

## Cosmology: Through the Prism of Science and Jainism

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### Abstract

Matter in Jain philosophy is called *Pudgala*. Etymologically it means that which is liable to integration and disintegration'. It possesses colour, smell, taste and form, and is perceptible to touch. It can be consumed or destroyed and it may decay or alter its form. It is characterised by five colours (black, green or blue, red, white, yellow), two smells (pleasing and unpleasing), five flavours (pungent, bitter, astringent, sour, sweet), five shapes (circular, globular, triangular, square, oblong) and eight touches (light, heavy, hot, cold, rough, smooth, wet, dry). It is divided into four classes-*skandha deśa*, *pradeśa*, and *paramāṇu*. The smallest parts of matter which cannot be further divided are called paramānus or atoms. Two or more such atoms may combine together to form compounds (*saṃghāta*). Our bodies and the objects of nature are such compounds of material atoms. Mind, speech and breath are also products of matter. The masses of matter constituting the world necessarily have to interpenetrate each other, and the units of the one must be touched by those of others. In this process the units of time are included, placed on the same level with the others and considered constant. Contraction and expansion of matter stand for different densities with the same number of its units. We propose to discuss these points more elaborately in the section on atomism.

**Keywords:** Religion; Anātman; Guṇas; Paryāyas; Astikāya; Anastikāya; Atthikāya; Kāla; Jīva; Ajīva; Mukta; Baddha; Trasa; Pudgala; Karmas; Bhokt; Kart; Lokka; Dharma; Adharma; Pradea; Skandh.

### Introduction

We do not generally speak about religion and science in the same or amiable context. In fact, science and religion are, rightly or wrongly, still being considered as opposite poles. When, therefore, Jainism, which is very often and somewhat erroneously regarded as a religion instead of an ethical way of life and mode of thinking, is compared in its underlying philosophical and metaphysical teachings with the concepts of modern physics and biology, most

people will assume a skeptical attitude. They may refer to such attempts graciously as a mistake, and ungraciously as absurdity. Both sides are wrong, wrong in their assumptions and wrong in their conclusions. All the more astounding it is that few will raise their eyebrows when some of the intellectual and scientific elite of this 20th century profess to see no difficulty in citing Western religious scriptures as authority even though scientifically, sociologically and ethically we have far transcended the old traditional contentions and standards.

There can be no question that Jainism is the one system, excepting perhaps science itself, which achieves an objective and detached view about the nature and destiny of man. This striking objectivity divorces the Jainism system from the realm of religion and allies it at once with the kind of scientific search for truth which characterized India in the Gupta and other early periods of its civilization and which afford a major pre-occupation to most of the intellectual world—both East and West-of today. Jainism, this writer contends, is not properly a religion; it is a system for life and living in a world which is circumscribed with difficulty and beset with suffering.<sup>1</sup> Jainism is not a religion, if, in scientific terms, we define religion as a mystic experience, a psychic thrill.

But there is also a difference: the Jain thinker is clear as to his aims; if he uses science and its methods, he does so with the realization that science is a means to an end and not an end in itself. Since today the world is wedded to the methods of science, we have only to note how wholly compatible with science is the system founded in India about 2,500 years ago.<sup>2</sup> Modern scientific achievement serves merely to lend added perspective to the concepts of impermanence, of the illusory quality, and of *anātman* which were put forth so long ago. As an end in itself, science may solve immediate problems; it feeds more people so that there are more people to feed; it prolongs life and finds more effective means of destroying life. Science, as viewed today, is nothing more than a method and to make a cult of it, to find in it the answer to problems and questions of the ultimate forms of human destiny, is rank error. It is making a dogma of science where no religious emotion or attitude is ever intended.

The method of science admits primarily the formulation of an hypothesis, the testing of that hypothesis, and the stating of a new hypothesis on the basis of knowledge obtained by such experimentation. Science is characterized by its "tough-mindedness". The search for truth is not always easy, nor indeed, always pleasant. It has been said that the truth may hurt. It does, but it remains truth for all that. To those of us who, now living, are seeking a few moments of respite, of relief from worry, in short, of what might be called happiness, Mahavir says in effect: "All right, just remember, it doesn't last; it may be here today but it is never permanent". Just as science seeks to define its answers objectively, without emotion, so also does Jainism hit squarely at the target and, free from emotional stress, informs us concisely what

is what. We may not like it and we may have to toughen ourselves to take it, but it is proven to be.<sup>3</sup> So much has been said regarding the relationship between Jainism and the natural sciences, that it is scarcely worth belaboring the point further here. The nature of matter, the nature of physical reality, problems of space and time are all implicit in Jain teachings.

### Scientific Enquiries: Cosmology

According to the Jains the universe has neither any beginning nor any end. The entire cosmos is composed of substances of different kind. These substances are possessed of some unchanging essential characters (*guṇas*) and changing modes (*pariyāyas*). These are broadly classified into two groups—extended (*astikāya*) and (*Anastikāya*). *Astikāya* (*Atthikāya*) literally means "mass of all that is". Every substance of this kind exists (*asti*) like a body (*kāya*) possessing extension. There is only one substance, namely, time (*Kāla*) which is devoid of extension, and hence falls into the *Anastikāya* group. *Astikāya* substances are again divided into two kinds—living (*Jīva*) and non-living (*Ajīva*). *Jīva* is of two kinds, emancipated (*Mukta*) and fettered (*Baddha*). The latter is also of two kinds, moving (*Trasa*) and non-moving (*sthāvara*), e.g. those living in the bodies of earth, etc. The moving *Jīvas* are again classified into five-sensed, e.g. men, four sensed, e.g. bees, three sensed, e.g. ants, two-sensed, e.g. worms, and one-sensed, e.g. plants. In the same way *Ajīva* is divided into four categories *Akāśā* (space), *Dharma* (conditions of movement), *Adharma* (conditions of rest) and *Pudgala* (matter). *Pudgala* is of two kinds—the atoms (*Aṇu*) of earth water, fire, air, etc. and the compounds (*Saṃghāta*).<sup>4</sup>

Although there is a tendency among the scholars to explain *Jīva* in term of *Ātman* or *Puruṣa* of the other schools of Indian thought, etymologically it stands for 'what lives or is animate. The concept bears a clear mark of formulation from observing the characteristics of life and not through the search after a metaphysical principle underlying individual existence. Thus the word in the original sense stood for the vital principle rather than for the soul. Later on, however, the question of consciousness was emphasised, and the *Jīvas* were theoretically arranged in a continuous series according to the degrees of consciousness. On the top of this series were placed the perfect souls that had overcome all *Karmas* and attained omniscience and at the bottom were placed imperfect souls

inhabiting the bodies of earth, water, fire, air or vegetable. But this classification was actually biological, done from a purely empirical point of view on the basis of the sense organs, such as those that have one sense, two senses and so forth." But with the development of the idealistic bias, which saturated most of the philosophical systems of India, the Jain conception of *Jīva* also underwent a significant change. The biological and material considerations were gradually thrown aside and the concept of *Jīva* came to be looked upon as different from body, and its existence was sought to be proved in that of consciousness itself. In the first stage of this idealistic development its eternality and undergoing change of states were maintained. It was conceived as existing permanently, acting and being acted upon, as an experient (*bhoktā*) and agent (*kartā*). It was supposed to know things, perform activities, enjoy pleasure, suffer pain, illumine itself and other objects. In other words, the existence, function and behaviour of *Jīva* were conceived in accordance with those of a human being. In the subsequent stage of the development of this process, the intrinsic nature of *Jīva* was conceived as one of perfection and it was characterised by infinite intelligence, infinite peace, infinite faith and infinite power. Attempts were also made to solve the problem of its relation with the body by postulating that during the period of its union with matter, these features are obscured, though not destroyed.<sup>5</sup>

*Jīva* is capable of expansion and contraction according to the dimensions of the physical body with which it is associated for the time being. It becomes co-extensive with the body, though it has no form, it acquires, just, like a lamp which remaining the same illumines the whole of the space enclosed in a small or big room in which it happens to be placed, the size and form of the body wherein it lives. It is in this way that a *Jīva* though formless, is said to occupy space or possess extension, its non-spatial character thus being affected by its association with matter. Owing to the inclinations generated by its past actions a *Jīva* comes to inhabit different bodies successively. Whilst the knowledge possessed by the *Jīva* may be boundless, that which it actually possesses is fragmentary due to the obscuration caused by *Karma*. That is why it suffers and enjoys the fruits of its deeds, and then, in consequence of its *Karma* it has. Acquired, goes through the succession of rebirths, and finally obtains liberation through the destruction of its *Karma*. So long as it feels desire, hatred and other attachments, and is fettered by *Karma*, it undergoes continual incarnations. This is how the concept of

*Karma* is brought in relation to the normative and ethical aspects of Jainism. The classification of *Jīvas* will be dealt with in a subsequent section.

*Ajīva* consists of the objects responding to the sense-organs. It is in all respects the opposite of *Jīva*. It is classified into *rūpa* (those with form, as *Pudgala* or matter) and *arūpa* (those without form; as *Dharma*, *Adharma*, *Ākāśa* and *Kāla*). These five categories constitute the world or *loka* and beyond is the immeasurable infinite called *aloka*. Space or *Akāśa* is divided into *Lokākāśa* (part occupied by the world of things) and *Alokākāśa* (space beyond it which is absolutely void and empty). It is in the *Lokākāśa* that this... universe takes up only, a part. Regarding the shape of the universe the Jains have a number of conceptions. Things left together hanging in space would lead to chaos since space by itself is not a condition of motion and rest. Motion and rest are conceived of in terms of *Dharma* and *Adharma*, the laws by which things are bound to produce a cosmos. Both are devoid of sense-qualities, non-corporeal and co-extensive with *Lokākāśa*. The successive movements of the world are strung on time or *Kāla*. A distinction is made between eternal time and relative time, the latter being determined by changes or motion in things. Matter or *Pudgala* are figured objects existing in six different forms of different degrees of fineness and visibility and assimilating the qualities of touch, smell, colour and sound. Everything in the world except *Akāśa* is produced from matter. The physical objects apprehended by senses consist of atoms or *Paramāṇus*.<sup>6</sup>

*Dharma* and *Adharma* produce all possible conditions of movability and its opposite. *Dharma* is the principle of motion which helps the *Jīva* associated with *Pudgala* (matter) to progress just as water helps on the movement of a fish. *Adharma*, likewise, is the substance that helps the immobility of objects, just as the shade of a tree helps a traveller to rest. Without any movement on its part, it first attracts and then keeps motionless the one attracted. Both *Dharma* and *Adharma* are eternal and formless, both pervading the entire worldspace. Both of them are divided into three classes: *skandha*, *deśa* and *pradeśa*. The whole is called *skandha*; a part of it is called *deśa*, and a portion of that part *pradeśa*. *Dharma*, *Adharma* and *Ākāśa* do not exist in their totalities in the lower, the upper and the higher regions of the world, but only in their parts, whereas in the total world they do not exist in part, but as a whole. As conditions of motion and rest both *Dharma* and *Adharma* are passive (*Udāsīnakārana*).<sup>7</sup>

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Etymologically it means that which is liable to integration and disintegration'. It possesses colour, smell, taste and form, and is perceptible to touch. It can be consumed or destroyed and it may decay or alter its form. It is characterised by five colours (black, green or blue, red, white, yellow), two smells (pleasing and unpleasing), five flavours (pungent, bitter, astringent, sour, sweet), five shapes (circular, globular, triangular, square, oblong) and eight touches (light, heavy, hot, cold, rough, smooth, wet, dry). It is divided into four classes-*skandha deśa*, *pradeśa*, and *paramāṇu*, The smallest parts of matter which cannot be further divided are called paramāṇus or atoms. Two or more such atoms may combine together to form compounds (saṃghāta). Our bodies and the objects of nature are such compounds of material atoms. Mind, speech and breath are also products of matter. The masses of matter constituting the world necessarily have to interpenetrate each other, and the units of the one must be touched by those of others. In this process the units of time are included, placed on the same level with the others and considered constant. Contraction and expansion of matter stand for different densities with the same number of its units. We propose to discuss these points more elaborately in the section on atomism.<sup>8</sup>

It is therefore evident that the first and the second items of the nine fundamental categories of truth, namely, *Jīva* and *Ajīva*, were originally meant for a basic understanding of the cosmos. Although these two bear stamps of dogmatic assertions, the *a priori* principles by which they have been characterised can easily be detected. Early Jain thinkers wanted to understand and explain life and universe in terms of certain observed principles. They first made a distinction between animate (*Jīva*) and inanimate (*Ajīva*) objects and then made a thorough classification of all such objects. This was purely a scientific approach. In course of this investigation the concepts of space, time, motion, rest and matter were also taken into account and their character and qualities were analysed. Space was supposed to embrace the perceptible universe and beyond, whereas the remaining four to concern with the expansion of the world.

It is an historical fact that the scientific revolution which took its rise in the seventeenth century in the West was largely responsible for upsetting the earlier religious conception of the universe. Not only did science controvert the specific dogmas of the Western religion, but it seemed to have undermined the foundations as well as the fundamental concepts implicit in a religious outlook on things. The new cosmology of Copernicus, Galileo and their successors altered the geocentric picture of the universe although it was pronounced to be "contrary to the Holy Scriptures". The new biology (the theory of evolution) upset the doctrines of the special creation and the fall of man. And the new psychology seemed to show that man's mind, like his physical body, worked on a pattern of causal law and that however deep one plumbed its depths, it would not be possible to discover in it an unchanging soul which governed all its activities.

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