

SOUL: CHARACTERISTICS, SCIENTIFIC BASIS & FUNCTIONS WITH SPECIAL REFERENCE TO DRAVYASAMGRAHA

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Abstract

Dravyasamgraha, a 10th century Digambara Jain text, is an easy to read, comprehensive and tremendous work of Ācārya Nemicaṇḍra about the constituents of the cosmos and their functioning that is primarily influenced by conscious elements called *jīvas* or living beings. The author uses *anekāntavāda* and the two *nayas* (*niścaya* and *vyavhāra*) extensively and tries to bring vast knowledge of his earlier scholarly works in its composition. Being comprehensive, it just lists the main features of which encourages the reader to go to their esoteric details as can be seen in a number of commentaries by later *ācāryas* and various scholars with social/scientific and psychological background. The present paper analyses some of the important characteristics of *jīva* and interaction between *jīva* and *pudgala* (matter) based on the said text with reference to modern research in science and psychology.

Structure of the Cosmos

According to *Dravyasamgraha* (15-20), the universe (*loka*) consists of two categories of substances, namely *jīva* (sentient or living beings) and *ajīva* (insentient or non-living beings)¹. While *jīva* is the soul around which the complete Jain philosophy revolves, *ajīva* includes rest of the five substances. Among these, principles of rest (*adharmā*) and motion (*dharma*), time (*kāla*), and space (*ākāśa*) are inactive, non-corporeal, and matter (*pudgala*) is active corporeal substance. Space (*ākāśa*) consists of two inseparable realms namely universe (*loka*) where all these six types of substances exist, and the space surrounding it which is also space but without the five substances. This distinction of *loka* and *aloka* is crucial as it defines the spatial limits of *loka* or universe for the active elements namely *jīva* and *pudgala* for they exist and interact within this space, as beyond it, in *aloka*, *jīva* and *pudgala*. Jain texts dealing in cosmology further define finer limits as to where and what type of interactions can take place in the universe for a better grasp of the structure of the universe and its functioning.

Supporting Substances (Infrastructure)

The structure of *dharma*, *adharmā*, *ākāśa* and *kāla* are considered non-corporeal.² Space is a large unbreakable continuum of space points (*pradeśa*) called universe (*loka*) and is

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¹ *Jīvamajīvaṃ davvaṃ jīṇavaravasaheṇa jeṇa ṇiddiṭṭhaṃ | devīṇḍaviṇḍavāṇḍaṃ vande taṃ savvadā sirasā || (Dravyasamgraha 1)*

² *ajjīvo puṇa ṇevo puggala dhammo adhamma āyāsāṃ | kālo puggala mutto rūvādiguṇo amutti du || (ibid 15)*

surrounded by an infinite space called *aloka*.³ Matter is said to be corporeal (due to its qualities of touch, taste, odour, and colour) and is cognizable by sense organs.⁴ The first three – *dharma*, *adharmā*, and *ākāśa* – are omnipresent as a single continuum, while *kāla* is also present in each space point of space but as a continuous chain of independent jewel-like elements called *kālāṇu*.⁵ The first three substances provide just a supporting infrastructure for *jīva* and *pudgala* to exist, act and interact while time supports change in the status of the two. The size or spatial dispersion of supporting elements as of innumerable space points except time which occupies only one space point.⁶

Active Substances

There are two active substances among the six – soul and matter. Here we will discuss matter first and then will talk about soul.

- **Matter (Pudgala)**

The substance having fusion and fission as its inherent nature with the probability of having more *paramāṇus* (the smallest existent part of matter occupying one space point) than one in one space point giving it the quality of mass, weight and other characteristics is called *pudgala* (matter).⁷ Matter can have numerable, innumerable and infinite space points (Dravyasaṃgraha 25). It attracts and is attracted towards *jīva* to affect it as well as get affected by it, besides creates mass (*skandha*) of different forms, sizes and qualities on its own of matter only.⁸

Pudgala can exist in sound (*śabda*), bondage (*bandha*), subtleness (*sūkṣma*), grossness (*sthūla*), physical structure (*saṃsthāna*), division (*bheda*), darkness (*tama*), shadow (*chāyā*), brightness (*udyota*) and heat (*ātapa*).⁹ Thus, energy (heat, light and sound), matter (solid, liquid and gas as subtle, gross) and physical structures are all matter (*pudgala*). This is similar to the common understanding that matter and energy are convertible into each other. Thus, the entire *loka* appears to be matter only due to its being the only non-corporeal substance.

- **Soul (Jīva)**

An empirical being lives on the basis of four vitalities of life, namely sense organs (*indriya*), strength (*bala*), life duration (*āyu*) and inhaling-exhaling of breaths

³ *avaḡāsadāṇajoggaṃ jīvādīṇaṃ vīyāṇa āyāsaṃ | jeṇaṃ logāḡasaṃ allogāḡasamidi duvīhaṃ || (ibid 19)*

⁴ *vaṇṇa rasa gandhā do phāsā aṭṭha nicchayā jīve | ṇo saṃti amutti tado vavahārā mutti bandhādo || (ibid 7)*

⁵ *loyāyāsapadeso ikkekke je thiyā hu ikkekka | rayaṇāṇaṃ rāsī iv ate kālāṇu asaṃkhadavvāṇi || (ibid 22)*

⁶ *hoṃti asaṃkhā jive dhammādhamme aṇaṃta āyāse | mutte tivīha padesā kālassego ṇa teṇa so kāo || (ibid 25)*

⁷ *“pūraṇaḡalanasvabhāvatvāt pudgala ityucyate” (Bṛhadravayaṃgraha Ṭikā 15)*

⁸ *eyapadeso vi aṇū ṇāṇākhādhappadesado hodi | bahudeso uvayārā teṇa ya kāo bhaṇanti savvaṇhu || (Dravyasaṃgraha 22)*

⁹ *saddo bandho suhumo thūlo saṃsthāṇa bheda tama chāyā | ujjodādasahiyā ouggaladavvassa pajjāyā || (ibid 16)*

(*śvāsocchvāsa*)¹⁰. Earth, water, fire, wind, plants are immobile (*sthāvara*) living beings as they have only one sense organ which is skin, while two to five sensed living beings are mobile (*trasa*) with five sense organs which are skin, tongue, nose, eyes and ears.¹¹ Immobile beings are either gross or subtle, and five sensed beings are with or without mind.¹² The worldly beings are classified on the basis of fourteen principles of classification (*mārgaṇās*) and the fourteen stages of spiritual purification (*guṇasthānas*).¹³

The fourteen *mārgaṇās* are:¹⁴ (i) *gati* (condition of existence), (ii) *indriya* (sense organs), (iii) *kāya* (body), (iv) *yoga* (activity of mind speech and body), (v) *veda* (sexual feelings), (vi) *kaṣāya* (passion), (vii) *jñāna* (knowledge), *saṁyama* (restraint), *darśana* (perception), *leśyā* (colour of the soul), *bhavyatā* (ability to attain salvation), *samyaktva* (right faith) *saṁjñā* (ability to think) and *āhāra* (assimilation of karmic particles).

The fourteen *guṇasthānas* are:¹⁵ (i) *mithyādr̥ṣṭi sthāna* (complete heterodox), (ii) *sāsvādana samyagdr̥ṣṭi sthāna* (taste of right faith), (iii) *samyagmithyādr̥ṣṭi sthāna* (mixed faith), (iv) *avirata samyagdr̥ṣṭi sthāna* (non-abstinent right faith), (v) *viratāvirata sthāna* (partial abstinence), (vi) *pramattasāmyata sthāna* (complete self-discipline with negligence), (vii) *apramattasāmyata sthāna* (complete self-discipline sans negligence), (viii) *nivṛttibādara sthāna* (attaining unprecedented spiritual fervour), (ix) *anivṛttibādara sthāna* (attaining spiritual fervour in which gross passions can still attack), (x) *sūkṣma sāmparāya upaśāmaka* or *kṣapaka sthāna* (subtle greed passion-suppressed or annihilated), (xi) *upaśāntamoha sthāna* (suppressed conduct deluding passion), (xii) *kṣīṇamoha sthāna* (annihilated conduct deluding passion), (xiii) *sayogikevalī* (omniscient with three-fold activity), and (xiv) *ayogikevalī* (omniscient without three-fold activity).

Jīva has nine characteristics. These are: live (*jīva*), function of understanding (*upayogamaya*), incorporeal (*amūrtika*), performs action (*kartā*), co-extensive with its own body (*sva-dehaparimāṇa*), enjoyer (*bhoktā*), located in the world of rebirth (*saṁsāra-sthita*), emancipated (*siddha*) and has the intrinsic movement upwards

¹⁰ *tikkāle cadupāṇā indiyabalamāu āṇapāṇo ya | vavahārā so jīvo ṇicchayaṇayado du cedaṇā jassa ||* (ibid 3)

¹¹ *puḍhaviyalateuvāu vaṇapphadī vivihathāvareindī | vigatigacdupaṁcakkhā tasajīvā hoṁti saṁkhādī ||* (ibid 11)

¹² *samaṇā amaṇā ṇeyā pancendiya ṇimmaṇā pare savve | bādara suhameṇdiya savve pajjatta idarā ya ||* (ibid 12)

¹³ *maggāṇagūṇāṭhāṇehi ya caudasahi havaṁti taha asuddhaṇayā | viṇṇeyā saṁsārī savve suddhā hu suddhaṇayā ||* (ibid 12)

¹⁴ *gaiṇdiyesu kāye, joge vede kasāyaṇāne ya |*

saṁjamadaṁsanalessā, bhaviyāsammattasāṇṇi āhāre || (Gommaṭasāra-Jīvakāṇḍa 142)

¹⁵ “*kammavisohimaggāṇaṁ paḍucca coddasa jīvāṭṭhāṇā paṇṇattā, taṁ jahā-micchādīṭṭhī, sāsāyaṇasammadiṭṭhī, sammāmicchadiṭṭhī, avirayasammadiṭṭhī, virayāviraṇe, pamattasāṁjaya, apamattasāṁjaya, niaṭṭibāyare, suhumasāṁparāe-uvasāmae vā khamae vā, uvasāntamohe, khīṇamohe, sajogī kevalī, ajogī kevalī*” (Samavāyāṅgasuttaṁ 14.1)

(*ūrdhvagamana-svabhāvī*).¹⁶ The nine characteristics of *jīva* can be clubbed as understanding (connation and cognition), energy (action and enjoyer), feelings of pain and pleasure or connation cognition and affection as synonymous with consciousness making it as the basis of studies of psychology. Even researchers and proponents of Artificial Intelligence agree that intelligence and consciousness are different. Intelligence involves ability for problem solving which increases with the increase in the computing power and availability of vast streams of data while consciousness is the ability to feel things such as pain, joy, anger, ego, and goes hand in hand with intelligence (Harari 69).

Table: Characteristics of Soul

Distinguishing quality: Sentient. Number: Infinite

| Quality | Empirical soul <i>samsārī jīva</i> | Pure soul <i>mukta jīva</i> | Remarks |
|---|---|--|--|
| Liveness (<i>jīva</i>) | Senses, age, power, breath | Consciousness | As empirical or pure soul. Pure soul has consciousness and enjoys its own nature |
| Manifestation of consciousness (<i>upayoga</i>) | Vision, knowledge | Infinite vision, Omniscience | karmas obscure knowledge and vision of empirical soul. |
| Nonconcrete (<i>amūrtika</i>) | Yes, but appears concrete with karmic bondage | Nonconcrete | Matter with taste, touch, odour and form is concrete. |
| Agent/Doer (<i>karat</i>) | Of matter karmas (<i>vibhāva</i>) | Of its own nature (<i>svabhāva</i>) | <i>Svabhāva</i> : infinite vision, knowledge, bliss and energy |
| Size (<i>svadeha parimāna</i>) | Adapts to the size- of the matter body associated | Slightly less than the last human body it owned | Association of matter gives this characteristic to empirical soul |
| Enjoyer (<i>bhoktā</i>) | Of results of <i>vibhāva</i> (pain, pleasures) | Of its own nature (<i>svabhāva</i>) | Enjoyer of the results of its own actions |
| Located in the world (<i>samsārastha</i>) | Exists everywhere in the <i>loka</i> in different modes | Only at the summit of cosmos does not move from there | Pure soul just stays at the summit of cosmos |
| Emancipated (<i>siddha</i>) | Emancipated from absolute viewpoint | Has attained emancipation | Possesses infinite attributes naturally |
| Upwards movement (<i>ūrdhvagamana</i>) | Has the capability due to the nature of pure soul | Stationery, does not move more upwards due to absence of <i>dharma</i> and <i>adharmā</i> outside the limits of cosmos | Pure soul has a natural tendency to go up |

¹⁶ *jīvo uvaogamao amutti kattā sadehapariṇāmo | bhottā samsārattho siddho so vissasoḍḍhagā ||* (Dravyasaṅgraha 2)

Soul and its Salient Features

From one viewpoint, the empirical soul is the agent (doer) of matter karmas and their results (*vibhāva*), while the pure soul is the agent of its own nature (*svabhāva*). These two characteristics (action and enjoyer) of the soul are equated to energy (*vīrya*) and helps us understand the interactions of soul with non-soul entities like matter karmas, mind, body and external environment. Soul pervades the same space as the body it owns.¹⁷ The expansion and contraction of the soul can be explained like a balloon filled with air and without air. It means that more than one soul can be present at the same space point, like the light of many bulbs filling the space in a room. This is an interesting observation but here we are talking of the soul present in the body and its structure where it occupies all space points of the body. Soul cannot be broken into parts (hence it is considered elastic) as its space points (*pradeśas*) are all inseparably linked to each other, unlike matter whose nature is fusion and fission. The soul extends itself into body with five sense organs (*indriyas*) and mind (quasi-sense organ). The empirical soul in association with matter has the capability of extension and contraction, and also, the soul dwells in its innumerable space points.¹⁸

In 1985, research by neuropharmacologist, Candace Pert of the National Institute of Health at Georgetown University, revealed that the mind is the flow of information as it moves among cells, organs, and systems of the body. One of the qualities of information flow is that it can be unconscious, occurring below the level of awareness. The mind is immaterial, yet it has a physical substrate which is both the body and the brain. It may also be said to have a nonphysical nonmaterial substrate that has to do with flow of that information. The mind-body connection is a widely distributed psychosomatic network of communicating molecules where mind holds the network together, often acting below our consciousness, linking and coordinating the major systems and their organs and cells in an intelligently orchestrated symphony of life. (Pert)

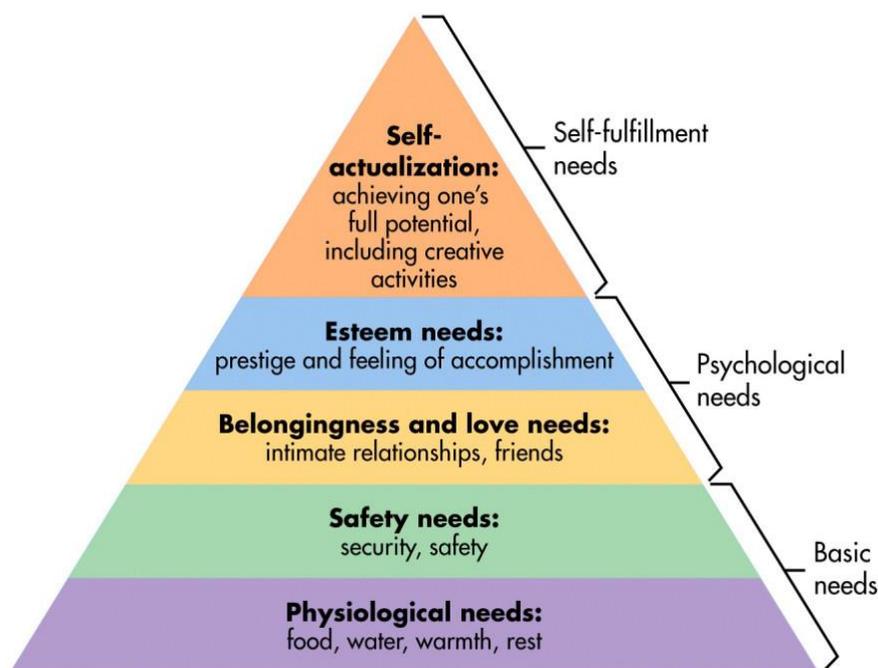
On the other hand, pure soul reaches the highest place in *loka* known as *siddhaśilā* or abode of liberated soul up to where it can go and not beyond due to absence of the three supporting layers. The middle world (called *madhya-loka*) is the only place where human beings live. The middle world is circular and consists of continents alternating with oceans in concentric circles. The first continent, *Jambūdvīpa* is set around Mount Meru (Sumeru) and forms the heart of *Aḍhādvīpa*, which means ‘Two-and-a-Half Continents’ that comprise: *Jambūdvīpa*, the surrounding ocean of *Lavaṇasamudra*, the second continent *Dhātakīkhaṇḍa*, the encircling ocean *Kālodadhi* and one-half of the third *Puṣkara* continent. (See, *Tiloya-panṇattī*)

¹⁷ *jaha paumarāyaraṇaṃ khittam khīre pabhāsayadi khīram |
taha dehī dehattho sadehamattam pabhāsayadi || (Pañcāstikāya 33)*

¹⁸ *aṇugurudehapamāṇo uvasamhārappasappado ceda |
asamuhado vavahārā ṇicchayaṇayado asamkhadeso vā || (ibid 10)*

Taking birth as a human being is a rare opportunity because it offers possibilities for purification. Moving upwards of the soul is inversely proportional to the association of matter karmas. It goes upwards directly when it attains the pure form while the empirical soul descends below due to association of karmas.

Maslow, a leading psychologist (1908-70), also defines the hierarchy of needs, as below (Cherry):



He said that human beings are motivated by a hierarchy of needs and the needs are organized in a hierarchy in which more basic needs must be more or less met (rather than all) prior to higher needs, the order of needs is not rigid but instead may be flexible based on external circumstances or individual differences and most behaviour is multi-motivated, determined by more than one basic need.

Self-transcendence according to him, brings an individual what he called peak experiences in which they transcend their own personal concerns and see from a higher perspective. These experiences often bring strong positive emotions like joy, peace, and a well-known sense of awareness (i.e., the person is motivated by values which transcend beyond the personal self, e.g., mystical experiences and certain experiences with nature, aesthetic experiences, service to others, the pursuit of science, religious faith, etc.).

This description by Maslow tries to relate the cause and effect of needs and emotions and developing a hierarchy between physical and psychic interactions, similar to the Jain doctrine of the causes of influx and bondage of karmas and support the characteristic of soul of *ūrdhva gamana*.

Function of Soul

Sentience (consciousness and awareness) is the differentia of the soul.¹⁹ That which arises from both internal and external causes and is concomitant with soul is *upayoga* (manifestation). This distinguishes soul from the body, though it is one with the body from the viewpoint of bondage. *Upayoga* is of two types, namely vision/perception/connotation/*darśana* and knowledge/cognition/*jñāna*.²⁰ Jainism talks of *upayoga* as states/dispositions (thought activities) arising from subsidence (of deluding karmas), destruction (of eight types of karmas), subsidence cum destruction of the four obscuring karmas, rise of eight types of karmas and the inherent nature of the soul (free from karmic association) (*Sarvārthasiddhi* 2.9). Vibrations in the space points of soul are caused by the activities of the molecules of body, speech and thought activities of physical mind. Their effects are carried back as molecules of emotions (tainted and otherwise) to body and speech as well. This is the function of soul while consciousness is both structure and function of the soul.

Researchers and proponents of Artificial Intelligence agree that intelligence and consciousness are different. Intelligence involves ability for problem solving which increases with the increase the computing power and availability of vast streams of data while consciousness is the ability to feel things such as pain, joy, anger, ego and goes hand in hand with intelligence (Harari 69). These are degraded states of the four infinities, namely infinite perception, knowledge, energy and bliss, the characteristics of pure soul.²¹ This implies that the rise of karmas and activities of physical mind, body and speech; and thought activities of the soul (due to wrong world view/*mithyādarśana*), cause psychic mind to affect structure and function of physical mind and flow of associated emotions (e.g. tainted like anger, arrogance, deceit and greed or pleasant ones like love forgiveness etc. throughout the body).²² These emotions and vibrations flow throughout the body and the resulting experience is enjoyed by the soul.

The mind is a set of cognitive faculties including consciousness, imagination, perception, thinking, judgement, language and memory that affects and is affected by brain, and the central nervous system. It is responsible for processing feelings and emotions that result in attitudes and actions. Mind is accordingly classified as of two types, psychic mind (*bhāvamaṇḥ*) and physical mind (*dravyamaṇḥ*). Psychic mind (*bhāvamaṇḥ*) indicating the purity of soul arising on the destruction-cum-subsidence of energy obstructive and quasi-sense-covering karmas that manifests from moment to moment. Physical mind (*dravyamaṇḥ*) which is momentary and made up of matter in the shape of

¹⁹ “*upayogo lakṣaṇam*” (*Tattvārthasūtra* 2.8)

²⁰ *uvaogo duviyappo daṁsaṇa nāṇam ca daṁsaṇam cadudhā | cakkhu acakkhū ohī daṁsaṇamadha kevalam ṇeyam ||* (*Dravyasaṁgraha* 4)

²¹ *daṁsaṇam aṇaṁtaṇāṇam aṇaṁtavīriya aṇaṁtasukkhāya | sāsayasukkhā adehā mukkā kammaṭṭhabaṁdhehim ||* (*Bodhapāhuda* 12)

²² “*mithyādarśanāvratipramādakaṣāyayogā bandhahetavaḥ*” meaning “The five causes of bondage are: deluded world-view, non-abstinence, laxity, passions (tainted emotions) and the actions of the body, speech and mind. (*Tattvārtha Sūtra- That Which Is* 8.1)

eight petal lotus near the heart due to the rise of primary and secondary limbs body making karmas (*aṅgopāṅga-nāma-karma*). The manifestation of physical mind depends on the thought activity, with one thought at a time, as a fast-flowing stream, where sense impressions and mental (psychic mind) phenomena are constantly changing (*Sarvārthasiddhi* 2.11). The process involves accepting the virtual action (*upakāra*) of another undergoing transformation in its own constitution (supported by consciousness being present throughout the body (*svadeha parimāṇa*) and two types of sense organs - psychic and matter.

Jain psychology is ultimately based on the joint effect of the powers of the soul and the reactions due to karmic energies. Doctrine of karma holds that every activity, whether physical or mental, produces, besides its perceptible consequences, an imperceptible effect known as karma (subtle matter particles). Being a force, the karma must inhere in some substance. Therefore, the actions and desires to affect any change in us must transform themselves into a medium of homogeneous nature with the physical constitution of our body itself, i.e., matter. No desire, no feeling or connotation passes the threshold of our mind, without in some way, modifying the neural process, thereby explaining the information exchange between soul and matter in human body.

In 1975, Prof Robert Ader (a psychologist) and Nicholas Cohen (an immunologist) at the University of Rochester, demonstrated that a signal via the nervous system (taste) was affecting the immune function. This was one of the first scientific experiments of such kind that demonstrated that the nervous system could affect the immune system. Their research led to further works on the ways the central nervous system and the immune system communicate – biological pathways that make the mind, the emotions. The mind and the body are not separate, but intimately entwined (Goleman 190). Further, the chemical messengers that operate most extensively in both brain and immune system are those that regulate emotions.

In 1985, research by neuropharmacologist, Candace Pert of the National Institute of Health at Georgetown University, revealed that

- Nervous and immune systems (both with memory and capacity to learn) were clearly in communication with each other. A number of brain loci, many within emotion mediating brain areas are enriched with many types of neuropeptide receptors, suggesting a convergence of information processing at these nodes. Thus, neuropeptides and their receptor join the brain, glands and immune systems in a network of communication between brain and body, probably representing the biochemical substance of emotions (Pert 172-174, 87).
- The mind is the flow of information as it moves among cells, organs, and systems of the body. One of the qualities of information flow is that it can be unconscious, occurring below the level of awareness. The mind is immaterial, yet it has a physical substrate which is both the body and the brain. It may also be said to have a nonphysical nonmaterial substrate that has to do with flow of that information. The

mind-body connection is a widely distributed psychosomatic network of communicating molecules where mind holds the network together, often acting below our consciousness, linking and coordinating the major systems and their organs and cells in an intelligently orchestrated symphony of life (Pert 185).

- Our internal chemicals, the neuropeptides and their receptors, are the actual biological underpinnings of our awareness, manifesting themselves as our emotions, beliefs, and expectations and profoundly influencing how we respond to and experience the world. Her research provides evidence of the biological basis for awareness and consciousness, what eastern philosophers and practitioners have known and practiced for centuries. The body is not a mindless machine, the body and mind are one...the mind is nonlocal. This information exchange takes place over a network linking all of our systems and organs, engaging all our molecules of emotion, as the means of communication. What we see is a mobile brain that moves throughout the body, located at all places at once and not in the head. This body-wide information network is ever changing and dynamic (Pert 185).

The research of Candace Pert also supports the Jain doctrine of function, structure and characteristics of the soul, like the *svadeha parimāṇa*, action and enjoy characteristics of the soul associated with the four infinities of soul; psychic mind and physical mind communicate (material and efficient causes and as the *upakāra* of one on the other).

Conclusion

Indeed *Dravyasaṃgraha*, in a simple and comprehensive manner presents the depths of Jain philosophy which are of great use in understanding the latest scientific developments and relate them to characteristics of soul and matter, material and non-material interactions i.e., body and soul. The nine characteristics of the soul as given in *Dravyasaṃgraha* enhance our understanding of the soul, its relationship and working with the body and karmas. These characteristics are supported by the modern Psychology and Psycho-neuro-immunology researches guide us to understand how psychic mind and physical mind communicate through material and efficient causes and as the *upakāra* of one on the other.

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