serious problems -- with 2-3 problems at one time. I shall try to find solutions for the same to the extent of my ability. Yes, Purusha might not be doing anything but everything in the universe happens due to it. An analogy: A magnet does not act anything but the motion in the iron parts in the vicinity of it happens due to the presence the magnet.

5.7. Vimal (15 Jan 2017)

The problems of *Sāṅkhya* are more or less the same as that of the Interactive Substance Dualism; they are elaborated in Section 2.4 with Dr. Hari's response in Endnote and your previous response in Section 6.5.4.14 of (Vimal, 2012). I do not think that your analogy is useful because iron molecules interact with the magnetic field of the magnet, whereas *Puruṣa* is supposed to be simply witness/*Dristā*/experiencer; however, it is unclear, how *Puruṣa* can experience unless He interacts with neural signals. I guess, you mean that everything in the universe happens due to the 26th tatva of Āstika(seshvaravadī)-Sāṅkhya, which is the *Parmātman*.

As per Section (Vimal, 2012), "Furthermore, Kapila's Sāṃkhya has two versions:

- (i) nāstika(nirīshvaravadī)-Sāṃkhya with 25 elements (tatvas): Puruṣa (Ātmā), 24 elements of *Prakrti* [4 *Antah-karanas/inner-instruments (mana/manas,* buddhi/mahat, chitta, and ahamkāra), 5 jñāna-indriyas (netra/eyes, kam/ears, nāsikā/nose, jivha/tongue and tvachā/body), 5 indriyas (hasta/hands, pāda/legs, vāka/voice/vocal-apparatus, upastha/urino-genital-organ, and qudā/pāyu/anus), (rūpa/color, shabd/sound, gandha/smell, rasa/taste, sparsh/touch), and mahābhūtas (jala/water, *prithavī/*earth, agni/fire, vāyu/air, $\bar{A}k\bar{a}sh/sky/ether$
- (ii) Āstika(seshvaravadī)-Sāṃkhya with 26th Parmātman as tatva Rāmabhadrāchārya, 2000).p.76 p.94 (Jagadguru and (ShwetAshwataropanishad).3 Purusa and Prakrti can be derived from Parmātman (in analogy to the Neutral Monism: (Hameroff & Powell, 2009)) as its two aspects (viśesanas). This implies that SāmkhyAchrya Kapila (~1000-550 BC) somehow seems to know about theism-atheism phenomenon; however, Sāmkhya is close to interactive substance dualism that has 8 problems. In other words, so far, the eDAM framework is closest to the Fundamental Truth."

Drs. Hari, Bijoy Misra, and Nityanand Misra are very good in ISD/Sāṅkhya. Perhaps, they can help you to address those problems to the satisfaction of scientists. As far as scientists are concerned dualism is rejected because of those problems in addition to the fact that its Occam Razor's parsimony is 50% of the monistic frameworks such as idealism, materialism, and the extended dual-aspect monism.

5.8 Sehgal (16 Jan 2017)

In the first place, Purusha does not interact with the neural signals. Of the 25 elements, 17 elements viz. 5 Tanmaatras, 5 Jnaana-Indriyaas, 5 Karma-Indriyas, 1 Manas, 1 Buddhi, constitute what is called Sukshma Sharira Or Linga Sharira (Astral body). 2 elements viz. Chitta and Ahmkaara constitute Kaarana Sharira (Causal body). So this way total 19 elements compose Astral and Causal bodies. Purusha or Aatmaa or Soul, is the projection of universal cosmic conscious in Chitta of Causal body. Since cosmic consciousness (Parmaamtmaa) has innate self-consciousness, its projection in Chitta i.e. Purusha or Soul has also self-consciousness. All these 20 elements -- 17 of Astral body, 2 of causal body and 1 Purusha (Soul) survive at the time of the death of the physical body and recycle to next birth. All these 20 elements can be **seen** vividly and their mechanism of working **known** in the state of elements Samadhi. 5 gross viz. 5 mahābhūtas (iala/water, prithavī/earth, agni/fire, vāyu/air, *Ākāsh*/sky/ether) comprises baryonic matter and 4 physical forces of the Physical world. Knowledge of current Physicists is limited up to these 5 elements only though this knowledge is quite detailed one precise one. The signals of 4 physical forces are unable to pierce thru 20 elements of Astral and Causal realms/bodies, therefore, thru empirical experimentation, it is not feasible to know about these elements. However, in the state of Samadhi, these elements can be known. Sage Kapila might have also known these elements in the state of Samadhi.

One more clarification. Purusha does not descend down directly at the level of the physical body. Due to the presence of cosmic consciousness (Purusha), another force takes birth in Prakriti (Chitta in specific terms, which is a derivative of Prakriti). This force has been nomenclatured differently spiritual traditions. In order not to complicate the subject, I am not going into all those nomenclatures. This force is like a conscious signal from consciousness. It is this conscious signal which assumes the role of localised consciousness and descends down the physical body Sadhana/Samadhi, this conscious signal is withdrawn back on reverse path.

At the very first sentence, I wrote that Purusha does not interact with neural signals. Now I explain why? When neural signal of some E.M. energy is produced in the physical body, this reflects/translate in the Astral body having *Manas*, *Buddhi* and 10 senses. Due to this, a new signal of some Astral energy is set in the Astral body. I don't know about the exact mechanism by which neural signal of E.M. energy translates/reflects in the Astral Body. On setting in of signal of astral energy in the Astral body, this signal of astral energy manifests in Causal body before *Chitta*. Purusha is the projection of cosmic consciousness in *Chitta*. So here in *Chitta*, Purusha perceives (experiences) the signal of the stimulus, as translated to the signal of some astral energies and as manifesting in *Chitta*. There is no need for Purusha to

interact with this signal of astral energy in Chitta. Since Purusha by virtue of its nature is conscious, it can sense the signal as it presents before it. Key point is that in the state of Samadhi, all the above elements and their mechanism on account of perception thereof can be **seen**.

Now something about 26th element. An all pervading cosmic consciousness (Brahman of Upnishadas) has always remained by virtue of its existence -beyond any cause or effect. All the 3 worlds (Trilokas) are enveloped or bound within this cosmic conscious force. Call this universal cosmic consciousness as Brahmana or Parmaatma or God or Allaha hardly affects its existence. When this cosmic conscious force projects or reflects in Chitta in causal body, Purusha (Soul or Jeeva) is born as the reflected image of the cosmic conscious force which experiences/perceives everything -- all sort of perception, cognition or whatever undergoes at the mental level. In the state of dissolution (Mahapralay) of the Shrishati (universe), only 2 elements persist -cosmic consciousness (Brahman) and inert Moola Prakriti. On the creation of the universe all the 24 elements of triloka (i.e. 25 elements excluding conscious Purusha), manifest from Moola *Prakriti* in transformational order. But Moola Prakriti per se is inert lacking any consciousness (Knowledge) and motive force. Knowledge and motive force to Moola Prakriti for the creation of universe are provided from cosmic consciousness. Ultimate objective of an advanced level Yogi is not to entangle himself in the intricacies of the mechanism of 3 worlds or Triloki but to get himself identified with cosmic consciousness. It is then that image of Jeeva or Purusha as built in Chitta is broken and all the Sanskaras of Karmas of past millions of births are dissolved. It is these Sanskaras due to which Jeeva had to pass thru cycle of births and deaths since the creation of the universe. With dissolution of Sanskaaras, cycle of birth/death also come to stand still. All the above details appear some fairy tales till one has not learn about the experiences of an enlightened living Yogi/Sage who has really experienced above indicated elements and the mechanism thereof in the state of Samadhi. Ultimate reality and truth are not known by Occam Parsimony but by actual experience in the state of Samadhi. The way there is no substitute of empirical experimentation in objective scientific research, similarly there is no substitute of actual experience in state of Samadhi in the area of subjective spiritual research.

5.9. Vimal (18 Jan 2017)

Without interaction/association, how can *Puruṣa* mysteriously experience the information embedded in neural signals? Your speculation of mechanisms external to mind-brain system does not make any sense and you also agree that you do not precisely know and that cannot be demonstrated.

If you want to be just witness, you need to have information to witness. For example, the information from an object must come thru light and interact

with your photoreceptors and then get processed in your color neural-network as stimulus dependent feed forward signals, which then interact with your cognitive feedback signals for matching. If matching is successful, then self-related signals interact with the resultant of matching and then self selects the specific experience such as redness from the memory traces and then self experiences it. All astral and causal bodies are parts of cognition within the realm of mind-brain system (not outside). Thus, interaction is extremely important; without interaction, we neither experience nor do anything.

known in the state of Savikalpa Samādhi state, then each of them must its neural basis; therefore, those 20 elements are within the realm of the mindbrain system. This is very important point to note that yogis were misled because they did not have knowledge of neuroscience. The terms 'seen' means visual experience and 'known' means cognitive knowledge; both have their respective neural basis (that can be measured thru say very high resolution fMRI/EEG or more sensitive techniques) and are within the realm of the mindbrain system. You do not have any other evidence other than 'seen' and 'known': do you? Therefore, we must refrain from the fictitious superstition that they are external to the mind-brain system. Rest of your description are indeed 'fairly tales' for entertainment like in religious/fictional TV serials/movies. You must understand whatever yogis experience have their respective neural basis. You do not have any other evidence, therefore, please refrain from such superstition and face the bitter but real truth.

5.10 Vimal-Sehgal-Vimal: Working hypothesis and 3 experiments to test OOO-God theory (15-18 Jan 2017)

[1] Vimal: All experiences including strong OBEs must have their respective neural basis; they cannot be in a vacuum. You can always claim as long as OBEs have their respective neural basis, they are not "real strong OBEs"; this is unfair. I requested you to bring such yogi(s) and we will perform two well-designed experiments discussed before (see Section 3.8.13.5 of (Vimal, 2016a)), but you are unable to do so. This seems to imply that there is no such yogi because $S\bar{a}nkhya$ has misleading information. The founder of $S\bar{a}nkhya$ (sage Kapila) was misled because of strong OBEs as all experiences must have their respective neural basis. Thus, your term "real strong OBEs" = independent Puruṣa is fiction unless the two experiments give positive results. Until then, we must accept the hypothesis that astral/causal bodies, soul, and God are within the realm of mind-brain systems.

Sehgal: I have never indicated that any experience/feeling can take place in the vacuum. It is illogical to state that any experience will take place in the vacuum. This statement of yours stems up from your deep-rooted notion that apart from the baryonic matter and physical energies (of which the physical

brain is constituted of), astral realm and consciousness have no real ontological existence. The fact has been that ontological reality of the astral realm of nature and Cosmic Consciousness are even more than that of the physical realm. There are valid reasons for this. Astral realm serve as cause for the physical realm and Cosmic Consciousness serve as cause for both astral and physical realm. The cause is always more real than its effect though prima facie effect appears more real than cause since the cause is not directly visible and detectable. Though above framework lacks any objective evidence but there are adequate subjective evidence as flowing out from the experiences and narration of such people who have had such experiences. The requirement is to learn and understand about such experiences and narrations with equal experience/feeling/thoughts, seriousness. No whether in consciously awakened state or in Samadhi, originate out from the NNs of the brain. All experiences/thoughts in the consciously awakened state originate out from the Astral body level (SanskAras) and terminate out at the NNs level in the brain. Then what is the role of consciousness? It is in the presence of the consciousness that both astral mind (body) and the Physical brain (body) become functional and it is the consciousness which perceives/experience such experiences/thoughts. In the state of SS, when consciousness leaves the physical body/brain, even astral body/mind is adequate to accomplish experience/feelings, therefore, no thought signal reaches the brain level. In view of this, no NNs shall be built up in the brain due to non-flow of any thought signal from astral mind to the physical brain. This happens, since, in this state of Samadhi, almost all the physical body/brain is emptied out of the consciousness. There is one more principle which you need to understand. Breathing follows thoughts and thoughts follow consciousness.

Vimal: Your fictitious fairly tale story is very entertaining; however, it is based on Samādhi state experiences and knowledge as vividly 'seen' and 'known' by yogis. I fully and wholeheartedly agree that they are robust reproducible data and hence they are truly scientific data even though they are subjective data. The problem is not in data; rather, the serious problem is in the interpretation of data. What I am claiming is that each of them has a neural basis. Therefore, they are within the realm of the mind-brain system; they are not outside of it. This claim can be scientifically tested thru the 3 experiments elaborated below. You do not have any other evidence. Therefore, as I suggested before, you please refrain from this superstition.

[2] Vimal: From Section 3.8.13.5 of (Vimal, 2016a), the working hypothesis and the two experiments on OOO-God theory are as follows:

My working hypothesis is as follows:

No mental entity (such as astral body, causal body, soul/Self, or God) is beyond our mind-brain-body system. It appears beyond only through the **incompleteness** of our knowledge such as

related to the out-of-body experience (OBE). A complete knowledge must include the fact that an OBE has a neural basis. Thus, enlightened yogis, mystics, and people who propose life-after-death appear to disregard the knowledge related to neuroscience that all experiences, including OBEs at *Nirvikalpa Samādhi* (NS) state, have their respective neural bases and all mental entities are within the scope of mind-brain systems.

Experiences are subjective data; data are data; therefore, they cannot be rejected. Therefore, whatever yogis experienced cannot be rejected. Only its interpretation can be questioned. Their interpretation is based on incomplete knowledge.

Sehgal: You have built up the above hypothesis due to your lack of learning and understanding of the experiences and narrations of such people who have had such experiences. In the state of the SS, each and every part of the Astral body/realm, apart from the physical body/brain, can be **viewed and known** in quite vivid, objective and reproducible manner. Once you will get the adequate and clear understanding of the above and convinced of the same, your conception of the above hypothesis shall also vanish.

Vimal: I have already presented my argument above in [1].

- [3] **Vimal**: The above hypothesis can be tested as discussed before. For example, three experiments are proposed:
 - **(I) Expt.1**: Ask yogis to tell us what events are happening on specific days with randomly selected 100 people in 100 different countries.
 - (II) Expt.2: Inject anesthetics to yogis during NS-state and then, later on, ask yogis if they still experienced OBEs under deep anesthesia and/or
 - (III) Expt.3: Measure the neural correlates of OBEs by using fMRI/EEG or more sensitive techniques that can measure the neural basis of such very strong OBEs.

If results are positive in Expts. 1 and 2, then only we can claim that the $S\bar{a}nkhya$ -based OOO-God theory and the theist version of the eDAM are tenable. In other words, the eDAM can still interpret the data as follows: the degree of manifestation of the mental aspect of a state of soul, God, astral body, or causal body is very high and that of its *inseparable* physical aspect is latent. Thus, even in that case, the theist version of the eDAM cannot be rejected. However, the atheist version of the eDAM can be rejected.

If results are negative in Expts. 1 and 2, then the *Sānkhya*-based OOO-God theory and the theist version of the eDAM are rejected. However, the atheist version of the eDAM will hold.

If we are able to find neural basis in Expt.3, then the *Sānkhya*-based OOO-God theory and the theist version of the eDAM are rejected. Otherwise, one can argue that techniques used were not sensitive enough to measure the neural basis and more sensitive technology needs to be developed.

Sehgal: As I have indicated in the aforesaid, there is enough subjective evidence flowing out from the experiences and narrations of highly advanced enlightened Yogis of past as well as of the current period provided you may follow, learn and understand of their life and experiences. However, from a materialistic scientific point of view, if you are still interested in the objective evidence in the sense in which we seek evidence for any physical phenomenon, there is the need for a systematic roadmap to be followed before pursuing the proposed experimentation.

- (i) Built in up of a theoretical framework having a comprehensive and a clear understanding of the mechanism of the experiences arising out from the Fundamental Astral Realm and Cosmic Consciousness. This can be accomplished by following up experiences of such enlightened Yogis, their biographical and autographical accounts and constant contemplation over the same. If one is not convinced with a fair degree of uncertainty of the theoretical framework, why one will like to invest precious resources of time and money in empirical experimentation? This happens in the areas of Physical and cosmological research. I gave the example of dark matter where thousands of scientists have invested millions and billions of dollars and years of time for the discovery. But this happened only after they had built up of a theoretical framework of the existence of dark matter with fair degree of conviction. So is the requirement for empirical experimentation for Astral Realm and Cosmic Consciousness.
- (ii) Once you are convinced with fair degree of certainty of the genuineness of such experiences and mechanism thereof arising out from the Fundamental Astral Realm and Cosmic Consciousness, need arises to establish personal contacts with such people. There shall be the need to win trust, happiness and explain with all the modesty the scientific purpose of the proposed experimentation.

But why happiness and trust of such enlightened Yogis/Sages/Saints. Such people established in cosmic consciousness are self contained and don't need certifications from any research institute or body of scientists for the genuineness of their experiences or the mechanism thereof. Therefore, to make them agree to submit for empirical experimentation for scientific cause, their

trust and happiness is must. Perspective of such people is purely spiritual and not scientific one. Otherwise also we observe in our daily life that when one is having a direct personal subjective experience e.g. in deep love with someone, why he will submit to any empirical experimentation for getting certification of his love or establishing the mechanism thereof? For him, his own experience is adequate evidence in itself. This is an obvious phenomenon.

(iii) After getting the consent of such people, the conduct of the proposed experiments as per their convenience. So if you are serious enough to pursue the proposed empirical experimentation, kindly follow the proposed roadmap. This will require considerable efforts and time. I can help to the extent possible.

First kindly be clarified of the difference between Astral, Causal bodies and Soul/God. Astral and Causal bodies have nothing to do with Soul/God and cosmic consciousness. Astral and Causal bodies are the derivatives of the inert Prakriti on the similar lines as the Physical body is the derivative of the Prakriti. Moola Prakriti, at the time of the creation of the universe, transforms into a sequential chain into a nos. of derivative. Astral realm is a derivative of Moola Prakriti, a step lower than the Physical realm and becomes cause for the physical realm.

Cosmic consciousness on the other hand is an all pervading ontological reality, which exist by virtue of itself without any cause. Regarding its effects, there are different versions. SAnkhya treats Prakriti as having its own Fundamental identity (not an effect of cosmic consciousness) while as per monistic Advaita Vedanta, Prakriti/Maya is an effect of Cosmic Consciousness. Nevertheless, there is equal place for Astral and Causal bodies in both the versions. This Cosmic consciousness is what is God. Localized appearance of cosmic consciousness with false ego is what we call Soul.

In the eDAM, there is no evidence, either subjective or objective one, that Astral body/Causal body/Soul? God is the manifestation of the dual aspect of the stratified and discrete physical matter and physical energy. This is only intelligent scientific speculation bereft of any objective empirical evidence. Though no objective empirical evidence exist for the Fundamental identity of Astral body and cosmic consciousness but at least it has subjective evidence of the testimony of the scores of people. Need is to follow this testimony with all the seriousness.

Vimal: I have already presented my argument above in [1], specifically, I agree with the data, but not with the unnecessary and fictitious interpretation of data. I agree that it is entertaining to public and it is useful in money making enterprise thru TV and movies, like scientific and religious fictions.

(i)-(iii) We both are fully convinced on the reproducible subjective data at SS and NS *Samādhi* states. You are fully convinced in your interpretation and the

related mechanisms as per *Sānkhya*, but I am not. I am fully convinced in my interpretation and the related mechanisms as per the *Dvi-Pakṣa Advaita* (the eDAM), but you are not. I do not see why we have to convince each other our interpretations. We already tried and we both are unsuccessful. These experiments will test who is right and who is wrong.

[4] Vimal: The above experiments 1 and 2 solve the problems of objectification of subjectivity. There is no mystery in it; experiments are feasible and straightforward. We just have to practice meditation daily and seriously with lots of motivation (without laziness) towards NS-state.

Sehgal: There might [not] be any mystery in the objectification of subjectivity in the proposed two experiments but the whole concept of the objectivity of subjectivity, towards Science is moving forwards very fast in recent decades, is best with a number of complex issues. All the objective empirical experimentation is done under controlled conditions and it is not easy to parameterize, identify, quantify and measure different factors for a conscious system where subjectivity is involved. For example, if we want to study a subjective feeling say "hateness" in an objective empirical experiment, a number of complex issues are involved which do not have any solution viz., quantification and measurement of "hateness", identification of all the physical, mental and other factors contributing in the generation of hateness and their relative contribution in quantitative terms, keeping all such factors under controlled state. That is the reason that neither it has been possible up to now nor will it be possible in foreseeable future to devise an explanatory and predictive model for hateness.

Vimal: Yes, we need better technology. However, the subjective experience (SE) 'hateness' is like other SEs, such as love, redness, OBEs, bliss, and so on and has a neural basis.

- **[5] Vimal**: (a) On the contrary, meditative subjects must be naïve and know nothing about metaphysics or design and purpose of experiments. They must remain fully unaware of what enlightened people experienced. Let us not train their mind-brain systems in a biased way. Let us be open-mindedness. This is because once the mind-brain systems are trained thru certain metaphysics, then that is what they will experience. In NDE, a Christian will experience Jesus Christ; s/he will never experience Hindu Gods and vice-versa.
- (b) Some OBEs are common, but there are also differences. In other words, you and I cannot be the subjects in the experiments because you are 100% committed to $S\bar{a}nkhya$ and hence you will always experience in the $S\bar{a}nkhya$'s way. I follow science and the eDAM and I will always experience in the eDAM way. Thus, we both are biased and hence we cannot conclude anything useful. Subjects must be random, naïve, and unbiased as in all scientific experiments. This does not mean that we should not practice, but we need to be very careful.

- (c) I agree that technology still needs to be developed to pick up subliminal signals. If we cannot find a neural basis on strong OBEs, then it means that available technology is unable to pierce the deep neural structures of the brain.
- (d) On negative results, you can always claim that current technologies are not sensitive enough to pick up signals from astral and causal worlds out-of-mind-brain systems. However, one can also claim that they simply do not exist because all the subjective data can be explained by the scientific eDAM framework.
- **Sehgal**: (a) Forms of my physical body and that of your body is the aggregation of some atoms and molecules as governed by certain Laws of Nature. These are aggregation lasting for fairly permanent period say 60 to 80 to 100 years. In meditation when a Christian mediator sees Christ, it is also an actual form composed of Moola Prakriti or TanmAtra and as existing in the astral realm of the nature. In deep meditation, Moola Prakriti or TanmAtra create an actual real form of the god/goddess, be it Christ or any other Hindu god/goddess in the Astral Realm as per the will (Bhaawnaa) of the meditator.
- (b) The question of personal bias is relevant for such subjects who worship God in Saakaara form in form of some god/goddess. Those who meditate God in Niraakkara form like in Sankhya or eDAM, personal bias is irrelevant.
- (c) Available technology is able or may be able in near future to pierce the deep neural structures of the brain but issue is mind is neither brain nor arises out of the brain. It is in the Astral Realm of nature up to which signal of e.m. energy or other known energies have no access. Same issue is cropping up in the discovery of the dark matter also.
- (d) But existence of the Fundamental Astral and Causal realm carry many subjective evidences. Subjective data can be explained thru eDAM but it has neither objective empirical evidence nor any subjective evidence PLUS a lot of logical inconsistencies which have no solution. About this I written many times in the past and I need not repeat.
- **Vimal** (a)-(c): The theist NS type meditator and atheist Buddhist NS type meditator have reported opposite experiences; for example, the former reported lightness and the latter reported darkness within darkness ($\hat{S}unyat\bar{a}$). Therefore, subjective biases may arise.
- (d) Your queries on the eDAM have been fully addressed in various sections. If you misunderstand the eDAM, then it is not my fault. In any case, it is the least problematic foundational metaphysics based on robust reproducible empirical data from 1pp (SEs) and 3pp (NCC). Therefore, it has both subjective evidence from the 1pp data and objective evidence from the 3pp data. As shown

in the Section 3.15 and other sections of (Vimal, 2016a) and Sections 3.1-5 above, it is completely logical.

5.11. Vimal: Sixth sense

We can hypothesize that our mind-brain has a 6th sense (if it exists!), which is able to receive information from any place outside of brain by focusing method. If so if a yogi at thoughtless NS-state focuses at a distant place (say 10,000 miles), s/he will be able to receive information from that place whatever people are doing or thinking. In that way, s/he has OBEs and able to 'see' what those people are doing and able to 'know' what they are thinking. However, the 'self' is within the realm of her/his mind-brain system. In the NS-state, the 6th sense might be activated. We can measure neural correlates using high-resolution fMRI/EEG and or more sensitive techniques. Thus we can investigate what this 6th sense is, where it is located in the brain, and how it works.

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Endnote

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¹ 84 Classic Yoga Asanas, Kriya, Mudra, Pranayama, Surya Namaskara, Asana, Adho Mukha Svanasana, Aekpaadprasarnaasana, Anantasana, Anjaneyasana, Ardha Candrasana, Ardha Matsyendrasana, Akarna Dhanurasana, Astavakrasana, Adho Mukha Vrksasana, Baddha Konasana, Bakasana, Balasana, Bharadvajasana, Bhekasana, Bhujangasana, Bhujapidasana, Chakrasana, Chaturanga Dandasana, Dandasana, Dhanurasana, Dwi Pada Viparita Dandasana, Eka Pada Koundinyasana I, Eka Pada Koundinyasana II, Garbhasana, Garudasana, Gomukhasana, Halasana, Hanumanasana, Hasta Uttanasana, Janusirsasana, Kakasana, Kapotasana, Kukkutasana, Kurmasana, Makarasana, Malasana, Matsyasana, Mayurasana, Natarajasana, Navasana, Padahastasana, Padmasana, Parivrtta trikonasana, Pashasana, Pavanamuktasana, Rajakapotasana, Salabhasana, Samakonasana, Sarvangasana, Shavasana, Siddhasana, Simhasana, Sirsasana, Sukhasana, Supta Virasana, Tadasana, Trikonasana, Urdhva Hastasana, Urdhvamukhasvanasana, Vajrasana, Virasana, Virabhadrasana II, Virabhadrasana III, Viparita Karani, Vriksasana, Virabhadrasana, Virabhadrasana III, Virabhadrasana III, Virabhadrasana III, Virabhadrasana, Virisasana, Virisa

² One of the main goals of meditation is to silence thoughts. In 3-4 hrs, if you are successful in silencing your thoughts, you will have an out-of-body experience (OBE). As thoughts decrease, OBEs becomes stronger, meaning a feeling of leaving body further and further, first near your brain-body, then in the room, then out of the room, then the further distance to your town, your country, then the whole world to the whole universe. This does not mean your 'self' or 'soul' is out of the body; it is just an experience, similar to any other experience because each experience has its neural basis; 'self' resides inside your brain, but you will feel as if you are out of the body. It is possible that you will get information thru hypothetical unknown 6th sense; so it may be possible to 'know' what others are doing or thinking. It will also activate your pleasure centers and visual system in the brain and experience bliss/ananda and pleasant light. You may not feel mundane sufferings even if there are present because the strength of bliss is much higher than your pain/suffering. Slowly, you will acquire godly virtues, such as unconditional love, humility, and compassion for all.

Soham Meditation: Sit comfortably without pain; a chair is fine with an upright back. Mentally repeat 'SO' (or HAM) during inhaling and 'HAM' (or SO)

during exhaling; Soham = So+ham = sah+anham = I am That = I am Brahman. Focus on mantra synchronized with breathing without thinking anything.

³ **Critique1**: *Sāṃkhya* has no *Parmātman*.

Author: So you reject the 26th tatva: the unmanifested Brahman: many names; some investigators call it *Parmātman* to make it as a part of theistic philosophy. Some claim that *Gītā* was before 3000 BC and *Sāṃkhya* (1000–600 BC?, *Kapila*: 550 BC?) came later. Krishna declared himself as *Parmātman* with *Puruṣa* and *Prakṛti* as part of him. Kapila seems atheist but some sub-school of Vedanta coined 26th *tatva* and made *Sāṃkhya* also part of theist Vedanta. It is unclear how this happened.

NM: On the two versions of $S\bar{a}nkhya$, I can confirm that two traditions do exist in the $S\bar{a}nkhya$ lineage. In the atheistic version there are 25 elements, and in the theistic one 25 elements + $Param\bar{a}tman$ as 26^{th} . The original aphorisms ($S\bar{u}tras$) of $S\bar{a}nkhya$ by Kapila are almost entirely lost and only some of them are available today. What we see as $S\bar{a}nkhyas\bar{u}tras$ today are widely believed to be composed by $Vij\bar{n}\bar{a}nabhik\bar{s}u$ in 15th century.

An introduction to the two traditions can be found in (Raju, 1985).(p.304-335). You can see this on Google Books under http://books.google.com.hk/books?id=wZ_iahRQomwC&pg=PA304

Raju also discusses the two possibilities, whether *Sānkhya* was originally atheistic, and later turned theistic, or if it was originally theistic, turned atheistic in the middle, and later returned to its theistic roots. The last part of (Tīrtha, 2007) presents many arguments in favour of Kapila being theistic. However, no doubt that the *Sānkhya* system as expounded in later commentaries is theistic, and it is counted as one of the *Āstika* systems today.

Author: Thanks for the precise and interesting information with references. As per (Tīrtha, 2007).p.305, "The Yoga philosophy of Pantaňjali ... is also called by the name theistic Sāṅkhya (seśvarasāṅkhya), for Pantaňjali explicitly accepts the reality of God and the only main difference between the two schools is the rejection or acceptance of God. [...] So far as the general practice goes, it is customary to present mostly the views of the atheistic Sāṅkhya of Īśvarkṛṣṇa as the main Sāṅkhya; for his work is the main authoritative one now available. [...] The Sāṅkhya accepts three valid means of knowledge—perception, inference, and verbal testimony. [...] indeterminate (nirvikalpaka) and determinate (savikalpaka) perception ... There is ... the contact between sense and object, and then between sense and the inner sense (antahkaraṇa), and then some kind of relation between inner sense and the ātman, which the Sāṅkhya calls generally by the word Puruṣa, before knowledge of the object becomes a full cognition."

Krishna declared himself *Parmātman* with *Puruṣa* and *Prakṛti* as part of him. Did *Sāṃkhya* come later than Gītā? If this is correct, then *ṛṣi* Kapila and other *Sāṃkhya* followers might be aware of Gītā's theist view of *Puruṣa* and *Prakṛti* metaphysics. What caused them to reject it and delete *Parmātman*? The

metaphysics of *Puruṣa* and *Prakṛti* as derived entities from *Parmātman* has explanatory gap problem of neutral monism: how *Puruṣa* and *Prakṛti* can be derived from the third neutral entity *Parmātman*? Is this a reason for rejecting *Parmātman*?

NM: I might be wrong, but I believe Sāṅkhya predates Vedānta and Gītā. Here is my reasons: In the Bhāgavatam, Kapila is listed as the fifth Avatāra (SB 1.3.10) and Vyāsa as the seventeenth (SB 1.3.10). So as per the Bhāgavatam, Sāṅkhya propounded by Kapila came before Vedānta propounded by Vyāsa. In the Gītā the Lord says, siddhānāṃ kapilo muniḥ (BG 10.26) - I am Kapila amongst the Siddhas. Also see BG 3.3 loke'simandvividhā niṣṭhā purā proktā mayānagha jñānayogena **sāṅkhyānāṃ** karmayogena yoginām ||

Author: Your reference seems authentic. If you are correct, then Kapila might be before *Gītā* (*Mahābhārata* war: 3067 BC, 5561 BC, *Vyas*). Further research is needed, such as astronomical analysis as done by Vartak and Achar on *Mahābhārata*.

Critique1: Since I don't have an understanding why universe must exist I would like to hear any closure theory (could be erroneous in language but might have a physical meaning!).

Author: 'Why universe must exist the way it is' is an interesting question. There is no satisfactory answer. For some, God-theory says that God was very lonely before universe was created, so He created universe the way it is. So that people can interact with Him by worshipping Him and by always begging Him to fulfill their wish-lists. Scientific hypothesis is multiverse theory.

Critique1: The multiverse theory doesn't explain life. Big Bang itself is artificial.

Author: The <u>Big Bang</u> is strongly supported by astronomical observations. A hypothesis for life in our universe is the <u>anthropic principle</u>.