

The Jaina World of Non-Living

Dr. N.L. Jain

PĀRŚWANĀTHA VIDYĀPĪṬHA, VARANASI, INDIA
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THE JAINA WORLD OF NON-LIVING

[The Non-living in Tattvārthasūtra]

English Translation with notes on Chapter Five
of
TATTVĀRTHA-RĀJAVĀRTIKA OF AKALAṅKA
(Royal-Semi-aphorismic Explanatory of Reals)

On
TATTVĀRTHA-SŪTRA
(Treaties on Reals)

By
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Dedicated
To
My Teachers and Monks
and
My parents
and
Mrs. Kshama Jain,(better half)
and
The Armstrongs (sons)
who internally encouraged
and
externally enraged me
for completion of this work.

N.L. Jain

Publisher's Note

Jainism, the oldest indigenous religion has immensely contributed to the field of religion, philosophy, literature, history and culture. It also carries perhaps the most scientific and progressive outlook towards the natural science and environment.

The *Tattvārthasūtra* of Ācārya Umāswāti (-mi) (3rd century A.D.) is the first Jaina text in Sanskrit which submits the basic Jaina tenets in more systematic way. That is the reason why the *Sūtra* became so much popular amongst the both sects, Digambara and Śvetāmbara.

A large number of commentaries on the *Tattvārthasūtra* have been written by Jainācāryas since fifth century A.D. and onwards in different languages. Out of these commentaries the *Tattvārtha-Rājavārtika* of Ācārya Akalaṅka (720-780 A.D.) is of paramount importance which deals with the contemporary religious and philosophical views.

The fifth chapter of the text is more important from all standpoints. Dr. N.L. Jain, a profound scholar of Jainology and science has undertaken an INSA project of its translation work by adopting the technique of question-answer type with critical and supplementary notes. He appears to be successful in his endeavour. We are grateful to him for his permission to publish this commendable work. We are also thankful to Shri Pradyuman Zaveri from USA who has extended his co-operation by giving the financial assistance for its publication.

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Dated. 24.7.2000

Bhupendra Nath Jain
Secretary
Pārśwanātha Vidyāpīṭha
Varanasi.



Acknowledgements

It has been my desire for long to place before the wider world of scholars and general readers some important Jaina texts through English which could give a little deeper understanding of Jinistic concepts through logically amenable methodology. Nothing could be a better text than the explanatory of “Tattvārtha Rājavārtika” forming an exhaustive commentary on the first Sanskrit aphorismic sacred text called ‘Tattvārtha Sūtra’ (Aphorismic Treatise on Reals) of Ācārya Umāsvāti (-mi) of third century A.D. by the eighth century Akalanka-a shining star in the galaxy of Jaina scholars of not only his time but of all times. It was fortunate that the INSA approved my proposal to move in this direction in stages. I have worked sincerely on the first stage of this translation work of chapters 2 and 5 of the text dealing with physical and biological sciences in the field of Jainology by technique of question-answer-type with supposed to be very common terminology. I do not know how far I have been successful in my endeavour. But I have tried to be faithful to the text. Still there might be slips of conceptual or linguistic nature due to my ignorance in the complexity of topics. I hope for suggestions for correcting or improving this and the later stages of the work from the wider readership.

I take this opportunity to acknowledge my grateful thanks for the following persons and institutions who have been helpful to me in different ways and at different stages of this uphill task. I do hope for their affection in my future literary adventures too :

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N.L. Jain

Contents

1. Dedication	1
2. Publisher's Note	2
3. Acknowledgements.	3
4. Prologue	5
5. Introduction	9
6. Chapter Five	43
7. Appendices	
A . Reading References	285
B . Abbreviations	289
C . Introductory : N.L. JAIN	291
8. Standard Transliteration.	292
9. Index	293

Prologue

A western scholar has remarked that Jainism and Hinduism are the only two religions in the world whose origins can not be traced through they have had different names in the course of time. In the cyclic universe, Jainism is stated to be the natural and eternal religion with modifications time with the times. It aims at the smooth physical and spiritual progress and welfare of all the living beings, thus, leading to the overall increase in the happiness of the world. As per G.P. Jain, Jainism has a history of roughly six thousand years.

The Jainas form a minority community in Indian population. However, they have an over-proportionate contribution to the Indian culture (and world culture also) in the fields of different branches of knowledge like (i) physical and spiritual sciences (2) art and architecture (3) iconography and temple structure (4) cosmology and astronomy and the like. They have all the three factors to claim it as universal religion : (1) propounders (2) literature and (3) Comparative supremacy.

(1) They have Tirthankars (ford-makers) sermonizing the three-fold path of right faith(F), knowledge (K) and conduct (C) for ultimate happiness of the self and the world. They have also given us the three-fold path of non-violence (N_1), non-absolutism (N_2) and Non-attachment (N_3) for running a better spiritual progress. They have instructed the triad of sweating (S_1), self-sufficiency (S_2) and (iii) sameness (S_3) for having a better society. When these paths are followed, their result is multiplicative rather than additive.

$$(1) \text{ Right } (F + K + C) = \text{Right } (F.K.C)$$

$$(2) N_1 + N_2 + N_3 = N_1.N_2.N_3$$

$$(3) S_1 + S_2 + S_3 = S_1.S_2.S_3$$

(2) All of these principles have an universal appeal. These are contained in its pre-Christian and post-Christian voluminous literature in Ardhamāgadhī prakṛta and sanskr̥ta language and now even in non-Indian languages like English, German, French and Japanese. It has given Jainism a popularity throughout the world.

(3) The principle of non-absolutism and manifold predication has given it a comparative supremacy on theoretical and logical grounds.

In early days, the promotion of religion was mostly based on royal patronage in the country. However, the Jaina seers and businessmen have been going abroad in various parts of the world since the days of Alexander even in fourth century B.C.E. The names of the monk Kalyana, Ācārya Kālaka and his disciples, prince Ārdraka and others are noted in history. That is why, we find many forms of indicators for the preservation of Jaina culture in different parts of the world as described by G.P. Jain in his booklet. Currently, Gurudeva Citrabhanu, (late) Muni Susila Kumar, Triputi brothers, Acarya Candana and her disciples and many Bhattarkas have been trotting the globe for the last thirty years for promotion and preservation of Jaina culture. The householders like Virchand Gandhi, C.R. Jain, Br. Śitalprasad and more than a dozen of other scholars including Dr. N.L. Jain have also been participating in this activity. This has been due to increasing migration of the Jainas abroad for education and business purposes. There are about 0.10-0.15 million Jainas in almost all the continents of Europe, Africa, Asia and America. They need preservation, continuity and promotion of their culture on a wider scale. They have established many Jaina organisations like JAINA, JAFNA, Jaina Samaj, Europe, Jaina Academy, Leicester and others for promotion and preservation of Jainism.

Besides promotional lectures, many persons have written and published a good amount of elementary literature on Jaina tenets and practices including many foreign scholars in different foreign languages. Various aspects of Jainism also form the topic contents of International Conferences in the world on various themes related with philosophy, religion, ethics, peace and non-violence and environment etc. as Jainism has its tenets are applicable to the wider world problems. Some organisations have created world wide website on Jainism also. Despite this, it is observed that the middle level and academic world of the west seems to be not properly informed about Jainism. That is why, most books on 'World Religions' used as a course of study have many points about it to be rectified. It is, therefore, felt that we must have this

category of Jaina literature for the non-Jaina general and scholarly world covering intellectual and logical sides of Jaina precepts. There have been some attempts in this direction in the past, but the literature could not reach the people who required it most. One could also not distribute it because of lack of proper informations.

Times have changed during the last half of the century. We have listings of scholars writing chapters or books on religion and many publishers involved in these types of publication. Not only they, but others also require the middle level Jaina literature. The Jaina community abroad feels its duty to fulfill this task.

The U.S.A. has a sizable Jaina community spread over all the areas of this country. They have established nearly five dozen Jaina Centers including many Jaina temples with JAINA as their composite organisation. The Jaina Society of North Texas, Dallas, is one of the prominent centers. It has a temple in its center. It celebrates Prayūšana and other Jaina festivals (ii) it runs local Jaina pāthasāla (school) for children of different age-groups. (iv) It publishes many informative circulars and bulletins. Many Bhattarakas, Sadhus and scholars visit us regularly. As an active member of the centre, I had an idea of publishing middle level intellectual literature on Jainism. It was fortunate to learn that Dr. N.L.Jain of Jaina Kendra, Rewa (M.P., India) is involved in translating the middle and academic level sanskr̥ta Jaina texts. or their commentaries like Dhavalā (Ṣat-khanda-āgama) and Rāja-vārtika (commentary of Tattvārthasūtra by Akalanka of eighth century) in English. His translation involves supplementary notes also for comparative studies in current times. I felt pleasure in encouraging Dr. Jain's effort and in sponsoring the publication of at least one chapter of Rājavārtika - the fifth chapter dealing with the second reality of Non-living (Ajīva) of the Jainas. We selected this text as Tattvārthasūtra (Treatise on Reals) is the first aphorismic text of 3-4th century C.E. which is accepted by all the sections of the Jaina Church and it gives the Jaina tenets in the most organised way. It has also been translated in many languages. However, its commentaries, specially of Akalanka has not been translated in English so far. It is the crest of commentaries

explaining the Jaina tenets in intellectual and logical way. The fifth chapter on the Jaina World of Non-living is also important as it deals with topics related with physics and chemistry and biology of today. The readers will see what the Jainas could say on these matters in earlier days and what the scientists say about them today (through his supplementary notes).

Dr. Jain has already published two chapters of the commentary under the titles of (a) Jaina Karmology (8th Chapter, Navdaršana Society, Ahmedabad, 1998) and (b) Biology in Jaina Treatise on Reals (2nd chapter, Dig. Jain Samaj, Chennai, 1999) which have been well received. I encourage such efforts in global promotion of Jaina literature and feel pleasure in sponsoring publication of the fifth chapter on the Non-living. We hope his effort moves the people to rectify their views on Jainism in their books in their coming editions. I also wish that Dr. Jain will complete translation of other chapters of the commentary in due course. My thanks are due to Dr N.L. Jain for permitting me to sponsor this publication. The publisher, PVRI, Varanasi also deserves my thanks for the quality publication of the book.

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Pradhuman Zaveri

INTRODUCTION

Historically, culturally, philosophico-literarily, archeologically and commercially, the Jainas form a very important community in India despite their non-significant percentage (1.0%) in her population. They belong to a complete system of life style. They have their (i) torch-bearers (ii) sacred literature and (iii) worship-centers, now spread over all parts of the world. They follow the proto-historic religion of the East under strivers or ascetic tradition. Their primary literature is in a form of Prākṛta language consisting of mixture of 18 major languages and 700 dialects spoken by the general public of the times. But when Sanskṛta came into prominence, they had their sacred literature written in this language too. A tradition of composing sacred texts in aphorismic form (aphorisms are short and concise technical sentences with deeper meaning which, generally, are not clear without a good explanatory) had developed in Indian philosophical systems during the period between early pre-Christian to early post-Christian centuries. This is evidenced by the aphorismic texts of Sāṅkhya, Yoga, Nyāya, Vedānta and Vaiśeṣika systems composed during the above period. The Jainas also did follow the pattern. Their 'Tattvārtha Sūtra' (Aphorismic Treatise on Reals) supposed to be composed in northern India by Umāsvāmi (-ti) is the first and most important sacred text in aphorismic Sanskṛta respected not only by all the sections of the Jainas but also by the scholars of different systems for its authenticated and systematic presentation of Jaina tenets. It seems this Jainian text is the culmination of the period of aphorismic sacred texts.

The text contains the essence of Jaina religion and philosophy in a systematic way through all of its important aspects- physical as well as spiritual- not so compositely detailed earlier. However, it aims primarily at dealing with seven spiritual reals leading the worldly living to attainment of ultimate happiness or salvation. That is why, it is also called as 'Mokṣa Śāstra' (Treatise on Salvation). The 'Tattvārthādhigama' (Treatise on Reals) is another name for this text. Many English translators have expressed these titles in different ways but the title of 'Aphorismic Treatise on Reals' is preferred here as it gives an idea about the literary nature and contents of the whole text. It has the same place among the Jainas as the Gita for Hindus, Qoran for Muslims, Bible for Christians, Guru Grantha Sahib for Sikhs and Avesta for Pārsees. It is more popular among the D-section of the Jainas as indicated by the comparatively large number of Digambara

commentaries in the ratio of roughly 3:1. Its reading and recital has been prescribed to be spiritually upgrading and physically purifying.

Currently, this text is found in two versions : the D-version (Digambara, Sky-clad) and the S-version (Śvetāmbara, White-clad). Basically, it seems to be a pre-schismic text. That is why, many scholars have tried to trace the origins of these versions with specific perspective, but lack of historical records and plurality of contradictory contents and evidences have not clarified the point. However, it is surmised that these versions would have originated within about 100-200 years of its composition when the Jainas are said to have clearly developed into two sections (S and D). Dr. Sagarmal seems to be reasonable to suggest that the Digambara Pūjyapāda did not modify the original version to suit sky-cladist concepts. It must be Yāpaniyas who might have done it and he had adopted it. This view contradicts an earlier view. Nevertheless, each version has been very popular among the saints, scholars and votaries. This can be judged by the fact that many short and long commentaries and explanatories on (and translations of) each version have been appearing from time to time - first in Sanskrit and then in regional languages and now in German, English and Japanese too. It is also pleasing to note that while the noted Śvetāmbara saint Yaśovijay Gaṇi wrote a commentary on D-version, the Digambara Pt. Khubchand Shastri translated the S-version with autocommentary in Hindi. This is another proof for its popularity in both the sections. It is also a high credit for the text that International Sacred Literature Trust (ISLT), London, has published its international English translation (entitled 'That Which Is', Tr. N. M. Tatia, P.S. Jaini et al.) in 1994 implying its worldwide importance among the basic religious literatures of the world.

Period of Composition

Despite varied opinions, it is safe to presume that the text has been composed sometimes after 683 years of Mahavira's salvation. Due to some discrepancies found in many historic traditions of the Jainas, the concensus is now being built up for modifying the earlier accepted date of his salvation from 527 B.C. to 468 B.C. (i.e. 60 years later than assumed). Accordingly, the earliest date of the composition of this text will be sometimes after (683-468) 215 A.D. (i.e. in the third century A.D. in contrast to previously accepted 156 A.D.). Recently, Dhaky and Jain have suggested that the most probable date of the author of this text should be lying between early to late third century A.D. This date is in contrast with many earlier scholars advocating for the second century A.D. But it seems reasonably acceptable on many

scores. The variable textual or tabletal lineages create an impression of their being hearsays and not of very reliable character catalysing for their critical examination to serve as reliable evidence.

This has been the period when most of the aphorismic texts of other systems had already been composed. This fact must have encouraged the scholarly Jaina seers like Umāsvāti to compose a Jaina text on similar lines. Secondly, this has been also the period when the ethical and philosophical concepts of the Jainas were under experimental and mental scrutinisation stage. There were differing and varied alternative opinions and most of the concepts were in colloidal state requiring logical crystallisation. The scholars point out that every thought and concept passes through a historical process of its development. Besides, this was also a period when the Nirgrantha (knotless) church (this was the earlier name of Jaina Church) was undivided though schismic nucleation might have taken place much earlier. The author Umāsvāti must be given credit to have been born during such a critical period of Jaina Church to crystallise and systematise the Jaina pathways and establish scholarly excellence in tune with the times of the middle of the third century A.D.

The Aphorist Author

The spiritualist Jainas of pre- and early post-Christian era were mostly anonymous about their compositions. They adopted this tradition on many counts such as (i) extreme faith in the Jinās and their omniscience (ii) virtually tri-timal validity of their sermons of Jaina faith and (iii) compiler or faithful follower concept about their compositions for their credibility. That is why, there have always been discussions about their authorship and composition period. This has been a general trend even upto tenth century. Of course, some authors have a short mention of their parentage and/or teacher-taught lineage without any details. This historical disregard has been responsible to contribute to many debatable and as yet unresolved issues to evaluate Jinistic contribution in the literary and philosophical fields properly. The Tattvārtha Sūtra is no exception to this trend, specially its D-version. Moreover, the prominence of the above trend in the early compositions casts doubt about the period of Vācaka Umāsvāti. One has to convince how could his details be taken as exception in the matter ?

Despite this, many scholars have academically attempted about the issue of the authorship of this first Jaina Sanskṛta text. It is agreed that Ācārya Umāsvāti is the author of the text (of course, with different titles of identification). However, his personal identity is still under

discussion by the scholars. The author is described with two titles- (i) Ḡṛddhapiçcha and (ii) Vācaka. The scholarly discussion on this point is based on the following grounds:

- (a) Different pontifical and elders' lineage records of varying periods.
- (b) Many inscriptional records of Śṛavanvelgola, Hansī, Humçhā etc.
- (c) The mention of author in literary commentaries by the commentators like Vidyānanda, Siddhasena, Haribhadra, Vādiraja and in other texts of different authors like Vṣrasena and
- (d) Contents and conceptual development.

The pontifical and teacher-taught lineages are different in the two Jaina traditions. There is not only difference in lineage of 683-year period of Mahāvīra's post-salvation but the lineages of post-683 year are still more complex. Though some of these lineages contain the name of Umāsvāti, but they can not form the sole basis for any definite conclusion either about the author or his period. A range of period, however, could be guessed about him. The early lineages of S-version do not have the name of Umāsvāti. However, their lineages of 12th century onwards do have his name approximating Vācaka's period as 660 A.D.

All the inscriptions quoted by the Digambaras, generally, belong to a very late period (11-13th century A.D.). They indicate that Ḡṛddhapiçcha Umāsvāmi (-ti) was the author of the text but nothing about his biography or period. The period of inscriptions is the period when things got settled with respect to versional traditions and perspective. They cannot be very much relied upon the authorship issue. However, they may add a supporting factor alongwith other points.

There is mention of the aphorist author neither in the D-version of the text nor in its first two important commentaries composed approximately between 450-780 A.D. However, some later scholars mention the author as Ḡṛddhapiçcha modified afterwards as Umāsvāmi in inscriptions and Kannada commentary as above in 12-13th century. Since then, the D-version has G. Umāsvāti as the aphorist. The earliest commentary of Pūjyapāda on this text fixes his latest date also to be somewhat 100-200 years prior to him (i.e. 250-350 A.D.).

The Digambaras do not accept Umāsvāti with the title of 'Vācaka' as the aphorist as the Śvetāmbaras postulate on grounds of the panegyric in the autocommentary and other later commentaries of seventh and eighth centuries of their version. They feel the versional identity in these titles. They also express surprise about non-mention of the aphorist in early commentaries of the D-version. This leads to surmise that Digambara scholars might not have accepted him as a

member of purely their lineage because of many of his aphorismic contents not tallying with the concepts of the current D-version. Dr.S.M.Jain has indicated that this type of non-difference about the lineages has been in many cases. However, he points out many contents not tallying even with the concepts of S-version in the text.

The scholars have mentioned that the following aphorismic concepts do not tally with the D-contentions:

- (i) Preferential three-fold path of salvation in place of traditional five-fold one in 1.1.
- (ii) The possibility of eleven afflictions in the omniscients (9.11).
- (iii) There is mention of twelve classes of heavenly celestials in 4.3 in place of the traditional 16 in 4.19.
- (iv) The separate mention of time as a reality in 5.39 (and 5.22) indicating its disputed character despite the postulate of six realities. (of course, this indicates the boldness of the author to move on to definiteness).
- (v) The definition of 'spotted saints' (Vakuṣa) in 9.46 (TRV, P.636). connotes 'few clothism' also as one of the forms of 'sky-cladism' or 'knot-lessism'.
- (vi) The definition of 'possession' (Parigraha) in terms of attachmental volition rather than physical possessions in 7.17 indicates virtual non-acceptance of physical non-possession as the essential restraint-promoting means.
- (vii) The mention of five causes of karmic influx and bondage as against two to six mentioned in many Digambara texts.
- (viii) The scholars point out many more cases with reference to the statements in the autocommentary.

Some other scholars have indicated the following concepts not tallying with the S-contentions :

- (i) The same point as in (i) above.
- (ii) The concept of seven-fold spirituality-based reals in 1.4 in place of nine or eleven indicated in many canons.
- (iii-v). The difference in the number of disquisition doors (8 in place of 9, 1.8), Laukāntika celestials (8 in place of 9, 4.24) and causes of influx of physique-making karma of ford-builder-ness (16 in place of 20, 6.24).
- (vi) The life-span of Laukantika celestials is not in tune with Bhagavati (6.5).
- (vii) Discrepant descriptions about minor vows of householders in chapter VII and the number of ascetic model stages (Pratimās).
- (viii) Mention of five completions in 8.12 in place of six by tradition.

(ix). The inclusion of 'nakedness' (Nāgnya) in afflictions in 9.9 and 9.15.

(x). There is also difference between the statements about the maximum acquirement of vocable knowledge by the first two types of knotless ascetics in the canons and the autocommentary (9.48).

(xi). The description in autocommentaries of 2.17, 3.3, 3.9, 3.15, 4.26, 4.42 and 9.6 have also been shown to be canonically contradictory even by Siddhasena like 6.24, 9.17 and others.

In addition, many authors have referred to many more perceptual differences, shortening, lengthening or elimination of many aphorisms and their different meanings in S and D-version texts. This is a decisive factor for the better assessment of the authorship issue.

Thus, this aphorismic text seems to contain many concepts contradictory to the tenets of both the versions. On versional analysis, the comparatively lesser number of contradictions with D-version (8 against 12) leads to favour it more in this tradition. R. Williams also confirms this point on the basis of his analysis of the seventh chapter of this text. He has concluded that T. S. cannot be regarded as a S- work from the point of view of the conduct of lay people. It is a purely Digambara work on this basis. The clarification of Jain on many points going contrary to S-version are not very reassuring as they prove the preferential opinion of the aphorist rather than the colloidal canonical descriptions. These canonical statements indicate the developing trend of concepts in different periods crystallised by the bold Umāsvāti. Academically, this developmental process may be analysable, but this trend has a point towards the total validity of canonical contents on the basis of Jinās' meanings and scripture-proficient wordings for the common man.

However, the above bothway conceptual contradictions lead to conclude that the aphorist was not adapted to either of the major sects prevailing today as has been contended by many scholars of mid-twentieth century. He could also not be 'Vācaka' - titled. The lineages of S-version hold to have him round about 660 A.D. One, therefore, can safely presume that only Umāsvāti or Umāsvāmi was the author of Tattvārtha Sūtra without any title. It is the titles which have created the problem of authorship to be discussed later. How could he, otherwise, make the above type of statements? However, if he was neither of these two lineages, which lineage he belonged to?

There are three possible contentions on the issue. Some Digambara scholars hold the view that he belonged to the Yapaniya sect (a compromise sect in early Christian centuries) because the tabletted

lineages of current sects do not contain his name upto quite a later date and also these are of questionable nature on many counts, However, this view does not seem to be correct as Dr. Jain suggests because of his different lineages involving different opinions regarding certain postulates. The aphorist, thus, seems to be a pre-Yapaniyan and pre-Digambara-Śvetambara lineage.

There has been an opinion based on variable later lineages among the Digambaras that the aphorist was not only a prominent member of Mūla-Sangha of Kundakunda lineage but he was his direct or indirect successor also. However, this also does not seem to be correct as he has not advocated idealism over realism so ferrociously when one looks deeper into the literature composed by both of them. There are many points of contrast which indicate independent intellectualism of this aphorist. He has given his own version on the major issues. This is the main reason for the popularity and the following he received by later seers. How a direct or indirrect disciple could improve concepts over his traditional colloidal teacher sermonising for unquestionable right faith ? Some contrasting points may be noted here:

- (i) A clearcut upholding of 3-fold 3-gemal path for religiosity and salvation out of 3-5-fold paths mentioned by Kundakunda in his texts.
- (ii) Initiation of the concept of organs of valid cognition (pramānās) by eqating knowledge with its organs.
- (iii) A clearcut upholding of seven reals on spiritual basis instead of nine (or more).
- (iv) He defines right faith as belief in the seven reals or six realities (of physical world) in contrast with Kundakunda's definition involving belief in (a) scriptures (b) the Attained alongwith (c) reals and realities which seems to be a development over the aphorist.
- (v) His order of seven spiritual reals stands better reasoning.
- (vi) The name and order of twelve reflections is different from Kundakunda.
- (vii) The aphorist showed indifference over the monistic concept of idealism versus realism.
- (viii). The aphorist kept mum over the concept of eleven model stages of the householders.
- (ix). He excluded holy death from the list of the twelve minor vows for the householders. His order and classification is also more logical.
- (x-xi). He does neither have any discussion on the concepts of 14 spiritual stages (though he mentions some of them with reference to meditation) nor 14 investigational disquistitons.

(xii). In contrast to many disquisition doors for aspectwise studies, he mentions only 6 or 8 (or 12 if four positings are also included) of them.

(xiii). Umāsvāti has also not followed the tradition of composing texts on the basis of 'as told by Jinās' for credibility. He intended the reader to Judge his composition by himself. He has presented himself to be more intellectual rather than faithful.

A third and presumably more reasonable opinion, thus, seems to emerge that the aphorist was a prominent figure living in a period prior to clearcut schismatisation as pointed out earlier. He started an era of logical thinking which has been the basis for Jinistic conceptualisation. This translator concurs with this view and hopes the coming generation of the scholars will approve it.

Biography of the Aphorist - Umāsvāti/Umāsvāmi

There is not much details available about the biography of this noted aphorist who followed the anonymistic trend of his own time. That is why, even a recent scholar raised a point whether the aphorist was a female. However most scholars take him as a male and a scholarly saint. Two versions about his life-sketch are available and, therefore, there are two names of the aphorist as pointed out earlier. On this basis, some contended them as representing two persons. However, it is reasonable to presume that as Umāsvāti is a common factor in the two names, the aphorist must be a single person by this name attached with different titles after schismic mentality developed. It is due to this that his biography is also marked with confusing details.

The D-version gives some inkling about his whole life without any details of his area of birth, parentage, lineage and literary compositions. In contrast, the S-version gives the later details without indication of his whole life sketch. If one assumes that the aphorist was a single person and a pre-schismic identity, his life-sketch could be reasonably compiled by inclusion of all the available details in both the versions. This will lead us to the following biography of the aphorist, though it may not be to the liking of many earlier or modern scholars advocating either the separate identity or lineage of the aphorist.

The aphorist was born in a noted Brahmin family during a period sometimes 683 years after the salvation of Mahāvira (It is now 468 B.C. hence 683-468=215 A.D.). His parents were Vātsi 'Umā' (mother) and 'Svāti' (father) leading to his name as Umāsvāti. (This may be a southern tradition which indicates his Digambara origin ?) However, the autocommentary panegyric mentions him to be born in the city of

'Nyagrodhika' (whose identification seems to be difficult). However, recently, Dr. Jain has identified this place with Nagod in Satna district of Madhya Pradesh in the vicinity of which origination of shortlived 'Uccanāgara' (Ucehara city) lineage could be traced at least scholarly. The Digambaras take him to belong to the Nandi order. He received education under a Brahmin teacher named 'Mūla'. What led to his Jinistic initiation, is not known but it is said that he got initiated at the age of 19 by the striver tradition saint Ghoṣanandi. He became proficient in (i) pre-canonical tradition and scriptures (ii) Sanskr̥ta language and grammar and (iii) the prevalent major non-Jaina philosophical systems. His scholarship is qualified with the terms 'pre-canon proficient' and 'scripture-proficient' These titles indicate only his deep scholarship rather than their literal meanings as the pre-canons were lost to memory and canonical scriptures were traditionally oral by his time. He became pontif of his lineage at the age of 44 and continued this position creditably until his death at the age of 84 as per J.L. Jaini. Thus, the reasonable period of the aphorist is 215-299 A.D. reasonably a third century aphorist. He had an able disciple named Balāka-piccha and grand - disciple named as Guṇanandi.

He composed the 'Tattvārtha-Sūtra' at Kusumpur (current Patna, Bihar) or Ūjayanta (Girnar, Gujrat - in those times in southern side) at the request of a righteous votary for the benefit of human kind. This he might have done at a mature age of roughly 50 Years, i.e. in later half of the third century A.D. (The composition of autocommentary and at least 'Prašama-rati-prakarāṇa' is also ascribed to him under debate from one side). It is pleasing to learn that there is at least one author from the north (?) on whom Digambaras stake their claim as most of the early Digambara seers and authors belong to the south. He also seems to belong to the South rather than north. Ācārya Virasena mentions southern and northern postulates on many occasions indicating differences of opinion on many issues between the two. However, Tattvārtha Sūtra is a highly systematic text as above and prior to these contentions.

Looking from the current trends of biography, the above sketch seems to be quite incomplete as there are no details about his work and activities during such a long life-span. Nevertheless, we can have a respectful idea about the aphorist from what we have in different sources.

The Tattvārtha Sūtra (Aphorismic Treatise on Reals) : Text and Contents

The scholars have pointed out that the Tattvārtha Sūtra is the crowning achievement for systematically summarising the concepts and issues related to the Jaina philosophy, ethics, logic and mythology. It is a

monumental work of Umāsvāti. It has developed and described the contents in a coordinated way and created a landmark in the history of Jaina Church by initiating many new and better-presented issues of contemporary importance like (i) the precise formulation of three-fold path of salvation (ii) seven-fold spiritual reals involving the five noble truths (iii) definition of living in volitional terms and consciousness (iv) Karma theory (v) six-fold realities of physical world (vi) concepts of standpoints and organs of valid cognitions (vii) disquisitional methodology of objective studies (viii) primary and secondary aspectology of objective description (ix) canonical ethical codes for the laity and ascetics (x) cosmology and (xi) mythology. Not only this, he has reversed the canonical order of many triads like (i) Gem-triad, (ii) Activity-triad, (iii) Passional process-triad, (iv) Tetrad of bondage and (v) Pentad of senses. This reversal has not been discussed by the commentators. It could be presumed that the canonical period was the period of intellectualism and the period of devotionism was coming up in Umāsvāti period. Hence, he reversed their order, in most cases, to promote devotional path. This reversal may represent the historical development of thought process, scientificity or different (north and south) traditions. This point also supports the boldness and independent thinking of Umāsvāti.

If we overlook the versional approaches, we can easily point out that the contents of this aphorismic text have not only been drawn from the existing sacred Jaina literature but they are also indicative of an intelligent attempt creditably followed by the majority of the latter Jaina seers. Umāsvāti has drawn his contental treatment not only from the Digambara texts like *Ṣaṭ-khandāgama*, *Kaṣāyapāhuda*, *Mūlācāra* and *Bhagavati-Ārādhana* etc. (Some scholars have doubted about the existence of these texts in the period of Umāsvāti, but it seems they need reconsideration of their views), but he has also drawn from the traditional primary and secondary canons under oral transmission before the second or third councils at Mathura and Balabhi. He has also drawn many of his aphorisms on the basis of the existent texts of other philosophical systems as pointed out by Panditji. However, on serious reading, it does not look sound that the contents are drawn heavily on the basis of Kundakunda compositions as there are many basic points where both differ heavily as shown under the section 'the Aphorist Author' earlier.

This text contains 357 aphorisms in D-version and 344 in the S-version spread over ten chapters as shown below with summarised contents :

Chapter	No. Of Aphorisms		Major contents
	D-version	S-version	
1.	33	35	Right faith and knowledge, methods of objective studies and acquiring knowledge, standpoints, organs of valid cognitions.
2.	53	52	Living in general, Biology, classification, transmigration, anatomy, birth, bodies, physiology, physics, sexes, death.
3.	39	18	Hellish, human and animal world, geography, geology, mythology.
4.	42	53	Celestial world, astrology, mythology.
5.	42	44	World of non-living, physics, chemistry, biology.
6.	27	26	Ethics, influx of karmas, psychology, mind-matter effect.
7.	39	34	Auspicious karmic influx, conduct of laity, right conduct.
8.	26	26	Theory of Karma and karmic bondage (psychology and ethics).
9.	47	49	Karmic stoppage and shedding, asceticism, meditation, ethics.
10.	9	7	Liberation.

The numerical difference in the aphorisms of the two versions is due to the fact that there are many additions, deletions and conjunctions in different places. Besides, there are many aphorisms which have different forms of renderings in part. P. C. Shastri has referred 59 such noticeable variations in the two versions representing about 17 % of the total aphorisms.

The question of original version of the text has been discussed by many scholars opining in their schismic favour. If it is agreed that the text was composed sufficiently prior to schismic origin, none of the two

current versions should be taken as original as they seem to be heavily tinged with versional preferences. That is why, there is difference upto 17% as above in the two versions. It seems the original text must have been different from the currently available two versions. Each schism adapted to its own advantage to the maximum in their commentaries. The many anomalies found in the commentaries with respect to specific schismic points also support this point.

The Digambaras are said to be more conservative and traditional and, therefore, older in comparison to the progressive and liberal schism of Śvetāmbaras. It is said that mythology and rituals precede religious systems. The inclusion of large amount of mythology in D-version indicates this to be more in tune with the original text.

Ācārya Umāsvāti seems to be the original author without any cognomen or title. Looking to the importance of the text, each schism later wanted to adapt him. Each adapted him with his own specific title, he became Gṛddhāpīccha for Digambaras and Vācaka for Śvetāmbaras in due course.

It is seen that the major contents involving the spiritual and physical sciences in this text cover the early stage of many branches of learning of current age. The contents have been summarised by many scholars in short and long form. They could be summarised in a condensed form representing the basic themes, such as:

- (i) Philosophy, physical sciences and metaphysics : chapters 1, 2, 5, 8
- (ii) Mythology and cosmology : chapters 3, 4
- (iii) Ethics for laity and monks : chapters 6, 7, 9, 10

J.L. Jaini has analysed the chapterwise contents in terms of groups of aphorism indicating the scopes of the subjects in modern terminology in his english translation of this text. This is the most elaborate summarisation and the reader is referred to his book.

Commentaries on Tattvārtha-Sūtra

As pointed out earlier, the popularity of this text could be judged from the large number of commentaries covering a period beginning from fifth century A.D. to to-date. They are in different languages including even German, Japanese and English. The JSK mentions 14 D + 3 S commentaries (Tīkās) and explanatories (Vārtikas) upto 16th century A.D. A large number has appeared since then in different languages like Hindi, Gujrati etc. along with many translations of the original text. The commentaries in Sanskṛta are the most important of them. They give us an idea of logical, philosophical or conceptual development in their respective periods. They, thus, have literary as well as historical value. However, it is most surprising that almost all

the early D-commentaries originate from the south and S-commentaries from the north (This point seems to favour the two versions by two different authors. However, 83% similarity overrules this point). The main available commentaries (and translations) are mentioned below in Table 1 on next page with their approximate period-range collected from various sources along with informations about the recent research trends and revival of the composition of aphorismic texts.

It is observed that the D-explanatories/commentaries are mostly based on S.S. of Pūjyapada while S-commentaries are based on the so-called autocommentary. The D-commentaries have three forms- (i) prose (ii) semi-aphorismic prose and (iii) verse which are represented by Nos. (i) 2, 5-9 (ii) 3 and 4 respectively. In fact, No. 3 and 4 have also autocommentaries on the semi-aphorisms and verses. In contrast, the S-commentaries are in prose form only. This translator concurs with Panditji that the D-commentaries no. 3 and 4 are highly philosophical and advanced in comparison to the S-commentaries. In contrast to the opinions of some scholars, it can be easily pointed out that if there appears simplicity in elaboration and style in the S-autocommentary, it is also there in SS in many cases. Of course, it must be admitted that while the Vācaka was a canonist, Pūjyapāda was grammarian and logician also as is reflected in his SS. This point cannot, therefore, be a sufficient ground to prove the earlier or later period of the two, Secondly, if non-composition of commentaries for longer periods (i.e. about 700 years in case of Kundakunda texts) could be a logic for dating an author, the Vācaka will also appear to be in the same category (Siddhasena commentary being about 400 years later) and his date could also be about 6th century i.e. about 100 years earlier than Siddhasena. This leads to an approximate contemporariness of Pūjyapāda and Vācaka - one in south and other in north, per chance without normal chances of mutual personal communication. This seems to be an anomalous point for the debating scholars. Pt. P.C. Shastri and recently S.M. Jain (and many others) have dealt with this issue which requires more exhaustive studies to yield plausible conclusion.

One of the vexed problems associated with the so-called autocommentary of Vācaka Umāsvāti is whether he is only a commentator or author-cum-commentator of the text. The following points indicate that he could be only commentator-cum-remodeller of the original text under the title 'Vācaka':

1. Generally, no panegerics are found in ancient texts upto the from the days of scholastic schismisation).

Table 1. Tattvārtha sūtra and its Commentaries etc.

S. No.	Commentaries	Author	Area	Period-range, A.D.
(a) Digambara				
1.	Basic Text	Umāsvāti	North/South	215-299/ 156-240
2.	Sarvārtha-siddhi (SS)	Pūjyapāda	Karnataka	450-530
3.	Tattvārtha Rājvārtika	Akalanka	South	720-780
4.	Tattvārtha Ślokavārtika	Vidyananda	Karnataka	775-840
5.	Tattvārtha Vṛtti	Abhayanandi	-	11th Cen.
6.	Tattvartha-sutranugata Kanāta Vṛtti	Divakar Bhattaraka	Karnataka	1060 AD
7.	Tattvārtha Sūtra-Vṛtti (Kannada)	Balchand Muni	Karnataka	13th Cen.
8.	Tattvārtha-sukh-abodhini	Bhaskarnandi	Karnataka	1300-1400
9.	Tattvārtha Vṛtti	Śrutasagar Suri	Gujrat	1442-1528
10.	Commentary (D-version)	Yaśovijaya Gaṇi	Gujrat	1638-1688
(b) Śvetambara				
11.	Tattvārtha-adhigama Bhāsyā	Vācaka Umāsvāti	North	As in 1 above (assumed to be later)
12.	Tattvārtha Bhāsyā Vṛtti	Siddhasena	Gujrat/Rajasthan	675-750
13.	Tattvārtha Bhāsyā Vṛtti	Haribhadra	Rajasthan/Gujrat	700-770
(c) English Commentaries and Translations				
14.	English Translation, Main Text (D)	J.L. Jaini	North	1920
15.	English Translation, Main Text (D)	C.R. Jain	North	1930

16.	Reality (Eng.Tr.of a-2 above)	S.A. Jain	south	1960
17.	English Translation, S- version	K.K. Dixit	Gujrat	1970-74
18.	That Which is	N.M. Tatia, P.S. Jaini et al.	Rajasthan, Maharashtra	1994
19.	German Translation, basic text	H. Jacobi	Germany	Later half of 19th century
20.	Japanese Translation,		Japan	Early 20 th Century

(d) Translations/Commentaries in other languages.

21. Hindi translations by P.C. Shastri, K.C. Shastri, Acarya Jnansagarji, Kanaknandiji etc.
22. Gujrati translation by Pt. Sukhlalji (Hindi translation also).
23. Many other translations in different Indian languages. (It is not possible to list all of them).

(e) Researches on the Basic Text.

24. The text has also attracted the attention of current research scholars and as many as ten theses have been submitted on various aspects of the text along with comparative studies on its commentaries upto 1996.

(f) Revival of Aphorismic Texts.

25. The aphorismic tradition of sacred texts has now been revived by Gaṇādhīpati Tulsiji through his twentieth century composition of a ten-chaptered aphorismic book 'Jaina Siddhant Dipika' (JSD) translated into English entitled as 'Illustrator of Jaina Tenets' containing basic Jaina concepts with modernising trend and eliminating much of the ancient mythology.

2. Vācaka has mentioned that he is composing "Tattvādhigama" as an explanatory of "Tattvārtha" rather than "Tattvārtha sūtra" as is indicated by the last words of the chapters. Similar practice is also followed by Devanandi Pūjyapāda. The terms "Tattvārtha" and "Tattvārthādhigama" should not be equated to connote the same meaning as has been done by many scholars to support their contentions.

3. Some scholars opine that important texts have first commentaries 100-200 years after their compositions. That is why, Kundakunda's, period is slated for sixth to eighth century. On the basis of this criteria, the first commentary on Vācaka's commentary appears by about 750 A.D.. He should have, therefore, composed his commentary not earlier than 600 A.D. as is clear from the Vācaka's lineages stated above.

4. It is observed in Digambara tradition of Jain Church that most of the later commentators have added or modified the basic texts (of Kundakunda, Battakera etc.) in their own times with respect to the number of verses and their referential meanings. Why this can not be assumed that Vācaka Umāsvāti could have followed this point in modifying the original text and commenting on it ?

5. The S-lineages indicate his approximate period as 660 A.D. or so - the period of practising schismisation. It is, thus, quite natural to explain the basic aphorisms according to the tradition and sometimes modify it. This is what has been done by Vācaka and also by many later Digambara Commentators on Kundkunda and Battakera literature etc.

6. Some scholars have presented similar logic or counter-logic applicable in both the versions of the text. This indicates that polarisation of schisms has led to many anomalous points in both the versions. These are logically unable to prove any proposition.

7. Traditionally, the Digambaras have very high place for this text and it is not only read in Paryūṣaṇa, but it is also a part of regular recital like an incantation for improving religiosity. In contrast, the Śvetambaras do not hold such a value for this text. It indicates that it has not been a text of ancient tradition there and, thus, has a later adaptation.

8. Dixit has pointed out that one of the criteria for assessing the composition is the fact of tracing the development of thoughts and concepts. Whatever the earlier scholars have said, the S-version has many more advanced points in this regard, i.e. (i) numerical simultaneity of afflictions (20 in place of 19), (ii) bonding factors of the Karmic species of ford - builder (20 in place of 16), (iii) separate cognition status of memory etc. (in the place of synonymism of sensory knowledge), (iv) use of the term 'a-clothed' in place of nakedness in the list of 22 afflictions, (v) elimination of much of mythology and the like. Of course, one can point some exceptions in both cases, but one should look into the basic issues. This point also places Tattvārthādhigama or Vācaka at a later date.

The commentaries of Akalanka and Vidyananda are at the crest of the D-commentaries on this aphorismic text peeping deeply into the essence of the aphorisms and elaborating scholastically for the world of philosophers who have high appreciation for them. They were composed

during their periods between 720-840 A.D. They are entitled as Vārtikas (semi-aphorismic or versified explanatories) in contrast to the other short or long prose-based commentaries. The term 'Vārtika' is defined by lexicographers as a type of Explanatory which elaborates (i) what is said (ii) what is left unsaid (iii) what is imperfectly, difficultly or dormantly said and (iv) supplies the omissions. Both these explanatories satisfy these criteria excellently to be called by this name. Of course, the Akalanka explanatory is in a semi-aphorismic (most of its semi-aphorisms are the important sentences of SS) prose form while Vidyananda's semi-aphorisms are in the versified form. Both have elucidatory autocommentary on them.

Royal Semi-aphorismic Explanatory of Akalanka : Rājāvārtika

Out of the commentaries Nos. 2, 3 and 4, the Akalanka's explanatory named 'Tattvārtha Vārtika' or popularly called as 'Tattvārtha Rāja-Vārtika' or simply 'Rajāvārtika' (Royal Semi-aphorismic Explanatory on Reals) has an intermediate position. It is also called 'Tattvārtha-Vārtika-Vyākhyānāṅkāra' because of its elucidative autocommentary. It draws its base from No. 2 and gives base to No. 4. Just as the basic text 'Tattvārtha-Sūtra' was composed during the period of aphorismic sacred texts, 'Rājāvārtika' was also composed during the period of Vārtika-type texts illustrated by (i) Nyāya-Vārtika (Udyotakara, 550-650), (ii) Pramāṇa Vārtika (Dharmakīrti, 7th century and (iii) Mīmāṃsā-Śloka-Vārtika (Kumarila, 750-800). Akalanka followed the Udyotkara tradition for his Vartikas (prose-form) which are simple as well as exhaustive. This commentary is a highly advanced text involving the complexity of language due to logical base, refutation of related concepts of alien philosophical systems, grammatical maturity and excellent show of keen observation power of natural phenomena in comparison to much simpler SS and TSB. This single text alone is sufficient to learn the Jaina concepts and thoughts. In fact, this royal explanatory seems to be an original work for its treatment and methodology.

This Explanatory has some special points which occur quite repetitively under elaborations of many aphorisms. Of course, they are always at points wherever needed. These points may be mentioned here for the benefit of the general readers :

- (i) The explanatory contains an elucidative question-answer type treatment of the topics to make them easily graspable.
- (ii) The use of possessive or genitive case, possessive suffix or word conveying the possessiveness in the aphorismic structures has been elaborated by illustrating the relation to be observed in the states of

difference and non-difference between the qualities and the qualified objects as in the case of staffed Devadatta and pithed tree etc.

(iii) The usefulness or futility of addition compounds in the aphorisms supporting the canonical or original concepts.

(iv) Mostly, it has been opined that the etymological or conventional meanings of any word usually do not carry the conceptual meanings properly. The example of 'gau' (cow, to go) is very common in this connection.

(v) The use of polyviewistic approach is there in almost every case wherever different systems opine for absolutistic views. The substantive and modal approach is the specificity of this commentary. In fact, it was a period of establishment of Jaina logic through this multi-predicatal principle. This commentary, therefore, abounds in dealing with the various concepts of Cārvāka, Sāṅkhya, Nyāya, Vaiśeṣhika, Mimāṃsaka and Buddhist systems. This indicates not only the prominence of these systems in his period but also his authentic proficiency in all of them.

(vi) The reader of this commentary will find that many complex concepts and discussions have been treated with illustrations from common physical world. The examples of earthen-pot, fibre-fabric, milk-curd, Devadatta and his staff, horns of ass and hare, hair-crest of the frog, sky-lotus, son of a barren lady, physician-medicine and the like are everywhere which make discussions very interesting and easily understandable. This practice indicates him not only to be a keen observer of nature (as stated) but also an excellent psychologist to bring his point to the readers beautifully.

**Author of Rājāvartika (The Royal Semi-aphorismic Explanatory):
Bhatta Akalanka (720-780 A.D)**

It is proper here to learn about the biography of such an eminent explanator and author - Akalanka also entitled with Bhatta - a brave and bold scholar and debater. The literature reveals about twelve seers with this name during the period between eighth and sixteenth centuries. We are concerned here only with the first one. His biography is found in "Akalanka-Carita" (Biography of Akalanka), 'Rājāvali-Kathe' (Biographies of Royalties) and many other sources. Nyāyācārya has deeply worked on him. However, it is shrouded with contradictory references in them regarding his (i) birth and birthplace (ii) parentage (iii) teacher-taught lineage (iv) area of his activities and (v) his period. Despite this, his compositions have earned him a high prestige recorded by many later scholars in their compositions. He has been ascribed with about twelve titles suggesting his profound scholarship, debating capacity, winning over philosophical disputants and logic-based

scientificity. However, two of his facets are important - (i) debater and (ii) commentator-cum-author. In addition, he has proved to be the founder and systematiser of Jaina logic and theory of polyviewism. He was so influential that the Jaina logic was designated as 'Akalanka Logic, Akalanka genesis of theory of organs of valid 'cognitions', and so on. He was not only a logician and polyviewist but he was also an intellectual with the mentality of examination-based acceptance of traditional spiritual and physical concepts. He faced many anomalies in Jaina terminology and ambiguous points in his times with reference to different philosophical systems which he resolved without appreciable canonical transgression. He followed Umāsvāti's tradition of independent thinking.

Despite ambiguity about his biography, one can make out some general statements in this regard as per the logistics of Nyāyācārya. There is a controversy over his period due to the meaning of the term 'the 700th year of Vikramarka-Śaka' in the verse of Akalanka-Carita. If this means Vikrama era, it will mean his presence in 643 A.D. If this means the Śaka era, it will mean his presence in 778 A.D. It is unfortunate that both the meanings of this term are found in different sources. Shastri (N.C.) opines that the discussion and evidence put forth by Nyāyācārya is strong enough to support the thesis of his period as 720-780 A.D. assuming the meaning of the above term with reference to the Śaka era (i.e. A.D. +78 years).

He was born in a royal kṣatriya clan in the religiously dominated city of Kānci (Southern Kāśi) area of current Tamilnadu in about 720 A.D. He was locally educated in the first instance. He got associated with a Jaina saint whom he met with his parents. They asked him for a temporary 8-day oath of celibacy (which he took as a life-long one). It seems he must have been taught by this monk during his wanderings in the country. Akalanka must have realized the disappointing religious and philosophical state of the time and the anti-Jaina tirade must have pinched him to work for promotion and glory of the Jaina faith. In order, per chance, to fulfil this object, he did not marry reminding his father about the life-long vow of celibacy. He attended Buddhist monastery in Kānci in disguise to learn the Buddha philosophy which was prominent in refuting other philosophical systems on logical basis. His sharp intelligence made him a ferocious debater, commentator and author. There is a story about his flight from the monastery due to a correction in a text which his teacher could not explain properly. He wandered throughout the country after this episode and established himself in the world of philosophers.

It seems it is after these eventful Buddhist studies that he was Jinistically initiated and became the pontif of the regional group of monks of Sudhapur. During this period, he participated in many famous debates in Kānci (Tamilnadu), Kalinga (Orissa, in the court of the king Himshitala) and Andhra (in the court of the king Sāhastunga) countries and defeated the Buddhists at every place and glorified the Jaina faith.

Besides debates, his memorable task has been his authentic compositions- his authorship of logical texts. He has two types of compositions- (i) original (4) and (ii) commentaries (2). There are two commentaries - one on Tattvārtha Sūtra named as Rāja-Vārtika (which is the subject of this work) and the other on Āpta-mīmāṃsā (Critique of the Attained) of Samantabhadra known as Aṣṭa-Śati (Eight-Centad). He has four original treatises - (i) Nyaya Viniścaya (Ascertainment of Logic, 480 verses in 3 chapters) (ii) Siddhi-Viniścaya (Ascertainment of Validity, 12 chapters) (iii) Pramāṇa Sangraha (Anthology of Cognitions and (iv) Laghiyas-traya (A Short Triplet, 3 chapters, 78 verses) containing logistic treatment about organs of cognition, standpoints and positings. They have autocommentaries also, His contribution to the field of Jaina logic may be cited in terms of (1) improved and better definition of the organ of valid cognition over Umāsvāti and Siddhasena (2) strengthening the concept of two-fold knowability of objects- (a) logically-amenable and (b) logically-non-amenable postulated by earlier scholars (3) re-affirming the two-fold (sense-based, deficient and efficient or non-sense-based) concept of perceptual cognition and modifying its definition in terms of 'immediate-cum-lucid' (viśada) (4) establishment of six -fold organs of valid cognition (Pramāṇas) by refuting other systems in this regard (5) applications of polyviewism to explain the resultant of organs of valid cognitions (6) the scientific concept of relative validity of organs of cognitions and (7) non-acceptance of the practice of casuistry, censure, wrangling and cavil etc. for a good scripture-based debate and many others.

The scholastic achievement of Akalanka springs forth from the texts of noted scholars like Dharmkirti (Buddhist) and his predecessors, Kumarila (Mīmāṃsaka) and Udyotkara (Nyāya) who either preceded him or were his contemporary. He has depth in his descriptions and meanings along with satirical remarks for the opponents.

We do not find other details about his activities during his life time. Of course, his scholastic works and debates must have consumed most of his time besides his pontifical duties and observance of monkal practices. We do also not have any mention of his teacher-taught lineage. Nyāyāchārya does not seem to agree to the hearsay about his brother -

Nikalanka. However, looking at the places of his debates, his area of activities was in the southern and Kalinga part of the country. He had a glorious death in 780 A.D. It must be noted that while Akalanka was promoting Jaina faith in the south, his contemporary Śvetāmbara scholar Haribhadra was following his path in the north.

The Project : Chapterwise English Translation of Rājāvārtika of Akalanka

In these days of (i) global communications (ii) promotion of harmony among the world of religions (iii) advancement of science and scientificity and (iv) thirst for knowledge, the Jaina faith requires universal propagation due to its self-experienced or observed and scientifically benevolent concepts attuned to the relativistic theory. However, the process has been hampered due to language problem. It is necessary to place the traditional or original general or scholarly literature before the world in the most popular language - English. Many western and eastern scholars have done creditable work in this direction. However, much more needs to be done. The promotion of faith in Jinistic spiritualism requires the scientific character of the traditional descriptions about the physical world. It is this point which needs active attention. The presentation of Śvetāmbara literature stands better in this regard by now. The Digambaras should also take up the cause to let the world know about their early scholarship in elucidating the physical world through their literature.

Though it is heartening to learn that a good number of Digambara basic texts of Prakṛta and Sanskṛta have been translated into English by the eminent people like J.L. Jaini, C.R. Jain, A.P. Jain, A.N.Upadhye, S.A.Jain, G.R. Jain and others beginning from the third decade and after in this century, but this literature involves mostly the primary texts. The Digambara literature has a large volume of secondary texts in terms of short or long commentaries on these texts covering a period of middle ages beginning from the fifth century onwards. These texts not only present the philosophical and logical background for the Jaina concepts contained in the basic texts but they also represent the developmental stage about them in their respective periods. They are, thus, historically important too for evaluating the eastern scholarship properly. Only rare cases have come up in English.

The 'Tattvārtha Sūtra' has been the most popular basic text in this regard. It has many commentaries in Sanskṛta as already stated. It is fortunate to know that almost all important commentaries have been translated in Hindi. However, it is only the earliest Digambara commentary by Pūjyapāda which has been translated in English by S.A.

Jain under the title 'Reality' (1960). In addition, G.R. Jain has a modern commentary on its fifth chapter alone under the title of 'Cosmology, Old and New' (1975). However, the other advanced commentaries based on this remain unexplored in this regard. The Akalanka commentary 'Rajavārtika' is one of them though its Hindi translation (in fact, summary) appeared in 1953-57. It has manifold importance. It was, therefore, thought proper to translate it into English. However, the treatise is too large for full translation in one-go. Accordingly, it was considered to be taken up in stages. In view of my personal background, my interest got concentrated first on chapter 2 and 5 as they contained normally all the Jaina postulates of Biological and Physical sciences. Accordingly, I submitted a proposal to the authorities of INSA, Delhi for sponsorship and assistance as they have been encouraging such activities since 1961. It was fortunately accepted in 1993. However, the work involved not only translation but critical and supplementary notes also on the basis of other commentaries and current trends. These notes will serve to evaluate the status of our scientific knowledge during the Akalanka period of eighth century which is taken as a dark period in the history of eastern science.

There has always been a more intense feeling than S.A. Jain that it is extremely difficult to convey fully the spirit and charm of Sanskr̥ta into English and that many expositional peculiarities of Sanskr̥ta cannot be literally translated. In fact, it seems an uphill task to translate the highly compounded and very long sentences (covering many lines) involving a complex terminology. It is natural to realise that Sanskr̥ta language could be highly condensed in words to express lengthy meanings requiring many sentences in English for their elaboration. Despite this, I have tried to do justice in rendering the essence of the original contents as faithfully as possible in simpler English.

Methodology :

The methodology adopted in this project has been worked out as below :

(a) Procurement of important editions of (i) Hindi and English translations of basic texts of Tattvārtha Sūtra and Tattvārthādhigama Bhāṣya (ii) original or Hindi/English translations of different commentaries on the text along with Rājaa-Vārtika and (iii) other associated or related literature including research papers and journals.

(b) A general study of the above literature in (a) was carried out to define the nature of English translation. Four special points emerged out of it :

(i) **Avoidance of grammatical references** : It is found that there has been no tradition of aphorismic/semi-aphorismic texts in English. Here no format of etymological or grammatical justification is found. I have,

therefore, purposely avoided many grammatical references and sections which do not cast any impression on the aphorismic and conceptual value of the text and which do not have much credit for the general reader. Nevertheless, those text contents have been included which cover case-endings. (nominative, possessive, locative etc. which lead to clarification regarding the meaning of the aphorisms), compoundings and utility of aphorismic structures and the terms used therein.

(ii) Terminology : The earlier translations of Jaina literature, in general, showed a varying terminology by different authors. Many-a-times, a single English word (i.e. perception etc.) was being used for many specific terms to confuse a new reader. There has been a feeling that this has a strain on him when he studied more than one book. About twenty such terminologies of individual origin are available. It was decided to use a highly simple and common terminology developed (out of them) by a Board of Scholars - under Jain International, Ahmedabad (1995). A good number of terms have to be coined for their simplicity and non-traditional derivatives and words have been used - perhaps not to the liking of the traditional linguists. It is hoped that the readers will appreciate this endeavour.

(iii) References : This work involved a good amount of studies of books and journals. They have been used freely and repetitively in the translation and notes. It has been thought proper to avoid their referencing at each point to contain the volume of the text. However, they have been listed in the end in Appendix A. In the same way, a list of symbols and abbreviations is also given.

(iv) Supplementary Notes : The addition of supplementary notes at the end of the commentary of aphorisms was thought to be an essential component of a twentieth century scholarly endeavour. They give not only the summary of contents of the respective commentary of the aphorisms but additional points also found in other commentaries alongwith the current scientific opinions on the related subjects. In most cases, they also indicate different renderings of aphorisms in the S-version. Their importance has been mentioned earlier. The first part of these notes may seem somewhat superfluous but it was felt necessary for onward notes. These notes have been added with an unprejudiced mind and logic-amenable faith in the ancient wisdom. Many recent authors have been referred to in this connection and logistics have been impressed upon. Vidyānanda's Explanatory forms a substantial part of these notes with or without direct reference. It is hoped that these notes will add to the charm of this work.

(c) Translation Technology : This translation work has been undertaken on the basis of the above points in mind alongwith the following additional salient features :

(i) It has been pointed out that this explanatory has autocommentary on its semi-aphorisms. In fact, it is the autocommentary which gives the real purport of the semi-aphorisms. It would have been a high repetition to give their import also. Hence, they have not been taken into consideration in this translation. This does not cause any disadvantage in any way.

(ii) The Hindi translator of this explanatory gave only the gist of the contents in running Hindi. He did neither have the commentarial introduction nor question-answer-based treatment of the contents. The translation does not have even the general import of the original aphorisms. All these three features have been incorporated in this work.

(iii) Based on the points c-i and c-ii above, the following 5-point serial has been followed during this translation :

1. Translation of introduction to the aphorism.
2. The basic aphorism of Umāsvāti (with its chapter and aphorism number) with diacritical marks.
3. The import of the aphorism.
4. The number-wise semi-aphorismic translation using question-answer technique wherever appropriately observed in the explanatory.
5. Supplementary notes.

Besides the above 5-point translation, Introduction in the beginning and necessary Appendices at the end have also been given.

Details of Chapter 5

This chapter has 42 aphorisms in D-version and 44 in the S-version. The same processes of addition, deletion and different renderings (in about 21% of aphorisms) as in chapter 2 are observed here too as below in contrast to D-version :

(i) Addition (in S-version)

- | | |
|--------------------|------|
| 1. Jivasya | 5.8 |
| 2. Anādhī-ādimaṅśa | 5.42 |
| 3. Rūpādiṣu-ādimān | 5.53 |
| 4. Yogopaogau | 5.44 |

Jiveṣu

(ii) Deletions (from D-verion)

- | | |
|------------------------|------|
| 1. Jīvāśca | 5.3 |
| 2. Sat-dravya-Lakṣanam | 5.29 |

Thus, 4 additions and 2 deletions in S-verion make a total of 44 aphorisms in S-version of this chapter. The deletion of 5.3 has been made up by combining 5.2 and 5.3 of D-version in one there. Akalanka does

not support this amalgamation in S-version. The deletion of 5.29 has not been explained in the texts. However, it looks odd to add aphorism 5.8 while amalgamating 5.3 of D-version. Shastri's explanation about indication of contraction and expansion capacity does not seem logical in view of 5.16 in S-version. The other three additions 5.42-5.44 are just elaboration of 5.41 (which has been done by Akalanka through his semi-aphorisms). It may, however, be noted that these additions and deletions do not make any difference in the conceptual imports.

(iii). There is 21% (9 out of 42) different renderings in nine aphorisms (5.4, 5.7, 5.16, 5.17, 5.22, 5.26, 5.28, 5.36, 5.38) in S-version in contrast with the D-version. These lead to substantial conceptual differences.

Three important conceptual differences can be easily pointed out due to these different renderings in the S-version of this chapter :

(i). There is quite a good amount of difference in explaining the concept of atomic bondings due to their positive and negative character in both the versions despite the aphorisms 5.33-5.36 (D-version) and 5.33-5.35 (S-version). Out of eight probable conditions of mutual bondings, there is possibility of bonding in 6-7 cases in S-version while there is possibility of bonding in 2 cases only in the D-version.

(ii) There is also some difference about the resultant nature of the aggregate due to bonding under different conditions in both the versions.

(iii). The question of time as a reality has been under colloidal condition in both the versions. The aphorism 5.39 (D-version) indicates its definiteness while the 5.38 (S-version) points out still a colloidal situation in the matter in the times of Vācaka. Thus, the Digambaras have six realities while the Svetambaras may have 5 extensive realities. However, the 5.22 there gives some positive indication about this point.

The subject matter of the fifth chapter refers mainly to the world of the non-living. It has the following topics in order :

- | | |
|--|------------|
| (1) Mention of five extensive realities | aph. 1-3 |
| (2) General characteristics of realities | aph. 4-7 |
| (3) Number of spacepoints of realities | aph. 8-11 |
| (4) Occupancy of the realities | aph. 12-16 |
| (5) Functions of the realities | aph. 17-22 |

(6) Definition of mattergy	aph. 23
(7) Various forms of mattergy	aph. 24
(8) Kinds of mattergy	aph. 25
(9) Three methods of formation of mattergies	aph. 26-28
(10) Definition of reality (Dravya)	aph. 29-30
(11) Definition of permanence	aph. 31
(12) Mode of dealing with contradictory conditions	aph. 32
(13) Rules for atomic bonding to form physical or chemical aggregates	aph. 33-37
(14) Second definition of reality	aph. 38
(15) Counting time as a reality	aph. 39-40
(16) Definition of attributes	aph. 41
(17) Definition of modes/modifications.	aph. 42

It is clear that this chapter deals with many topics of physics, chemistry and biology which may be classified as follows :

(i) Physics	Aphorisms
Realities (Dravyas)	1,2,4,5,6,7
Definition and kinds of mattergy	25-30
Spacepoints, functions, occupancy	10,12,14,19, 20
Heat, light, Sound	19,23,24
Medium of motion and rest,	8,13,17
Space, time	9,18,39,40
(ii) Chemistry	Aphorisms
Atoms/ideal/ultimate atoms	11
Methods of atomic bonding	26,27,28
Theory of atomic bonding	33,34,35,36,37
Modifications	42
(iii) Biology	Aphorisms
Spacepoints, occupancy and functions	3,8,15,16,21

The current physics, chemistry and biology deal with almost all of these topics. However, it is observed that the contents described in the commentary seem to belong to the pre-instrumental age. They are mostly speculative and not illustrative. However, the philosophical discussions in

the commentary are impressive. They refute the following theories of different philosophical systems - refutations of (i) Vaiśeṣika definition of reality as an entity in connection with reality-ness or an entity having an acquiring capacity for attributes (ii) non-materiality of sound (iii) different viewpoints about time to prove its separate identity as a reality (iv) Mīmāṃsaka theory of Exposerism (Sphotavāda) and (v) many concepts of other systems. The polyviewistic approach is one of the instruments in the logic of Akalanka. The supplementary notes here too will enable the reader to take up the journey upto twentieth century through different philosophical routes to locate his station in proper perspective.

Summary of the Contents of Explanatory : 1. Definition of Reality

The aphorism 1.4 of Tattvārtha Sūtra has mentioned seven spiritual reals (Tattavas) for moving the worldly being towards salvation. In contrast, this chapter deals with the five (extensive) and one (non-extensive) realities of physical world (Dravyas). Both types of entities have specific names for distinction. The term 'reality' has been three-foldly defined in aphorisms 5,29,30,31, 38, 41, and 42 having the same sense :

- (a) A reality is that which undergoes modifications due to internal and external causes.
- (b) A reality in an entity characterised by existence or is-ness consisting of the processes of origination, destruction and permanence.
- (c) A reality is characterised by the attributes and modes. The attributes are co-existing qualities while the modes are successively changeable qualities. The attributes represent permanence while the modes represent the other two points as in (b) above.

The explanatory refutes the definition of reality (a) as a conjunction with reality-ness, (b) as an asylum of attributes (c) as a multitude of attributes and (d) as having the capacity of transformations into the useful on solid logical basis. It, thus, establishes the above three-fold definition of reality.

2. Kinds of realities of physical world and their definitions

There are two kinds of realities in the physical world - (a) non-living and (b) living. There are four extensive non-living bodies of (1-2) medium of motion and rest (3) space and (4) mattergy. In addition, there is the extensive reality of (5) living body and (6) a non-extensive reality of non-living time. Thus, there are six realities in the physical world.

The first five realities are called bodies with respect to homolocation and heterolocation as well. The term body means accumulation of many space-points. Its inclusion in aphorism 5.1 is meant for exclusion of the reality of time as a body or extensive reality. The term 'non-living' does not mean negation of the living but the existence of other forms different from the living one like 'not-horse' having a meaning of animal different from horse - an ass or a donkey.

These realities have been defined on the basis of their functions, etymology and convention. The medium of motion and rest are the neutral causes of motion and rest of the living ones and mattergy. The space accommodates all the entities including itself. The mattergy has the properties of association and dissociation. The ultimate atom is formally said to be mattergy with respect to the attributes and capacity for association etc. The order of placing the four non-living realities in 5.1 has also been justified on practical grounds.

The definition of the reality of the living as conjunction with livingness has been refuted on similar grounds as in the case of reality-ness as reality alongwith logical flaws of infinite regression and loss of promise in this postulate. In fact, the reality of the living is that which is associated with activities of life (like consciousness, respiration etc.) undergoing natural or efforted changes.

The Jaina concept of six physical realities excludes many other realities postulated by other systems as they get included in these six ones. Further, it has been inferentially established that the qualities of touch, taste, smell and colour are co-existing ones.

The Digambaras postulate time as a definite reality on the basis of its functions in aphorism 5.22 and its general and special attributes as found in other realities.

The explanatory has given logic for the existence of all the realities individually and independently.

3. Characteristics of the Realities

There are two types of characteristics of realities - (i) based on similarities and (2) based on dis-similarities. All these realities are eternal and fixed in number and space points. However, the five realities are formless or non-mattergic, the first three of them are single, continuous, inert and neutral entities. In contrast, the reality of mattergy has form or sense-perceptibility with respect to the twenty sub-classes of four co-existing properties of touch, taste, smell, colour (and shape also ?) as explained in 5.23. Their order has also been justified on the basis of visibility. The substance and its properties are coexisting attributively but changing modally. The mattergy includes sense-perceptible objects like bodies, brain, karmas, atoms and variforms and sense-organs etc. It has two varieties in the form of (i) ultimate atoms and (ii) their aggregates. They are different from the Sāṅkhyā Prakṛti. It is also active. It has maniness also. The reality of worldly living is also similar to mattergy in these three regards. However, it is permanent like active atoms, ego and Prakṛti etc. Substantively, they may be inert, but modally they are active. However substantively, there are some similar and some dis-similar characteristics in these realities.

4. Spacepoints of Realities

The spacepoints of the realities are as below.

(1) Medium of motion	innumerable spacepoints
(2) Medium of rest	innumerable spacepoints
(3) Single living entity	innumerable spacepoints
(4) space	infinite space points
(5) Mattergy	Numerable, Innumerable and infinite spacepoints
(6) Ultimate atom	single space point
(7) Time	Innumerable and infinite (aph. 5.40)

5. Substratum or Location of Realities

- (1) All realities are accommodated in universe or occupied space
- (2) Medium of rest and motion : Located in whole of the occupied space
- (3) Mattergy : Located in one spacepoint upto infinite spacepoints of occupied space.
- (4) Livingentity : Located in one spacepoint upto innumerable spacepoints of occupied space due to its lamp-like expansion and contraction capacity.
- (5) Space Located in itself in occupied and non-occupied universe.
- (6) Time Located in occupied space.

The universe (loka) has been defined in terms of (a) a place where the effects of merit and demerit are observed (b) a place where different types of objects are observed (c) a place observed or perceived by the omniscients and (d) a place where six realities are found. It has two varieties- occupied universe as above and unoccupied infinite space devoid of any type of occupancy.

6. Functions of the Realities

The functions of different realities are given as below :

- (1) Medium of motion Neutral causality in motion of the living and mattergy.
- (2) Medium of rest Neutral causality in stoppage or rest of the living and mattergy.
- (3) Space Accommodation for all the realities including the space itself.
- (4) Mattergy Formation of bodies, speech, mind, respiration etc. (The materiality of sound and mind has been proved here). Feelings of pleasure, pain, aliveness and death.
- (5) Living reality Mutual support and dependence in

- (6) Time pleasure, pain, aliveness and death.
Perdurance of entities, causing transformations, activity or motion, priority and posteriority, two varieties

7. Additional Properties or Modifications of Mattergy

The mattergy is observed to have many additional properties in terms of (i) languagical and non-languagical sounds which are mattergic in nature (ii) natural and exertional bonds (3-4) absolute and relative fineness and grossness (5) regular and irregular configurations (6) six kinds of division (7) darkness (8) shadow or images (9) hot light (10) cold light and (11) ten-fold action, motion or transformation. These modifications are found in aggregates only while touch, taste etc. are found in both- the ultimate atoms and aggregates. These modifications include many forms of current energies like heat, light and sound in addition to grosser matter.

8. Varieties of Mattergy and their Formation.

All kinds of mattergy have two basic varieties : (I) ultimate atoms and (ii) atomic aggregates. The term 'aṇu' has been used here for ultimate atom while early Śvetāmbara texts used the term 'paramāṇu pudgala' (ultimate atomic mattergy or 'Paramāṇu'). The ultimate atoms are imperceptible to senses, indivisible and occupy single space point. It has two touches and one taste, smell and colour- a total of five qualities. Its existence is inferred from its gross aggregates like body, senses and basic elements. The atoms may be the cause and effects under different conditions. The aggregates have three varieties : (i) whole aggregates (ii) part aggregates and (iii) sub-part aggregates. The different kinds of earth, water, air and fire are all aggregates. They are produced by the processes of dissociation, association and association-cum-dissociation. They may be diatomic to infinite-atomic in character. They may be perceptible or imperceptible by senses. However, the ultimate atom (i.e. causal atom) is produced by dissociation only.

The ultimate atoms have positive and negative electrical character which leads to their bonding to form aggregates. There are six rules for bonding to occur or not to occur :

- (1) Bonding does take place when the electrical character of bonding entities is opposite.
- (2) Bonding does not take place when the quantitative electrical character of bonding entities is minimum (i.e. 0 or 1).
- (3) Bonding also does not take place when the electrical character of bonding entities is quantitatively similar.
- (4) However, bonding takes place between the bonding entities if their electrical character is similar or dissimilar but differing in numericality.
- (5) Bonding takes place between the bonding entities if their electrical charge numericality differs by 2 (or more) in them.
- (6) The properties of the newly formed aggregate will depend upon the nature of the entity having more numericality during bonding.

There is some difference in the interpretation of these rules among the Digambara and Śvetāmbara versions as indicated in supplementary notes.

9. Theory of Relativism

Many philosophical systems postulate impossibility of permanence through change in an entity. In response, the Jainas point out that changes occur only in an existent and permanent reality. Hence, they believe that every entity has substantive and modal aspect and the statements are made under one of these standpoints. The seemingly opposite characteristics may be given credibility under the prominence of one aspect taking other aspects as secondary. Thus, the viewpoints of prominence and non-prominence should always be taken into account for elaborating the ways of the world. This is called relativism. It is on this basis that the Jainas have been able to run the middle path rather than extremist path.

Conclusions

The studies undertaken during this project lead to the following probabilistic conclusions :

- (i) Tattvārtha Sūtra is a pre-schismic and the first Jaina aphorismic sacred text in Sanskr̥ta containing the filtered tenets current in the days of the aphorist of the third century A.D. involving many of them

supposed to be not in tune with the current schismic concepts. The text is highly popular in Digambaras while it seems historical in S-section.

(ii) The life-sketch of Umāsvāti is not properly available. Each schismic tradition stakes its claim on him. For the D-schism, he may probably be a southern while for S-schism, he is northern. But the author of the text should be a single individual as is supported by the 83% aphorismic commonality. It is not definite how and when the rest 17% changes have taken place and which is the original version? Both sides have strong points in their favour. His biography could, therefore, be prepared on the basis of informations from both the sources. However, a unified stand on his identity seems remote.

(iii) Out of many commentaries, the Digambara ones are noted for their logistically and philosophically advanced nature. The majority of them were composed in south in contrast to the S-commentaries composed in the north. All agree that Akalanka's Rājāvāritka excels among them. It reflects upon the eighth century state of philosophical and scientific knowledge. In contrast, Vidyānanda's explanatory abounds in inferential logic and refutation of Buddhas and Mīmānsakas.

(iv) The Tattvārtha Sūtra has about more than 40% contents related with the physical world indicating its importance even for the spiritualists. Rājāvāritka forms about 50% of its contents on the physical world. This supports mostly traditionally authentic views on the basis of logic and polyviewism. However, he seems to have fixed and established many conventions in the field of Jaina logic and encouraged criteria of logical amenability for general considerations. The second and fifth chapters were selected for this work because of their overall physical contents.

(v) The physical and contental details of the fifth chapter on the World of Non-living have already been given earlier dealing with different topics related with it. Many of the traditionally accepted concept elaborated in this explanatory on the basis of original text seem to have gone historical after the conceptual advent of Relativity theory and Indeterminacy principle.

(vi) It is seen that the concepts about the various aspects of the non-living world (and living one also) have made high jumps in this scientific

age of relativity. The mattergy has now an extended definition. The existence of the realities of medium of rest and motion. has become a part of doubt and the reality of time has become a part of four-dimensional continuum and an intellectual point of reference. The nature of energies is now taken as wavicularly dual. The atoms (though not ultimate ones) have been split into many finer constituents. The rules of atomic bonding of Jainas require better elaboration though the methods of formation of aggregates remain the same. However, the modifications have gone infinite in terms of their physical and chemical nature. Thus, we find that the textual concepts of Jainas as stated in Rājvārtika of eighth century A.D. now stand little behind the current scientific knowledge and require some tuning.

(vii) The philosophical views of Jainas regarding (i) aspect-based difference and non-difference between substance and its attributes, (ii) definition of non-living as some entity different from living rather than negation, (iii) Refutation of varied definitions of reality of other systems and postulate of its definition in terms of permanence through change, (iv) the elaboration of physical and psychical nature of mind (v) materiality of sound and its varieties, (vi) mattergicity of feelings, (vii) practical functions of time, (viii) ten-fold actions or motions (ix) theory of relativism (x) and refutation of theory of Exposerism stand comparatively on much better footing in contrast with contemporary philosophical systems.

(viii) This project enables the general and scholarly leader to learn about many Jaina concept in the field of the important branches of physical science like Physics and Chemistry with which he has generally not been familiar. This work, thus, fills a gap of a historical importance and encourages further studies in proper perspective.



OM NAMAH SIDDHEBHAYAH
(Bowings to the Liberated)
TATIVĀRTHA-RĀJAVĀRTIKA
(Royal Semi-aphorismic Explanatory on Reals)
by
BHATTA AKALANKA

FIFTH CHAPTER

Now the reality of non-living will be described. It is one of the seven realities like the living etc. coming in succession to the living one. All realities are the objects of right faith. It is now described through the first aphorism in terms of its name and classification. Other realities and their details follow the reality of non-living :

Ajīva-kāyā Dharm-adharma-ākāśa-pudgalāh 5.1

There are four types of non-living bodies - (1) medium of motion (Dharma) (2) medium of rest (Adharma) (3) space (Ākāśa) and (4) mattergy (Pudgala). 5.1.

1. The term 'Ajīva-kāya' represents homologous existence. It means non-living bodies.

Q. How could there be homologous existence ? It is due to the relationship between adjective and noun, substantive between the two as per Jainaendra grammar (1.3.12). It can be illustrated by the term blue lotus. If there is transgressional character in this illustration, the same case is here too. The term 'body' (kāya) is applicable with the living ones and the term 'non-living' is applicable with the reality of time. What would be the difficulty if they are taken as hetero-located ?

2. A. There is differentiation in the case of the term royal servant (Rāj-puruṣa) due to difference between the royalty and his servant. Thus, there

is hetero-location. Similarly, if the term non-living bodies is taken as to mean the body of the non-living, there will be hetero-location and it will, therefore, mean difference or separateness between the two entities.

3Q. Non-differentiation is observed in possessive case too as in case of golden ring (ring of gold). However, this is not a proper example as the term 'gold' there is meant for excluding other specific materials like silver or specific quantity (like māṣā or rattī) from which ring could be made.

Q. It is opined that no differentiation could be there despite hetero-location.

C.Q. How ?

C.Q.A. It is observed so as in case of 'golden ring'. Here the 'golden ring' means ring of the gold and there is no differentiation between ring and gold despite possessive case. Similarly, there should be no differentiation in case of the term 'non-living body'.

A. This is not correct. The term 'golden' here is meant to exclude other specific materials from which ring could be made. The term gold excludes silver etc. and their quantity, size etc. too. The ring is made of gold and neither of silver etc. nor of other materials (Māṣādi). This is not the case in the case of 'non-living body' (body of non-living) where there is no exclusion of any other material.

4. Alternatively, let there be hetero-locational position in the term 'non-living body' because it is non-contradictory. Because under the sermon of five existential bodies, the living one is also a body (kāya), hence the use of the word 'non-living' here has been done to exclude the living one. This means that it is the body of the non-living rather than that of the living.

5. In general, differentiation is observed with some respects like name, characteristics and usefulness etc. For example, in the case of the ring of the gold, the metal 'gold' is a general term while the term 'ring' is the specific form of the gold. Thus, there is difference between them due to generality and specificity with respect to name and characteristics etc. If there could be permanent non-difference between them, the gold can not be converted into ear-ring. Alternatively, the ring might also be called

ear-ring because of its generality with the gold. Hence, it should be agreed that the term 'golden' here means exclusion of other metals like silver etc. i.e. it is the ring of gold and not of silver etc. Had there been permanent non-difference between them, there could be no name like golden ring.

Similarly, in case of the 'body of non-living', the term 'body' means 'spacepoints or pradeśās'. The pradeśās of the realities of medium of rest and motion etc. will be described later. They are different from each other with some respects like their name and characteristics etc. If they are non-different, the space points of all of them will be non-different from each other. Alternatively, as the pradeśās are many, the realities of medium of rest and motion may also be many. It is because of this, that the term 'non-living' here has been used to exclude other entities. It means -body of non-living and not of the living etc. In case of permanent non-difference, there could be no such designation.

Thus, because of observed differentiation with some respect, hetero-locational position could also be there.

Q. There are different names etc. even in the case of non-difference. For example, body of 'Śilāputraka' or 'head of Rahu' etc. Now, the body is not different from the body of 'Śilāputraka' or 'head' of Rahu, otherwise there would be 'head' only.

A. Despite this, a difference is found there with respect to capacity. This is the body of Śilāputra who is capable of performing many staunch functions and not of anybody else. There could be difference due to action and intellectualism through words between them. Hence, the adjective has been used for the exclusion of others. It means - body of the Śilāputra and not of men etc., head of Rahu and not of others.

In case of mere non-differential point of view, there could be no exclusion of others. It will have statement like gold of gold or pitcher of pitcher etc.

6. Q. The term 'non-living' indicates 'non-existence' of the living. Thus, the non-living is merely non-existential.

A. This view is not correct. The term 'non-existence' means existence of other modes excluding that under consideration. If it is said

that the non-living is that which is not living, it will have a non-existential character. This meaning is not correct. The non-existence means existence of other modes or characteristics. If one says, 'it is not horse', it does not mean non-existence of horse, but it means an animal of different kind, though it may have similar stomach-shape and single-hoof. It is used to mean a donkey or an ass. Similarly, non-living does not mean non-existence of living but existence of modes or entities different from the living. It means a body which has characteristics of non-consciousness etc.

Q. One will not know this meaning as there is no similarity in characteristics of the living and non-living like that in the term 'not-horse' as above.

A. This is not correct. The similarity is observed with respect to the properties of existence, substantivity etc.

The meaning of 'absence of existence' for 'non-existence' can not be taken as correct. In fact, the term means existence in other forms which has a positive meaning.

7. The aphorism utilises the term 'body' as involving a simily. This term has multiple or dual meaning here. The body is like a group or mass of space points.

Q. What is the simily here ?

A. It is like this. As the normal body is formed by the association of many mattergic particles due to fruition of the physique-making karma of gross etc. bodies, similarly, the realities of medium of rest or motion etc. have body due to accumulation of their infinitely inherent space points or particles.

8. The term 'body' has been taken here in the aphorism to denote the maniness of the constituents in terms of space points. These space points are primarily or secondarily non-existing but they are intelluctually thought of for the benefit of the common laity in terms of points accommodating the physical atoms. These space points are the constituents of bodies. The term 'body' indicates maniness of space points in it.

9. Q. The above explanation for inclusion of the term 'body' is not logical and proper as it is said in the canonical aphorism (5.8) that the realities of medium of rest, motion and single living have innumerable space points. Thus, the term 'body' does not serve any meaning in this aphorism.

10. If the above aphorism (5.8) is meant to denote the number of space points, still it does not lead to definiteness regarding their individual number of space points. -

Q. The aphorism 5.8 does not denote the number of space points individually as it indicates only the innumerability of space points with respect to all the three together. Does it mean that inclusion of the term 'body' in this aphorism (5.1) is meant to indicate individual innumerability of space points ?

A. This is not correct. This also does not lead to any definiteness as the term 'body' indicates only group of space points rather than their individual innumerability.

Q. How do we have definiteness about it ?

11. A. The definiteness is indicated by the aphorism 5.12 (and others) which means that the realities are accommodated in the universal space. These aphorisms lead to the definiteness about their number of space points.

12. Q. If the term 'body' is not included in the aphorism 5.1, all the realities will have unitary character with no space points as their constituents.

A. It has already been said that aphorism 5.8 will describe that the realities of medium of rest and motion and single living have innumerable space points.

13. Q. The canons point out, 'there are five extensive bodies'. The term 'body' here is, thus, meant to corroborate this statement.

A. This is not so. The canonical corroboration is already there through the aphorism 5.8 mentioning innumerable space points of these realities.

14. Q. The term 'body' has been included in aphorism 5.1 to indicate non-deviation from the nature of extensive body-ness by the realities.

A. This is not so. It has been said later in aphorism 5.4 that the realities are eternal, and fixed numerically. This proves their non-deviation from the nature of extensive bodyness.

15. Q. If it is so, there should be no inclusion of the term 'body' in the aphorism 5.1. What is its utility ?

A. The term 'body' suggests that all the five extensive bodies consist of many space points as their constituents. It is only on this basis that innumerability of their space points can be proved. Any statement must have corresponding affirmation.

16. The term 'addhā' is grammatically indeclinable. It means time. It will be described later. The term 'body' here indicates that time does not have many space points. Just as the atom is uni-space-pointed and, hence, it does not have two, three etc. space points, it is called non-space-pointed. Similarly, the reality of time is also non-space-pointed due to its uni-space-pointedness.

17. The names of different realities (like Dharma etc.) should be taken as conventional. They are based on the instructions of the Enlightened ones which are eternal. They have coined these terms with their special meanings on account of their excellence in knowledge and conation. They should be taken as conventional. This is a specific Jaina terminology.

18. Alternatively, the names of these realities may be taken due to their activity or functions which are described below.

19. The medium of motion (Dharma) is so called as it helps motion of the living and mattergy which have a nature of self-moving.

20. The medium of rest (Ahdrama) is just the opposite in function to that of the medium of motion.

21. Space is an entity where all realities are accommodated and it is itself accommodated.

22. Alternatively, the term 'Ākāśa (space) is a grammatically indeclinable word which has a meaning as an agent giving accommodation to all the realities.

23. Q. It is opined that if accommodation is the characteristic of space, this is not observable in case of non-universe space. Hence, it can not be designated as space.

A. This is not so. The non-universe space has the capacity of accommodation. It does not matter whether it accommodates or not. For example, the future time may be far away but sometimes it has the capacity to attain the nature of the present. Thus, it is called future time though it is not attained. Similarly, though there are no realities to be accommodated in the non-universe space, however, the capacity to do so is there. Thus, it is also called space because of its accommodation power.

Alternatively, the term may be taken as conventional here to mean space despite absence of accommodation as the word 'go' (verb-movement) means a cow despite the fact whether it moves or not. The conventionalism is a great force.

24. The term 'Pudgala' (Mattergy) is an etymological term as it is the entity which undergoes combination and decombination. The Sanskr̥ta term 'Bhāskara' means sun because it illuminates or lights (the objects). Thus, it is an etymological term. Similarly, the term 'Pudgala' is also etymological as it undergoes combination and decombination through association, dissociation and mixed processes. This is also an indeclinable and irregular word like the word smaśāna (burial place or crematorium) which means a sleeping place for dead bodies.

25. Q. It is opined that as the atoms are constituentless, they can not have properties of combination or decombination. Thus, they can not be designated as pudgala (mattergy).

A. This is not correct. Their mattergic nature is proved with respect to their attributes. The atoms possess attributes of touch, taste, smell and colour. The intensity of colour etc. may increase from one unit to 2,3,4, numerable, innumerable and infinite units. The intensity may decrease also to lower values. Thus, they are called mattergy as their attributes undergo increase (association) and decrease (dissociation).

Alternatively, the term 'attribute' is a formal word. It involves capacity also. The atoms have capacity for association and dissociation,

they will undergo these processes, they might have undergone these processes. Thus, the atoms are formally called 'mattergy'.

26. Thirdly, the term 'put' in Pudgala means the living beings. The term 'gil' means 'intake'. Thus, the entities which are intaken in the form of objects which form their body, food etc. are termed as 'pudgala'.

Q. These formations are not possible in the case of atoms, they may not, therefore, be called mattergy.

A. This is not so. We have replied to it that they are formally called mattergy.

27. The use of plural number in aphorism 5.1 should be taken to mean the independence of each reality. What is meant by independence ? This means that each reality has its own function like helping motion in bodies by the medium of motion etc. They perform their functions themselves without any interference or help or dependency on other realities or factors.

Q. It is observed that modifications in an entity take place due to instrumentality of external factors. This will not occur if the realities are independent.

A. This is not so. The external factors are only instrumental causes. The living being or mattergy undergoing movements etc. do not catalyse the realities of medium of motion etc.

Q. When there is mutual combination of words, there is normally an addition compound and the resulting plural number. How does it indicate the independence of the realities ?

A. When there is involvement of group, it could be indicated by singular number. If the plural number is there, it should, therefore, mean independence. The Jainendra grammar illustrates this point through its aphorism 3.1.61.

28. The word 'Dharma' is a popularly auspicious word. Hence, it is taken as the first among the non-living bodies.

29. The medium of rest (Adharma) is placed after the medium of motion because this is the cause of maintaining order in the universe. The universe consists of five extensive bodies and the time. The term 'order' means positioning through specific but varied ways or shapes like cane-

seat etc. The medium of rest (and motion) is the cause of order in the universe. In the absence of medium of rest, the moving realities will not have any rule regarding their movements. Under the conditions of its pervasiveness, there could not be specific order in the universe. Hence, it is reasonable to place the reality of medium of rest after the medium of motion.

30. Moreover, the medium of rest is the counterpart of the medium of motion as it causes rest. Hence, it has been placed after the medium of motion.

31. The space has been placed after these two as they are pervaded in it. The mediums of rest and motion pervade in the space. They define the space properly. The occupied universe is that space which is pervaded by these two realities. The other space is known as unoccupied space (non-universe) in the world. Hence, the reality of space has been placed after them.

32. Moreover, just as the medium of rest and motion are non-material because of absence of attributes of colour etc., space is also non-material. This point also places space after these two realities.

33. The mattergic entities are found accommodated in space, hence they are placed after the space.

34. Q. The space should be placed first as it is the substratum for the other five realities like the medium of rest and motion etc.

A. This is not correct because the order of the universe is beginningless. It is not the rule that the space is the substratum and other realities are the substrates in the beginningless universe. This is the natural state of the universe. Thus, space is not the substratum. The substratum-substrateness or order of priority-posteriority occurs in cases where the entities have beginnings or origins like plums and pots etc.

35. Q. If substratum-substrateness between space and other realities is not accepted, it would be contrary to the canons. They state :

"The space is self-sustained, the thin-air-layer is based on space, the dense-air-layer is based on thin-air-layer and the thin-air-layer is based on dense-water-layer."

A. This is not correct. There are authentic instructions in this matter. There would have been canonical contrariety if one would have said one-sidedly that there is no substratum-substrateness between space and other realities. However, when statements are made with respect to space, time etc., it does not involve canonical contrariteness. Thus, in some respects, there may be substratum-substrateness, while in other cases there may not be so.

Q. How this point can be explained ?

A. This could be explained on the aspectal basis. With respect to substantivity, there may not be substratum-substrateness among space and other realities. Under the secondariness of modificational aspect and primariness of substantivity, each of the realities has an independent, beginningless and inherent existence. Hence, there is no question of their substratum-substrateness. However, when substantivity becomes secondary and modificational aspects become primary, all the six realities have origins and, therefore, there can be substratum-substrateness. It is with respect to modal point of view that the canons described their substratum-substrateness. Thus, there is no canonical contrariety here.

Alternatively, there could be substratum-substrateness with respect to practical standpoint. Despite the beginningless character of the universe, the popular opinion supports the above canonical statement. However, with respect of actualistic standpoint, there could not be this type of relationship as all the realities are self-based under the concept of beginningless universe.

Q. If one agrees the substratum-substrate-relationship with respect to practical standpoint, it will lead to infinite regression. It is as follows :

- (a) Dense-air-layer is the base of dense-water-layer.
- (b) Thin-air-layer is the base of dense-air-layer.
- (c) Space is the base of thin-air-layer.
- (d) Some other entity will be the base of space
- (e) Some other entity will be the base for (d) and so on.

A. This is not correct. The space is infinite and pervasive. Whatever is pervasive and infinite, it is found everywhere. Thus, there could be no statement like 'some other entity as base for space' etc. and, therefore, no

infinite regression. By remainder, there could be infinite regression in case of non-pervasive and material entities which have constituents, sense-perceptibility and destruction property. The space has properties different from them. Thus, there is no infinite regression in case of space. The pervasive entities do not have such a case. Thus, the order of placement of realities in the aphorism 5.1 is logically correct and undisputed.

36. Q. It is learnt that time is also a non-living entity. That is why, the great commentary mentions, 'There are six realities', Hence, it should also be included in aphorism 5.1.

A. It has not been included here as it has been described later in aphorism 5.39 with its characteristics.

Supplementary Notes

1. This chapter deals prominently with the second reality-non-living or Ajīva out of the seven enunciated in the first chapter 1.4. The word 'Ajīva' has been translated through many terms - not-soul, non-sentient, non-living and the like. However, the term 'non-living' has been preferred here. This will be used throughout this description.

2. The Akalanka commentary deals with the following points in 5.1 : (a) homo- and hetero- locationality of the terms 'body' and 'non-living' (b) meaning and purpose of the term 'body' (Kāya) in 5.1 (c) four-fold classification of the non-living and (d) definition and order of these realities.

3. It is postulated that there are four types of non-living bodies of reality. They may be treated as having common substratum and discordant substratum on the basis of realistic thinking. In the first case, the factors of non-living and embodiment have same importance. In the second case, it will be a somewhat different situation.

Conventionally, the definition should precede classification. However, the aphorist has not defined non-living. It means that the non-living could be defined on the basis of its counterpart living (Jīva).

4. The term 'non-living' could be explained in terms of an entity or mode different from the living. It should not be taken as to mean non-existence of the living. It should mean an entity having different

characteristics from the living one, i.e. non-consciousness etc. It is a positive and counterpart entity to the living one. It means that the medium of motion and rest etc. do not have any characteristics of the living. This indicates that the prefix 'a' (non-) has different meanings with reference to context (see Sanskr̥ta English Dictionary, V.S. Apte, Page 1)

5. The non-living realities here are termed as 'bodies' or 'existent bodies'. The word 'bodies' means extension in term of 'collection of space points' or 'collection of fine constituents'. The term indicates origination and destruction aspects of the reality. The medium of rest, motion and space have space-pointal unit collection while the mattergy has constituentual grouping. The space point may be defined as the indivisible and elementary cell of space occupied by an ultimate atom. It is termed as 'Pradeśa' in Jaina terminology.

6. Though time is also a non-living entity, but is has not been included in this aphorism. This means the substantive reality of time was a disputed issue even in the days of Umāsvāti (-mi). Moreover, some Śvetāmbara canons call it as a mode of living and non-living entity. Some postulate about practical or metaphorical time rather than real time. However, it is only space pointal in nature and, hence, not accepted as an 'extended body'.

7. Almost all the ancient eastern philosophies agree to the different names and number of categories of reality. The soul (Ātmā, Jīva, living) is accepted by all (except Cārvākas) either in its real form or worldly form. But there is no specific category designated as Ajīva or Non-living in other systems except the Jainas, though this could be inferred from the different types of properties of categories in contrast to the living soul. The Sāṅkhyan Prakṛti or primordial element of Nature may be equated with the non-living reality of the Jainas. The space and mattergy (under different names and varieties) are agreed by the Nyaya-Vaiśeṣikas. The term 'Pudgala' is specific to the Jainas to which Buddhas give different meaning (i.e. soul in worldly ways, not in reality). However, the medium of rest and motion are specific to Jainas only representing their ingenuity of thoughts on the order of the universe. However, the Greeks (Aristotle and Anaxagoras) had inklings about the medium of motion with not

much details. All the above realities are independent and different from each other.

8. The categories of non-living realities can not be dealt with under the concepts of monism of words as they are neither heard nor there occur blowing of ear membrane or burning on speaking words like loud sounds or fire. Similarly, they can also not be dealt with under the concept of Brahmic monism as it will involve livingness of the non-living entities.

9. It must be kept in mind that the non-living reality does not only indicate the aggregated or visible forms of mattergy (like noumenal or derived elements of Buddhas or Cārvākas), it also involves nonmaterial entities of medium of motion, medium of rest, space and time. The visible forms are represented only by the mattergic entity of the Jainas. Thus, the Jainas have two forms of the non-living reality : (a) material (mattergy) and (b) non-material (other four entities). Sāṅkhyan Nature approximates the Jaina variety of the non-living reality.

10. The commentator Aklanka has defined all the four non-living realities specified in the aphorism 5.1 in conformity with ancient canonical and procanonical tradition as below :

- (1) **The medium of Motion** : Neutral and auxiliary cause for motion of mattergy and the living beings like water for moving fish . It is eternal, extensive and non-material.
- (2) **The medium of Rest** : Neutral and auxiliary cause of rest of mattergy and the living like the shade of tree for the rest of a tired traveller. It is also eternal, extensive and non-material.
- (3) **Space** : the accommodator of all the realities including itself, substratum for all the substrates. It is also eternal, extensive and non-material.
- (4) **Mattergy** : A reality having quality of combination and decombination and possessing four co-existing attributes of touch, taste, smell and colour. It is extensive and material.

The time has also been mentioned as a reality in 5.39. This is serving as auxiliary cause for maintaining continuity and modificational

character in all realities except itself. It is a non-extensive atomic reality. It has two varieties - apparent and absolute.

G.R. Jaina calls the first two of these as mysterious physical principles having a different meaning for them in comparison to their traditional meaning of duties or their being attributes of soul as in other systems. They are realities as they have attributes like mattergy etc. A similar inferencial syllogism proves the space also as a reality (Cārvākas do not admit it). The probans here has neither the flaw of subjective non-existence nor the flaw of characteristical non-existence.

11. The variety of non-living reality has been subject to not only philosophical speculation as in these aphorisms from the early days, but it has also been extensively subject to scientific studies during the last few centuries because of their objective experimental nature. It will be interesting to correlate the ancient postulates with the current one. G. R. Jaina has pointed out that science and religion - both claim to be in the pursuit of truth. However, he refers to Einstein as indicating that the scientist can know the truth but not the absolute truth. The scientific truths are relative and not absolute. He points out that there is a great contrast between the never-changing laws of nature postulated by the omniscients and the ever-changing theories and concepts of modern science. The religious concepts cover both - physical and spiritual worlds. Could it be said convincingly that both of these could be called never-changing ? It may be comparatively better in the spritual sphere but they had their days in physical sphere. Moreover, the absoluteness of concepts can not be justified by those whose basic tenet is relativism. On this basis, a historical perspective should be taken to justify, modify or even substitute the older concepts in view of the newer and newer phenomena observed. This will sanction scientificity to the religion which is the demand of the day.

12. Pancāstikāya points out that the reality of medium of motion is non-material by nature and does not have qualities of touch, taste, smell, colour, sound or contact. It is an absolute, eternal and continuous medium pervading the whole occupied universe. It is absolutely non-atomic but for purposes of practical convenience, it is assumed to be

made up of innumerable space points. It is a permanent reality undergoing number of modifications without changing its basic nature of serving as neutral and external cause of motion of other entities. It also distinguishes between the occupied and un-occupied universe. The propagation of waves, blinking of eye, activities and motion of different types etc. are all due to this reality.

13. The reality of medium of motion has been equated with Aether (of space) postulated by Newton (1642-1727 AD) through which light (or mattergy like electricity and magnetism) could move. The scientists had difficulty in defining its exact nature. Its material nature had to face unsurmountable difficulties. Its non-material nature, therefore, points support in many ways. However, contradictory experimental reports have been made about its nature during 1881-1935. It is now agreed that earth is moving through a fixed ether, i.e. it is inert and non-material medium. However, the scientists have not been able to detect the presence of Ether so far. Muni Mahendra points out that this Jaina concept shows high similarity with the Newtonian concept.

The theory of relativity of Einstein has, however, led to discredit this concept on the basis of the postulate of relativity of truth in all worldly aspects. Accordingly 'No absolute motion can be determined in any way'. Jain scholars now indicate that this has led to dissolve the material ether concept rather than non-material ether concept of the Jainas. They presume that the non-determination of absolute motion is due to the incapability of the observer which could not be taken to mean its objective negation. Eddington, Reinbach, Margoni and many philosophers like Bertrand Russel also argue in the same way.

In general, motion and rest of entities are properties related with space and time. The age of relativity has unified them in terms of a four dimensional continuum, thus dissolving the concept of their absolute nature. Now, scientists deal with real or perceptual space rather than conceptual or absolute space. Though, this does not go against the concept of non-material absolute space as a possible construct, but this does not serve any useful purpose in exploring phenomena related with the order in the universe. Thus, the concept of the reality of medium of

motion has been unique in early days but it now stands as a pre-relativistic concept which has served useful purpose for macro-cosmic world. It seems to have gone historically important concept now. Ācārya Siddhasena also doubted about the existence of these two realities even in the fifth century A.D.

14. The reality of medium of rest (Adharma) has just the attributes similar to the medium of motion as in section 12 above, but it serves opposite function in comparison to it. It is its counterpart. It is an essential and complementary component of the universe maintaining equilibrium. Without this medium, the living and non-living entities would be scattered throughout space and there will be chaos everywhere. This medium of rest binds the things together neutrally, keeps the house in stable order and limits the boundary of the occupied universe. The activities like sitting, standing, sleeping, concentrating, keeping silence and the like are all due to this reality. It is a stabilising factor. The existence of its medium (and also the earlier one) is inferred only through their functions. This medium has one more important use besides maintaining equilibrium. It is that it is also instrumental in dividing the universe in occupied and non-occupied parts like the medium of motion.

15. The reality of medium of rest has been equated with the Newtonian concept of gravitation applicable to earthly and heavenly bodies, and macroworld and microworld. In fact, it is a force of attraction working under some definite laws. Its nature was not accurately known in his times but its non-materiality was also in mind. Einsteinean age has added inertness to it. But it is not this force which could be equated with this reality. It is the medium or Field through which it works. Thus, it is gravitational (and now electromagnetic too) field or generally 'Field' which comes nearer to the Jaina concept. Thus, here again, Jainas fare well with Newtonian concepts. In the days of relativity, this concept of Field has also been virtually dissolved in terms of the natural effects of the curvature of space under four-dimensional space-time continuum containing heavy or light masses causing curvature in surrounding space. Thus, apples do not fall due to gravitation but due to curvature in space. The Newtonian laws work here too but they have better theoretical basis

now. Thus, there is no clear-cut confirmation about the medium of rest (or Field) in the days of relativity. However, the earlier Field concept is the nearest equivalent here too.

16. The Jains believe in omniscience and its intuitional validity. It works over scientific measurement concepts. So, even if these mediums are not visible or experimentally verifiable, they should be accepted on the ground that the omniscients must have observed them to be postulated. The validity of this logic is subject to serious thoughts in these days of scientific intellectualism. However, their non-material nature will always remain beyond the scientists' eye, and will have a high faith content.

17. There is a question raised in the Jaina Texts as to why the reality of space can not be assigned the functions of inert instrumentality in motion and rest ? It will reduce the number of realities from six to four only. The answer to this question indicates three flaws as below :

- (1) If the reality of space is assigned multiple functions, there will be chaos in the universe, the assumed division between the occupied and unoccupied universe will disappear. In other words, the concept of infinite unoccupied universe will be dissolved.
- (2) The space is infinite and, therefore, rest and motion will also be possible in it. This will pose a problem as to where the salvated individuals will stay ? There could not be a place called abode of the salvated at the end of the occupied universe as the above two realities will be found everywhere in the space. This will be contradictory with the basic canonical postulates.
- (3) The concept of ordered cosmos will be impossible. There will be a chaotic cosmos instead. There will be an infinite occupied universe which is against canons.

Thus, this hypothesis will not only be conflicting with established canons but it would also be impossible. This commentary defines Ā-Kāśa (space) etymologically and beautifully.

18. The space is the non-living and absolutely independent eternal reality accommodating other realities including itself like water accommodating swan etc. though with some difference. It is also non-

material consisting and coinciding with other pervasive non-material realities alongwith non-pervasive mattergy. It has two divisions : the occupied space which is finite in dimension but infinite in time. All the realities exist in this zone. It is known as Lokā-akāṣa (occupied universe). The unoccupied space is beyond this. It is infinite in extension and devoid of medium of rest and motion. It is pure space. Thus, the occupied or finite space is a floating island in the infinite ocean of unoccupied space which may be called mathematical pure space. The existence of unoccupied space is logically proved due to the existence of its affirmative subject (i.e. occupied universe). These non-material entities are interpenetrating each other and could be taken as one from the spatial point of view. They form an inseparable unit having same size in the occupied universe but differing in their functions and nature.

19. The space has many types, accommodative space, empty space, absolute space, relative space, perceptual space, conceptual space, subjectively real space, objectively real space and space-time continuum. The Jaina system postulates objectively real absolute space.

20. The eastern creationists agree to the reality of space but they presume it to be the cause of creation leading to a concept of its subtle materiality. That is why some have translated it as ether. This view is not acceptable to Jainas. They have a non-material space reality supported by some modern scientists to a large extent.

21. However, the concept of space of the Jainas is again going very much similar to Newtonic age with respect to its absolute, independent and objective reality with continuous nature and accommodating function. But, Einstein's relativity concept postulated inter-connected four dimensional space-time continuum rather than independent three dimensional space and mono-dimensional time as one finds every phenomena occuring in space with respect to time. This leads to the fact that there is neither an independent objective reality of space nor time. They have relative existence of space-time only which is not in tune with the Jaina concept. There is the objective reality of space-time continuum which has been successful in explaining most of the phenomena more successfully. The practical distinction or divisions in terms of space and

time of this continuum, thus, serve only subjective mental constructs dependent upon the observer like equator or north pole etc. However, there are some scientists like Reinbach who argue for the objective reality of the continuum as well as separate space and time. According to them, mental constructs may be realistic also like the concept of a simple straight line in a curved space. The non-acceptance of the concept of absolute space may be due to three facts :

- (1) It is not possible to know and detect it.
- (2) The physics of today can work even without it as the concept does not serve any useful purpose for common man.
- (3) The concept may be logical rather than scientific. Thus, the matter is still under serious exploration and a duet between the scientists and philosophers is on. As has already been said, the absolute space has no useful purpose for the scientists and, hence, they are not accepting it in general.

22. The infinity of philosophers' space has also been reduced to finiteness in extension because of the curvature in the continuum where one can find a ray of light may have a round trip during about 10^{20} years, though this period may be counted as nearly equal to infinite extension. However, its infiniteness with respect to time is accepted without much difficulty.

23. The time is also postulated as a reality though it is atomic, non-space-pointed rather than extended like other realities. This has three varieties : Present, past and future. We live only in the present which is very short.

There is a difference of opinion about time being an absolute reality in S and D version. In fact, it has two varieties : absolute and apparent. The S-version maintains that the absolute time is taken as the modes of the living and non-living entities due to their modificatory existences. Modes represent the specific realities themselves. The apparent time is taken as a reality as it serves many beneficial functions of maintaining continuity and modification. The apparent time is quantitative in terms of Samaya (time instants) units and their multiples measured on the basis of solar or lunar motions. It is limited to those

areas only where these motions occur. Thus, time is not an objective reality but a form of other realities. In contrast, the D-version maintains the two varieties of time as above. But it defines them little differently. The absolute time is an independent reality maintaining continued existence of entities. It is like fine atomic in nature like the gems and innumerable in number while the apparent time is that form of this reality which regulates modifications in the entities through various time units like Samaya etc.

As with other three non-material realities, the Jaina concept of absolute and independent reality of time was quite substantiated upto pre-relativistic age. However, the relativistic age seems to change this concept. Accordingly, both space and time co-exist in presence of matter. It postulates the following :

- (1) The time is not an absolute entity but a relative one correlated with space forming the reality of space-time continuum.
- (2) It has eternality undergoing progressive and regressive cycles.
- (3) The space-time reality vanishes when there is no matter. (The Jainas postulate pure space only in the absence of matter).
- (4) The concept of present time has a variable length depending on the location and speed of the observer. It is observed that time appears to flow slower near the massive body like earth and at higher speeds. It has been calculated that a man moving in spaceship at the speed of light will increase his age by two years only in two years while the man on earth will move to the age of 70 in the same time. Thus, the present will be defined as the interval between the incident and its observation.
- (5) The concept of simultaneity, thus, is an illusion. It has only relative meaning.
- (6) The practical unit of time is second. Measurements upto 10^{-29} seconds have been made. (The Jaina Samaya unit is comparatively very small).

We, thus, find the changing concepts in relativistic age in respect of all the non-material entities postulated in Jaina cosmology. However, it must be pointed out that we are still using simpler Newtonian theories for all practical purposes as the difference between its predictions and of

realativity is very small in situations of the macroworld. However, microworld has a different story. Thus, it seems that the Jaina theories are more in tune with the macroworld. They should be specified in this way rather than universalise them.

24. The fourth non-living reality is termed as 'Pudgala' by Jainas for which we have coined the term 'mattergy' as it involves both- matter and energy (heat, light etc.). This specific Jaina term consists of two parts - pud + gala. Each has its own meaning representing the two basic attributes of material entities They have capacities of (a) combination, association, integration or fusion and (b) decomposition, dissociation, dis-integration or fission under different conditions. The term 'pud' represents the first set and the term 'gala' represents the second set. Thus, the term 'mattergy' may be defined as material entities undergoing the processes of association and dissociation. These processes may be natural as in radioactivity (dissociation) or mineral formation underground or artificial as in the case of particle bombardment to produce higher or smaller atoms or different chemical process of preparing many small or large compounds (association). The term is, thus, etymological and attributive.

25. The commentary gives a newer meaning to this term also. It means material entities are those which are intaken by the living beings in general in the form of food, energy, body and the like. This seems to be a grosser meaning of the term. This entity has been described in detail later in the chapter.

It is said the 'absolute knowledge' covers all the realities and their modifications as its objects (1.29). The term 'Dravya' or realities occurs there. What are these realities ? The next aphorism 5.2 elaborates about them :

Dravyāṇi 5.2

The above entities are called realities or Dravyās 5.2.

1. The realities are those entities which undergo (or are undergone by) modifications because of their origination and destruction due to internal and external causes. The modifications occur due to internal and

external causes. The external causes may be substantive, spatial, temporal and modal. Despite these causes, the original reality does not undergo basic or newer modification. The internal cause is a potential factor for this representing its capacity for modification. The internal and external causes lead to origination and destruction in entities. If there is absence of either of these causes, the modifications will not occur just as in the case of lentil cereals kept in storage and non-cookable ones put in boiling water. The realities are those entities which undergo modifications due to these causes. With reference to differential standpoint, one differentiates the subject and object. The differentiation can be realised between the existence due to non-departure from ones own nature of specific class and its modifications evident through affirmative causes involving frequent originations and destructions. When the realities are considered with respect to objective case, there is grammatical suffix 'ya' to the root 'dru'. When they are considered with respect to subjective case, there is again a grammatical suffix 'ya' to the root 'dru' under compacting conditions.

Alternatively, despite the nature of continuation of originating and destructive modifications, an entity which remains in permanence due to its continuous subjectivity or substantivity is known as 'dravya' or reality. We learn this meaning because the roots having a meaning 'to go' have also the meaning 'to know'.

2. Alternatively, Jainendra grammar (4.1.158) has an aphorism 'Dravyam Bhavye'. This should be taken as an origin of this term 'Dravya' which is an indeclinable word on the basis of a simily. A 'Dravya' or reality is that which is like a raw wood. What does the simily mean ?

The word 'dru' means a raw wood which does not have knots or other types of hardness. It can be converted into any desired shapes with the help of instruments of the carpenter. Similarly, the entity of any reality also undergoes different modifications like the raw wood because it has a nature of self-modification and can be modified subjectively and instrumentally like obtaining water during digging of earth shells. This statement is based on the view of non-difference between the subject and

instrument. It is due to this easy modifiability that the entity is called 'Dravya' or reality.

3.Q. It is opined that as the person of Devdatta is named and called staffed (Dandi) because of his possession of a staff. Similarly, the earth etc. are called realities because they have a conjunction with specific-cum-general attribute of realityness (Dravyatva) in them. This differentiates them with attributes and the actions leading to infer its affirmation and negation. Thus, a reality is due to its conjunction with realityness rather than modifiability.

A. This is not correct as the realityness does not exist. Devdatta is an entity even before possession of staff and staff is also an entity through its circularity, length etc. even before its possession by Devdatta. Therefore, the connection of the separate entities is logically reasonable. However, this is not the case with the reality. The reality is not observed before its relation with the realityness. Had it been so, their conjunction serves no useful purpose. Similarly, the realityness is also not observable before its connection with the reality. Thus, both of these entities are non-existing. Their connection is not logically proper. Even if we assume their existence, the non-existing entities do not have power to manifest themselves during their connection. It could be illustrated by two birth-blind men whose combination or collaboration cannot produce the power of vision in either of them. Similarly, the connection of reality and realityness can also not produce the capacity of naming the reality as reality. The reality can not cause naming it as such before its inherence with realityness. It will remain as reality-in-self but no reality. If it could be named as reality without it, the inherence will be void. Similarly, the realityness also remains as realityness before its inherence with the reality, it can not cause the naming of reality as reality.

If the inherence between reality and realityness is desired not to be void, still as they do not occur independently or separately, they can not cause naming of reality as reality. Hence, the reality can not be defined as due to inherent relationship with realityness.

Q. There is no designation of reality before its connection with realityness. But the reality does exist there. Hence, the realityness exists (inferentially) and it can not be denied.

A. This is not correct. An existent can not become non-existent. The reality is not self-existent. It could exist only due to its relationship with existence-ness. This is not existing. If one agrees relationship between non-existing entities, it could lead to relationship of horns with the ass. However, the realityness is a pervasive entity. If it combines with attributes and actions of different natures, it could also combine with ass's horns etc. However, this is not desirable. If the realityness combines in the form of realityness itself, the combination has no value as it is realityness even before the combination. Hence, the reality is self-existent and self-proved.

Q. (The Nyaya school has an argument here). It is only the reality with which the realityness gets connected inherently. Hence, there can be no inherent relationship between it and other entities like attributes, actions or ass's horns. It is the reality which is the inherent cause of realityness, no others.

A. This is not correct. The reality is itself unproved. If there had been any reality self-proved independent of realityness, it could have been designated as inherent cause. But it is not so. Hence it cannot be the inherent cause because of its non-self-proved character.

If it could be inherent cause despite non-self-proved character, why it could not be the case with ass's horns etc. ?

Q. The ass's horns etc. are non-existent, therefore, they could not be inherent cause.

A. The realityness is also non-existent, how it could be inherent cause of the reality ?

Moreover, the above fact leads to prove the reality as the realityness itself. As the reality (and not attributes and actions) is the inherent cause of realityness, it means its inherence in reality only and not in attributes or actions etc. This leads to a conclusion that the reality is itself realityness. This is the inner entity which is beginninglessly

inherent, non-separable from the reality and it is non-outsider general-cum-specific entity for the reality.

The reality is the inherent cause of realityness as it is a specificity of the reality.

Q. What is the specificity ?

A. It is the substratum-character of the reality. It is said to be the substratum for other substances.

The reality can not be substratum as it is itself unproved. It is observed that only self-existent entities can be substratum as the pitcher etc. for water etc. However, here the reality is not self-proved separately from realityness. Hence it cannot be substratum for others.

4. Moreover, there could be no designation as the reality for the disputant who opines that it is due to inherent relationship with the realityness.

Q. How is it so ?

A. The designation could be with respect to either (i) differentiation or (ii) non-differentiation. In case of second alternative, there could be the designation of realityness rather than reality, just as a man with stick is designated as 'stick' itself.

Q. Let there be designation of realityness for realityness. However, it may have an additional designation as reality. Thus, a reality is said to be a reality due to realityness called as reality.

A. This is not correct. It suggests proving an unproved entity through an unproved cause.

Q. How the realityness could be designated as reality ?

A. If it is by itself, why the same logic can not be applied to the reality itself.

Q. There is difference in the meaning of reality and realityness ?

A. The same objection will be here too as detailed earlier. Moreover, the reality will have to be designated as realityness. When the term has two meanings (realityness and reality), how it can be said that it will mean only the reality and not the realityness due to its inherence ? If the designation of reality is with respect to differentiation, then as a man

with stick is termed as 'with stick' ,similarly, the reality will also be termed as 'reality with realityness' and not as reality itself.

Q. It is opined that there is absence of possessive case in case of 'white cloth' due to the inherence of attribute of white colour. Similar case may be taken here regarding absence of possessive case.

A. This is not the correct illustration. It is discordant. The loss of possessive case is grammatically permissible only in case of attributal statements. Even if it is not accepted, then, there is another grammatical aphorism suggesting 'Attributes may have dual forms'. However, the term 'realityness' is not attributal, hence the possessive case can not be lost here. Moreover, the loss of suffix of possessive case has not been stated, hence the designation of 'reality for realityness' does not arise logically.

5. Moreover, the use of possessive suffix in terms of 'realityness as the mode of reality' can not be there as it has objections both ways. The mode (or realityness) may be either different or non-different from the reality. If non-different, the possessive suffix has been used for beginninglessly modificational reality. Thus, there could be no difference between reality and realityness, and thus, the theory of their relationship will be void.

If the alternative of differentiation is accepted, one cannot have the etymology as the mode of reality is realityness because the reality and realityness are non-different from each other. The mode of pitcher can not be attributed to fabrics.

Moreover, if realityness is defined as mode of reality and a different mode, then, it may be asked whether realityness has a different mode. If it has no mode, it will be non-existing in absence of mode. If it has modes, it will have a second possessive suffix and this on continuation, will lead to infinite regression.

Q. It is opined that as the word 'Avika' (Sheep) is derived from the word 'Avi', similarly, the mode of realityness would also be derived from the mode 'reality' with possessive suffix.

A. This is not correct. The two cases refer to different types. In case of 'Avi' or 'Avika', there is no difference in the meaning, it is only a grammatical point. However, in case of reality and realityness, there is

not only grammatical difference but the difference in meaning also. Thus, the two cases are different.

6. The Nyaya School opines that the realityness is one. How a single non-composite entity can exist in many other real entities like earth etc. ? If it exists, it will have only maniness as the colours etc. observed in many objects.

If it is opined that the realityness is one like the space and accomodates many, then, the example seems to be heterodox. The space has large (infinite) extension and, therefore, it can accommodate the whole universe. However, the attributes are objectives for substantive entities, how non-large or finite realityness could accommodate the whole or many entities ? The extensivity is observed in reality and not in attributes.

Q. It is opined that as a single unit is formally called a number, similarly, it could be assumed to have formal extensivity.

A. This is not correct. This will be like proving a fact through an unproven logic. The logicians follow a tradition to prove a probandum through a proven probans. The formalisation can not prove the primary or main theme. Moreover, it is agreed that the space is one with respect to realityness. But it is infinite with respect to spacepoints. Thus, the comparative illustration of space does not stand scrutiny.

7. The realityness is one like indigo. This illustrative statement is not logical as it cannot be proved.

Q. It is opined that as the single indigo-substance is found in many blue clothes like Saris, blankets and other fabrics, similarly the realityness may also be observed in many realities.

A. This is not correct. This illustration is unproved. It is not proved that the same indigo colour is contained in the Saris, fabrics and blankets. Just as there is difference in clothes due to their varieties, similarly there could be difference in the indigo-substance used as colouring agent for them. Even in the same fabrics, whatever indigo has been used in corners, the same may not have been used in inner parts of the cloth. How one can say that the same indigo-substance has been used, when the same indigo-

substance could not be used in the same cloth in all its parts, how could it be used in different realities ?

Q. Could it not be one like indigo in the indigo ?

A. This will also be equivalent to the unproven promise and, therefore, not logical.

8. The unitarian nature of reality could not be proved even in the absence of illustration like the fire as it will lead to the loss of proposition.

Q. The fire has hotness despite any illustration to prove this. Similarly, the existence of reality in realities may also be proved despite absence of any illustration regarding existence of one in many entities. They are existing as such by nature.

A. This logic does not seem sound, as it involves loss of proposition. It is said that there is no illustration in this case but the illustration of fire is being cited. Thus, the proposition is lost.

Moreover, if it is agreed that even in the absence of proper logic (or illustration), the reality is assumed to be found in many realities, why it is not agreed that the reality is reality by itself. The inherent relationship between the two has already been repudiated.

9. Q. Let, then, this be the definition of the reality :

' A reality is that which serves as a retreat or asylum of attributes (Guna-Sandrāva). It means that it is an entity which receives or is received by the stream of attributes'.

This definition is faultless.

A. This is not correct. If it is an absolutist definition, there may be a fault. It may be questioned whether the reality is different or non-different from attributes ? If it is non-different, there can be no separate designation of the two as there is absence of subject-object differentiation. Moreover, in case of absolute non-difference, there will either be only attributes or reality. If there are only attributes, they will be non-existing as they are concomittant with and substrate of the reality. In the absence of substratum, where will they reside ?

If there is only the reality, what will be its characteristics ? In their absence, the reality will only be imaginary as the horns of the donkey.

If the attributes and reality are taken as different, they will be devoid of differentia on absolutist difference. Secondly, the characteristic of reality as receiving or being received by attributes does not logically stand as the attributes are inactive and they can not approach the reality. It is said in Vaiśeṣika Sūtra (5.2. 21-22) that direction, time and space are inactive and different from active reality. Similarly, the attributes and actions are also inactive.

The definition that reality is that which receives the attributes - does also not stand scrutiny as the inert realities can not approach to receive them. Moreover, the attributes are not self-existing. Just as Devadatta (or any person) reaches the village which is self-existing with underground water area, boundaries and other signs, the attributes are not that way self-existing which may approach the reality.

Q. The Nyaya School points out this way :

"The attributes may be proved to be self-existing because they could be seen to approach the reality during the baking process. It is observed that when earth or clay atoms are heated, their black colours are changed into red. Thus, the attributes are received by the realities."

A. This is not correct. It will lead to differentiation between the reality and attributes. If there is reality always existing and attributes are destroyed and originating in it, it means that the reality and the attributes of colour etc. have different identity.

Q. Let the attributes and reality be non-different due to their inherent relationship.

A. This will also lead to permanence of attributes like the reality. In case of non-difference, when there is reality, there are attributes of colour etc. Alternatively, when there are attributes, there are reality. This will mean that just as the reality is permanent, the attributes will also be permanent. Further, it leads to the fact that if attributes like colour etc. are impermanent, the reality may also be so.

Moreover, the logic is contradictory like wise-foolish. If one is wise, he is not foolish. If one is foolish, he is not wise. Similarly, if the attributes like colour etc. are non-different from the reality due to their inherent relationship, they may not undergo destruction or origination (as the reality is permanent). However, if they undergo these processes, they cannot be non-different. Where is the justice in stating that the non-different attributes undergo destruction and origination while the reality stays permanently. Similarly, the reality is not that which is approached by attributes, as the two entities are entirely different. How a fabric can be approached by a pitcher? They are so different. If they approach, there is contrariety in differential characterisation of the reality and its attributes.

Q. The receiver-received-ness is observed under differential condition as in fire and smoke etc. It is not observed under non-difference as nothing could exist in itself. The tip of the finger does not touch the self (it is already touched).

A. It is correct that receiver-received-ness (definable-definition-relationship) is observed in materials different from each other as the fire and the smoke. However, the reality and its attributes are not noted for their difference as they are not found separated from each other.

Moreover, it is inconclusive to state that the non-different ones cannot exist in themselves. It is observed that this is so as in the case of lamp which illuminate itself alongwith others. It does not require another lamp of illuminate it. If it does so, it will have the property of non-illuminator like the clothes etc.

Further, it is to be questioned whether the knower or instructor of the reality knows himself ? If he does not know himself, it will be contrary to your (Vaiśeṣika) tenets as it is said in 9.1.11 of V.S. aphorisms that the self-perception is there when there is special contact between self and the mind in the self itself. If the self does not know himself, how it could know others ? Thus, the self will turn out to be a non-omniscient. If it does know itself, your earlier thesis is contradicted. Thus, the modes exist in realities and they characterise them.

Q. Let, then, the definition of the reality be taken as being the aggregate, group or multitude of attributes and nothing else.

A. It is also not correct as there seems to be no difference between the subject and object. For the advocates of this definition, it could be said that neither the attributes nor their group is different from reality which may address the subject-object relationship. It is not very correct to state that subject-object relationship is observable in non-difference as in the case of self-illuminating lamp. There should be some difference as we realise the reality and its colour differently. If there is absolute non-difference, then, either all the reality should be in the form of colour alone or the reality should always have the same colour. However, we see different colours (black etc.) in realities and materials.

Secondly, it is not proper to postulate 'group of attribute' concept as they are not observed separately. It is only the materials like grains etc. which have different forms and groups. Similarly, the concept of qualitative attributes does also not seem to be logical as they are adjectives qualifying the objects. There cannot be any attribute-ness of attributes without the objects.

However, it may be asked whether the group of attributes could be (1) different or (2) non-different from the attributes or (3) it could be indescribable? The defects of the first two alternatives have already been indicated. In the third alternative, there is contrariety of one's own statement. If there is a group and it is indescribable, it may not be a group at all. Only an existent has names. The indescribable is beyond speech expressions, hence it could be equivalent to a non-existent, it will mean as the words of the fools.

However, if attributes are describable and their grouping is not so, it leads to difference between attributes and their grouping.

Moreover, if objects are assumed to be groups of atoms of colour etc., they may not develop the properties of visibility etc. as the atoms are invisible. Thus, the tangibility of any object may be a confusion only. If it is called correct, there will be no difference between direct and inferential knowledge and pseudo-direct and pseudo-inferential knowledge.

The definition of reality as having the capacity of transformation into useful (Bhavya, beingness) is also not possible for the absolutists. It can not have the property of transformability because of unproven character of the reality. The contact-theorists have the reality quite different from attributes, action, existence, generality and particularity. Under this assumption, it is not proper that the reality could be the subject of the verb 'to be' (Bhu-to be, root) because of its unproved existence like the ass's horns, due to absence of these inherent qualities in it. It can also not be proved due to other causes like relationship of inherence as this is not possible in the case of an entity unproved by itself like the ass's horns. The reality can also not be the subject of the verb 'to be' in case of its definition of 'multitudes of attributes' because the multitude is imaginary and the attributes themselves have no independent nature of their own separate from it. However, there is no such difficulty for the manifold-predicators as they agree to partial difference between the modifications and the modified (i.e. reality and attributes) in terms of names, characteristics, usefulness etc.

13. The realities like medium of motion etc. are many. This maniness is the common substratum. Hence, the aphorism has a plural number. Secondly, it indicates that it is only these entities which are realities and not others.

14. Q. The conformity with number among realities has yielded the plural number in the aphorism. The same could be applied to the gender also as the realities like non-living etc. belong to masculine gender. Hence, there should be masculine gender too (i.e. Dravyāḥ in place of Dravyāṇi).

A. This is not correct. Every word has its own specific gender. It does never change, as is the case with numbers. The word 'Dravya' is assigned a neuter gender only.

Supplementary Notes

1. The commentary deals with (1) etymological and simile-based definition of the reality (2) repudiation of the concept of realityness on solid logical grounds (3) logical repudiation of absolutist definitions of

reality accepted by other systems in terms of retreat or collection of attributes and (4) validity of using neuter gender in the aphorism 5.2.

2. This aphorism indicates the similarity among the realities of aphorism in terms of their common designation-Dravya (reality). The extensive-ness is the other similarity.

3. Every philosophical system postulates some basic entities under a generic name. The Jainas call it 'Dravya' (reality). Other seemingly synonyms may be tattva, artha, tattvārtha and padārtha. However, whereas Dravya is the general name for all the basic realities of the Jainas, the other systems take it as a specific name under their general basic entities. It has been translated here as 'reality' rather than 'substance' as the later term connotes an idea of materiality while there are many non-material entities involved like space, medium of motion and rest and even the soul (disembodied Jīva).

4. The term 'Dravya' is very common in Jaina texts indicating its varied meanings. Out of four positings (Nikṣepās), there is one substantive positing (Dravya). There is a specific standpoint called 'substantive' (Dravyarthika) along with a modal standpoint. The conduct of people may be external (Dravya) and internal (Bhāva). There is an external or physical (Dravya) karma and psychical karma. There is physical worship and psychical worship, physical mind and psychical mind and so on. Thus, the term 'Dravya' may mean 'substantivity, external, physical and reality as a whole as such depending upon the context. These various meanings are covered by its etymological meanings to indicate the capability of an entity to become this or that. The different meanings as above are just different ways of communication of its modificational character in intellectual or substantial entities.

5. Despite varied meanings, the term "Dravya" could be defined etymologically and grammatically in such a way that all the above meanings could be covered. It would be realised that those meanings are just different ways of communication of its modificational character of physical, intellectual, psychical or substantive entities to be capable of transforming (or transformed by) into this or that. The commentary deals

with these definitions in number of ways which have been summarised in Viśeṣā-vaśyaka Bhāṣya. Some absolutist definitions of other systems have been repudiated confirming their validity only on the basis of non-absolutistic ground. Some of the definitions are given in the commentary of this aphorism while others are treated in later aphorisms like 5.29, 5.30 and 5.38. All are summarised below:

- | | | | |
|-----|---------------------|---|---|
| (1) | Etymological | : | Dru (undergo, flow) + yat (changes) |
| (2) | Etymological | : | Dru (undergone by motion) + Yat (changes) |
| (3) | Indeclinability | : | Capable of being changed into beautiful products. |
| (4) | Simile- based | : | Dru means a raw wood capable of changes into different shapes. The reality is that which is similarly modifiable. |
| (5) | Philosophical-1 | : | Dravya or reality is an entity capable of maintaining permanence through change. |
| (6) | Philosophical-2 | : | Reality is the substratum of attributes and modifications. |
| (7) | Tritimal definition | : | The essence which undergoes changes, will undergo changes, and which has undergone changes. |

It must be added that many early Jaina canons and Umāsvāti utilised definitions of reality (i.e. 3 and 4) prevalent in Vaiśeṣika and other systems under non-absolutist approach. One is not in a position to guess philosophical definitions. However, the later ones seem to be more elaborated and developed. These are the general definitions of reality. The specific ones will be detailed in due course.

6. This definition of reality indicates that it has dynamic (modifiability) and static (permanence) aspects. It has a dual (rather than absolute) character entwined through permanence and change in it. It is bipolar. This characterisation is an attempt of realistic blending and coordination between the two extremist philosophy of Vedānta (static) and Buddha (dynamic). The Jaina system, thus, turns out to be a synthesist. This synthetic view is supported by Mīmāṃsaka Kumāril and western Scholar Kant. The Jainas have shown this type of specificity in many other contexts.

7. The static and dynamic aspects of reality or the reality and its modifications or attributes can not be taken as absolutely different from each other because they do not exist separately. They are always co-existing. Their separate existence can not be proved. An unproved entity has not been found to be existing like a barren's son, soft hairs of tortoise, sky-lotus and ass's horns etc. It is only the separately proved entities which are observed separately. The inherential relationship can also not prove their separate character as it means a partially self-same relationship which can not prove the absolute difference between reality and its modes. Otherwise, this will lead to the futility of modes.

8. The attributes and modes are found only in realities and not outside them. There are infinite attributes of each reality. One cannot describe them in full except the omniscient. However, one can detail them in two categories : (a) general attributes-Devsena gives ten of them, and (b) specific attributes-Devsena gives a list of sixteen. However, each reality has its own general and specific characteristic attributes. Modifications occur only in attributes.

9. The above definition can be illustrated by many common examples. Gold remains as gold despite its ornaments which may be changed into different forms. This leads one to define reality as having a property of identity-cum-difference in which there is a duration and movement.

10. This definition of reality in terms of permanence through change is supported by the scientists in terms of their 'law of conservation of mass and energy' as it is called today. The chemistry and physics of today are based on this law. It is held that whenever transformations take place, the mass or energy involved re-appear in different forms maintaining their total quantity intact. This scientific law is a quantitative confirmation of the philosophers' qualitative law.

The earlier aphorism indicates only four realities under the non-living group. The next aphorism points out a specific reality too to be included in the list :

Jīvāśca 5.3

The living beings are also a reality 5.3.

The term 'living' has already been explained earlier (in the second chapter in 2.8). The word 'ca' drags the word 'Dravyāṇi' from 5.2 to serve the proper meaning as above.

1. Q. The Vaiśeṣikas put up their views here :

"The living one could be defined as that which has a conjunction with the general-cum particular quality of 'livingness'."

A. This view is a dis-allowed concept. Its repudiation should be taken in the way similar to the case of repudiation of reality-ness as reality as stated earlier in aphorism 5.2.

2. Secondly, there will be contingency of flaws of infinite regression and loss of promise in adopting this concept. If the living is characterised by livingness, it will also have to be characterised by another living-ness. This chain will lead to infinite regression. If the livingness is said to be a self-proved concept in order to avoid infinite regression, there will be loss of promise in stating that an entity is characterised by conjunction with another entity. Thus, the living should also be taken as a self-proved entity like the livingness.

Q. If it is said that the livingness is self-proved like the lamp, what is the harm if the living is also taken as self-proved ? The living and livingness are different entities and their attributes cannot be found in each other. There is no similarity between them. Hence, the living one cannot be self-proved like the livingness. Otherwise, it may lead to confusion. However, there is no confusion, hence there could be no flaws as above.

A. This is not correct. It cannot be proved that the living and livingness are two different entities. Had there been a difference, the confusion could not have occurred. They are not different as they are not self-proved. This has been said earlier too.

Moreover, still there will be loss of promise as the Vaiśeṣika concept postulates that the attributes of an entity are not found in other entities. Had it not been so, the existential property of 'beingness' would not have been described to be found in realities, attributes and actions. If

it is opined that it is only beingness which has existential property, then there will be no existence of the above three entities as they cannot be called existing like the ass's horns.

Thus, it is proved that the living one is characterised as the special reality associated with activity of life (like respiration, consciousness etc.) with natural and beginningless changes.

3. Q. The reality will be defined as an entity having properties of origination, destruction and permanence as in aphorism 5.29. It is due to these characteristics that the entities like medium of motion etc. are termed as realities. Thus, this aphorism 5.3 does not serve any purpose for their numeration.

A. This is not correct. This aphorism is meant for accurate ascertainment of the number of realities. This states that there are only six realities in the universe-named as (i) living, (ii-iii) medium of motion and rest, (iv) space, (v) mattergy and (vi) time to be described later.

This ascertainment leads to the exclusions of other realities like direction etc. postulated by other philosophical systems (specially Vaiśeṣikas) who postulate nine realities.

Q. How is it so?

A. The realities of (i) earth, (ii) water, (iii) fire, (iv) air and (v) mind or brain are included in the reality of mattergy as they have the properties of touch, taste, colour and smell. This is not correct that air and mind do not possess colour etc. This can be proved by inference like :

"The air has colour etc. as it has touch like pitcher."

The colour etc. cannot be negated because of their lack of perceptibility by sense of sight etc. as it may lead to negation of invisible atoms etc. which will be an unwarrantable stretch.

The mind has two varieties : (i) physical and (ii) psychical. The psychical mind is knowledge and this is the innate attribute of the living. Hence, it is included in the category of the living. The physical mind is a modification of mattergy as it has colour etc. It is not proper to postulate absence of colour etc. in the physical mind because they are not perceived by senses. These attributes are found even in dis-similar materials like atoms etc. which are said to be non-perceptible by senses.

Thus, the logical reason of non-perceptibility has doubtful nature and, hence, invalid. The colour etc. can be proved in physical mind by the following inference :

"The mind has colour etc. because it is the instrumental cause of knowledge like the sense of sight."

Q. The logical reason here is fallacious because it applies to the non-material sound (or word) which is also the instrumental cause of knowledge.

A. This is not correct. The sound is mattergic and, hence, it will have colour etc.

Q. Despite the super-sensuous nature of atoms, it is seen that they have tangible aggregates. Hence, it is proper to infer their tangibility. This is not the case with air and mind as we do not have any tangible effects originating pattern. Hence, they are non-tangibles or non-perceptibles.

A. This is not correct. They also have tangible effects. They are atomic in nature and all atoms have capacities to produce tangible effects. There is no class-distinctions among the atoms as postulated by other systems. We see that the moon-stones (earth-atoms) produce water, water produces earthy pearls and sun-stone produces fire. Thus, we do have tangible effects by intermingling of atoms.

The reality of direction is also included in space. The convention of 'this is east, west etc.' in the series of spacepoints is based on the rise and setting of the sun.

4. The aphorism 5.3 has a plural number. It indicates that there are not only many or infinite living beings but they also have many different classes. All varieties of the living beings can be classed into two main categories - (i) worldly living beings and (ii) liberated or salvated beings. The worldly beings have many varieties with respect of fourteen investigations (like destintiy, senses etc.), fourteen spiritual stages (like perversity etc.) and fourteen taxonomical classes (like gross, fine etc.) The salvated beings have also many varieties with respect to their salvation in one, two, three, four, numerable, innumerable and infinite time instants. They have also varieties with respect to their shapes /sizes

of the bodies at salvation point and their accommodation in the world of the salvated and so on.

5. Q. It is contended that the aphorism 5.2 and 5.3 should have been combined to form only one aphorism like 'Dravyāṇi Jivāh'. In this way, one would not have the word 'ca' also, thus reducing the size of the aphorism too.

A. This contention is not correct. It will lead to an erroneous meaning that only the living beings are a reality and not the others (space, time etc.) .

6. The plurality of the aphorism 5.3 does also not rectify this meaning as it is meant only for indicating the wide variety of the living beings. The commonly related plurality of the word 'Dravyāṇi' would also not have given the desired meaning as it would refer only to the reality-ness of wide variety of the living beings.

7. Q. The first aphorism 5.1 refers to the topic of non-living realities. Thus, the unification of aphorism 5.2 and 5.3 would also serve the purpose of postulating the living and non-living realities.

A. This is not correct. As the term 'Dravyāṇi' (realities) will be bound with the term 'Jivāh' (living), it will indicate that only the living ones are the reality.

8. Moreover, the continuation of any topic does not always have the desired meanings until clarificatory effort is made. If clarification is not there, the reality will accrue only to the living beings and not to the non-living ones. Thus, the composition of two separate aphorisms 5.2 and 5.3 is justified. This also serves the additional utility for the word 'ca' in this aphorism.

Supplementary Notes

1. The commentary deals with the following points :

(a) Repudiation of livingness as the characteristics of the living by pointing out additional flaws of infinite regression and loss of proposition.

(b) Asserting the six-numericality of realities by indicating the inclusion of realities of other systems in them logically.

(c) The two-fold-ness and maniness of the living reality.

(d) Support for validity of two separate aphorisms 5.2 and 5.3 on logical grounds.

(e) The normal and additional clarificatory utility of word 'ca' in 5.3.

(f) Repudiation of non-existence of an entity or quality due to non-perception through their perceptible effects and transformations.

2. Bhāskarnandi gives a better clarification for the plural number in the aphorism 5.3. It says that it indicates two facts :

(a) The living ones have two main classes.

(b) Not only the living ones are many in general, but each of the classes also have many varieties as indicated in the commentary.

Akalanka gives only one cause - the variety - for plural number.

3. It must be added that the living reality is also an extended reality like the others as in aphorism 5.1. Thus, the word 'Ca' will have four-fold utility :

(a) It drags the word 'Dravyāṇi' from 5.2.

(b) It clarifies that there is the living reality separate and independent from the non-living realities.

(c) It also drags the word 'Kāya' (extended body) from 5.1 to indicate the extensivity of the living reality.

(d) It also indicates that the living reality is also similar in designation to other realities of aphorism 5.1.

4. The living reality has been said to be of two kinds : (a) worldly or embodied one and (b) the dis-embodied or salvated one. Generally, the term 'living' indicates the embodied class. However, the aphorism 5.4 (later) characterises it with sense-imperceptibility or non-materiality. This suggests its fine nature. The general concept of the embodied living postulates that it consists of two parts associated with each other : (a) internal called soul, non-material and (b) external called body. Umāsvāti has not used the term 'Soul' (Ātmā) in his aphorisms. However, there has always been a concept of an inner entity in the worldly or embodied living beings called the soul. The term 'jīva' has been ambiguously used to denote this embodied unit as well as the inner disembodied unit or the pure salvated soul. In fact, the important characteristic of the embodied living is the property of the pure living-soul. This property is the

knowledge and conation (and all other attributes associated with them) representing the conscious character of the soul as detailed in 2.8.

5. The existence of soul is negated on two counts :

(a) There is no cause of the origination of soul.

(b) It is non-perceptible by senses.

Both these counts have been shown to be infested with fallacies of contrariety, non-existence and inconclusion. Muni Mahendra has summarised fourteen logistic points in support of the existence of soul from Jaina texts of different periods. The most important of them are mentioned here :

(a) The feeling of I-ness like 'I am happy, sorry etc.' is the first point to denote existence of conscious soul.

(b) There does not exist any means of knowledge supporting negation of soul.

(c) There is absolute non-existence of transformability of the living into non-living or vice-versa. There is also the existence of non-living as counterpart of living.

(d) Any existent can never be negated.

(e) The sense-imperceptibility can not negate the soul as it would incur the non-existence of entities which are fine and distant in time and space. Moreover, the knowledge about non-material entity can not be acquired through senses. However, the omniscients, clairvoyants and telepaths may perceive its existence.

(f) The qualities of consciousness, sensation of pleasures and pains, general and rebirthal memory, passions and volitions are the substrates or states which prove the existence of a substratum of a different nature as these are not found in non-living entities. That could be a living substratum only.

(g) The collective knowledge and experience of non-living sense-object can not be there without the inner entity in the embodied living.

6. The properties of worldly and salvated living beings are described later alongwith other realities in terms of their similarities and

dis-similarities. However, the living reality satisfies the criteria of being a reality as discussed in commentary of 5.2.

7. The postulate of the living being as an eternal reality repudiates the Buddhist concept of the living as momentarily existing but continuously flowing of mind or mental faculties (like the lamp flame). It also discards the Cārvāka view of origin of the living from specific combination of non-living entities. The Jainas postulate an independent living reality with specific differentia. A living entity could not originate from the non-living one.

8. Vidyānanda points out that the living reality is different from the non-living one as (a) it has a specific differentia of consciousness (b) there is difference between the body and consciousness, (c) it is realisable by specific means of knowledge like superworldly perception, and (d) the dead does not have the quality of consciousness.

9. The scientists have differing opinion regarding the existence of soul. In fact, its non-material nature puts it beyond their province. They can study only sense or instrument perceptible objects. However, they experiment upon the really existing worldly being of all types. Some scientists opine that the livingness is generated out of a specific and critical combination of material elements. The Jainas repudiate it on the basis of point (8) above. Hence, scientists would normally take it to be a sense-imperceptible fine entity in the form of energy. Their experiments have shown that any living entity at birth has a certain electrical energy which vanishes at death. But where does it go at death? What new form does it take? They presume that the energy leaves the body at death and appears in the surrounding atmosphere. G. R. Jaina has indicated that death signifies the departure of soul with its two finer bodies-karmic and caloric from the material body.

10. There have been large number of studies on the smaller and larger living entities both- internal and external. It has been found that different proteins and DNA, genetic structures, internal glandular secretions and their modifications, glutathione and the like can explain many of the karmically explained phenomena in modern terms. The synthesis of different types of living cells and transplantations of body-

parts are confirming improving the destruction-cum-subsidence of different karmas.

11. Moreover, there are conflicting reports about the conclusions based on studies on life after death or transmigration and parapsychological phenomena which may have an inkling about separate existence of the soul entity. However, Karl Sagan explains these phenomena in terms of accurate recollection of four-stage parinatal experience - again moving towards non-living origin of the living. However, the cloning experiments prove the living origin of the living.

12. The modern man is, thus, a little bit in dilemma whether the religious statements should be taken as final in view of verifiable scientific conclusions of the day.

13. Similar is the case with physical mind (brain) and psychical mind in semi-aphorism 5.3 above. The current researches indicate most probably the non-living nature of matter residing in physical brain. This is confirmed by effects of alcohol and medical treatments in mental disorders. It may be called living only formally being a substrate. (Times of India, 19.9.99).

According to Scientific American (Dec.1999, Damasio), mind is based on quantum-level phenomena occurring in the microtubules. It is biological and has a multiple structural level. It is the "movie-in-the-brain" which has an identifiable neural basis. The movie creates the "seen" and the 'seer'. It is the complex brain structure which generates the mind which is biological phenomena rather than a mystery. The biological system of mind will have a molecular structure which is under research.

14. The cellular origin of life also points in the same direction. However, how the first cell was formed is the basic point.

15. The Śvetāmbara version has an aphorism 5.2 which represents a combined form of Rājvārtikās aphorisms 5.2 and 5.3.

The next aphorism 5.4 describes some similar specific properties of the realities :

Nityā - avashitāni - arūpāṇi 5.4

The above mentioned (five) realities are eternal, immutable (fixed in number) and formless (devoid of colour, shape etc.) 5.4

1-2. The term 'eternal (Nitya)' means permanance. It is formed from the root 'Ni' with addition of suffix 'tya' which connotes this meaning. The eternity means never losing or giving up the general and specific properties associated with the reality. This term will be defined in this way in a later aphorism 5.31. The realities like medium of motion etc. are characterised by specific properties like causing motion or rest etc. and by general properties like existentiality etc. These individual attributes are never changed or given up by them. Hence, they are indestructible or eternal.

3. The term immutable (Avasthita) means that these realities have a fixed number. They do not transgress their numericality. There are only six realities, neither less nor more. Alternatively, they may also be called immutable as they do not transgress the numerical value of their individual space-points like innumerable spacepoints of medium of rest and motion, occupied space, single living being and infinite space-points of mattergy and unoccupied space.

4. Q. The word 'immutable' should not be there in this aphorism as the word 'eternal' too connotes this meaning. The immutability cannot transgress eternity.

A. This is not correct. All the realities have many types of modifications. These may be illustrated in terms of different modes of the realities like motion, rest and their changes. The term 'immutable' indicates that despite manifold modification, they do not lose their basic characters. For example, the realities of medium of rest, motion, time and space cannot have the property of tangibility or consciousness. Similarly, the living beings can never have the property of unconsciousness. The mattergy cannot have non-tangibility.

5. Q. The terms 'manifoldness of modifications' and 'immutability' seem to be contradictory. How could they exist in the same reality ?

A. Their existence is possible under two- fold standpointism. Every reality has two aspects - substantive and modal. Their properties depend upon the prominence of one of these aspects. Thus, the immutability with respect to substantive aspect and modifiability with respect to modal aspect can exist in a reality without any contradiction.

6. Alternatively, it may be said that the term 'eternal' is an adjective for the term 'immutability'. Just as a certain person - Devadatta is called 'ever-talkative' due to his regular habit of gossiping despite his many modes of coming, going, sitting, etc., similarly, the realities of medium of rest and motion etc. are also called 'eternally immutable' as they do never give up their nature of being non-tangible etc. despite many substantive and modal transformations in them.

7. The term 'immutable' in this aphorism is not meant for indication of lack of activity or motion of any type in the realities as this property has been indicated through the aphorism 5.7.

8. The term formless or non-tangible (Arūpa)' is included in the aphorism to indicate the true nature of these realities. They do not have form, colour or perceptibility. This means that they do not also have taste etc. which are concomittant with colour. The word 'colourless or formless' also means non-material or sense-imperceptible.

9. Q. Some canons mention about five realities. It is said that the realities do not transgress their numericality of five. Here, six realities have been mentioned. This is contrary to the early description.

A. This is not so. The questioner has not understood the meaning properly. The earlier authors intended that the sixth reality of time will be described later and, hence, they have not taken that into account here. Thus, only five realities have been described earlier. There is, thus, no contradiction.

Supplementary Notes

1. This aphorism 5.4 indicates three more points of similarity among the five realities described in 5.1 and 5.3.

2. The commentary deals with the following points :

- (a) Derivative meaning of the term 'eternal' (Nitya).
- (b) Meaning of the term 'immutable or fixed' in term of (i) fixed numericality (ii) fixed number of space-pointablity and (iii) constancy through modifications or eternal constancy.
- (c) The meaning of the term 'formless (Arūpa)' in terms of (i) negation of property of colour, shape or eye-perceptibility, (ii) negation of other associated properties with colour like taste etc.

and (iii) non-material nature in general representing sense-imperceptibility.

These terms represent the basic nature of the above realities.

3. The three properties of this aphorism can be substantiated by inferential syllogisms as below :

- (a) **Eternality** : The realities of medium of motion and rest etc. are eternal because there is logical connection between their tri-timal attributes and modes.
- (b) **Immutability** : The realities of medium of rest and motion etc. are numerically immutable because they do not interfuse with each other.
- (c) **Non-materiality** : The realities of medium of rest and motion etc. are non-material because (a) they are pervasive and (b) they are realities different from mattergy like space.

4. The terms of 'eternal and immutable' can be distinguished as below :

The eternity is defined as to maintain and not to lose one's general and specific nature. In contrast, the immutability refers to the absence of inter-transformation capacity of these realities.

5. The term 'Arūpa (non-material here) does not mean absence of any differentia, otherwise they will be non-existent like horses' horns. The word 'rūpa' here means touch, taste etc. which are non-coexisting in these realities except one (see aphorism 5.5)

As all the realities of 5.1 and 5.3 have common characteristics of eternity and immutability, similarly non-materiality could also be taken as a characteristics of all. However, the next aphorism indicates exception to this assumption.

Rūpiṇah Pudgalāh 5.5

The mattergic realities are possessed of form (or colour) or materiality. 5.5.

1. The word 'Rūpa (form)' has many meanings. It may mean substances, nature, practice, scriptures, primary elements, specific property of colour etc. and form or sense-perceptibility in different

contexts. However, the term here should be taken to mean form, embodiment or sense-perceptibility on the authority of sacred scriptures spoken by the Enlightened ones and reduced to writing by their chief disciples. It is said there, "Rūpi-dravyam Mūrti-dravyam". Thus, matteric entities are embodied or material.

2. The word 'mūrti (form)' or material can be defined as the transformations in the substances in the form of colour, taste, smell, touch and various shapes like circular, triangular, quadrilateral, rectangular etc.

3. Alternatively, the word 'rūpa' should mean a specific attribute of an entity which is perceptible by the sense of sight. It could be either colour, shape or both.

4. Q. Does this specific meaning of colour or shapes of this term mean non-inclusion of attributes of taste etc. ?

A. No, these attributes are inseparably related. Therefore, they are included in the term 'rūpa'.

5. Q. The word 'Rūpi' has a possessive suffix 'in' attached to the word 'rūpa'. This suffix is possible in case of entities which are different from each other. For example, a man with a staff is known as 'staffed'. Here, man and staff are separate before their combination. This type of separate existence is not observed in the case of substances and their qualities like colour etc. These are simply the modes of the substance. Hence, the use of possessive suffix is not justified in the aphorism 5.5.

A. This is not correct. The difference between substances and modes could be proved with some aspects. It is agreed that substantively, the colour etc. are not observed separate from their substance. However, we observe modally that there are changes in colours etc. in the substances while they remain permanent. But modally, there is observable difference between substance and its attributes on the following points :

- (a) The substance is permanent while attributes are changeable-being produced.
- (b) The substance is beginningless while attributes have beginning.
- (c) The substance has a positive assertion while attributes have negative assertion.

These and other points lead us to prove difference between realities and their attributes in some respects. This justifies the use of possessive suffix in the aphorism 5.5.

6. Moreover, it is observed in many cases that even the non-separate entities are designated by using similar suffixes as exemplified by the words 'soul with soulness' or 'tree with pith' etc. There is no soul different from soulness or any tree different from pith. Still we find such types of differentiating designations.

7. The plural word 'Pudgalāh' (mattergies) has been used to indicate different varieties of mattergy in terms of atoms and aggregates. They will be described later in detail.

Supplementary Notes

1. The commentary deals with the following points :
 - (a) Selection of the meaning of 'form' from the sevenfold meaning of word 'Rūpa' in the aphorism which involves colour and shape-both.
 - (b) The word 'form' also means an eye-perceptible quality invariably associated with taste etc.
 - (c) The grammatical point regarding justification of possessive case and plural number in the aphorism.
 - (d) The justification of differential and non-differential characteristics of attributes and the attributed on the basis of substantive and modal standpoints.
2. This aphorism does not only indicate the contrastingly dis-similar property of mattergicity of the mattergies, but it also characterises them through the term 'form'.
3. Kundakunda has mentioned in his text about what could be the categories of the entities to be included in the reality of mattergy. He points out that the following could serve as a basic list :
 - (a) All sense-perceptible objects
 - (b) Sense organs themselves
 - (c) Different kinds of bodies of living and non-living beings.
 - (d) Mind (physical) or brain
 - (e) Karmas (physical) and neo-karmas

- (f) Other tangible entities (atoms and aggregates smaller than karmic vairforms).

One need not elaborate categories (a) and (b). The five bodies of the living beings have already been described under 2.36. Out of them, the gross-body is normally sense-perceptible. The others are gradually getting finer and perceived by omniscients, clairvoyants and telepaths. The materiality of physical mind has been proved on the basis of its instrumentality in acquiring knowledge in commentary 5.3.3. It is equated with current brain. The term 'Karma' has a specific meaning in Jainology. It is a subtle material particle responsible for worldly cycles of the living beings. It forms the fifth category of aggregatal classification of Kundakunda (to be detailed under 5.25) in his Pancāstikāya (76.76.1) and Niyamsāra (21-24).

4. The aphorism 5.25 classifies the mattergy into atoms and aggregates. The material nature of aggregates is substantiated by their sense or instrument perceptibility. However, atoms (anus) are said to be the finest one non-perceptible by eye. Moreover, the canonical indivisibility has now been shown to consist of a cluster of finer particles- the ultimate of today being the quark. The recent fine instrumental techniques have led to postulate partial materiality or dual nature of these fine micro-world particles. The canons, Tattvārthasūtra and its commentary do not mention any of the particles equivalent to current atomic constituents - fundamental particles. However, many Jaina authors of today have a tendency to maintain the indivisibility of atoms of Jaina texts. It looks surprising when the Greek or Daltonian indivisibility has been shattered and accepted as a fact, why the relativist Jaina authors are unable to accept it? Will it involve some flaw in the concept of omniscience? [The point will be dealt with later].

5. The details about mattergy and mattergic entities will be given in aphorism (5.10, 11, 14, 19, 20, 23, 24, 25, 26, 27, 28, 33-37) later in this chapter.

6. Pūjyapāda points out that the non-living and material mattergy of the Jainas is different from the non-living primordial element of Nature called 'Prakṛti' by the Sāṅkhyas. It is postulated as formless,

undifferentiate and unmanifest. How the manifest world could originate from unmanifest abstract entity ? However, G. R. Jaina equates it with the sixth extra - fine matter in the form of fine fundamental particles of today. His equation requires deeper considerations as it goes above 'Pūjypāda' view.

The next aphorism answers the enquiry whether other realities like medium of rest etc. have also many varieties like the mattergic reality.

Ā-Ākāsāt Eka-Dravyāṇi

5.6

The realities upto space in aphorism 5.1 (i. e. medium of rest, motion and space) are single and continuous entities. They are indivisible wholes, so to say. 5.6.

1. The prefix 'ā' in the aphorism has been used in the sense of inclusion rather than limitation. This means that space is also a single reality. Had the prefix been used to mean the limit, space would have been excluded. Thus, the aphorism 5.6 includes the reality of medium of motion, rest and space as per the order given in aphorism 5.1 .

2-3. The word 'eka' (single) has many meanings like single, helpless, solitary etc. However, it denotes the number here. It qualifies the word 'dravya' (reality) in the aphorism. This does not lead to the use of singular number for the realities because of common relationship as they are many (i. e. three in terms of medium of motion, rest and space) . The numerical one cannot explain the meanings of many entities.

4. Q. There is already the topic of realities. The word 'Dravya' in the aphorism, therefore, violates the principle of brevity. Hence, the aphorism should end with 'ekaikam' (one each) rather than 'ek-dravyāṇi' .

A. This is not correct. The word 'Dravya' is included in the aphorism to specify their undoubted single wholeness with respect to their substantivity only rather than with any other respect like locational, modal or timal etc. This means that despite their innumerableness with respect to mode (causing motion, rest and transformations in many living and mattergic realities), location (in terms of different time units), the realities of motion and rest are single ones only substantively. Similarly,

the space is also infinite locationally in term of innumerable spacepoints accommodating infinite living and non-living entities. But it is also a single continuous reality substantively.

All these three realities are not many like the living ones and mattergies. Similarly, these later ones are not single units like the three being described. If these two are accepted as single entities, there will be contradiction with the observed difference between an action and actor. There also might be the possibility of loss of worldly and liberated state. The singleness or mani-ness of the reality of time will be described in aphorism 5.39 .

Supplementary Notes

1. The commentary deals with the following points :

(a) The meaning of the term 'Eka' (one) as numerically one is selected out of many meaning of the word.

(b) The support of plurality in the word 'Dravya' (reality') on the basis of three separate realities involved.

(c) It also supports the use of the term 'Eka-Dravyāṇi' on the ground that the unitariness or continuousness has been described with respect to substantivity only. It is not spatially, temporally or modally as the realities may have maniness in these respects.

2. The commentary reflects grammatical maturity of the author.

3. The single and indivisible wholeness can be proved by the following inference :

"The realities of medium of rest or motion are each a single whole because they are non-material despite their large extension (pervasivity) like the space."

4. The Vaiśeṣikas have an inference proving maniness of these realities :

"The realities of medium of rest and motion are many because they constitute of many space-points like the earth etc."

This inference is not correct as it has a transgressional character with space which is also one with many spacepoints.

5. This aphorism serves two purposes :

(a) It indicates similarity of one wholeness among the three realities.

(b) It indicates dissimilarity of mattergy and living reality with these three as they are not one whole but many and discrete. Similarly, the reality of time is also innumerable as will be pointed out later.

6. It has already been described in supplementary 5.1 that the different realities have approximate connotations with current scientific concepts as below :

- | | | |
|-----|----------------------------|---|
| (a) | Medium of motions (Dharma) | Positive Aether |
| (b) | Medium of rest (Adharma) | Negative Aether or
Field (gravitation) |
| (c) | Space (Ākāśa) | Space |

These concepts have been modified in post-Newtonian era as described earlier.

7. It must be pointed out that recently, the theory of non-material space is moving towards an atomic or discrete space concept. This would mean mani-ness of space, though this is not a widely accepted opinion. If this turns out more realistic, the Jaina concept of space will require some additional elaboration.

The next aphorism indicates additional specific property of the above single realities :

Niṣkrīyāṇi Ca 5.7

All the above three realities (medium of motion, rest and space) are inactive or inert also (i.e. they do not have any activity or movement from one place to another) 5.7.

1. Activity is the mode of realities causing their motion from one place to another place due to internal and external factors. The internal factor is the inherent energy for motion. The external factors may be strikes, propulsions etc. The dual causality here suggests that the realities do not have motion as their inherent nature. Had it been so, they could have always been in motion. The activity has been said to be a mode of reality suggesting that it is not different from it. If the activity had been different from the reality, it would have been always inactive. The activity involves movement from one place to another. This indicates the attributes like knowledge and colour etc. are not activities.

2. The activity leads to motion in other substances. The term inactive means devoid of translational activity.

3. Q. If these realities are inactive, how there could be their origination ? If there is no origination, decay can also not be there. Thus, the three-fold characteristic of a reality does not hold good here.

A. This is not correct. The characteristics could be demonstrated otherwise also rather than by activity. In fact, origination can occur in two ways : (i) internally and (ii) externally. The origination and destruction by internal causes occur due to inherent six-fold imperceptible but rhythmic or wavelike rise and fall of the infinite attributes of individuality (a-guru-laghu) accepted in each reality on the authority of the scriptures.

The external causes also produce origination and decay. For example, the medium of rest and motion etc. cause rest and motion and accommodation in horses and cows etc. Their activities are varying each instant suggesting the instantal difference in their causes (i.e. realities). Thus, this is practically accepted as their externally caused origination and destruction.

4. Q. If these realities are inactive, they could not become the cause of motion, rest and accommodation. It is observed that the only active or moving materials (like moving water for fish etc.) are causes of movement.

A. This is not correct. The realities are only neutral causes for movements etc. It is just like sense of sight which is only the neutral cause for seeing things as one does not see things when the soul goes out of the body at death due to destruction of life-span karma. Thus, it is evident that it is the capacity of the soul to see objects. The senses are only neutral causes. Similarly, the reality of medium motion etc. are also inert causes.

5. This is so because these are the realities with specific characteristics. The space is accommodating other realities despite its non-moving nature. Similarly, other realities also perform their functions inertly despite their non-active nature.

6. The word 'ca' in the aphorism 5.7 is meant to indicate reference to the three single realities of the aphorism 5.6. Thus, while the realities of medium of motion and rest and space are inert, the other two realities of mattergy and the living entities are active internally and externally as well.

7. The Vaiṣeṣikas point out that the reality of soul or living should be inert because it is all pervasive. It may cause action in others (like hand etc.) due to its inherence with attribute of causes of motion (like effort and conjunction etc.).

Their contention is not correct. The soul is active by self like air. Air moves by self and causes plants to move. Similarly, the soul is active by self due to energy resulting through the fruition of physique - making karma of space movement and limbs-sublimbs caused by destruction-cum-subsidence of energy-obstructing and knowledge-obscuring karmas. The inactive soul cannot cause action in other substances like hand etc.

8-9. Moreover, it is seen that the inactive space reality cannot cause activity in substances like pitcher etc. accommodated in it. Similarly, the inactive soul can also not cause activity in hands etc. despite being connected with it. Further, the Vaiṣeṣika Sūtra 5.1.1 points out that qualities like connections and efforts are inactive inherently. Hence, the combination of two inert entities cannot cause activity in the third entity. It could be illustrated by the fact that the association of two born-blind men cannot have the power of seeing an object.

10. Q. The connection with fire is based on its hotness. It causes change in colour etc. of pitcher etc. during baking. However, there is no activity in fire itself. Similarly, the connection between soul and efforts is based on unprecedented mystical force called 'Adṛṣṭa' and it causes activity in the hands etc. and not in the soul. Hence, the soul is inactive.

A. This is not so. This logic proves what is desirable for us. The connection with fire is a property of tangible substances. This causes colour change etc. in tangible pitcher etc. Similarly, the connection of soul and efforts also produce activity in hands etc. Therefore, they should also be the attributes of tangible and active realities. This logic proves the active nature of soul which is what the Jainas postulate.

11. Moreover, the illustration of fire-connection is not the proper one as its reverse is not true. The cold fire does not lead to change in colour etc. Thus, the illustration is an unproved one and is, thus, incapable of proving the desired property of the illustrated one.

12. Q. The soul connection and effort could cause activity in hands etc. despite their inactivity as in the case of inactive gravitation existing in heap of earth causing activity in grass and plants.

A. This is not correct. This illustration is similar to the earlier one. The heap of earth is active and gravitation is its quality. This causes activity in grass etc. Similarly, soul-connection and effort are also qualities of the soul. Moreover, the inactive gravitation cannot cause activity (as it is non-tangible, non-catalytic and non-destructive). Thus, the illustration stands unproved. In fact, the reality itself gets modally transformed in terms of gravitation causing activity.

13. The illustration of medium of motion does also not serve the purpose of proving causality of soul in the activity of others as both are non-active. This illustration is, in fact, dissimilar or negative. The medium of motion is postulated as non-catalytic and inert cause of motion. In contrast, the soul is said to be a catalytic cause for the activity in other entities. This is accepted even by the disputants. The attributes of an inert reality cannot be catalytic. Hence, the illustration is dis-similar. Similarly, the reality of medium of motion may be only an inert cause but it cannot be that type of cause of activity of inactive reality of soul as it is not found separately from soul. If the soul and its activity are postulated different from each other, they will lose their existence. This is again a dis-similarity.

14. The soul and its attributes are inactive. Hence, they cannot cause activity in hands etc. It is just like the space which is inactive and, hence, does not cause activity in living or dead body. Moreover, any entity absolutely inactive and non-material cannot be connected with body, hence, there could be no mutual functioning like the space entity.

15. Q. The activity of the soul is based on its connection with karmic body. However, when all the eight karmas are destroyed, there is no

body, and the soul becomes dis-embodied, and, thus, there will be possibility of soul's inactivity.

A. This is desirable as there is no effect in the absence of cause. The Jainas agree to the absence of activity in the liberated souls which is due to karmas and quasi - karmas. Alternatively, though there is absence of activity due to external causes, there will, however, be internal natural activity like movement upwards like the lamp. Thirdly, there could be inactivity in the soul if the properties of four infinities of bliss, knowledge, conation and energy are not taken as activities. However, they are accepted as activities, hence this is not correct to say that the soul is inactive after disembodiment.

16. Moreover, the activity of the liberated souls will be described later in aphorism 10.6-7 as due to (a) prior impulsive experience, (b) non-attachment, (c) absence of karmic bondage and (d) inherent nature of moving upward like (a) potters' wheel, (b) mud-coat-devoid gourd, (c) stalk of castor-seed and (d) fire flames of fire.

17-18. The mattergic reality has also two types of activity - (a) natural and (b) efforted. This is non - different from the mattergies as there is no other self- characteristics for them. It is just like hotness of fire which is not different from it. There is no other self-based characteristic for fire. Had it been there, there would be no fire in the absence of its characteristic. Similarly, the activity is also non - different from the active entity. Had it not been so, the mattergy would have been non-vibrating and there might not be activity at all. Thus, activity is non-different from mattergic reality.

19. Even if the activity is accepted as different from the active mattergy, it should have a designation on combination (of activity with matter) similar to the combination of staff and the staffed (which are independent from each other). But it is not the case as the activity is not observed independently of the active material as in the case of staff and the staffed.

20. Q. Let there be relationship of inherence between action and active entities. This relationship means non-separation between entities and

their activities. Thus, the mattergy and action will behave as one and no separate designation will be required.

A. This postulate is not proper as it leads to commonality between the two. In case of characteristic of non-separation, one feels whatever is matter, it is also an action and vice-versa. Thus, it is futile to presume a newer entity of inherence. If different entity of inherence is accepted, there could be no non-separate relationship.

21. Q. If there is non-difference between matter and action, there will be one-ness of the two. However, their mani-ness is observed in different forms such as (a) the reality is permanent and activity is temporary and (b) the reality is causeless and natural while the activity is causal. In case of one-ness of the two, the action may also be causeless and permanent like the reality or the reality should be otherwise.

A. This is not correct. The difference between the two could be proved in many respects. The Jainas postulate separateness with respect to some aspects. They do not agree to absolutist one-ness.

22. Q. If mattergy and the living are active, they should be non-permanent like the burning lamps.

A. This argument is inconclusive. It is seen that the atoms, primordial Nature (Prakṛti) and ego etc. are permanent, though they are active.

The momentarian Buddhists have different arguments for non-permanence of the living being which do not involve activity. Thus, the relationship between activity and non-permanence is not proved.

23. Moreover, the Jainas agree that the active living beings are non-permanent with respect to modes. Thus, the argument is not unsatisfactory to the Jainas.

24-25. The living beings etc. cannot be proved absolutely active as we postulate their inactivity with substantive standpoint. This standpoint maintains that all entities are inactive and permanent despite their modal transformations. Under modal prominence, all entities have origination and decay and, hence, they are active and non-permanent. Thus, the non-absolutists could not be charged with absolutistic flaws.

Supplementary Notes

1. The commentary elaborates on the following points :
 - (a) The term 'activity' means translatory motion due to internal and external causes. It is not observed in the first three realities as in aphorism 5.6.
 - (b) The inactivity does not lead to non-existence of the triad of origination etc. in these realities. It also does not mean the realities not to be able to serve as helping cause due to its pervasive character. It causes activities of motion, rest and accommodation.
 - (c) The logical refutation of Vaiṣeṣika's view that the soul is also inactive due to its pervasive character. It causes activity in hands etc. due to inherence with qualities of effort and conjunction which are real causes of activity. The inactive soul or its attributes cannot cause activity in others or self. The support of illustrative examples of fire, gravitation, medium of motion etc. has also been refuted on verifiable grounds.
 - (d). The two-fold activity of mattergy-natural and efforted.
 - (e). The activity and the reality are non-different from each other from substantive point of view and different from each other from modal point of view.
2. This aphorism also refers to the dissimilarity of the realities of the living and mattergy with respect to inactivity which is observed in other three realities of aphorism 5.6. Thus, the inactive realities are similar on the basis of inactivity and the other two are dissimilar to them in this respect. These are internally as well as externally active.
3. It will be mentioned later that the reality of time is also inactive or inert.
4. The activity or inactivity of realities refers to their intrinsic nature.
5. The inactivity of these realities can be proved by the following inference:

"The medium of rest and motion are translationally inactive because they are pervasive like space."
Of course, they are active non-translationally and transformationally as, otherwise, they cannot be called realities.

6. The Vaiṣeṣikas prove the inactivity of the living reality also on the basis of the above inferential syllogism. However, this inference can be counterbalanced by the following one to prove its activity:

"The living entity is active because it is the cause of action in mattergic entities like the mattergic reality."

If the living entity is inactive, there will be no cause for activity in body or the dead body should also be active.

Secondly, the living entity is not pervasive as it has the size limited to the body size itself.

Thirdly, the pervasiveness and non-materiality are corelated for the Vaiṣeṣikas. This is not correct as their mind is non-pervasive despite non-materiality.

A second inference could also be given :

"There is activity in the living entity because it is associated with attributes causing activity like the heap of earth (which has gravitation etc.)."

7. The aphorism has been elaborated well by Vidyānanda. He concurs with Akalanka that the three realities are inactive with respect to translational motion only. They are, however, active with respect to other types of external and internal activities.

He has also mentioned an inference to confirm non-absolutist contention about the difference between reality and activity. He has taken activity as one of the modes of the reality.

8. The commentary refers to a term 'a-guru-laghu' (a-heavy-a-light) as a general intrinsic property of individuality of the realities. It is said to be undergoing imperceptible or infinitesimal increase and decrease in its parts in six different steps causing origination and destruction. It maintains the individuality of the realities and their characteristics. However, it is not in anyway related with specific gravity or density of an entity.

In fact, the term 'A-guru-laghu' is typical to Jainas which connotes three meanings as found in scriptures and summarised by Pandit Sukhlalji:

(a) The eight qualities of dis-embodied living or the salvated ones are - (1-4) four infinities of knowledge, conation, bliss and energy and (5-8) non-materiality, destructional righteousness, accommodability and a-heavy-a-lightness (or maintaining equality or constancy in properties) . They include the quality of 'a-heavy-a-lightnes' which could be due to destruction of status-determining karma or physique-making karma. As all the salvated beings are equal in all respects of status and non-material physique, their capacity to maintain this property is called the attribute of 'a-heavy-a-lightness'.

Thus, in the first instance, the property seems to be related with the salvated beings only or exclusively with the pure souls.

(b) There is a sub-species of physique-making karma named by this title. It indicates that this property refers to a quality of the living beings in general as karmas are associated with all the worldly beings upto the stage of the Enlightened ones.

(c) Ālāpa-paddhati of Devasena goes still further. It mentions that this quality is not limited to the living beings alone. It is a general property of all the realites in the world-living and non-living, material and non-material.

It has been stated above that this property maintains individuality of entities despite transformations undergoing in them. According to Panditji, this property maintains the order in the entities so that

- (a) No reality transforms into another reality.
- (b) No attributes transform into other attributes.
- (c) No co-existing entities transgress their nature.

This property seems to be akin to the realities of medium of motion and rest which maintain order in the universe. This also maintains the intrinsic nature of realities. It must, however, be realised that there seems to be no intelligible definition of this property regarding its true nature except that it is a fine attribute which undergoes six-fold imperceptible transformations each on increasing and decreasing side in the intrinsic and extrinsic nature of the entities. However, it has three varieties :

(a) **Karma- based a-heavy-a-lightness** : It is due to relationship of karmas and quasi-karmas with the living. It is not natural. But it may be an attribute of the living.

(b) **Karma-devoid a-heavy-a-lightness** : It is due to destruction of all karmas and is found in the salvated beings. This is its natural form.

(c) **Non-living-based a-heavy-a-lightness** : The above two varieties refer only to the living beings. However, there are non-living entities too. The a-heavy-a-lightness found in the nature of non-living entities will be the third variety.

9. It has been felt by the earlier saint-scholars also that the property has no definitional clarity. Hence, they have mentioned that though it may not be acceptable logically, but it should be accepted on the basis of Jaina teachings and canons, i.e. non-logically or by faith only. Maille Dhavala, Akalanka, Jayasena, Virasena and Devasena etc. have expressed this way and Pt. Sukhlalji concurs with this view.

10. It has been said that the property of a-heavy-a-lightness involves six types of increase and six types of decrease mentioned in literature- specially by Devasena. It will be interesting if we could illustrate here this six-fold increase and decrease by taking some concrete examples based on GR Jain's book.

The Jainas have three types of numerations: (a) numerable (3), (b) innumerable (9) and (c) infinite (9). These have sub-divisions mentioned in brackets against each-totalling 21 in all. The numerable numbers are countable and start with 2 and go upto 10^{19739} or higher. The innumerable number will be a minimum of highest numerable number +1 and going upto a limit to be perceived by the omniscients. The infinite number has no limit. Devasena mentions six steps each of increase and decrease in terms of the above three types of general numerations. The decrease in numerations are just the reverse of increasing numerations. Mukhtar has assumed 12000 as the original number for illustration with 3,4 and 5 as representing numerable, innumerable and infinite numbers. Accordingly, the following six steps of increase will have these values:

(a) **Fractional and multiple increase in three numerations**

(i) Infinitesimal increase : $12000+12000/5 = 14400$

- (ii) Numerableth (fraction) increase : $12000 + 12000/3 = 16000$
- (iii) Innumerableth increase : $12000 + 12000/4 = 15000$
- (iv) Numerable times increase : $12000 \times 3 = 36000$
- (v) Innumerable times increase : $12000 \times 4 = 48000$
- (vi) Infinite times increase : $12000 \times 5 = 60000$

(b) Fractional and multiple decrease in three quantities:

Similar calculations on decrease have the following numerical values in order:

- (i) $12000 - 2400 = 9600$ (iv) $12000 - 36000 = -24000$
- (ii) $12000 - 3000 = 9000$ (v) $12000 - 48000 = -36000$
- (iii) $12000 - 4000 = 8000$ (vi) $12000 - 60000 = -48000$

Thus, we see that there will be increase between 14000 to 60000 and decrease between 8000 to -48000 in original number of 12000. Though the values here are assumed, but the difference in increase and decrease under six steps is not imperceptible as the definition of 'a-heavy-a-light' suggests. The increase and decrease here, however, are like ripples in the sea.

The calculations of G.R. Jain are on different footing. Still there is a variation in increase from 1152 to 16128 over the original number and decrease from 10124 to 15872 over the same number. Here, there are no negative numbers. The calculational uniformity is necessary for proper understanding of this term. However, this calculation indicates what could be meant by six-step increase or decrease.

11. The realities have two types of capacities-potential and kinetic. The potential energy is found in all realities on the basis of which they have their functional aspects. The kinetic energy is found only in the realities of mattergy and the living one. The worldly and salvated living ones move in various ways by themselves and make others move also. The atomic mattergy or microworld of today also moves with a velocity. This is confirmed by modern science also.

12. The Vaiṣeṣikas have an inference to postulate the difference between the activity and active reality:

"The activity and reality are different because they are objects of different types of knowledge like the Sahya and Vindhya mountains."

The aphorism 5.1 mentions non-living bodies indicating the existence of spacepoints in them. However, it does not mention about the number of spacepoints. The following aphorism 5.8 is meant for describing about their numerical nature.

Asankhyeyāḥ Pradeśāḥ Dharmā-adharma-eka-jivānām 5.8

The realities of medium of motion, rest and single living being- each have innumerable spacepoints 5.8.

1. Numeration means counting. Differentiation with respect to own or alien characteristics is the specificity or particularity. The term 'innumerable' means transgression of a particular number. Alternatively, the 'innumerable' is a number which cannot be counted by anybody.

2. Q. If the 'innumerable' number cannot be counted by anybody, there could not be any omniscient being.

A. This is not correct. The omniscient being knows the 'innumerable' in that form only as he knows the 'infinite' in 'infinite' form. The omniscient being knows the entities as they are. Thus, there is no loss of omniscience. There are three types of numerical measures to learn about things - numerable, innumerable and infinite. The term innumerable indicates non-maximal and non-minimal innumerability or intermediate or middle category of innumerability.

3-4. The term 'Pradeśa' or spacepoint is defined as that entity which could be numerically described. This description is based on the unit area occupied by a single substantive (ultimate) atom (to be defined later). The realities of single living being, medium of rest and motion - are all similar with respect to numericality of spacepoints. They all have innumerable spacepoints. The realities of medium of motion and rest are inactively pervading the space. The living reality has also similar spacepoints. However, it has a contracting and expanding nature and, hence, its karmic body may be fine or gross occupying different number of spacepoints. Moreover, when there is the world-filling soul-extrication, the eight central spacepoints of the living being occupy the

place between the layers of Citrā and Bajra under the mount Sumeru (Mandara) while the rest of the spacepoints occupy the whole of the inhabited universe in all directions.

5. Q. The assumption of spacepoints for any single reality may be only a formality rather than actuality. The formality does not serve any purpose in the logical examination of entities. The mirage does not satisfy a thirsty man.

A. This is not so. The assumption of spacepoints is real. The spacepoints occupied by a pitcher are different from the spacepoints occupied by any other material like a fabric. Had there been no difference between the spacepoints occupied by different materials, the reality could not have been pervasive. Thus, the reality is not devoid of spacepoints despite its indivisibility.

6. Q. If the spacepoint division is real, the reality cannot be called non-composite or a single whole.

A. This is not correct. There is no division of reality of space etc. like the pitcher which is materially divisible and, therefore, composite.

7. The living beings are many. They could have infinite spacepoints. However, the word 'eka' (one) in the aphorism 5.8 is meant to indicate that a single living being has innumerable spacepoints.

8. The aphorism 5.8 has possessive case. It indicates that there may be difference between the reality and spacepoints with some respects.

9. The aphorism 5.8 has two separate plural words 'innumerable' and 'spacepoints'. They could not be condensed to a single term as the term spacepoint has to be successively applied for the proper meaning of latter aphorisms. If this was not done, the following aphorisms would have to have the term 'spacepoints' included in them. This would have lengthened the other aphorisms. This would be an undesirable act for the aphorist.

10. Q. The assumption of spacepoints of the realities of medium of rest and motion etc. is not real as these are indivisible or non-composites. We know that the term 'lion' is used for specific animal with excellent qualities of cruelty and bravery etc. and possessing specific parts of the body like sharp nails, daunting teeth, grey pupil of eyes and shining hairs

etc. due to the operation of specific physique-making karma of five sense and subhuman destiny. However, we also sometimes designate man as a lion. This means man may have some common-ness in qualities with lion. Man cannot be a real lion, he may be only a metaphorical lion. Similarly, the spacepoints may not be real in these realities despite their being primary for mattergies.

11-13. A. This is not correct. We find that there are two types of different but similar entities in the word 'man as a lion' where lion is secondary and man is primary. However, we do not have a similar position in terms of spacepoints of realities. They are same in all the realities because they occupy the same space unit. Secondly, while the single word 'lion' indicates the primary character, it indicates the secondary character when associated with an adjective as in lion-man. This type of difference in character is not found in spacepoints. They are always associated ones as the spacepoints of mattergy or medium of motion etc. Thirdly, the character in the usage of the word lion undergoes change due to its qualitative partial similarity in man. There is no such case in spacepoints of the above realities as each one has independent spacepoints.

14. Q. There are no real spacepoints of these realities like pitcher etc. Otherwise, they could be independently spotted or counted like those of the neck, bottom etc. in case of the pitcher due to their space-occupancy.

15. A. This is not correct. It is reasonable to count spacepoints of pitcher etc. due to their sense-perceptibility. But the realities of medium of rest and motion etc. have sense-imperceptible spacepoints. Therefore, they are not countable despite their real nature. The scriptures are authority on this point. They have been delivered by the omniscient Enlightened ones and conveyed by their chief disciples through memorised meanings. They have come down to us through the tradition of their successive disciples. They point out the primary realness of spacepoints of the realities. This concept is, thus, authenticated by the scriptures. They have described that there are infinite-times-infinite spacepoints of karmas of the knowledge - obscuring types etc. in every soul spacepoint. There are infinite-times-infinite spacepoints of bodies of

gross and other types in every karmic spacepoint. There are infinite-times-infinite number of naturally accumulated spacepoints in every spacepoint of the body like the accumulated dust particles in wet jaggery. A similar situation exists for the real spacepoints of the realities of medium of motion etc.

16. The scriptures also mention that there are two types of spacepoints of the living beings - fixed and non-fixed. When there is a non-steady nature of modes during experiences of pain and pleasures, feelings of anger and other passions or transition periods, the spacepoints of the living beings are called non-fixed due to their upheavals. The steady state of these spacepoints is called fixed. The central eight spacepoints of the living beings are always fixed. All the spacepoints of the salvated and omniscient beings without activity are also fixed. The spacepoints of the living ones under exercise, pain, accidents and emotions are always non-fixed except the eight central spacepoints. All other living beings have fixed as well as non-fixed spacepoints. These scriptural statements prove that the spacepoints of these realities are real and primary.

17. The scriptures further mention that the pure spacepoints of the living beings equivalent to innumerableth part of the Utsedha Angula ($1 \text{ UA} = 1.07 - 1.30 \text{ cm}$) transform into the senses of sight etc. This occurs due to the destruction-cum-subsidence of energy-obstructing karma, sensory and vocable knowledge-obscuring karma and fruition of physique-making karma of limbs and sublimbs. These senses have specific spacepoints, naturally non-transformable and perceptible by the senses. Thus, the spacepoints of the living ones are real only.

18. In practice, it is observed that the city of Pātaliputra (current Patna, Bihar) is located in specific spacepoints of space, the city of Mathura (U.P.) is located in different spatial spacepoints. Thus, the space has many spacepoints. The non-spacepointed space of the absolutist will have all these cities at one spatial place only. This is contrary to observations.

19. The Vaiśeṣikas face two-fold flaws on their absolutist viewpoint. They presume that the ear is defined as that region of space which

is in the outer part of the ear drum. This causes the experience of sound due to divine vital force called 'Adṛṣṭa'. If this ear-space is admitted as a whole space, it will become the space itself. Thus, all the sounds produced due to strikes between material bodies in all directions should be heard by all the living beings all the times. To avoid this flaw, if only the limited spatial spacepoints are called as the ear, it means that there are many spatial spacepoints. Thus, the Vaiśeṣika postulate of non-space - pointed space reality will not stand scrutiny.

Alternatively, an atom occupies space. If it occupies the whole space (because of its non-spacepointed character), the size of the space will have to be either atomic or the atomic size will have to be equivalent to whole space. Both possibilities are undesirable. However, to avoid this, if atom is said to occupy one point of the space, it leads to the fact that the space has many spacepoints. Thus, again we conclude that the spacepoints of space are real.

20. Secondly, Vaiśeṣikas postulate that actions change their substratum through decompositions and combinations. It is their nature. This fact also indicates that the space must be spacepointed. There will, otherwise, be the possibility of absence of actions due to absence of translational activity in spacepoints.

21. Further, the Jainas postulate the view of manifoldness towards the unity and multiplicity of spacepoints of these realities. For example, there is unity of spacepoints in a man with respect to substantive or general standpoint while there is multiplicity of spacepoints with respect to modal or particular standpoint such as he has limbs and sublimbs like head, back, hand, nose, fingers, joints etc. which have their own spacepoints. Alternatively, substantively, man is one while modally he is many in terms of cutter, food-digester etc. There is also manifoldness in him with respect to his modes of being a father, son, son-in-law, brother-in-law etc. of others. He may also have manifoldness with respect to his qualities as having five-sensed one, healthy, intelligent, clever, skilled and well-behaved etc. Similarly, the realities of living being, medium of motion and rest are substantively one while they are many with respect to their specific modes.

22. Moreover, in practice, the worldly living being is always composite because he is bonded with karmas from beginningless time. His karmic bonding makes him spacepointed. However, the living being is non-space-pointed because of his innate quality of consciousness with respect to pure or ideal standpoint.

Supplementary Notes

1. The commentary deals with the following points :

(a) The etymological and general meanings of the terms 'innumerable, spacepoints and the mentioned realities'.

(b) The justification of composing the aphorism in the existing form.

(c) The justification for the concept of spacepointism of different realities on primary basis through logic and many illustrations.

(d) The validity of the concept of 'innumerable' and 'spacepoints' on the basis of 'omniscients' authority, whose infinite insight into non-intelligibles make us believe in these commonly non-perceptible entities.

(e) The spacepointness of the three realities may be considered with respect to their substantiality and modality. Substantively, they are mono-spacepointed and modally they are multiple-spacepointed. This is also applicable to the disembodied and embodied living beings.

2. The Śevtāmbara version has two aphorisms (5.7-8) in place of one here to convey the same meaning. However, this commentary does not have any questions about it as in many other cases. Does this mean that these two aphorisms in S-version were not current during Akalanka's time ?

3. The term 'Pradeśa' has been translated in many terms but we will use 'spacepoint' for it. It is a minimum distance in three dimensional space which serves a primary unit for dimensional measurements. All other canonical units of length are derived from it. The ultimate atom has been postulated as having a dimension of one spacepoint. Thus, a spacepoint is represented by the area occupied by one atom. The time taken by an atom to move from one spacepoint to the neighboring spacepoint forms the base for time units. The term 'atom' here should be taken to mean canonical ultimate atom only.

4. The mention of innumerable spacepoints of the realities of medium of motion and rest indicates that the occupied universe is finite as these realities are found only in this section of space. This fact is indicated by aphorism 1.25 of J.T.D. of Tulsī where he has included occupied space in it along with all others of Umāsvāti. Despite their being a continuous single whole, the concept of their spacepoints serves to explain many physical and psychological phenomena. Of course, the commentary elaborates the primary nature of their spacepoints.

5. The Jaina system postulates the finiteness of the occupied universe. They have a three-tyre universe with a specific shape. The volume of this universe is 343 cubic Rajjus. The Śvetāmbaras have given a volume of 239 cubic Rajjus which has been disputed by the physicist Jaina saint Muni Mahendra who concurs with the correctness of 343 cubic Rajjus. The Rajju is a larger length unit which has been calculated on some assumptions by many authors. G.R. Jain mentions it to be equal to 1.45×10^{21} miles (app. 2.3×10^{21} kms) based on equating the Einstein's volume of universe (1037×10^{63} cubic miles) with Jaina volume in cubic Rajjus. The Rajju unit is a larger unit as astronomical light year of current science though their values differ (5.88×10^{12}).

6. The term 'innumerable' may have a meaning of a countless number. It has three varieties - (i) peripheral (parīta), (ii) yoked (yukta) and (iii) numerate. Each of them is divided into three classes - (i) minimal (ii) maximal and (iii) middle. Thus, the innumerable number has a total of nine varieties. Their values increase in the order given and could have as shown below:

- (a) Minimal peripheral = maximal numerate + 1
 (b) Middle peripheral = minimal peripheral + 1 \longrightarrow
 maximal peripheral - 1.
 (c) Maximal peripheral = minimal yoked + 1

and so on. The commentary indicates that by the term innumerable, one should take the middle innumerable, as also mentioned in the case of numerate number in 3.38. It does not mention what class of innumerable number should be taken. This non-mention shows that varieties of 'innumerable' number were not developed by Akalanka's time. Pūjyapāda

and Vidyānanda also do not clarify on this issue. It would seem proper that the first class of peripheral variety should be taken here. However, this is subject to elaboration by the canonists and scholarly saints.

7. The value of even the first innumerable variety in its different forms is not very clear-cut. The minimal value depends on the maximal numerable number. With respect to time, the maximal numerable time varies between 10^{90} - 10^{180} years. This +1 makes the innumerable time. However, the 'innumerable' in terms of number has a different story detailed earlier. Akalanka has also given a complex method to find it out in his commentary on aphorism 3.38. Thus, until the value of maximal or highest numerable number is fixed, the value of any class of innumerable number will be anybody's guess. This is why, the existence of the class of innumerable number and its value has been ascribed to the instruction of the omniscients. Thus, this quantity becomes a subject of non-logical arena not amenable to common man's knowledge.

8. The canons have given many symbols for 'innumerable' in different texts.

9. Similar is the case with existence and extension of a unit spacepoint. It has also to be accepted on the basis of omniscient instruction. The question of the attribute of 'a-heavy-a-light' has also been dealt with similarly in the aphorism 5.7.

The concept of a unit spacepoint is only an ideal and mental construct for the common man to represent the dimension of an indivisible atom. It is also termed as indivisible corresponding section. However, it must be noted that the term 'atom' and 'spacepoint' are different from each other.

The next aphorism 5.9 answers to the question about the numericality of spacepoints of space.

Ākāśasya Anantāh 5.9

The reality of space has infinite space points. 5.9.

1. The term 'Ananta' means infinite or endless. The infiniteness here refers to 'spacepoints'. They are dragged here from the previous aphorism. Thus, it means that the spacepoints in space are infinite.

2. Q. There is no difference between the innumerable and infinite because they have similarity in being quantitatively immeasurable or uncountable.

A. This is not correct. Their difference has already been detailed in 3.38 which indicates that infinity is a larger number than the innumerable one.

3. Q. If it is infinite, it may not be cognisable.

A. It is cognisable by persons (or omniscients) having supra-sensual or superior knowledge.

Q. If the omniscients cognise the infinity, its infiniteness is lost. If they do not cognise it, their omniscience is lost

A. This logic is not reasonable. The omniscients have destructional knowledge which is supra-sensual and infinite-times-infinite. They directly cognise the infinity in terms of infinity itself. The others learn about it through their instructions and inference. Thus, there is no loss of the concept of omniscience. It is not logical to presume that because the infinity is known and, hence, it could become finite. The omniscient cognises the infinity in terms of infinity only.

4. Moreover, most of the philosophical systems agree to the concept of infinity and omniscience. The Buddhists state that there are infinite elementary substances. The Vaiṣeṣikas postulate that the realities of direction, time and space are infinite because they are all-prevasive. The Sāṅkhyas maintain that their two elements- the primordial Nature and Soul (Puruṣa) are infinite because of their pervasiveness. All these cannot be said to be non-cognisable because of their infinity. They can also not be assumed to be finite as they are cognisable. Hence, it is not correct to say that an entity could be non-cognisable because of its infinity.

5. Secondly, the concept of non-cognisability due to infinity of entities will lead to the loss of concept of omniscience. There will be nobody to know the infinite objects. If objects are assumed to be finite, there will be possibility of loss of salvation and the world.

Q. How is it so?

A. If the living objects are presumed to be finite, there will be no world when all the living beings are salvated. If to avoid this, one

presumes the rebirth of the salvated beings, there will be no salvation at all as it is endless. Moreover, there are infinite karmas and quasi-karmas in every living unit. If they are postulated as finite, there will again be no world after sometime and, therefore, no salvation in due course. Similarly, if the past and present are assumed finite, there will be loss of public statements like early or late. This is not logical as there cannot be origination of non-existent and destruction of the existent. If the space is assumed to be finite, there will be possibility of assumption of solidity beyond space. If this is not acceptable, and space surrounds space, then, space becomes infinite.

Supplementary Notes

1. The commentary deals with the following points :
 - (a) The etymological meaning of the term 'ananta' representing the numbers beyond innumerable.
 - (b) There is difference between 'innumerable' and 'infinite'. Referring to commentary on 3.38, the value of 'infinity' of different types is sufficiently larger than the innumerable, the minimum being, minimal peripheral infinity.
 - (c) The 'infinity' is known and perceived only by the absolute knowers omniscients in the form of infinity itself. If the concept of the infinity is not accepted, there will be following flaws :
 - (i) There can be possibility of non-existence of the quality of omniscience.
 - (ii) There will be loss of the world and salvation.
 - (iii) There will be loss of concept of three types of time.
 - (iv) The infinite space can be proved only by admitting the concept of infinity - cosmic space surrounded by non-cosmic space.
 - (v) Most philosophers accept the concept of infinity with respect to their different postulates.
2. The concept of infinity has generally been a philosophical one. However, the Jainas have extended it to have a calculational form through its nine varieties. It had no fixed value upto the time of George Cantor who proved infinity to be a form of actuality or reality. Now,

there are many types of infinities - actual, existential, calculational, proper, improper, mathematical and philosophical.

3. Dhavīā 3 mentions ten types of infinities out of which calculational or numerical infinity is important here. This could be defined as an endlessly endless but specific number obtained by exhaustion by finite quantities inexhaustively involving infinite time. Thus, 'infinity' is a specific number like innumerable but much bigger than it in terms of its middle and infinite categories. As with innumerable, it cannot be perceived by common experience but it is perceived by omniscients and clairvoyants. The infinity is expressed by the symbol ∞ . It has been expressed in canons in many ways.

4. As earlier, it is the middle category of infinity which should always be taken, though specific category has not been mentioned.

5. Mahendra Muni, G.R. Jain and L.C. Jain have shown the calculations leading to the approximate values for different types of infinities indicating impossibility of their calculated values even in these days of supercomputers.

6. The infinity of the Jainas involves all the existent realities and their modes.

7. Vidyānanda has added an important logical discussion on the concept of absolute difference and non-difference between the spacepoints and spacepointed entities like space. It has been proved that there is difference and non-difference between the composite and components in some respects. If they are absolutely non-different, there will be only mono-spacepointal entity which will be an undesirable proposition indicating the non-existence of the composite. If they are absolutely different, it will be difficult to define the spacepoint. If the spacepoints are realities, the space will become a manifold reality which is undesirable for the Vaiśeṣikas as they presume space as an undivided whole reality. It will neither be beginningless nor infinite. If the spacepoints are taken as attributes, it will still be undesirable. The attributes have been assumed to be attributeless and spacepoints have many attributes like combination, division etc. Moreover, the spacepoints cannot be taken as formalised or imaginary. In fact, they are real as they

serve the function of accommodating other realities. The imaginary fire cannot cook foods or dry clothes as in dreams. The space can also not be componentless, as it has different modes of origination and destruction.

8. The Jainas prove the compositeness of space etc. by the following inference :

"The space etc. are composite in some respects as they have conjunctions and disjunctions with many atoms like aggregates of fabric and pitcher."

If this is not accepted, either the space etc. will be atomic in nature or they will be many like atoms. Moreover, if space is taken as componentless, there could be no activities of any entity in it. Where will they move when there is only a mono-spacepointal space ?

9. The spacepointal infiniteness of space can be proved by the following inference :

"The space has infinite spacepoints as it has no border outside the cosmic space like atom as a negative illustration."

This infiniteness of space is also perceived by the omniscients and canons due to them which also state this fact.

10. The JSD has two statements in this regard in their aphorisms 1.25-26:

- (i) The cosmic space has innumerable spacepoints.
- (ii) The non-cosmic space has infinite spacepoints.

Umāsvāti includes both these postulates in his aphorism 5.9. In fact, the innumerable is included in the infinity.

11. The aphorisms 5.8 and 5.9 conclude the spacepoints of all the four non-mattergic realities.

The earlier aphorisms have indicated about spacepoints of non-mattergic realities. The next aphorism is intended for numeration of spacepoints of material mattergic realities :

Sankhyeyā-asankyeyāśca Pudgālānām 5.10

The mattergic realities have numerable, innumerable and infinite spacepoints. 5.10.

1. The aphorism 5.10 has the word 'ca' (and) which is meant for inclusion of 'infinity' with the other two types of spacepoints mentioned. Thus, the aphorism will mean that mattergic realities have three types of spacepoints. Some mattergies like diatomics etc. have numerable spacepoints while others may have innumerable and infinite spacepoints.

2. Q. The mattergies have infinite-times-infinite spacepoints also. The aphorism 5.10 should include this variety also.

A. The is not correct. The infinity has been taken in the general term and this variety is included in it. The infinity has three varieties- (i) peripheral, (ii) yoked and (iii) infinite-times-infinite. All these varieties are involved in the general infinity. Hence, there is no necessity for additional inclusion.

3. Q. The universe has infinite spacepoints and it is the substratum of aggregates composed of infinite and infinite-times-infinite spacepoints. This seems to be a contradiction and there cannot be infiniteness in the universe.

A. This is not correct. This is possible because of the fine type of occupancy character of the mattergies. The fine atoms etc. are transformed in such a fine way that even the infinite-times-infinite atoms can be accommodated in each spacepoint of space. Secondly, their accommodating capacity is also un-interrupted due to their subtlety. Hence, there is no inconsistency in occupancy of each spatial spacepoints even by infinite-times-infinite spacepoints of mattergy.

4-5. Moreover, this is not an absolute principle that grosser substrate cannot be accommodated in smaller substratum. The mattergies have a specific property of huge aggregation. Thus, many mattergic units could occupy a smaller area. For example, we find that many smelling particles (or molecules) are pervading in a small bud of champaka flower due to their subtle contracting capacity. The same particles are seen spread over all directions of space when they are in grosser aggregations (of finer nature). Similarly, we also observe that subtler particles (of carbon) found in dried cowdung cakes or mass of woods occupy a large volume when burnt by fire in terms of smokes in all directions. It is in the same

way that infinite-times-infinite mattergies and living units could occupy smaller space due to their high aggregation capacity.

Supplementary Notes

1. The commentary deals with the following points :

(a) The inclusion of the infinite variety of spacepoints of mattergies through the word 'ca' in the aphorism.

(b) The category of infinite-times-infinite has not been specifically mentioned as it is included in the general 'infinite' number.

(c) The illustrated support for accommodation of infinite spacepoints of mattergy in the innumerable spacepointed cosmic space due to expansion and contraction capacity of mattergic aggregates like the smell of flowers, light of the lamps or burning of woods. This support is based on non-absolutistic approach.

2. The three types of spacepoints of the mattergy have been mentioned due to different types of mattergic aggregations - physical or otherwise - observed.

3. The mattergic entities have two varieties - (i) fine or invisible and (ii) gross or visible. The fine ones may be atoms and molecules etc. Besides these, the Jainas have karma-producing 'karmon' particles and mind-producing fine mindon particles too. The gross ones are formed out of aggregation of fine particles. Sometimes, the gross forms are also invisible as the karma particles formed out of infinite-times-infinite karmon particles. Their existence has to be accepted either on the basis of canons or inference.

4. The word 'atom' used in 3 above will be discussed under aphorism 5.11 later.

5. One differentiation between the non-mattergic and mattergic realities can be traced to their aggregate forms. The spacepoints of mattergic realities can be separated while those of other realities cannot be separated from their aggregates. The non-mattergic realities cannot be broken down in parts as they are single wholes. Secondly, the spacepoints of mattergic entities are dependent on number of spacepoints in them or their aggregates. In contrast, the spacepoints of the non-mattergic entities are based on size, area or volume of the unit spacepoints.

6. It must be pointed out that the mattergy is accommodated only in the cosmic space which has innumerable spacepoints. It does not exist in the infinite non-cosmic space.

7. The manifold nature of mattergy spacepoints can be proved by the following inference:

"The mattergy has the stated three varieties of spacepoints as its aggregates are formed through variety of aggregations (like pot, pencil and book etc.)."

8. The Buddhists point out that aggregates are non-existing entities. They are only a false notion due to immediate adjacentness of many atoms together. Only the atoms are the real entities. Therefore, there could not be different varieties of spacepoints of mattergy. Their contention leads to non-observability of aggregates as the atoms are said to be supra-sensual. Hence, the concept of aggregates must be accepted. It is perceivable and cannot be negated by any logic or means of knowledge.

The aphorism 5.10 states that mattergies, in general, have many spacepoints. Does it mean that atoms will also have many spacepoints ? The next aphorism clarifies this point by contradicting this guess :

Nāṇoh 5.11

The atoms (Aṇus, the Jainas have generally used the term 'Aṇu' for atoms) do not have spacepoints (and they are indivisible). 5.11.

1. Q. Why there are no spacepoints in atoms ?

A. There are no spacepoints in atoms as they have an extension equivalent to that of only one spacepoint. Just as a single spacepoint of space is denoted as non-spacepointed because of its unitary nature, similarly the atom is also called so because of its similar unitary nature.

2. Moreover, there is nothing smaller than the atom (or Aṇu) so that it could be divided into spacepoints. That is why, it is called the beginning and end of extension of itself.

3. The word 'atom' has an etymological meaning of smallest or finest just like the word 'Pradīpa' (lamp) has an etymological meaning of

illumination. If there are spacepoints of atoms, either it may not be called as such or the aggregation of spacepoints may be called 'atom'.

4. Q. If there are no spacepoints in atom, it may be non-existent like ass's horns.

A. This is not so. It has already been said that the atom has only one spacepoint. It is not like ass's horns which have no spacepoints at all.

5. Q. It has to be asked whether the atom has beginning, middle or end in its extension. If it has, it will have spacepointedness. If it does not have, it will be non-existent like ass's horns.

A. This is not correct. The knowledge exists despite the fact that it has no beginning, middle and end. Similarly, atom also does exist. Its existence will be proved later on under 5.25.

Supplementary Notes

1. The commentary deals with the following points :

(a) There is a three-fold logical support for the atom to have no spacepoints :

(i) It is a uni-spacepoint entity which is indivisible.

(ii) There is no smaller size or quantity than the atom.

(iii) The term 'aṇu' (atom) has an etymological meaning of ultra-fineness.

(b) The non-spacepointal statement about 'atom' does not mean its non-existence. It is uni-spacepointal (where one is not taken as any number). Thus, 'non-spacepoint' means 'not more than one spacepoint'.

(c) The 'atom' has a real existence despite its 'no beginning, no end and no middle' characteristics like knowledge (vijñāna).

2. The Śvetāmbara canons like Bhagavati and Sthānānga have the term 'pamāṇu or pamāṇu pudgala' while Umāsvāti has the term 'Aṇu' in this aphorism and in 5.25. However, Kundakunda has both the terms in the same verse 20 of Niyamsara. Thus, it seems the two terms have the same meanings. Both of these terms have been translated as 'atom' by S. A. Jain, K. K. Dixit and two Shastris in their translations or commentaries. J. S. D. has done well to compose the aphorism 1.28 in terms of 'Na Parmāṇoh' in place of 'Nāṇoh' here. This term has been most popular throughout the world since early centuries. We have preferred

this term in this translation and its supplementary notes. Some scholars and saints have been translating this term through ultimate or elementary particles on the basis of atomic researches during the last two hundred years. Some call it as 'ultimate atom'.

3. The definition of the term 'atom' has always been as a unit indivisible, invisible finest constituent of material world since the pre-Christian and pre-instrumental era. However, when powerful instruments could lead to the composite character of prehistoric, the scientific world modified the definition of atom as the basic unit with specific characters of the material entity. The component parts due to new discoveries were called sub-atomic or fundamental particles. Thus, there are three types of matter at present: (i) sub-atomic or fundamental particles, (ii) atoms and (iii) aggregates (physical mixtures/chemical compounds).

4. The scientific west has accepted the above modified picture about the term 'atom'. However, the canonist or supra-authority-based east is not in a mood to do so. He feels it will entail contrariety or falseness of scriptures. The attribute of 'indivisibility' has been their catchword. The Jainian atom should also be indivisible at all costs. Thus, it has been equated with different fundamental particles like electron, stripped atoms and now quark (later some other one if quark is proved to be a composite one - who knows ?) at different times. Many scholars have now started calling it as ultimate particle or atom. How far this attitude is justified - is a question for moderate scholars.

5. The current aphorism indicates that the atoms occupy only one spacepoint (lowest unit of fineness) and they do not occupy more than one spacepoint. This statement should be taken with historical rather than scriptural perspective.

6. It seems that this problem of indivisibility of atom must have intrigued the early Jaina scholars. They have solved it in such a way that popular meaning could also be acceptable by the same term. Just as they have classified the term 'perception' (Pratyakṣa - (i) supra-sensual (ii) sense-based) in terms of worldly and superworldly varieties having seemingly contradictory meaning for the common man, the Anuyogadvāra and Jambūdvīpa-prajñapti also classified the term 'atom'

in two forms - (i) apparent atom (real atom) and (ii) absolute atom (ideal atom). The ideal atom may have the property of absolute indivisibility as postulated in canons. However, it is the real atom which is of importance to common world. It is formed from infinite ideal atoms but still finer to be nakedly visible. The atom of the current scientists may be equated with this real atom. It is this atom which forms all the elements, compounds and aggregates of the world. The Jainian real atom may be divisible into what are now called sub-atomic particles. These may also not be the ideal Jainian atoms. Triloka-prajnapti has indicated that a real atom may have a size of 10^{-12} - 10^{-13} cm.

7. On this basis, the aphorism 5.11 will have a meaning with respect to ideal or absolute meaning only. The ideal atom does not have more than one spacepoint. It is dimensionless geometrical point. However, it is not an abstraction but an objective entity. It is sense-imperceptible but it could be inferred by its visible effects or intuitional experience.

8. Niyamsāra refers to one more classification of atoms. They are two-fold - (i) cause-atom and (ii) effect atom. The cause atom forms the physical aggregates like earth, water etc. The effect atom is the last indivisible unit caused by finest division of aggregates. The aphorism 5.11 will refer to per chance effect atom which could move upto the ideal atom of the Jainas. Kundakunda says that, in general, the word 'atom' should be taken as to mean ideal atom, while all other entities are designated as aggregates (Niyamsāra, verses 20-29).

9. Vidyānanda has said that the atom is not only uni-spacepointal but it is also the substratum of attributes of colour etc. Thus, the atom serves a dual character. It is substantively a reality and has a unit spacepoint. The uni-spacepointal character of atom is a non-separable differentia. It is also inferred from aggregates formed by atoms. In fact, spacepoint and spacepointousness are concomitant.

10. Vidyānanda has refuted the concept of multi-spacepointal or eight-specepointal character of the atoms as accepted by some philosophical system. He has given inferences for support of his concept and for refuting it as below :

Supporting inference : The atom is multi-spacepointal because it is a reality like space, soul and pot etc.

This inference has a two-fold fallacy :

- (a) It has a transgressional fallacy with the reality of time (reality without multi-spacepoints) and sound (Mīmāṃsakas postulate their reality without spacepoints).
- (b) It has a fallacy of contrariety because the reason of reality proves the fact to be otherwise.

Counter-inference : (i) The earthen-pot etc. are made up of ultimate constituents by their terminal division as there will, otherwise, be no divisibility in them. The terminal constituent is called the atom.

(ii) The eight-spacepointal atom is divisible as it is multi-constituent along with materiality like the earthen-pot etc. The divisibility terminates at indivisible mono-spacepointal character of the atom.

Moreover, if the atoms are supposed to be multi-spacepointal or eight-spacepointal, one will not have the apprehension of the aggregates. If the atoms combine totally, the aggregates will turnout to be atomic in size. If the atoms combine partially, it will lead to infinite regression. Thus, it must be a third type of combination of atoms which will avoid the above flaws. And this mode will be the Jaina postulated mode through the property of opposite electrical nature of atoms.

11. It may be added here that the mono-spacepointality or non-existence of many-spacepointality of the (ideal) Jainian atoms should be taken with respect to substantive standpoint. It cannot be taken with respect to modal standpoint as it has been postulated to have its modes through different colours, tastes etc. Thus, a mono-spacepointal atom has manifold modal modificational spacepoints.

12. There is no difference between the spacepoints of atoms or any other reality with respect to their locational occupancy. However, they differ from each other with respect to their separability from the composite realities as pointed out in note 5.10.10.

Where are the realities located? The next aphorism is intended to indicate the substratum of realities like the medium of motion etc.

Lokā-kāṣe Avagāhah 5.12

All the realities are accommodated in the universe-space (occupied space). 5.12.

1. Q. There is context of mattergy from the previous aphorism 5.11. This aphorism, therefore, should refer only to the accommodation of mattergy only.

A. This is not so. This aphorism refers to all the realities as a group rather than any individual one as all of them have been described before. Thus, there is no discrimination here. This aphorism, therefore, states the substratum of all the realities.

2. Q. If space accommodates other realities like those of medium c rest and motion etc., the space must have some other substratum.

A. This is not so. The infinite space is accommodated in itself. The space is, thus, the substratum and substrate by itself.

3. Moreover, there is no other reality which has a larger magnitude than the space where it could be accommodated. It is, therefore, justified that the space is self-accommodative in the absence of any other infinite substratum.

4-5. This concept also avoids the flaw of infinite regression. Secondly, from the actualistic point of view, all the realities are self-accommodating substantively. Hence, there is ideal substrate-substratum-relationship among them.

6. Q. If all the realities are self-accommodating, there will be contradiction with the canonical statements like 'space is substratum for air etc. mentioning mutual accommodative nature of the realities.

A. This is not so. These statements have been stated from practical point of view. The presumption of substrate-substratum-relationship is always with respect to practical standpoint only. There will, otherwise, be flaw of infinite regression. Substantively, however, every reality is self-accommodating.

7. This statement could be illustrated in terms of various activities. In fact, there are two types of activities - (i) subject-inherent just as to go, sit etc. and (ii) object-inherent like cooking the rice or breaking of the pitcher etc. The substratum of the subject and object may be the verb

'āste' (to sit) or cooking in vessels- etc. Thus, from practical point of view, the realities are substratum for activities and these may have other substratums too. Form substantive standpoint, however, every reality or activity is self-accommodative only. This aphorism 5.12 is a practical statement only.

8. Q. If substratum-substrate relationship is accepted, there should be separateness and time lags between them as in the case of plums and the containers where plum is the substrate and container is the substratum. This will mean that space is first and other realities are next. This will lead to contradict the beginninglessness of the realities.

A. This is not logical. The substrate-substratum relationship is also observed in case of non-separable entities like the body and the hand (where body is the substratum of hands) which are simultaneously produced without time-lag. Similarly, the realities of space etc. are beginningless and simultaneously originating and they may have substrate-substratum relationship.

9. Secondly, there is no fixed rule that this relationship exists only in separable entities like plum and the container. This is also observed in non-separables like roots and shoots etc. in a tree. Thus, there is no application of this flaw of separateness in the case of realities.

10. Q. There is a term 'universe space' in this aphorism. Now, what is meant by the term 'universe' (loka) ?

A. The universe is an entity where the effect of merit and demerit are observed in terms of pains and pleasures.

What is that entity ? It is the soul.

11. Alternatively, the universe is an entity which observes or knows about the realities in the world. This again means - the soul.

12. Q. The above two definitions of the term 'universe' indicate that the soul or the living being is the universe. It leads one to say that other realities are non-universe. This is a canonical contradiction that the universe consists of six realities.

A. This is not correct. The etymology is only an instrument for conventional meanings. Just as, a cow is called 'Go' because of its moving nature. But this does not mean that a seated or unmoving cow

cannot be called 'Go'. Similarly, the term 'loka' means observation. This etymology does not mean that other realities besides the living being are not 'universe'.

13. Thirdly, the universe is an entity which is observed by the omniscient who has absolute conation and knowledge. This proves that other realities are also universe as he observes all of them.

14. It is the soul which observes. It cannot be called non-universe because it is non-observable. It is self-observing. The omniscient who observes the external realities, observes the self-soul too. How, otherwise, could he be called omniscient ? Secondly, one who cannot observe ownself, how could he observe others ? It is just like earthen-pots who do not observe themselves and, hence, unable to observe others too.

15-16. Q. If the universe is that which is observed, the non-universe will also have to be termed as universe as it is observable by the omniscient or omniscient. If he does not observe it, he will not be omniscient. This is undesirable.

A. This is not so. The point has already been replied in term of convention over-ruling the etymology. Alternatively, the universe may be taken as that entity wherefrom the omniscient observes. He does not observe non-universe from his position in non-universe. Hence, the non-universe cannot become universe. Thus, there will be a qualified observation in terms of both.

17. The space of the universe is termed as universe-space. The term refers to the location just like a pond where there is storage of water.

18. Alternatively, the term 'universe' belongs to a case of substratum which means it is an entity where all the realities could be observed. The space is the substratum here. The universe is the space. It is a homolocalised entity where all realities are located. This space is classified in two divisions due to these realities-universe-space and non-universe space. The universe-space has innumerable spacepoints like the realities of medium of rest and motion. In contrast, the non-universe space outside this is infinite.

Supplementary Notes

1. The following points have been detailed in this commentary :

(a) All the realities are accommodated in the occupied or cosmic space with respect to the empirical view. However, they are self-accommodating from the actualistic and idealistic standpoint.

(b) There is a two-point logical support for spatial occupancy of the realities.

(c) It is, once again, proved that substratum-substrate relationship could also be observed in entities even non-separable with respect to time as in the case of colour in cloth or hand in body.

(d) There are four definitions of the term 'loka' (occupied universe or space) :

(i) The loka is an entity where fruits of merit and demerit are observed.

(ii) The 'loka' is an entity which observes or acquires different objects and objectives.

(iii) The 'loka' is an entity which is directly perceived by the infinite knower- omniscient. It involves the living and non-living entities.

(iv) The 'loka' is a place where different entities and realities are observed. It is a substratum for all entities including itself.

All these meanings are based on the Sanskr̥ta root 'loka' (to observe) through its subjective, objective and abstractive forms.

2. The occupied space occupancy of the realities may be (i) eternal and (ii) non-eternal. The realities of medium of motion and rest have only eternal occupancy. However, the realities of living and mattergy may also have a non-eternal occupancy.

3. All the non-pervasive entities occupy a pervasive space or substratum. If the realities are assumed to be absolutely self-accommodating, there will be possibility of loss of substratum-substrate relationship.

4. It may be noted that while the earlier aphorism 5.11 has primarily idealistic approach, this aphorism has primarily realistic or empirical approach. Thus, the aphorist has utilised different point of

views in descriptions. One has to look which point of view is in tune with the aphorismic meaning.

5. The term 'loka' has been defined earlier under supplement 5.8.4. The term 'occupied or cosmic space' in the aphorism here indicates once again, that there is unoccupied space also in the universe where no reality does exist.

The next aphorism 5.13 indicates the specific type of accommodation of different realities in universe space.

Dharm-Adharmayoh Kṛtsne 5.13

The realities of medium of motion and rest occupy the whole of the universe-space 5.13.

1. The word 'Kṛtsna' (whole) denotes the non-remmental relationship. The realities of medium of motion and rest do not occupy part of the universe-space like that occupied by a pot in a part of the house. They occupy the whole of it like oil in the til seeds. They are always present everywhere in this space.

2. Q. How they are coexisting together in terms of spacepoints ?

A. The three realities of medium of motion, rest and space are non-mattergic. Therefore, their spacepoints can co-exist non-contradictorily. Moreover, when mattergic entities like water, ashes and sands etc. can coexist at a point, why the non-mattergies cannot coexist together ?

3. Moreover, these realities have beginningless co-existing relationship. The non-coexistence of spacepoints of gross aggregates of entities having beginningful relationship due to division, combination, motion, transformation etc. may be possible. This is not possible in case of non-material entities.

Supplementary Notes

1. The commentary deals with the following points :

(a) The medium of rest and motion occupy the entire universe space pervasively like oil in the seeds.

(b) The two realities are non-mattergic and, hence, they interpenetrate each other without obstruction. Their inherent eternity

also indicates the absence of their priority and posteriority leading to their interpenetrating and mutual accommodation capacity.

(c) There might be obstructions in interpenetrating between the mattergic entities.

2. This aphorism, again, indicates that it is these two realities that are responsible for division of universe space into two categories. They are, therefore, coextensive with this space. Thus, they occupy part of the space rather than whole space. These have already been shown to be equivalent to Newtonic concept of Ether and Gravitation (field).

3. This commentary indicates common observations of co-existence of water and fine sand or ashes in the colloidal form. When these material objects can accommodate each other, what to say of non-mattergic entities?

4. G. R. Jain has suggested that the illustration of interpenetrability of some material objects like water and fine sand or ashes or light does not serve the purpose well as they involve parts which the non-material mediums do not have. However, they could be assumed to have mutual interpenetrability like electrostatic, magnetic and gravitational fields maintaining their own identity.

5. The Einsteinean cylinder theory indicates the finiteness and, therefore, stability of the universe. Three dimensional infiniteness of the universe leads to non-stability. Of course, it could be infinite with respect to time. The Jainas do not agree to this point because it leads to all the space being occupied one. The steady-state theory or Big-Bang theory is also not acceptable to the Jainas as they do not agree to the continuous expansion of the universe. They believe the universe divided into two sections - (i) occupied and (ii) un-occupied due to demarkation through these two realities where occupied space is floating in the infinite unoccupied space. However, there are some points of similarity (beginngingless and infiniteness with respect to time) in the steady state theory.

6. Vidyānanda supports this aphorism through the inference :

"The realities of medium of rest and motion occupy the whole occupied space because they serve the activities of rest and motion of the entities. The illustration here could only be negative."

If it is not accepted, there will be rest and motion in unoccupied space also which is contrary to the Jina instructions.

The next aphorism 5.14 is intended to describe the specific accommodation of atomic, numerable and innumerable spacepointed tangible mattergic realities :

Ek-pardeśādiṣu Bhājyah Pudgalānām 5.14

The mattergic reality is accommodated in one, two etc. spacepoints in space 5.14.

1. The first term in the aphorism should be understood to mean a group involving from the beginning of one to many spacepoints. How do we learn to mean this ? Because all the spacepoints have the same class. It may be illustrated by the term like 'Somśarmā etc.' which involves Somsharma also along with others. Alternatively, we borrow the word 'spacepoint' here from the earlier aphorism so that it becomes a group. Thus, the first term includes the unit spacepoint also.

2. The second term 'Bhājyah' means alternatable, divisible or separatable. This means that the accommodation of mattergies is alterable. Thus, a single atom will have accommodation in one spatial spacepoint. If two atoms are bound, they will occupy single spacepoint. However, if they are non-bound, they will occupy two spacepoints. If three atoms are bound, they may occupy one or two spacepoints. However, if they are non-bound, they occupy three spacepoints. Similarly, the numerable, innumerable and infinite spacepoints of the aggregates are accommodated in one, numerable and innumerable spatial spacepoints of universe space depending on their bound and unbound states.

3-4. Q. It is all right if many spacepoints of non-mattergic realities like medium of rest etc. are accommodated in a single spatial spacepoint. However, this could not be possible in case of many spacepoints of mattergic realities as it will lead to unity of multiple spacepointed

mattergies. If it is possible, one will have possibility of divisibility of unit spacepoint.

A. This is not correct. It has already been said that this could be possible due to specific aggregations (and finer transformations and accommodation capacity of space) among the mattergic aggregations. Moreover, we observe that there are many light mattergic particles in a room without any spatial discrimination. And these particles are not unitarised because of their mono-spacepointal-accommodation. Similarly, the infinite aggregates can also be accommodated in one spacepoint non-blendingly due to their fine transformations. Thus, there is no contradiction in accommodation of many spacepoints in one spacepoint.

5. Thirdly, the nature of realities is not subject to logic. Their natures are definite. Fire has a nature of burning, the grasses are burnable. And so on. Similarly, the nature of mattergic substances is such that many of their aggregates can occupy a single spacepoint due to their accommdational nature. Thus, there is no contradiction regarding their accommodation peculiarity.

6. The scriptures also point out this fact. They are the words of omniscients coming down to us by unbroken tradition through their chief disciples and succeeding scholarly disciples. They are perfectly true and valid. Pancāstikāya (64) points out that 'the world is completely full of infinite number of various fine and gross mattergic bodies'. As we accept the accommodation of infinite number of general class of microorganisms (Nigotas) in a single body of these beings on scriptural authority, similarly the above fact regarding mattergic accommodation should also be taken as granted.

Supplementary Notes

1. The commentary deals with the following points :

(a) The meaning of the first term used in the aphorism 5.14. The first term includes 'one spacepoint' along with higher numbers. The second term indicates accommodation of mattergic entities of different spacepointal nature in similar or dis-similar spacepoints of the occupied space.

(b) The method by which multi-spacepoint mattergies are accommodated in one, two or more spacepoints of space, is as below :

(i) Free atoms occupy individual spacepoints.

(ii) Aggregatal or bonded atoms occupy one or more spacepoints due to (a) normal or abnormal condensation of aggregates, (b) transformational fineness produced due to extreme condensation, (c) accommodation capacity of aggregates themselves, (d) the nature of expansion and contraction capacity of atoms and aggregates like the lamp. The intrinsic nature cannot be subject to logic, (e) scriptural testimony regarding accommodation of infinite-times-infinite general plant bodies in a single general plant body and occupancy of the occupied space by infinite-times-infinite times fine and gross mattergic entities (which are also not subject to logic).

2. Vidyānanda shows his keen observation to suggest transformational fineness in case of compressed mass of cotton and sawdust in comparison to their free state. He also points out that myrobolans, plums, black pepper and mustard seeds have gradually increasing fineness occupying lesser and lesser space. On the basis of this increasing fineness, we can extrapolate to infinite fineness of karmas or atoms. Similarly, infinite grossness of space may also be guessed on the basis of many physically gross elements.

3. G. R. Jain has given information about the number of electrons in the finite universe as 129×10^{77} as per Einstein calculation. The free atoms, electrons, ions, stripped atoms seem to be present in the interior of the stars where there exists a very high temperature. This represents the free state of the atomic or subatomic particles which could occupy single spacepoints. However, there are also examples where abnormal condensation has been observed to occupy atomic space - (a) small stars have densely packed matter to weigh about 121 kg/ml., (b) another star has been found to have a density of 87 tons/ml. Thus, the mattergic entities may have densest and closest packing to occupy one atomic spacepoint and they may have free state also to have one-to-one spacepoint occupancy.

4. The statistical probability of distribution of atoms in spacepoints may exist in the form of different statistical distribution laws of modern physics, specially Bose-Einsteinian statistics.

5. The uni-spacepoint occupancy of bonded atoms is based on total combination between them. Their partial combination, however, will lead to multi-spacepoint occupancy.

6. This aphorism leads to the following three points :

(a) An aggregate of numerable spacepoint cannot occupy an innumerable spacepoints.

(b) Similarly, an innumerable-atomic entity cannot occupy more than innumerable spacepoint space.

(c) An aggregate of infinite spacepoints cannot occupy infinite spacepoints as the occupied space has only innumerable spacepoints. This could be only due to condensations.

7. This aphorism indicates summarily that the spacepoints of substratum space could be equal to or less than the number of atoms in the mattergic entities.

The next aphorism points out about the space occupancy of the living beings :

Asankhyeya-bhāgādiṣu Jivānām 5.15

The living beings are accommodated in innumerableth part etc. spacepoints of the occupied space 5.15.

1-3. The term 'innumerable part' is one part of the innumerable parts. The living beings are accommodated in innumerable parts beginning from one, two to innumerable(1,2,3 IN). These parts belong to the universe-space which has been applied here with reference to the earlier aphorism 5.12. It must, however, be pointed out that this aphorism refers to the locative case while here it is referred to with respect to possessive case as the cases follow the sense. Hence, the case of 'universe-space' gets changed here. It can be illustrated by choosing the objective case for Devdatta in the predominantly nominative sentence, 'Devdatta has high-rise buildings, invite him (Devdatta)' .

This means that the space universe has innumerable spacepoints. They should be divided into innumerable parts. The single living being occupies one part of these innumerable parts. However, it can also occupy two, three, four upto all innumerable parts of the universe-space. Of course, many living beings occupy all the universe space.

4. Q. It is said that even a single innumerable part has innumerable spacepoints in two, three, four, etc. innumerable parts of space. Thus, there should be no distinctive occupancy of the different living beings.

A. This is not correct. The innumerable number has also innumerable varieties. Even the non-minimum-, maximum or middle innumerable has also infinite classes. This explains the accommodational differences among the living beings.

5. Q. It has been pointed out that a single living being occupies one spacepoint. However, there are infinite-times-infinite living beings. How they could be accommodated in the universe-space as there is numerical contrariety ?

A. There are two types of living beings - gross and fine. The gross ones have striking bodies. The fine ones, on the other hand, have fine transformations and non-striking bodies even among themselves. That is why, there are infinite-times-infinite microorganisms wherever there is even one fine micro-living. Similarly, there are many sweat-born a-sexual living beings occupying various gross-bodies of human beings. Thus, there is accommodational contrariety here. There have been such a case had there been only gross living beings.

Q. How the embodied soul could be non-striking ?

A. This is observed. We observe that the soul accompanied with fine karmic and luminous body passes through an iron-house with painted iron doors and hole-less throughout after death without any crack in it. The karmic body is the mass of tangible karmas and it is always associated with luminous body. Similarly, the non-striking character of fine micro-organic bodies should also be taken.

Supplementary Notes

1. The commentary deals with the following points :

(a) The living beings (or souls) occupy the space varying between a minimum of innumerable part to the maximum of whole of the occupied space. This universe has innumerable spacepoints and, hence, innumerable or even infinite living beings can be accommodated there.

(b) The innumerable quantity has innumerable parts each representing a spacepoint. Even this single part has innumerable as in the case of other parts. This will lead to equal occupancy or size of all living beings. This point is refuted by pointing out that an innumerable quantity has alternatives or varieties which will specify the different occupancy.

(c) The living beings are infinite-times-infinite in number. They are accommodated in innumerable spacepoint due to their fine and gross varieties. The fine bodies are obstructionless and they can be accommodated easily in the occupied space. The embodied soul with its karmic and luminous bodies also seems to be obstructionless as it passes away through the obstructing walls of the houses at physical death.

2. This aphorism concludes the spacepoint occupancy of five different realities. However, occupancy of time reality has not been mentioned. Vidyānanda and Bhāskaraṇḍī point out that its occupancy should be taken by implication that the time atoms occupy the spatial spacepoints on the basis of one-to-one occupancy. This is an additional point to this commentary.

3. The living entities occupy variable spacepoints (innumerable part to innumerable spacepoints). This suggests the variable sizes of the living souls. Some systems have atomic, pervasive or intermediate sizes. Its location is also stated to be in brain, heart or head. The Jainas postulate that :

(a) The embodied soul has size equal to its embodiment. It grows from a minimal size at conception to a maximum size at mature age. The process of extrication through yogic or meditational practices proves its expansion capacity. This size-variability is a common observation. However, the living souls may have spacepointal similarity.

(b) The living element persists throughout the size of its embodiment in the current birth. It is due to this that one feels pain and pleasure throughout.

(c) This aphorism refers to single soul. With respect to all living beings, they occupy all the cosmic space.

4. It is very difficult to express the element of soul in terms of scientific elements. The most scientific equivalent having a property of the living-knowledge, conation, growth, death etc. - may be taken as the protoplasmic cell. The living beings in world vary with respect to the number of such cells- unicellular amoebae to trillion-cellular men. Each cell must have living elements which are co-existing with body supporting the all-body persistence of soul. Of course, the pure soul is non-mattergic for Jainas while the worldly soul is fine-karmically associated and, thus, mattergic. This association is also a possible cause of variability of size.

5. It is now postulated that the soul may be a form of non-mattergic energy enabling the life-functions to take place. A large number of properties of the living ones can be explained on this basis without taking recourse to scriptural sanctions. However, some unexplained facts still remain.

It is said that the single living being occupies a single spacepoint equal to the occupied space. How this could occupy innumerable spacepoints ? It seems that the living one must pervade all the universe. The aphorism 5.16 intends to respond to this issue.

Pradeśa-sanhāra-visarpābhyām Pradīpvat 5.16

The living being occupies the numerable and innumerable etc. spacepoints of universe-space due to its contraction and expansion capacity like a lamp. 5.16.

1. Though the normal soul is non-mattergic, however, it bears somehow a mattergic nature due to its beginningless association with karmic body. Though its spacepoints are equal to that of universe-space, nevertheless, it has a fine body due to karmic bodies. This fine body

undergoes contraction in its spacepoints like dry leather. Its gross body undergoes expansion in them like spread of oil drops on water-surface.

2. These processes of contraction and expansion cause the soul to occupy different number of spacepoints upto innumerable ones. It may be illustrated by the lamp which, if kept in open space, illuminates the large area, while, if kept in small or covered area, illuminates the limited area.

3. Q. If the soul has the nature of expansion and contraction like the lamp, it should also be non-permanent like it.

A. This is quite desirable. Modally, the soul is non-permanent due to its expansion and contraction in spacepoints of associated karmic body. Secondly, it is also permanent with respect to substantive standpoint of general tangible reality like the tangible lamp. The illustration of lamp is, thus, not contradictory to Jaina precept.

4. Q. If the soul has a nature of contraction and expansion in its spacepoints like the lamp, it means it should have a composite character and it will have dissociation in its spacepoints by division, piercing etc. This leads to the zeroing of the soul.

A. This is not correct. Despite its bondage with karmic body and non-separability from it, the soul has a differentia and does not lose its non-mattergic nature. Therefore, there is no dissociation of spacepoints in it like the lamp.

5. Moreover, the Jainas are polyviewists. The absolutist may have difficulty in facing the charge of composite nature or expansion-contraction-nature of the soul. For the non-absolutist Jainas, the soul does not have the nature of either expansion or contraction in its spacepoints nor it is composite on the basis of substantive standpoint of its differentia of beginningless conscious character. However, it undergoes the above processes on the basis of modal standpoint of its modes due to fruition of physique-making karma of formation causing its definite but gross or fine body. Similarly, it is composite also due to its modal state under beginningless karmic bondages.

6. Further, those entities have componental dissociation and loss which have causal components. For example, a fabric is made from combination of many fibers. It could be destroyed due to dissociation of

its fibers. In contrast, the soul does not have its spacepoints caused due to the combination of other entities. But it has non-causal spacepoints. The spacepoint of an atom is non-combinational, hence it is not non-eternal caused due to recombination of components. However, the atom is non-eternal with respect to its combinational composites. Similarly, the spacepoints of soul are also non-combinational, and, hence, it is non-eternal due to recombination of spacepoints despite its being composite and spacepointed. But it is non-eternal only due to its modes of destiny etc.

7. It is due to the non-causal spacepoints of soul that one does not observe the special characteristics of pain and pleasure etc. in each of its spacepoints. These are observed only in case of those entities whose spacepoints are combinational like earthen pots etc. Had it been so in the case of soul, there will be the possibility of many souls in a single body. Hence, as a non-composite atom has only one class of character of colour like white etc. at a time, similarly, the non-causal non-componental soul also has only one class of special character of pain and pleasure at a time. Thus, the charge that the heat and rain effect the leather, and not the sky. does not hold good for the Jainas as it has already been pointed out that they have polyviewstic approach regarding the materiality and non-materiality and eternity and non-eternity of soul. (Substantively, the soul is non-material and eternal while it is material and non-eternal modally). If the soul is like the leather, it becomes non-eternal. If it is like the space, all activities of merit and demerit will prove useless (as it is permanent) -

8. It is accepted that the worldly living has small and large body depending on its karmic body and that the minimum size, the embodied soul may have, is equal to an innumerable part of an Angula (finger tip). This size consists of innumerable spacepoints (and not 1,2 etc.) which the soul occupies. Hence, the embodied soul cannot occupy one, two etc. spacepoints as the mattergies do.

9. Q. The liberated souls have no body and, therefore, they may occupy 1,2 etc. spacepoints in universe-space.

A. This is not correct. It is postulated that the liberated souls have their spacepoints just a little less than the body they occupied before liberation. There is neither less nor more of the spacepoints than this as there is no karmic cause for their contraction and expansion. Hence, the liberated souls can also not occupy 1, 2 etc. spacepoints in space like mattergies do.

10. Q. It is observed that the realities like medium of motion and rest etc. (possibly all non-mattergic realities) are non-different from each other on the following counts :

- (a) Their location is the same. They are coexistent in space.
- (b) Their shapes are the same.
- (c) They have a tri-timal existence.
- (d) Their qualities are same as observed by omniscients.
- (e) Their mutual contact is the same-wholly touching each other.
- (f) Their occupancy is also the same as all are pervasive in universe-space.
- (g) All the them are non-material, substantive and cognisable.

Their non-difference leads one to presume that they should be taken as one only.

A. This is not correct. Their difference is self-proved by the points of non-difference themselves as detailed. Had they not been different, how this commonality could be observed ? There is no common characteristics in one entity. Moreover, as the colour, taste etc. co-exist timally and locationally in the same entity and still they are not taken as one, similarly, the realities of medium of rest and motion etc. should also be taken as different from each other as they have their specific characteristics.

Supplementary Notes

1. The commentary deals with the following points :

- (a) The embodied soul (living) has a nature of expansion and contraction due to its beginningless materiality on account of its karmic body association. It leads it to become fine or gross occupying innumerableth part to whole of the occupied space like drying-up of

leather or diffusion of oil on water surface. Lamp light is a proper illustration for this process.

(b) The expansion-contraction nature does not make the pure living as non-permanent or composite entity. Substantively, the living reality is always permanent while modally, it could be non-permanent. The compositeness can also, thus, be explained on the basis of polyviewistic approach. The pure living unit is non-composite due to its non-materiality, substantivity and non-causal spacepointality. However, it is composite with respect to its embodied modes.

(c) The embodied soul does not occupy the ultimate one, two etc. spacepoints as it is embodied and body has a minimum size of an innumerable part of an Angula (app. 10^{-15} cm) containing innumerable spacepoints. The salvated souls also have a spacepointal structure equivalent to a little less (about 2/3) than the size of their worldly bodies.

(d) The realities of medium of motion etc. cannot be called non-different from each other as they have their specific differentia with many respects like location, shape, contact, occupancy etc. which may be common to all like the coexistence of colour etc. in the same entity.

2. Pūjyapāda has added one more point to prove identity between non-material realities. They commingle with each other. This does not stand scrutiny as they have specific differentia which is never lost even during commingling.

3. The spacepoint structure of the salvated soul is said to be equal to the 2/3 size of their embodied state. Khūbchand Śāstri states that this reduction is due to loss of air in the body after salvation. This means that our physical body contains one-third volume of air in the total body volume.

4. Vidyānanda has expressed the meaning of this aphorism 5.16 in terms of an inference :

"The living realities occupy innumerable part etc. of the occupied space because they have the quality of expansion and contraction like the lamp-light."

This aphorism is based on apparent, empirical or realistic standpoint rather than absolute or idealistic standpoint. One observes the

facts of expansion and contraction in soul spacepoints when one grows from child to adult and from adult to old state due to spacepoints of food-variforms etc. leading to different sizes of the body.

5. The Vaiṣeṣika or Nyaya School goes against this Jaina concept through this inference :

"The soul does not have spacepointal expansion and contraction because it is non-mattergic and pervasive like the space."

This inference has a counter-inference as above in 5.16.4. This inference is also contradicted by the Jaina scriptures whose validity is said to be undisputed.

6. The concept of particle size, hair-front size or thumb-size of the soul does not stand scrutiny as : (i) it will localise the sensation of pain and pleasures etc. to specific parts only and not pervasive of the whole body, (ii) the fast communicating nature of sensations will lead to Vedantic monism of one-soulness in the world. This is undesirable for the Nyaya-Vaiṣeṣika School.

7. Vidyānanda also proves non-splitting or non-composite nature of the soul by inferences, thus, confirming Akalanka :

(i) The soul spacepoints do not split or are non-composite because they are non-causal and

(ii) soul is an indivisible and non-mattergic reality like space.

8. It has already been said that from idealistic point of view, all the realities are self-supporting. However, from the realistic point of view, the space is the substratum of all the realities.

9. The expansion and contraction of soul spacepoints (of course, associated with fine karmic and luminous body) has been postulated by the Jainas through their concept of extrications (samudghāta). There are seven extrications (i) feelingly (ii) passionate, (iii) transformational, (iv) luminous bodial, (v) exit-bodial, (vi) omnisciently and (vii) pre-birthal. The term extrication is defined in Gommatśāra as extension or exit of soul spacepoints from the body without completely leaving the original body. It takes place under the above seven conditions.

10. It has been said that the fine general body plants (Nigotas) occupy the least number of occupied spacepoints while the largest fish

found in the last cosmic ocean of Jaina cosmology (having a canonical size of $1000 \times 100/9 \times 1.66 = 18440$ kms) occupies the maximum spacepoints in the space.

11. The explanation of expansion or contraction of spacepoints of embodied souls has been a subject of scientific speculation also. Max Born (1935) has expressed there are many observed facts which seem baffling for the scientists. He has mentioned some of them - (i) seeing without eyes, (ii) clairvoyance phenomena, and (iii) coming out of gold particles out of solidly closed ball-box. Many of such phenomena have come under paranormal experiments and quantum mechanics. They support the capacity of mind (sometimes equated with soul of the east) to extend itself upto distant places. Kit Peddler has mentioned many such phenomena in his 'Mind Over Matter' (1980).

12. The protoplasmic basic cell of the living unit has been shown to have property of contraction under different impulses. It also expands through its specific reproductive processes. Thus, the material living units have observable expansion and contraction properties.

It is correct that the qualities of colour, taste etc. are different from each other because of their specific characteristics like ocularity for colour etc. despite their homo-location etc. However, no such special differentia have been detailed for the realities of medium of motion and rest etc. to justify their difference from each other. The aphorism 5.17 intends to begin describing such characteristics of different realities:

Q. It seems logical that the mattergy has two varieties-atomic and aggregatal and that it occupies 1,2,3.....etc. spacepoints. Similarly, the embodied souls have innumerable spacepoints and they occupy innumerable spacepoints. Thus, though it does seem logical that the realities of motion and rest pervade the whole occupied space despite their spacepoints being innumerable only, it does not seem proper that they occupy innumerableth etc. parts of space.

A. The fact regarding these two realities is also logical. It is seen that the aquatic animals like fish etc. cannot move in the absence of water. Thus, water is the beneficiary cause in their motion. Similarly, the realities of motion and rest are also beneficiary causes in the natural and

external movement and rest of the living and mattergies. As their motion and rest is there in whole of the occupied space, their beneficiary causes must also be taken as pervasive there. There will be no such activities without their existence. Hence, the aphorism 5.17 is intended to indicate their prevasive character.

Gati-sthiti-upagrahau Dharma- adharmayoh-upkārah 5.17

The motion and rest are the functions of the realities of medium of motion and rest respectively. 5.17. (Alternatively, the motion is the function of the reality of medium of motion. The rest is the function of the reality of medium of rest).

1. The motion (gati) is defined as that mode of an entity which moves it from one point to another point in space due to external and internal causes.

2. The rest is just the opposite of motion. It is defined as the mode of the entity stopping its movement caused by non-translational character of its position.

3. The term 'beneficiation (upagraha)' is defined as the cause leading to generate different capacities or powers in the realities.

4-8. Q. The first term in the aphorism 5.17 can have many meanings depending upon what case and compound is taken. This does not lead us to have the correct meaning for the term. There may be a Bahubrihi compound here, there may be possessive case here, there may be homolocal meaning too.

A. The aphorist intends here to mean homolocal meaning. Had there been the sense of Bahubrihi compound, the aphorism could have a double number in its terms. Had there been the sense of sixth possessive case, there would have been a singular number in the first term of the aphorism. Hence, there is the sense of homolocalisation in this aphorism 5.17 by remainder which leads to support the double number in the first term. The homolocalisation is based on objective case.

9. The second term refers to the nominative case as there is the sixth case. The subjectivity is with respect to the verb 'beneficiation' which is an abstract case.

10-11. Q. If the word 'beneficiation' is abstract case, homolocalisation does not stand as it will have a meaning that the verb "beneficiation" will refer to the medium of rest and motion while the rest and motion are observed in the living ones and mattergies. If this term has an objective case, both the terms should have a double number.

12. A. This is not correct. A generalised practice has been applied here. It is said that 'the duty of the saint is austerity and scriptural studies'. Here, the word 'duty' is used in singular number while there are two duties (This should lead the word duty to be in double number) mentioned. Still there is singular number for the word 'duty'. Similarly, the general singular number of the word 'upkāra' has not been changed despite the double number of beneficinations.

13. Alternatively, we can presume a possessive case here. This will lead to the abstract case for both the words 'beneficiation' and 'function' (upakāra).

14. Q. If it is abstract case, the double number does not seem logical.

A. The double number in the word 'beneficiation' is logical as there are two realities - medium of motion and rest, and there are also two beneficinations. The double number indicates that they have respective references. Had there been the singular number, only one, i.e. either of the realities would mean to serve the cause of motion and rest of the living ones and mattergy just as the same earth serves the beneficination of motion and rest of horses and animals etc.

However, neither of these two realities are unnecessary as every single effect is caused by many cooperative causes. Thus, it means that the reality of medium of motion is assumed to be beneficiary cause for the self-moving realities of the living beings and mattergies. Similar is the case with the reality of medium of rest. As they are useful throughout, therefore, they are all-pervasive.

15-18. Q. The words 'upagraha' and 'upakāra' have similar meanings. The word 'upagraha' is, therefore, not necessary. This will load to a shorter aphorism too. There is no possibility for the sense of subjectivity of these realities as there is the word 'upakāra'(function). It has a supportive meaning. This means that the realities of medium of

motion and rest are not the primary causes of these activities. It is just like a helping stick for the blind to walk through his own thigh-force. The above realities are, thus, neutral causes rather than catalytic causes for moving or stopping the living being and mattergies acting on their own potency. Secondly, the sense of the aphorism also indicates the non-subjectivity of these realities.

A. This is not correct. The two words have been given to clarify the point of succession. If the aphorism did not have these two separate words as above, it would have meant (i) the function of the medium of motion is to cause motion in the living beings and not in mattergy, and (ii) the function of the medium of rest is to cause rest in other realities and not in the living beings according to succession of the terms. However, this is not so. The two words have been used to remove doubt about the above undesirable meanings and to suggest proper meanings.

19. This could be done by specific clarification about the meaning in the explanatory. However, this would have meant unnecessarily a larger text. Thus, two words have been given here to take the appropriate meanings easily.

20. Q. The reality of space is all-pervading. It also has empty points too. The function of movement and rest should be accrued to this reality. Why we postulate separate realities for these processes?

A. The reality of space is the substratum of all the other five realities of mattergy etc. just like any city is the base of a house. The function or quality of an entity could not be possible for any other entity. Otherwise, the qualities of burning and liquidity etc. associated with fire and water etc. could also be assumed for the single entity of earth only.

21. Moreover, it is observed that the fish do not move on earth in the absence of water despite the fact that there is always space there. If space could have been the cause of movement of fish, they could have moved on earth too. Similarly, the motion and rest of the living beings and mattergies take place not due to presence of space but due to specific presence of the realities of medium of motion and rest.

Secondly, if space could have been the cause of motion and rest, they should be observed in non-universe-space also. This would mean

that there should be no distinction between the universe and non-universe. However, there should be a distinct entity of non-universe separate from universe as it is denoted by the prefixed word 'a' (in a-loka) as in the case of 'a - brahmina' or non-brahmina which means a human being different from brahmina. The prefix 'a' indicates the positivity of a negative entity.

22. Q. The realities of medium of motion and rest should not be there as the fish etc. do not move in the absence of water despite the presence of space and other realities. The presence of definite external causes is a necessary criteria for the processes of motion and rest. The other causes are not necessary.

A. This is not correct. It is postulated that the realities of medium of motion and rest are the general or neutral causes for motion and rest like the space for accommodation. Just as despite the presence of earth and water etc. , space is the general substratum for all the realities, similarly, despite the presence of water etc. for fish etc., the realities of medium of motion and rest should also be taken as the general causes for these processes.

23. Q. The concept of only the reality of space as a pervasive reality is sufficient as the general cause for the motion and rest of all other realities. There should be no other realities for these processes.

A. This is not correct. This logic will lead to contradiction of postulates of all the major philosophical systems in many ways. The Vaiśeṣikas presume that, realities of space, time, direction and living beings are pervasive ones but they have their specific characteristics. However, there should be no need for separate postulation of the realities of time and direction as their functions will be served by the reality of space only. Secondly, the postulation of separate pervasive reality of the many living beings is also not necessary as a single living being could serve the purpose. It can be many through assumptions. Thus, the scriptural concept of many living beings due to their specific characteristics of intelligence, pains, pleasure, desire, effort, aversion, merit, demerit and latency etc. should not stand scrutiny.

The Sāṅkhyas point out that there are three elemental categories in the world which have different qualities of pleasure, lightness, absorption, pains, covering and silting etc. They are also pervasive. If motion and rest are accepted as the functions of space due to its pervasiveness, all the qualities of different categories should accrue to either of the one of the three above. Thus, the different categories will have opposite qualities leading to the possibility of blending or confusion. Secondly, all the souls will have the possibility of one unit as they all have a common property of consciousness and enjoyment from the beginning to the end.

The Buddhas postulate that there are five aggregates- form, feeling, instinct, latency and knowledge which have different characteristics of sense-perceptibility, experiencing, causation, receiving and processing and knowledge. If all these qualities are assumed for one of these aggregates, and they are not possible without knowledge, thus, all of them will have to be accrued to knowledge only. Thus, no other aggregates will be there and correspondingly the self will also not be there.

All this is undesirable. Therefore, the medium of motion and rest should be separately accepted despite the pervasivity of the space reality.

24. Q. If the medium of motion and rest have equal and similar potencies, there will be possibility of simultaneous functioning of the two. Thus, when there will be motion due to the medium of motion, there will also be rest concurrently due to the medium of rest. Hence, there will neither be motion nor rest for the living beings and mattergies. It could be illustrated by the example of a body being simultaneously attracted and detracted by two equally strong birds in the sky - thus, it can neither move upwards nor come downwards. This mutual obstruction of functioning will lead to negation of motion and rest.

A. This is not correct. The realities of medium of motion and rest are only helpers to those who have the natural capacity or instinct of modal transformations in themselves. For example, a lame man has a capacity to walk and the stick helps him to do it better. The stick does not capitate him to move, otherwise it could move the men under stupor or

sleep too. Secondly, the lamp is the helper for better illumination for the eye which is itself capable of seeing things. The lamp itself does not initiate the capacity of seeing by the eye. Otherwise, it could create it in persons under sleep, stupor or even the blind. Similarly, the living beings and mattergies have inherent capacity of motion and rest. These realities are just the helping causes and not the initiators. Had they been initiators, there would have been obstructions in motion or rest.

25-26. Moreover, it is also, sometimes, observed that there are motions even in the absence of external causes like water etc. due to the high-motion capacity in the birds. This could be explained only on the basis of the presence of reality of medium of motion. Similar case may be stated for rest also. This should lead to accept the postulate of these two realities. The reality of space cannot be said to be the cause of such motions etc. as it has the characteristics of accommodation only.

27. Further, this is not absolutely correct that all the living beings with eyes see only with the help of external factors like light etc. It has been observed that animals like a tiger and cat etc. see the objects even without external factors like light or lamp etc. due to specific capacity of their eyes - a characteristics of their class. However, human beings have no such special capacity and, therefore, they require external factors of light etc.

Similarly, this is also not a rule that all moving beings require staff for walking. The five-sensed men do walk without staff assisted by the medium of motion. However, it is not possible in case of blind men who cannot see the unevenness of grounds and, therefore, require staff for assisting their movement. It is the same case with the movement of the living beings and mattergies. All of them do not require external factors to move. Some birds require only the medium of motion (and rest if rest is there) while some others require external factors like water etc. too along with these realities. Thus, there is a non-absolutist situation in this case.

28-29. Q. There are no medium of motion and rest as they are not perceivable like the ass's horns. We perceive only those entities which are existing like the stick etc. They function to distinguish the even or uneven

lands. We do neither perceive these realities nor experience their functions.

A. This is not correct. If non-perception is the criteria for non-existence, it will lead to the possibility of non-existence of our torch-bearers, merit-demerit and hells and heavens etc. This is not desirable and, hence, the logic is inconclusive. We do not agree to the inference that non-perceivable entity is non-existent. Moreover, the non-perceptibility of these realities cannot be proved because they are directly perceived by the omniscient Enlightened and they are perceivable through scriptures composed by their chief disciples. They are also perceivable by inference due to observations of their functions. An unproved logical reason of non-existence can not prove the proposition.

30. Further, the medium of motion and rest are not as perceivable as the stick etc. That is why, their existence is under dispute. It has to be asked whether these realities are non-perceivable because of their non-existence like the ass's horns or because of their ultra-sensual perceptibility like atoms, space etc. It is not possible to decide the non-existence of an entity on the basis of the reason under dispute.

31. Moreover, it is observed that every effect is the result of many internal and external factors. The mass of soil has an internal capacity to transform itself into an earthen pot but it requires many external factors like the potter, rod, wheel, thread, water, time and space etc. for materialisation of this transformation No soil mass is capable of being transformed into earthen pot unless these factors are there. Similarly, the birds etc. have also the inherent capacity of motion and rest but they cannot move without many external factors. The medium of motion and rest are the general factors for these activities. Thus, inference proves the existence of these realities. This also leads to contradict the disputants' earlier inference to refute their existence.

32. Q. It is opined that the effect is not cussed by many factors. It is only their inter-contacts that lead to the effect. The observation that discreet fibers do not have the capacity to produce a fabric-proves this contention.

A. This is not correct. This point will lead to the possibility of loss of the law of causality. The effect will be produced by contact of any cause. However, it is not the reality. The fabric is produced with definite and specific causes of fibres, weaver, shuttle etc. leading to prove the contention of many-factored effects. Similarly, there may be motion and rest in entities with specific factors along with the above realities. Moreover, a single factor cannot cause the contact. The contact requires many factors. The quality of contact alone cannot be the cause of effect as it will involve loss of proposition that factors cause effect.

34. Further, if it is postulated that an entity is non-existing as it is non-perceived directly, it will contradict the tenets of all the disputants. For example, all disputant systems postulate direct and indirect objects. The Buddhas point out that each of the form-atom (colour atom) is supra-sensual. However, its aggregates are poly-atomic and, therefore, sense-perceptible. The mind and the mental processes like knowledge and feelings etc. are supra-sensual. The Sāṅkhyas postulate that the manifested elements of earth etc. are transformed forms of their primordial matter and they are sense-perceptible. However, the causative three qualities of essence (Sattva) etc. and the supra-soul (Parmātmā) are non-perceptible or indirectly knowable. The Vaiśeṣikas opine that the colour is produced and perceived in grossness and multiply composites. Thus, the gross earth etc. produced due to aggregation of many atoms and their inherent qualities like colour, number, measure, separation, combination and division etc. are non-perceptible. If it is postulated that the realities of medium of motion and rest are non-existing because of lack of their perceptibility like the sticks etc., it will lead to the possibility of non-existence of consciousness (vijñāna of the Buddhas), qualities of essence etc. (Sattva etc. of Sāṅkhyas) and atoms etc. (of Vaiśeṣikas) as they are non-perceptible. This will be contrary to everyone's own basic tenets. If their existence is inferred on the basis of their effects, what harm would be done for accepting the existence of realities of motion and rest?

35. Moreover, the properties of livingness, death, pain, pleasure, gain and loss etc. are normally imperceptible by human beings but they are

perceptible by excellent knowers or omniscients. Despite this, their existence is accepted. Similarly, the existence of the realities of medium of motion and rest is also beyond direct cognition but they are perceptible by the omniscients. Why their existence is not accepted like those of pains and pleasures etc. on the same grounds ?

36. Q. It is found that volitional natures of soul like knowledge etc. and mattergic changes like formation of curd from milk etc. are mutually dependent. They do not require any supra-sensual realities like the medium of motion and rest. Similarly, the states of motion and rest are also mutually dependent and do not require these mediums. Thus, there should be their non-existence.

A. This logic does not stand scrutiny. It has already been pointed out that the birds etc. should have these general external mediums for their movement and rest. Moreover, even the emergence of knowledge and curd-formations etc. also have time as external factor.

37. Q. The Vaiṣeṣikas point out that the divine or vital force (Adṛṣṭa) is the quality of the soul. It causes the effects of pain and pleasures. It is also the provider of the means for them. The aphorismic text 5.2.13 and 17 point out that (i) burning of fire upwards, (ii) oblique movement of air, (iii) the first motion of atoms and mind, (iv) approach and retreat, (v) combination of bile and humus elements and (vi) contact with other bodies - are all effected by this vital force. It could also cause movement and rest.

A. This is not correct. The mattergies are non-living and they do not have the quality of vital force. They also do not have merit and demerit. Hence, there will not be motion and rest in mattergies under this concept. This is undesirable.

38. Q. Generally, the mattergies serve the living beings. Thus, they will have their motion and rest due to the vital force of the living beings they serve.

A. This is not correct. The property of one entity does not have the capacity to initiate its property in other entities. It has already been said that an entity cannot cause any activity in others which is not inherently active by itself.

39. Secondly, if the motion and rest are accepted as due to vital force, the liberated beings or souls will not have their natural motion and rest as they have destroyed all their karmas of merit and demerit (which are due to vital force). However, their motion and rest are there. Thus, these properties cannot be due to any vital force.

40. Q. The realities of medium of motion and rest cannot cause motion and rest in entities because they are non-mattergic.

A. There is no example which could substantiate this logic of non-causality due to non-mattergicity. It is observed that space causes accommodation of all realities despite its non-mattergic nature. Similarly, the primordial matter of Sāṅkhyas, causes changes to produce gross world to serve the man, despite its non-mattergic nature. Similarly, the non-mattergic consciousness of the Buddhas also serves the cause of producing form and mind. The non-mattergic quality of vital force (Apūrva) of Mimāṅsakas manifests itself in various forms to serve the human beings. The non-mattergic mediums of motion and rest can also, in the same way, cause motion and rest in general.

Supplementary Notes

1. The commentary deals with the following points :

- (a) It defines motion and rest as presence and absence of translational motion.
- (b) It supports the composition of the aphorism 5.17 on grammatical basis- such as justification of dual number and possessive case etc. The aphorism may have nominative, accusative and abstract cases and related meanings.
- (c) The medium of rest and motion are general and auxiliary causes only like water for movement of fish or shadow for resting of tired traveller (as has been said earlier too). However, there may or may not be instrumental causes in all cases.
- (d) These functions cannot be attributed to non-mattergic, pervasive and hollow space as it has a designated function of accommodation of all realities. Moreover, it will involve loss of division between occupied and unoccupied cosmos. It will also result in contradiction of different

postulates by other systems. The earth and water etc. also are special causes rather than general ones.

(e) The attributes of motion and rest can also not be attributed to mystical forces like 'Adṛṣṭa' or 'Apūrva' because they cannot cause motion in the mattergic entities which are non-living while these are the qualities of the living.

(f) The realities of medium of rest and motion cannot be said to be non-existing as (i) they are not seen or (ii) they are mutually obstructing due to their equi-potentiality or (iii) they are non-mattergic. It will involve many undesirable consequences such as (i) non-existence of our elders, ford-builders, distant lands etc. (ii) possibility of contradiction with postulates of non-mattergic elements in the world by other systems, (iii) the postulate of Sāṅkhyan or Buddhist non-mattergic entities serving the world will not be possible, (iv) possibility of their being active forces rather than neutral ones. Moreover, the common man may not see them, but omniscients have perceived them. The, scriptures and inference also prove their existence.

2. This aphorism indicates that the medium of rest and motion have two types of functions- general and special. The general function is to support the living and mattergic entities. The special function is to render neutral support in their rest and motion. These functions are proved by the following inference:

"The simultaneous motion and rest of all the living beings and mattergies occur due to two separate pervasive realities as they cannot occur otherwise. The earth etc. cause them in order, and that not also in all entities capable of motion and rest."

It is only the pervasive and non-mattergic entities which could serve as neutral medium. The non-pervasive entities cannot serve these effects for all entities.

3. Vidyānanda has an additional point to refute the space as agency for rest and motion. He says that besides the loss of distinction between cosmic and non-cosmic space, it will also involve the loss of concept of finite universe and its specific shape.

4. There is distinction between occupied and non-occupied universe as the occupied one is finite due to existence of material entities in it. Its finiteness is determined and controlled by the medium of rest and motion.

5. The functions of helping motion and rest of the living and mattergies characterise the realities of medium of motion and rest respectively. In other words, these functions are the differentia of these realities.

6. It is known that any activity results due to two main causes- (i) material and (ii) instrumental. The material causes of motion or rest are always the living and mattergic entities which have innate potency for these activities. The realities of medium of rest and motion are only instrumental and neutral causes.

7. It has already been said that the current scientific equivalents for these two realities are - the Ether of space (medium of motion) and Field (gravitational and electromagnetic medium of rest). These are now supposed to be inert mediums. The properties of 'Field' are not very clear to the scientists but they feel that gravitational forces are responsible for the stability of universe while electromagnetic forces account for binding the microworld. In contrast to these two physical agencies, the Jainas have only one for stabilising the micro and macroworld.

8. G. R. Jain rightly says that the scientists cannot postulate any non-mattergic or invisible entity on their own accord until they are forced. However, they also have postulates of invisible particles like neutrino etc. to explain some normally unexplainable phenomena. However, the scientists feel that they can explain the worldly phenomena even without postulating non-material agencies.

The existence of supra-sensual mediums of rest and motion has been inferred from their functions. What are, then, the functions of another supra-sensual reality of space which could lead to learn about its existence ? The aphorism 5.18 is intended to respond to this point :

Ākāśasya-avagāhah 5.18

Accommodation of all the substances and realities is the function of the reality of space 5.18.

1. The term 'space' has already been defined. The word 'accommodation' is an abstract noun. It means 'giving place' or 'entry into'.

2. Q. 'The swan lives in water'. In this statement, the swan and water have no eternal relationship. Similarly, the accommodation of realities of medium of motion and rest by space should also be devoid of such relationship.

A. This is not correct. The statement is formal or conventional as there is no motion. The formalism is due to pervasion. It is just like to state that space is all pervasive despite no motion. Similarly, because of the pervasion of these realities in space everywhere, it is called that they are accommodated in space despite the absence of accommodational action.

3. Q. It is observed the substratum-substrate relationship exists in substances like plums in the bowl which have separate existence by themselves. However, the realities of space, medium of motion and rest have no prior-posterior relationship and, hence, there could be no substratum-substrate relationship among them.

A. This is not correct. This type of relationship exists even in the case of non-separate substance like lines on a palm. Similarly, it is possible here too.

4. Moreover, we observe that the divine faculties of God are non-separate from God or divinity. Still there is a practice of statement like 'divine faculties exist in God'. Similarly, the statement regarding accommodation of the realities in space is also logically designable.

5. The polyviewistic concept also supports the above statement. There is no absolutism about the non-separateness of eternally related medium of motion and rest. They may be both - eternally related or non-related and separated and non-separated. For example, when substantive standpoint is preferred over modal standpoint, there is neither origination nor annihilation, hence, the realities are eternally related and non-separate. Similarly, when modal standpoint is preferred, there is origination and annihilation of modes of these realities, hence, they may be called eternally non-related and separate ones. This also proves that in

some respects, the substrate-substratum relationship in accommodation of these realities in space could also be there.

6. The living beings and mattergies are primarily accommodated in space as they are possessed of activity like 'swan in water' .

7. Q. The space has the capacity for accommodating all realities. It is everywhere. Under this circumstance, there should be no mutual obstruction of material bodies. However, it is observed that there is obstruction of stones by shed etc. and of cows etc. by walls etc. This fact suggests that the space is destitute of its capacity for accommodation of others.

A. This is not correct. It is observed that only gross bodies have mutual obstructions. The fine bodies do not show this behavior as they have the capacity of mutual accommodation. Hence, this example does not lead to effect the capacity of accommodation of space.

8. Q. If fine bodies are called to have mutual accommodation capacity, the special characteristics of space as having this capacity does not stand scrutiny. Hence, there should be non-existence of space in the absence of special differentia.

A. This is not correct. The differentia of space is to accommodate all realities. For example, despite the fact that the earth etc. are substratum for motion and rest of horses etc., still the realities of medium of motion and rest are inferred for motion and rest of all the realities. Similarly, the existence of space is inferred for accommodating all the realities.

9. Q. Accommodation is the nature of space. However, there are no accommodables in non-universe space. Hence, this characteristics of space is not applicable there.

A. This is not correct as no substance gives up its inherent nature. As the water has capacity of accommodating swans even in their absence, similarly, there should be no loss of the accommodating capacity of space even in the absence of accommodables.

10. Q. The space does not exist as it is not produced like the horns of an ass.

A. The non-producibility of space cannot be proved because under the preferential modal standpoint over the substantive one, the space has origination and annihilation with respect to its own qualities of loss and gain in its individuality and alien-based accommodation qualities of accommodable living beings and mattergies. Alternatively, the origination and annihilation of space are observable. For example, if a person becomes omniscient at the last moment, it is the origination as an omniscient and annihilation as a non-omniscient. Now, the non-perceivable space by non-omniscient earlier is now perceivable by the omniscient. Thus, the space becomes originated due to perceptibility and annihilated due to non-perceptibility. If he does not perceive the non-produced and non-annihilated space, he may not be omniscient. Thus, the middle term (reason) is unproved due to perceptibility of annihilation and origination of space.

Secondly, the illustration of ass's horns is devoid of the qualities of proposition and reason, as the 'ass's horn' is produced in the form of word and knowledge. It is originated with respect to these factors and therefore, it is existing also. A living being in the form of an ass dies and takes rebirth in the form of a cow with horns. The existence of ass's horns can be proved to be existing with respect to a single living being through its present and future birth. There is class-transition and class-existence. This leads to the fact that there is no characteristics of non-existence here in illustration with respect to proposition and reason. If it is accepted as unitarily annihilable, there will not be memory and, thus, it will lead to elimination of the ways of the world.

11. Q. It is opined that space is not a reality or entity. It is just absence of covering.

A. This is not correct. As the mind and feeling etc. are said to be existing despite their non-materiality and coverlessness, similarly, space may also be called a really existing entity.

12. Q. It is postulated (by the Vaiṣeṣikas) that the space is not inferred by its accommodation capacity, but it is inferred by its capacity to produce sound or words. This may be stated that sound is the quality of space as it is produced due to external cause of strikings by air. It is

produced everywhere. It is sense-perceptible. It is a quality not found in any other category of realities. Thus, it proves the all pervasive space as qualified by it. All qualities are dependent on their substratums.

A. This is not correct. It is postulated that sound is not the quality of space. It is the form of transformation of mattergy. This will be proved logically later in aphorism 5.24.

13. Q. The Sāṅkhyas conceive that the primordial matter is the equilibrated form of three qualities (essence, energy and inertia) . It has a nature of begetting others. It has many altered modes like intellect etc. The space is one of the specific altered mods of the Prakṛti and nothing else.

A. This is not correct. There can be no transformation or alteration in Prakṛti because it is permanent, inert and infinite etc. like the soul. It can neither appear nor disappear. Moreover, it is accepted that the earthen pot is the alteration of Prakṛti. This is non-permanent, material and non-pervasive. The space, as its alteration, should also have similar properties or the earthen pot should have properties akin to it. Either of the alternatives is not desirable.

Supplementary Notes

1. The commentary deals with the following points:

(a) Grammatically, the word 'accommodation' (Avagāha) is abstract noun.

(b) The accommodation for all realities simultaneously is the special differentia of the space. The unoccupied space has also potency for accommodation.

(c) The space and mediums of rest and motion are eternally pervasive and inter-penetrated mutually by convention as non-separables have also substratum-substrate relationship as in the case of lines on palm or powers of God. Moreover, polyviewistic approach with respect to substantive and modal standpoints proves both ways.

(d) The living and the mattergies have translational motion. The space accommodates them primarily. It is not correct to say that there should not be obstruction between material objects in space as it is they which mutually obstruct and not the space.

(e) Some contend that there is no space as a real entity because (i) it is unborn, (ii) it is only a non-enclosure or coverlessness, (iii) it is a denatured form of Sāṅkhya Nature and (iv) it is an aspect of Brahma for Vedantin.

These points have been logically and observationally refuted on many counts.

(f) It is proved that space is an independent reality and that sound is an attribute of matter rather than space.

2. The existence of space can be inferred from the following inference:

There is an all-pervasive reality to accommodate all the realities simultaneously because there is no possibility otherwise of simultaneous all-inclusive accommodation. Its negative illustration is any material entity. Attributing this capacity to non-pervasive material entities like light and darkness will ultimately end in infinite regression.

3. Generally, the term 'Ākāśa' is translated as space. But many authors differentiate the two terms. Some say space is the property of 'ākāśa' which has been conventionally made a synonym for it. It may be either mental construct or a separate reality.

4. Sāṅkhya, Nyāya-Vaiśeṣika School and other systems agree to the space as a reality but with different differentia in comparison to the Jainas. It seems to be a metaphysical philosophical idealism. Vedas mention space as a precursor of other elements leading it to a form of subtle fine matter. There is a causal space and there is a non-causal or effect space and there is infra-atomic space. Moreover, it is the transformation product of the Nature of Sāṅkhyas. The monistic Mīmāṃsakas also call it a produced entity from Brahma.

5. The idealist philosophers postulated impossibility of space as a reality and assumed it as a mental construct which is now said to be a convenient fiction. However, the mathematicians established 'axioms of infinity' and their realistic theorems which are supporting reality of space. The Jaina theory of space seems to be in tune with Newtonian concept of absolute space with all the Jainian properties ascribed to it following generally a Euclidean geometry. Of course, there could be a relative

space also. However, relativistic concepts could identify Jaina space as equivalent to Field following non-Euclidean geometry also. There are some more points of difference mentioned earlier. The absolutist concept, thus, seems to have gone historical.

The aphorism 5.19 is intended to describe the functions of mattergic reality:

Śarira-vāk-manah-prāṇā-apanāh pudgalānām 5.19.

The functions of mattergy are the formation of body, speech, mind and respiration 5.19.

1. The body has been mentioned first as all others are substrates for it and there can be no actions related with them without it. Thus, body is the main to be described.

2. The speech follows the body as it helps in moving the man towards desirables through the sense of hearing.

3. Q. This aphorism should also mention other senses like sense of sight etc. as they are also beneficiary for human beings.

A. This is not necessary. The later aphorism 5.20 contains the word 'ca' which includes all the other desired beneficiaries not included here.

4. Q. There are spacepoints of soul in the body equivalent to innumerableth part of an UA in size due to destruction-cum-subsidence of knowledge-obscuring and energy-obstructing karmas. These soul spacepoints are designated as the sense of sight etc. Thus, these are not mattergic and they should not be included in the aphorism 5.19/5.20.

A. This is not correct. All the physical senses are mattergic, realisable due to physique-making karma of limbs and sublimbs. They are beneficiary to the living beings.

5. Moreover, if the non-inclusion of psychic senses of sight etc. is taken as logical due to the above karmic destruction-cum-subsidence, the mind should also not be included in this aphorism 5.19 as it is also dependent on the destruction-cum-subsidence of pseudo-sense-obscuring karma.

6. Q. It is observed that the soul spacepoints designated as sense of sight etc. are fixed and occupy definite space. The mind is not fixed and

definite that way. This is why, it is known as non-sense or quasi-sense. Thus, it should not be separately mentioned in the aphorism 5.19.

A. This is not correct. Despite the non-fixed nature of mind, it is always due to karmic destruction-cum-subsidence. Wherever it is applied consciously, there are soul spacepoints equivalent to innumerable part of UA in size transformed and designated as mind.

7. Further, if sense of sight etc. could not be included due to their being in the form of transformed soul spacepoints, the speech should also not be included here as it is too produced due to destruction-cum-subsidence of knowledge-obscuring and energy-obstructing karmas.

8. Q. It is opined that the speech-mattergies are not transformed soul spacepoints when coming out of mouth. Therefore, they should be mentioned separately in the aphorism 5.19.

A. This is not correct. We have already said that all the physical senses are mattergic. Hence, they should be separately counted through the word 'ca' in the later aphorism 5.20.

9. The mind has been mentioned here after the speech as it is found in an embodied soul along with speech capacity.

10. The respiratory function is mentioned in the end as it is observed in all the living beings of the world.

11. Q. The aphorism 5.19 seems to characterise the mattergic reality rather than its functions.

A. This is not correct. The differentia of mattergy will be described later in aphorism 5.23. This aphorism refers only to its functions and services in the related section.

12. Q. It is proper to mention the functions of the realities of medium of motion and rest because they are non-mattergic and non-direct. However, the mattergies like body etc. are mattergic and direct. Hence, their functions need not be mentioned. This is purposeless. For example, what purpose will it serve if one says that the sun rises in the east and sets in the west or that the jaggery is sweet and ginger is pungent.

A. This is not correct. There are mattergic entities which are non-perceptible. The physique-making karmas of gross, protean, ejectable, luminous and karmic bodies are basically non-perceptible due to their

fineness. Some of the bodies formed due to the fruition of these karmic subspecies are aggregates and gross. They are, therefore, perceptible, while others are non-perceptible like the luminous and karmic bodies. Similarly, the mind is also non-perceptible. The speech and respirations are perceptible by human beings while they are non-perceptible by fine class of living beings as they are beyond sense-perceptibility for them. Thus, this aphorism is meant for classifying the different types of functions of mattergies in terms of body etc.

13. The five types of bodies like gross etc. have been described to be mattergic in earlier aphorisms 2.36-2.48.

14. Q. The karmic body is non-mattergic as it has no form or shape like space. Only gross-bodies with form should be called mattergic.

A. This is not correct. The karma is mattergic only as its fruition depends on contact with material objects. For example, we see that the grains get ripened in contact with water and heat etc. They are all mattergic. Similarly, the karmic body also ripens in the presence of jaggery, molasses and thorns etc. Thus, the karmic body should be taken as perceptible and mattergic. No non-mattergic entity has been observed to ripen in contact with material entity.

15. The speech has two varieties- physical speech and psychological speech. Both forms are mattergic. They are mattergic with respect to their being instrumental in production and effects on mattergy. The psychological speech is mattergic because it is caused by the operation of energy-obstructing karma, knowledge-obscuring karma of sensory and vocalic subspecies and physique-making karma of limbs and sublimbs. It cannot be there in the absence of the above mattergic karmic species.

The physical speech is also mattergic which is transformed into speech through palate, lips etc. prompted by active soul endowed with this capacity. This is mattergic also as it is received by the sense of hearing.

Q. Why the sound is not heard again and again after its first pronunciation?

16. A. It is not heard again and again as the sound once received by the ears gets split in all directions afterwards just as the electric lightning

once seen is not observed again due to the same reason (or neutralisation of charges).

Q. Why the sound is not perceptible by other senses like the sense of sight etc.?

17. A. It is so because of its fineness. It is just like the fact that the nose receives only the smell of the objects and not their other properties like touch, taste etc. which are concomitant with it. These are finer properties.

18. Q. The sound is non-mattergic because it is the quality of non-mattergic space.

A. This is not correct. There are many facts which prove mattergic nature of sound which are as below:

(i) The sound is received by mattergic sense of hearing. No non-mattergic entity can be perceived by mattergic senses.

(ii) It is driven by mattergic air like the mass of cotton to be received by the persons in different directions. The non-mattergic entity cannot be driven by the mattergic materials.

(iii) It is obstructed by material objects like walls and cavities like water in a canal.

Q. The Vaiṣeṣikas point out that the above facts do not lead to prove the mattergic nature of sound. The sense of hearing is in the form of non-mattergic space. Thus, the non-mattergic sense of hearing can receive the non mattergic sound. Similarly, the sound cannot be driven by the air as it is a quality which does not have motion. This is received by distant persons because of production of newer sounds through combinations (of rod and drum), division (of bamboo) and other words. The strike by a fast moving material does not produce sounds. Therefore, there is no driving. The obstruction of sounds is also not truly obstruction as the strikes between mattergic bodies lead to mono-directional sound. Hence, the sound is non-mattergic.

A. All these arguments are not correct. This cannot be ascertained that the sense of hearing is in the form of space because the non-mattergic space has no capacity of activation. If it is said that the vital force (Adṛṣṭa) produces this capacity in space, it has to be enquired whether this force refines the space, soul or part of the body? It cannot

refine space as it is non-mattergic, it is the quality of different reality and it is non-related with space. Similarly, no refinement can be done in the soul as it is different from body, permanent and non-composite. It can also not earn the fruits of refinements. Similarly, the part of the body can also not be refined because the vital force is the property of a separate entity and it has no relationship with the body.

Moreover, the sense of hearing should be accepted as mattergic as it is wounded by mattergic bodies like nails etc. and cured by similar objects like oil etc. Further, the contention that the strike between tactile bodies does not produce sounds - is a proof for their mattergic nature as no non-mattergic entity can be struck by mattergic bodies. Thus, the sound obstructions are also proved as the Jainas agree to the strike between tactile bodies.

19. Secondly, we observe that stars are mattergic because of their overpowering by the sunlight. Similarly, the sounds are mattergic as the high sounds of tiger, elephants and drums etc. overpower the sounds of small birds etc. Moreover, the strikes in bronze vases create other sounds. Echoes are produced due to sound-strikes with solid rocks of the mountains.

Q. The non-mattergics have also overpowering capacity as in the case of overpowering of sensory knowledge by mattergic alcohols etc.

A. It is presumed that knowledge is destructive-cum-subsidential and depends on the mattergic senses. Hence it is mattergic. Otherwise, it could not be overpowered like the space. Thus, the sound is a mattergic mode.

20. Mind also has two varieties- physical and psychical. Both of them are mattergic as they are composed of mattergies. The psychical mind is characterised by the capacitative and functional consciousness. It is mattergic as it is assisted and supported by mattergy. The physical mind is also mattergic because it is the mattergies which are transformed into mind associated with special power owing to destruction-cum-subsidence of energy-obstructing and knowledge-obscuring karma and physique-making karma of limbs and sublimbs and assisting the living

beings to think about good and bad, memory and meditation etc. It is, thus, mattergic and not in the form of space.

21. Q. The mind is different from soul.

A. This is not correct. This point should be considered from polyviewstic approach like the senses. The senses are non-different from the soul as the spacepoints of soul themselves are transformed into senses due to destruction-cum-subsidence of energy-obstructing and knowledge-obscuring karmas. The senses are also different from soul as it is not destroyed on the destruction of the senses. Similarly, the soul spacepoints transform into mind and there is non-difference between the two. And the soul is not destroyed at the destruction of mind. Hence, it is different from soul also.

22-23. Q. The mind is a permanent entity and, therefore, it cannot be destroyed.

A. This is not correct. Here also, the scriptures indicate application of polyviewistic approach. The mattergies transformed into mind are destroyed as mind the next moment after completing their function of thinking about good and bad and memory etc. Thus, the mind is not permanent with respect to modes while it is permanent substantively.

24. Q. The Vaiśeṣikas point out that mind is an independent reality. It is atomic in nature and associated with each individual soul. It is said that the mind is the controller of order as the soul cannot have many simultaneous efforts and the all- sensory knowledge cannot occur simultaneously.

A. This view is not correct. The atomic mind is accepted to function due to its association with each soul and sense. Now, one would like to ask whether the mind is associated wholly or partly with the soul and senses. If the association is taken as wholly, it is not possible as the soul and senses are different entities. The atomic mind can associate with only one of them at a time. Otherwise, there will be contradiction. If partial association is accepted, partly with the soul and partly with the senses, it will lead to spacepointism of the mind. This is undesirable as it is said to be atomic only.

Moreover, if the soul is wholly associated with mind and as mind is atomic, the soul will also have atomic nature. Alternatively, the mind will have pervasive nature like the soul. If mind associates partially with the soul, it will lead to accept that soul has spacepoints. Thus, some of the spacepoints of soul will be with knowledge and some will be without knowledge due to fourfold, threefold or twofold contact point of the factors of soul, mind, sense and object. This will mean that the part of the soul, which is devoid of knowledge, could not be called so because of non-existence of its characteristics. Thus, the soul will not be pervasive. Similarly, if mind is associated wholly with the senses, it will mean either the atomicity of the senses like mind or the mind will be bigger equivalent to the size of the senses. Partial association will lead to spacepoints of the mind. It will not remain atomic.

Secondly, the Vaiśeṣikas postulate separateness of quality and the qualified and permanence of mind. Thus, it cannot have association and dissociation. Hence, it will have no association either with the soul or senses. If it has these qualities, it will lose its permanence. In fact, the quality and the qualified are not non-separate. Moreover, when the mind is non-conscious, how can it have a conscience to associate with the soul or sense. Hence, it cannot have association with definite entities.

Q. The mind works like the karmas (action).

A. This cannot be so. The karmas may have conscious nature due to their colouring with human volitions. It may have non-conscious nature due to its substantively mattergic nature. Thus, the illustration of karma is adverse.

Moreover, the mind is fine. Hence, it cannot perceive the colour etc. due to senses of sight etc. The atomic mind cannot occupy the whole sense of sight etc. Thus, one will have the capacity to see only those portions of the objects through senses which are occupied by the mind. One cannot see the whole object. However, we perceive the objects as a whole. Hence, the mind cannot be proved to be atomic.

25. Q. The mind is a fast moving entity despite its atomic nature. Hence, it can cause to see the whole objects.

A. This is not correct. The mind is non-conscious and mattergic. It cannot have intelligent activity.

26. Q. It is opined that a potter's wheel presents a picture of continuous flow on being driven fast by the persons. Similarly, Aḍṛṣṭa causes fast moving of mind and, thus, it pervades the whole senses.

A. This is not correct. The Aḍṛṣṭa does not have activity as its characteristic. How it can move the other ? We see that active man drives the wheel. In contrast, Aḍṛṣṭa is a quality of soul and inactive by itself.

27. Q. The natural relationship between mind and soul is beginningless.

A. This is not correct. Their relationship is conjunctional. The Vaiṣeṣikas postulate that conjunction is getting together the non-pre-gotten object. Thus , there is no eternal relationship between the soul and mind . The mind is destructive-cum-subsidential. There will, thus, be no eternal relationship between the two.

28. If mind and soul have eternal relationship, the mind should always be there. However, it is not so. The one -sensed and deficient-sensed beings do not have mind.

29. Q. The living ones and karmas have beginningless relationship. However, karmas are dissociated. Similarly, mind could also dissociate with soul.

A. This issue involves polyviewism. This is not absolutely correct to say that the living being and the karmas have beginningless relationship. The relationship may be beginningless with respect to the continuity of bondage. However , it could have a beginning with respect to different causes of bonding like wrong faith etc. Thus, the karmas can be dissociated due to reverse causes like right faith etc. Hence, there is no contradiction in karmic dissociation. The example of karma is , therefore, not logical in the case of mind and soul.

30. Q. The mind is cooperative cause of the senses, because they experience the pains and pleasures due to their association with mind on their contact with different types of objects. The mind has no other function .

A. This is not correct. In fact, the soul itself has got transformed into the senses like the red-hot iron mass. And the soul is conscious and, therefore, it is the senses only which experience pains and pleasures. If these experiences are not there without mind, the one-sensed, deficient-sensed and non-instinctive five-sensed living beings may not experience different types of feelings.

31. Q. Mind does not exist as it has no characteristically separate functions.

A. This is not correct. The mind has functions of examining good and bad about objects. The mattergic spacepoints of mind-associated soul are transformed into the mind and assist the thinking about good and bad and memory etc. despite the annihilating causes for functioning of external senses like deep darkness etc.

32. Q. The Buddhas point out that there is no entity like mind. It is the consciousness (vijñāna) only which is designated as mind. It is said that mind is the consciousness which is the material cause of obtaining six types of cognitions.

A. This concept is not correct. Their consciousness or mind has no capacity to cognise objects of the past and even the present as they hold a view of momentariness. Moreover, the present mind is momentary and it has no relationship with the earlier or later minds (vijñāna). How can it be capable of examining good and bad and cause functions like memory etc. ? The memory refers to the self - experienced contexts by the self. It does not refer to contents non-experienced contexts by the self. It does not refer to contents non-experienced or experienced by others. There can be no memory in the concept of absolute momentariness.

Q. There could be memory etc. due to unitary successions (santānas).

A. This could not be so as the successions are non-entities. The past successions are completely non-existing in the present. How they can lead to memory and thinking about good and bad ?

Q. Let the past consciousness (Ālaya-vijñāna) having the seeding capacity be assumed as a support for the above activities.

A. This could not be correct. If it is assumed to be continuously existing in different time instants, the concept of momentariness is lost. It is momentary, it cannot serve as support.

33. Q. The Sāṅkhyas postulate that mind is not mattergic as it is the modification of primordial element 'Prakṛti' . It undergoes modifications through intellect, ego etc. Mind is one of its specific modifications.

A. The Prakṛti is non-conscious and its modifications will also, therefore, be non-conscious. How an unconscious entity like earthen pot can have thinking or memorising capacity ?

Moreover, mind is the immediate cause of the activity of thinking etc. Who will be the subject of this activity? Prakṛti or Puruṣa? The Puruṣa is devoid of qualities. He cannot have activities like thinking and memory etc. which are modifications of the quality of essence or goodness (Sattva). Similarly, Prakṛti can also not be the subject of these activities as it is non-conscious. Nothing non-conscious has been observed to possess thinking etc. activities in the world uptill now.

34. Further, we know that normally Prakṛti consists of three qualities in the state of equilibrium. Different modifications appear in the form of intellect, ego etc. due to disturbance in this equilibrium state. Now, it is to be learnt whether these modifications are different from Prakṛti or non-different from it. In the first alternative, there will be loss of the absolutist concept of non-difference between the cause and effect. If the second alternative is accepted, there will be Prakṛti only and no modifications will be perceptible. Thus, there will be no mind.

35-36. The vitality or prāṇa is defined as the inhalation of air by the soul through body viscera like heart, lungs etc. due to destruction-cum-subsidence of energy-obstructing and knowledge-obscuring karma and fruition of physique-making karma of limbs and sublimbs. The exhalation of air due to the same causes is known as breathing out (Apāna). These two processes are also helpful to the soul as they cause the soul to live in the embodied form.

37. The processes of inhalation and exhalation together with speech and mind are mattergic as they show resistance etc. The mind is seen to be obstructed in its functions due to sound of thunderbolts and causes of

fear. It is also overpowered by alcohol etc. Similarly, respirations are obstructed by covering the mouth and nose etc. by hand-palms. It is also obstructed by cough. The mattergic entity cannot cause obstructions etc. in non-mattergic entities.

38. The above activities of respiration etc. prove the existence of embodied soul as they effect the soul. These activities prove the existence of soul in the same way as the mechanical instrument or device leads to infer the existence of its maker or user. They cannot be there until there is the subject. They cannot be accidental as they are observed to be based on causative law. They cannot be due to Buddhistic Vijnāna as it is non-conscious and, hence, has no capacity to act and drive. The Buddhists' aggregates of form and mind etc. also cannot do so as they are non-conscious.

Q. If all of these are inactive, there will be no activity or actions.

A. This will mean that there will be possibility of no translational motion of objects.

Q. The movement activity may be produced by specific element of air. There is, thus, no motion. It is only formal. The origination is the motion.

A. This is not correct. The element of air has no capacity to move others as it is inactive by itself.

Q. There could be no activity as objects are momentary.

A. The concept of momentariness cannot be proved logically.

39. Q. There should be the singular number in this aphorism as all entities like body, speech etc. are limbal parts of the living beings and they form a coupling compound.

A. This is not correct. There should be no singular number when there is mention of limbs and the limbed together. The singular number is observed only when there is mention of limbs. The body here is the limbed unit along with its limbs. Hence, there should not be singular number here. Alternatively, speech etc. are no limbs as they are non-fixed like teeth etc. Thirdly, there is singular number in case of aggregated coupling compound. The aggregation here will refer to only limbs of one

living being. However, many living beings are referred here. Therefore, there should not be singular number here.

40. It has already been pointed out that the term 'Pudgala' (mattergy) means an entity which has a property of association and dissociation.

41. The word 'function' is abstract noun. Therefore, there is no mention of any other subject. However, the possessive case of the term 'Pudgala' serves the purpose here. This means that mattergies assist the souls through transformations like body etc. The karmically engrossed souls are active and they receive and accept assistance of body etc. through bondage with them and experience them. If the soul is absolutely taken as inactive and supremely pure, there will be no bondage through body etc. and there will be no experience of their assistance. Similarly, there will be no world because of the absence of causes for activity. How there could be liberation in the absence of the world ?

Supplementary Notes

1. The following points are dealt with in this commentary :

(a) The supporting logic for the order of different terms in the aphorism 5.19 as bodies, speech etc.

(b) The justification why other senses have not been included in 5.19 besides vocal sense. The fixed senses like eyes etc. are not in the form of soul- spacepoints as they arise due to the fruition of physique- making karma of limbs and minor limbs. Had it not been so, the mind and vocal sense should also not have been mentioned in this aphorism.

(c) The karmic body is not non-mattergic (as it has no form) as its fruition is dependent on its contact with mattergic objects like jaggery and thorns etc.

(d) There are two kinds of speech- psychological and physical. The psychological speech represents the potentiality of speech while the physical one is the actual speech through sounds or words. Both of these are mattergic as they depend on fruition of specific karmic mattergies. The same speech is not heard again and again as it is withered away after its first effect. The materiality of sound has also been proved on the basis of its auditory sense perceptibility, transmission, obstruction, interference,

overpowering and echoing etc. It is neither the attribute of space nor of sensory knowledge.

(e) The word 'mana' is being translated as 'mind' here. It also has two varieties- psychical and physical. The first is said to be mattergic as it is dependent upon mattergy. It functions in the form of capacity for knowledge and conation. The physical mind is mattergic as the psychical capacity enables the mattergic particles to perform these functions.

The mind and soul may be different with respect to the fact that the soul persists even in the absence of mind like the senses. They may be non-different as the mind is in the form of soul spacepoints due to karmic fruition. The mind is abiding substantively while it is non-abiding modally. The soul and mind are not connected eternally as mind does not ever-exist.

(f) The commentary refutes the Vaiṣeṣikan independent non-living substantivity, non-observability and non-materiality of mind as it cannot have capacity to function properly because of its postulated atomic size. Moreover, logical treatment of the issue goes against this concept.

The mind cannot be negated as its functions of thinking, memorising and perceptions are observed even in the absence of internal and external causes. Ramaṇateertha has pointed out seven types of functions of mind : (1) power of imagination (2) magnification (3) exaggeration (4) assumption (5) presumption (6) creation of images and (7) memory. It also has feelings, emotions, impulses and inborn pattern of behaviour. It cannot be taken in the form of Buddhist concept of Vijnāna as their basic postulate of momentariness will not allow the functions attributed to mind. It can also not be taken as a transformation of Sāṅkhyan Nature as it is non-living and it cannot perform function of thinking etc.

(g) The combined processes of inhaling and exhaling of air is designated as 'respiration'. All this air is mattergic as one observes suffocation, obstruction etc. in respiratory process.

(h) All these four mattergic entities and their functional activities serve as a proof for the existence of an active living entity - Jiva or soul

as an actor. These and many others (twelve) have also been accepted as proof for the soul by the Vaiṣeṣikas.

2. The aphorism means that these mattergic entities or modes not only assist the functioning of the soul, but they also assist in modifications of mattergies themselves.

3. The mattergic nature of sound can be proved by the inference :

"The sound is mattergic because it is received, transmitted and obstructed by mattergies and it has touch also like the earthen pots etc." However, Vidyānanda says that the psychical speech is a capacitative mode of the living as mattergy is not the material cause for its origin. It is said to be mattergic only by convention as it is caused due to specific karmic fruition.

4. The mattergic nature of respirations is proved by the inference :

The respirations are mattergic because they have touch like earthen pots etc. (In fact, breathing in and out consists of intake of air and exhale of carbon dioxide etc. All of these are mattergic gases).

5. The mind is mattergic because it is composed of mattergic (mind) variforms like body etc. Vidyānanda and Bhāskarnandi point out that the psychical mind is, in fact, the mode of the living. It is said to be mattergic only by convention.

6. It seems that this aphorism refers only to the physical forms of mattergies as Vidyānanda says. This seems to be better intelligible. The psychical counterparts are only conventionally mattergic as they have capacitative nature only and are inferred on the basis of physical forms.

7. Gommatsāra points out that mattergy causes the formation of bodies etc. In fact, the mattergy forms aggregates to be transformed into different types of variforms. There are 8 \times 23 variforms mentioned in literature. It is said that (i) the Intakal variforms form gross, protean and ejectable bodies, (ii) the luminous variforms form luminous body, (iii) the karmonic variforms form eight-fold fine karmic body and (iv) the speech, mind and respiration variforms form the corresponding mattergic speech, mind and respirations. These eight types of variforms represent the fine varieties of aggregates in Kundkunda's classification.

8. It is known that the worldly living entities receive the various types of mattergies due to passions and activities according to their stage of development.

9. The mattergic reality is not neutral or inert cause for its services like the medium of motion and rest. It is an active and prompting cause.

10. There is one more philosophical point relating to mind. Where is its location in the body ? Some say it resides in the lotus- petalled heart (Buddhist, NV-School and Digambaras) while Sāṅkhyas maintain its residence in whole of the body. Sikdar mentions that the two sects of the Jainas hold different views on this issue.

11. There is undisputed materiality in bodies, speech and respirations. However, the problem of mind has been an intriguing one. The Vaiśeṣikas have non-material atomic mind different from soul. The materialist west and some Indian philosophers look the soul and mind as interchangeable terms. They were taken to be fine and material. It was presumed that soul is a subtle matter connecting mind and body. The soul was also taken to be a composite entity consisting of two parts - material and non-material. However, mind was taken to be non-material located somewhere in brain. It is now confirmed that mind is material located somewhere in brain like a hologram but moving very fast. Many of the canonical paranormal phenomena associated with soul have now been proved to be due to meditative mind. The currently material mind is very fine and it may be equivalent to a 4-touch mattergy or 8-touch mind-variform of the Jainas. It performs all functions of thinking, memorising, perception and conception etc. However, Mahendra Muni points out that there must be acceptance of soul substance to explain many other phenomena. The psychologists and neuro-physiologists indicate that consciousness is also a state of mind representing functional organisation of brain. Thus, mind and brain are two different entities, one is gross while the other is fine supposed to be composed of fine mindon entities. Of course, they are causally related and interacting with each other. This is quite in tune with Jaina theory.

The scientists will not say anything about the psychical mind which is the capacitative form (generally non-material) of physical mind.

However, the term 'psyche' may be taken as scientific synonym for this for which physical mind is necessary. This is one of the modes of conscious soul as per Jaina concept. Thus, the Jaina concept of materiality of mind will refer to physical mind closely associated with psychical mind (which is also said to be mattergic as it is assisted by physical mind).

12. G.R. Jain suggests that as there are classifications of fine non-living mattergies in terms of specific variforms, there are similar classified varieties of biological living cells which are also mattergic due to their karmic associations.

Just as the aphorism 5.19 indicates the activities of motion, utterance, thinking and respiration of the body, speech, mind and vitalities respectively are helpers due to their mattergic nature, similarly there are some other assisting factors of mattergy mentioned in the next aphorism 5.20 :

Sukha-dukha-jīvita-maraṇ-upagrahāśca 5.20

The mattergy promotes pleasure, pain, aliveness and death of the living beings 5.20.

1-2. Pleasure is defined as the disposition of agreeableness or gratification of the soul caused by the maturation of pleasure-feeling producing karma due to external causes like pleasing objects etc. Similarly, pain is defined as the disposition of anguish of the soul caused due to maturation of pain-producing feeling karma.

3-4. Aliveness is defined as non-cessation or continuance of the characteristics of respiration in the living beings due to the operation of longevity-determining karma causing worldly existence. The cessation of aliveness or extirpation of respirations is known as death.

5-6. All efforts or actions of the living beings are aimed at obtaining pleasures. Hence, it is mentioned first. Pain is the counterpart of pleasure causing anguish. It is, therefore, placed next.

7-8. The pleasures and pains- both are there in the living beings. Hence, aliveness follows these two. All beings die in the end due to the destruction of longevity-determining karma. Hence, the death has been

placed in the end in this aphorism. All the mattergies promote the above four phenomena for the living beings.

9. Q. The word 'promotion' or 'beneficiation' (upagraha) in aphorism 5.20 is unnecessary as it is contextual from the early aphorism and deals with mattergic assistance.

A. This is not so. The repeat word 'promotion' here is intended to indicate that the mattergies support themselves too in addition to the living beings. The mattergies are not like other non-mattergic realities like medium of motion etc. which promotes others only. We can illustrate the inter-mattergic promotion by the examples of (I) purification of bronze and other metals by ashes, (ii) purification of water by kataka nuts and (iii) tempering of steel by water.

10-11. Q. Death is undesirable to all. It is, therefore, not a soul supporting phenomena.

A. This is desirable for frustrated or despondent people. It is observed that those people desire death who have lost respects from the family or society and worried due to pains, sorrow and acute diseases etc.

Secondly, the aphorism mentions all the phenomena prompted by the mattergies whether desirable or not. Just as it mentions pain, through undesirable, it also mentions death too in a similar way.

12. Q. This is the context of functions of mattergy promotions. Both the aphorisms 5.19 and 5.20 deal with them. Why the two cannot be reduced to a single aphorism only ?

A. The two aphorisms have been composed separate to avoid the apprehension that the four- pleasure, pain etc. are the respective effects of the four-body, speech etc. This apprehension is undesirable. Moreover, the pleasure, pain etc. are also related with the function of the living beings detailed in aphorism 5.21. Thus, the two separate aphorisms are necessary.

13. Q. There cannot be any reasonability in the existence of pleasure, pains etc. in the soul. If the soul is eternal, it will always be the same as before. There cannot be any changes in it. How can

it experience pleasure or pain? If the soul is non-eternal, it will have momentariness and, thus, it cannot experience the same. It is observed that only a non-momentary soul can experience pleasure or pain due to contacts with desirable or undesirable objects. They could be accidental. They are dependent on good or bad volitions requiring early memories and corresponding actions. They cannot be possible in case of non-permanent soul.

A. This is not correct. The Jainas believe in the soul with eternal-cum-non-eternal character. The pleasure and pains are, therefore, possible there.

Supplementary Notes

1. The commentary deals with the following points :

(a) The definition of pleasure and pain in term of desirable or otherwise feelings and of life and death in terms of continuity or cutting off respirations. The first two are psychological while the other two are physical events.

(b) The order of pleasure etc. in the aphorism has been justified in terms of their preferences.

(c) There is no possibility of feeling of pleasure, pains etc. in the absoulistic concept of permanence and non-permanence of the soul. They are possible only in case of aspectal permanence-cum-non-permanence concepts. This view has been logically supported.

2. Not only the feelings and events mentioned in the aphorism 5.20 arise due to mattergic causes, but mattergy itself assists other mattergies to undergo physical and chemical transformations etc. in term of sense-organs and other processes (like purification of metals by ashes etc.).

3. The word 'ca' (etc.) is intended to include other senses and effects as mentioned in commentary on 5.19.

4. Kundakunda says that this aphorism also represents the popular point of view where the worldly soul is said to experience these feelings and effects as actor and enjoyer of karmas.

5. All the objects of senses may either be desirable or undesirable depending upon whether they are subject to attachment or detachment under specific conditions.

6. The commentary 5.20.12 indicates that 5.19 and 5.20 have not been joined together to avoid confusion of taking four effects of earlier four causes. However, there could be another reason for independent aphorisms. The bodies etc. (5.19) are due to manifesting-in-matter type species of physique-making karma while the pleasure, pain etc. are due to manifesting-in-soul type species of feeling-producing and life-span karmas. This could be explained in other words also. The living entity is the material cause of pain and pleasure etc. where feeling-producing karma is only instrumental. In contrast, the mattergies are the material causes of body etc. It is due to this that they have specific names. The manifesting-in-birth type of life-span species are counted in manifesting-in-soul type species.

7. There are two types of death - reducible by different causes like disease, accident etc. and non-reducible. While reducible death is definitely due to generally perceptible mattergic entities, the non-reducible death is also due to fine karmic mattergic entities - their bond duration and destruction and intakes.

8. It is clear that this aphorism also deals with empirical or worldly soul as the disembodied pure soul has no karmic veils at all.

The continuous promotary function of the four non-living realities have been described. Do the living beings have the same functions or different ones ? The aphorism 5s.21 indicates them :

Parasparo-pagraho Jivānām 5.21

The function of the living beings is to support each other
5.21

1. The term 'Paraspara' means mutual or reciprocal actions. The word 'upagraha' means help, support or assistance. The living beings function in a way to assist each other.

2. The mutual help can be exemplified by the relationship between the master and servant and teacher and the taught. The master helps the servant by giving him money and wages. The servants assist him in serving him in such a way that results in his welfare and protects him from the evil. The teacher teaches the taught what is good for this world and for the other world. He also encourages him to observe according to his instruction. The taughts also assist him through their devoted following and service.

3. Q. The topic of the functions of the realities is continuing. Hence, the repetition of the word 'upagraha' is not necessary in this aphorism.s

A. This is not so: This has the object of indicating that the pleasure, pain, life and death - the four as mentioned in the previous aphorism 5.20 are the main mutual functions of the reality of the living. There is no other new or specific one in addition.

4. Moreover, it also indicates that there is no rule that there is always the case of mutual assistance as in the case of copulating where men and women assist each other. In case of pleasure, a living being may cause pleasure to self alone or cause pleasure to one, two or many living beings through his pleasure. Similar is the case with pain also. Sometimes two or more living beings create pleasure or pain for themselves and also cause the same to one, two or others. A similar illustration may be given in case of life and death. Thus, only reciprocity is not a general rule.

Supplementary Notes

1. The commentary deals with the following points :

(a) The term 'mutual' (paraspara) has been defined as reciprocal help.

(b) The utility of the word 'assistance or help' (upagraha) used again in the aphorism has been stated to serve reference to only pleasure, pain etc. as in aphorism 5.20.

(c) The common examples of mutual help and assistance have been given indicating the interdependence of each unit with other units in the world of the living. It has been mentioned that the assistance is not always mutual, it may cause pleasure, pain etc. for one, two or many living beings.

2. The absolute basic differentia of the living is the consciousness - knowledge and conation. However, this aphorism indicates the external or empirical differentia of the living being through which the world of living sustains itself.

3. The aphorism, thus, will mean mutual assistance of the living beings either through instructions about the desirable and undesirables for the spiritual and material world or through material help of each other.

4. We observe that we depend on peasants for our foods, weavers or mills for our clothes, potters and others for our residences and so on. In return, they depend on us for their wages and livelihood. This mutual dependence results in our pleasures, pains, longevity and death under appropriate circumstances.

5. The commentary indicates two main types of observable mutually assisting relations mostly prevalent in those days- (i) master and servant, (ii) teacher and taught (Saints and votaries). The twentieth century has added one more such relation - (iii) politicians (government) and public. All other relations may be included in these categories.

6. This aphorism has been the mile-stone for Jaina ethics and morality. It represents the basic principles of universal brotherhood, spiritualist ecology and environmental preservation. It preaches cooperation and harmony among all the living beings for peaceful and progressive life.

7. The word 'living' (Jīva) here refers to all the varieties of the living world beginning from observable ones-sensed to five

sensed-ones. Thus, it maintains that every living entity functions for the pleasure or pain of other entities directly or indirectly. However, as nobody wishes to die, it is the normal trend to increase overall pleasures in the world through mutual cooperation and help.

8. This aphorism is the basis of the noted Jaina slogans 'live and let live' and 'live and help others to live'.

It is contended that every existing entity should be helpful. Now, time has also been called as an existing non-mattergic entity later. What are its functions ?

Alternatively, the motion etc. have been described as functions of the realities like medium of motion etc. Similarly, are there any causative functions of the reality of time ? The aphorism 5.22 indicates them in response :

Vartanā-parināma-kriyāh Paraṭvā-paratve ca Kālasya 5.22

The functions of time are (I) perduration or maintaining the continuity of entities (ii) causing modifications (iii) causing movements or motions and (iv-v) defining priority and non-priority in time. (They are indicators of time as an entity). 5.22.

1. The first term 'Vartanā' in the aphorism is derived from the root 'varta' with suffix 'yuc' having an objective or abstract case meaning 'existence' or 'which exists'.

2-3. Alternatively, there seems to be an accentless suffix 'it' here followed by another suffix 'yuc'. This means an entity having a tendency to exist.

4. The term 'vartanā' means existence or feeling of self-existence during every modification of every reality per unit instant of time. The term 'existence' means simultaneous occurrence of origination, destruction and permanence in any entity. It is nothing else than this. The self-existence is always prescribed and uncommon property for each entity. It is inferred through intellect and words. Though the word used for existence (vartanā) is the same for all entities due to existential similarity,

however, it has a separate, specific and expressed meaning with respect to each entity of the living, non-living or their varieties. Thus, the term 'vartanā' means feeling of existence through eternal and non-eternal three-foldly natured modifications of realities of medium of motion etc. during each individual time units.

5. The process of continued existence is inferred from popular examples. We know rice-grain is cooked for making cooked rice. This takes sometime. The process of cooking takes place every moment to yield the final cooked rice after proper time. There is specific state of cooking at each instant. If the cooking did not take place in the first moment, it may also not be there in the second, third and so on moments. Similarly, all the entities should be taken to undergo modifications at every instant which are difficult to be the subject of knowledge and verification.

6. The time is characterised by the process of continued existence. In fact, time is the external factor for causing self-existent modifications like cooking etc. accomplished by specific activities at different instants of time or Samayas and cooking time etc. Traditionally, we call it as time with different specification. What is the basis for these ways of the world ? This time usage cannot be accidental. This signifies to infer for the existence of some basic real time as the basis of the conventional time.

7. Q. The continued existence of entities is caused by the motion of the sun and not by time.

A. This is not correct as even the solar motion is also caused by time. The solar motion is also referred to as past, present and future in practice. This is the time-based conventional motion. This motion represents existence. This must have a basic cause - and this is what is called time.

8. Q. The existential characteristic is due to spatial spacepoint and not due to time.

A. This is not correct. The space is the substratum for the existence of realities. It can not be existence itself. It may be illustrated by the fact that rice-grains put in a vessel are cooked with the help of fire. Here it is not the vessel, (which is container for rice-grains) which cooks the rice. It is only the fire as cooking agent. Similarly, the space can not create existence of realities, it serves only as a substratum. It is time which causes the existence of realities.

9. Q. Let there be existence itself as the cause of continued existence. It commonly exists in all realities.

A. This is not correct. The existence itself functions due to time. Thus, time must be different from general existence.

10. The mode, modification or transformation (Pariṇāma) is the natural or non-natural change involving destruction of earlier mode and origination of particular present mode of the living or non-living reality with primary reference to modal standpoint with non-deviating substantive character.

The non-natural modification is the modal change in mattergy (without motion). The natural modification is transformation irrespective of non-natural cause.

The modifications have two varieties : (i) beginningless and (ii) beginningful. The beginningless modification is represented by (a) configuration of the universe and (b) shape and size of the Meru mountain etc. The beginningful modification has two varieties - (1) non-natural and (2) natural. The volitions like subsidental etc. of the living beings due to karmic subsidence etc. are called natural modifications as they are developed or modified due to preceptor's sermons etc. Similarly, the modifications in term of shape of pot etc. from non-living clay etc. is termed as non-natural one. The modifications like rainbow, clouds etc. are natural. Similarly, the different modifications of other realities, like medium of motion etc. may also be illustrated.

11. Q. There can be no modifications as functions of time as there are logical flaws bothways in proving their existence and

non-existence. It may be asked whether there is seed in the sprout. If there is seed in the sprout, there can not be sprout like the non-existence of seed. If there is no seed in the sprout, it will have to be assumed that the seed has not been transformed into sprout as it does not have the nature of seed. Thus, there are flaws bothways. Hence, there is non-existence of modifications.

A. This is not correct. The Jainas have different arguments on this issue. They have the existence - cum - non-existence theory of this regard. Thus, neither the flaws of absolute existence - side nor of non-existence side are applicable to it. The theory of relative existence-cum-non-existence represents a different class altogether just like 'man-cum-lion' class of living beings. Thus, the absolutist's flaws do not effect this polyviewist concept. Otherwise, there will be confusion among views.

With respect to substantivity of paddy seeds etc., there may be seeds in the sprouts. Had they been completely destroyed, how it could have been called as the sprout of paddy. However, with respect to mode of paddy seeds etc., it may not be there in the sprouts. If there is no change in the seed-modes, there should be no growth of sprouts.

12. Moreover, it may be asked whether the non-existence of modification is proved for the existent modes or non-existent modes. In both cases, this cannot be proved. If modifications are existent, how they can be denied ? If the existent is denied, the denial of modifications is also existent. Thus, negation of the negative means positive and modification will automatically be proved. If the denial of modification is denied, it is positive due to its existence, the modification itself should be existent due to its existence.

If the modifications are non-existent, how it could be denied like the ass's horns ? Moreover, the denial of the existence of modifications will mean that there will be no speaker, speech and meaning (as they are all modifications). How, then, denial

could be expressed ? In the absence of all these modes, the non-existence of modification cannot be proved.

13. Q. There should be no modifications as there are flaws bothways due to their separateness form the entities undergoing modifications. It can be asked whether the sprouts are separate from the seeds or nonseperate from them. If they are seperate, the sprouts cannot be the modifications of the seeds. If they are non-separate, there will be no sprouts as they are non-different from seeds. It is said in a verse that if the seed has modified itself into the sprout, the sprout cannot be different from the seed. But this is not the case. We observe that seed is different from sprout. However, if the seed is different from sprout, it cannot be called sprout. Thus, the existence of modifications cannot be proved logically.

A. This is not correct. The question has already been replied earlier in terms of the theory of altogether different class of this case. Therefore, there cannot be the flaws as above. The seed may be different from sprout in some respects and both may be non-different in some respects. With respect to modal standpoint, it can be said that the seed is different from sprout as there was no mode of sprouts before their origination from the seed and it has originated afterwards. However, with respect to substantive standpoint, the seed is non-different from the sprout as there is no sprout different from specific class of paddy seed.

14. Q. There should be no modifications as there are flaws bothways due to their positioning or non-positioning in the entities undergoisng modifications. It can be asked when the seed is modified in the form of sprout, what is the position of the seed ? Whether it is positioned in the sprout ? if it is so, it will be contradictory to say when there is the seed, how there could be sprout ? If the seed is not positioned in the sprout, it will mean that seed has not been modified into the sprout. Thus, bothways, modifications cannot be proved.

A. This is not correct. Here also, polyviewistic approach is applied. It may be illustrated through the example of soul and its forms. Just as the finger of a person is designated as soul due to its modification in terms of finger sublimb because of the fruition of human longevity-determining and physique-making-karma of limbs and sublimbs like the red hot iron ball, similarly, the finger-soul is called existent with respect to substantivity of beginningless inherential consciousness despite its modification in terms of destruction-cum-subsidence of energy -obstructing karma. This is also existent with respect to its mode as sublimbal finger positioned by mattergic embodiment. Thus, relatively it could be called non-different and positioned. However, it could be called non-existent with respect to its modes of contraction and expansion. Hence, it is different and non-positioned as well.

Similarly, the soul is called seed because of its embodiment as seed due to the fruition of physique-making karma of one-sensed plant-body and (sub-human) longevity-determining karma like red-hot iron. Thus, the seed is the modification of soul. Hence, substantively, this is existent with respect to eternal inherential consciousness. This is also existent modally because of its specific touch, taste, smell and colour modes prescribed for one-sensed paddy class of mattergy. Thus, it could be non-different and positioned. It may also be called non-existent with respect to its modifications as seed of mattergic paddy. Thus, it may be different and non-positioned. The application of polyviewism does not allow possibility of any absolutist flaws.

15. Q. There can be no modifications as it will involve the possibility of absence of growth. If the seed modifies into sprout, it should have a size of seed only, no bigger than it just like the modification of milk into curd. It is said, " if the seed modifies into sprout, how can it be bigger than the seed itself". If the sprout is said to grow due to soil and watery materials, it cannot be said to be the modification of seed.

Moreover, the accumulation of soil and watery materials cannot lead to the growth of sprouts as it has been observed that no growth occurs due to accumulation of materials like combination of lac with wood which does not result in its growth. It is said, "when wood is painted with lac, it only fattens the wood. It is only the lac which increases. Similarly, the earth and watery sap will increase when added to the seed. The seed or sprout will not grow".

A. This is not correct. The modification has been agreed by the disputant through his statement that seed will be sprouted. However, the growth results from other factors. We observe that new baby born due to human-longevity-determining and physique-making karma gradually grows on the fruition of another physique-making karma of formation of body due to proper metabolic modification of solar rays and mothers milk on the basis of the capacity of his digestive fire resulting in redox changes in foods due to destruction-cum-subsidence of internal energy-obstructing karma. Similarly, the living being existing in the seed is born as sprout due to physique-making karma of one-seeded plant and specific longevity-determining karma. It assimilates the foods from soil and watery saps like water by red hot iron and changes into useful components by the metabolic processes due to energy produced due to destruction-cum-subsidence of internal energy-obstructing karma and external factors like solar heat. Due to these intakes and metabolisms and operations of physique-making karma of formation of body, the sprout grows gradually.

The flaw of absence of growth of sprouts is applicable only in the absolutists' viewpoints. The eternalists can neither have modifications nor growth. The non-eternalists also will have no growth as they will have effect only in proportion with the cause. Moreover, it is to be asked from the non-eternalists whether the sprout and other factors are destroyed simultaneously or successively in the case of momentariness of entities. If they

are destroyed simultaneously, how there can be growth in sprouts ? It is not possible that entities undergoing destruction may cause growth in others also undergoing the same process. If they are destroyed successively, what the other factors will do for the destroyed sprout at the moment ? Or what the destroyed factors will do for the growth or sprouts ?

In case of polyviewists, the sprout and other growth factors are substantively always existent and modally always momentary. Thus, there can always be growth of sprouts from seeds.

16. Q. The Buddhists point out that there can be growth of sprouts due to different types of successions or non-interruptions even under the postulate of momentariness of entities. In fact, there are three types of successions - (i) by parts (ii) by order and (iii) irregular. The continuity of burning a lamp through another lamp is an example of succession by parts. This is like flow of water from one point to another point. This succession is based on similarity. The succession by order is illustrated by the examples of continued or non-interrupted states of childhood and youth etc. or seed and sprout etc. In these cases, the same species is transformed into different modifications continuously in order. The different types of clouds and rainbows and the variety of colour on the body of cocks and lizards represent the irregular succession. These successions result in growth.

A. This is not correct. The succession cannot be there under the concept of momentariness. It may be asked whether succession could be there between two (i) existent entities (ii) existent-cum-non-existent entities or (iii) non-existent entities. There cannot be any succession between the non-existent entities like that between the son of a barren lady and the sky-flower. There can also not be any succession of existent-cum-non-existent entities like ass and ass's horns. Hence, by remainder, there can be a succession between the existent entities only. Under the concept of momentariness, the successive entities cannot be existent at the

same time. How could there be succession, then ? If these entities are simultaneously existing, the concept of mementariness is lost.

Q. The succession could still be possible like the pans of the balance. When one pan is rising, the other is moving downwards simultaneously. Similarly, the origination and destruction processes may be assumed to follow succession leading to the growth of sprouts.

A. If the origination and destruction are taken as simultaneous, there will be possibility of loss of cause-effect concept as in the case of right and left horns of the cow.

17. Q. It is said in Yoga-Bhāṣya, 3.13 that the transformation means appearance of new quality preceded by dis-appearance of another quality in any ordered entity. It can be exemplified by the dis-appearance of milk followed by appearance of curd. Thus, there could be no transformations in eternal entities.

A. This is not the correct definition of transformation. It involves many flaws. In the first instance, the Buddhists do not have a permanent entity which could have modifications. However, if the entity is taken as different from the aggregation of coexisting qualities, the definition of an entity as the aggregation of qualities will not stand.

18. Moreover, one could ask whether the entity, which is destroyed, which is originated and which remains existent- is different from the aggregation of qualities. If it is non-different from it, which will be the transformation of what quality- the destroying one or the originating one? Further, it is logical to presume three different entities in such a case- the destroying one, the originating one and the existent one. If it is different from the aggregation of qualities, the definition of an entity assumed is lost.

Moreover, the above facts contradict the absolute eternal nature of entity, as there seems to be non-permanence when one quality is destroyed and the other appears.

Further, it has to be asked whether the aggregation (of qualities) is different or non-different from qualities themselves. If it is non-different, it is the qualities only, there could be no aggregation. This will mean non-existence of qualities themselves as they are invariably related with the aggregation. If the aggregation is different from qualities, there will be the loss of promise. This will further involve the non-existence of both the invariably related entities. Thus, how there could be even an imaginary transformation ?

Moreover, the disputants define transformation as conversion of earlier mode into another mode. This is also not correct as it also involves flaws both ways. This will mean that the modes of pleasure, pain and delusion etc. become the modes of the corresponding words and words will not have the connected sequences with these modes. If the sequence is admitted, the above definition does not stand. Further, generally it is observed that nothing can attain that form which is non-existing in it. For example the quality of existence is not there in non-existence, hence it cannot attain non-existence. Similarly, if the qualities are not having the gross form, how they can attain the grossness. If there is grossness in them, this cannot be said to be a modification as it is already there. Any entity cannot attain that mode which already exists in it. The non-existence is non-existential, how there could be a mode of non-existence ? Thus, the absolutist postulate does not stand logic on both sides for modificational existence in the cause. One has to agree, therefore, to the polyviewistic approach. There could be modifications with respect to modal standpoint. There could be no modifications with respect to substantive standpoint. This leads to conclude that substantively a permanent entity may have modification. Modally, the non-permanent entity may also have modifications.

19. The activity or action is characterised by motion or vibration through internal and external factors. This has two varieties as before- natural and non-natural. The non-natural

activity is seen in bullock-carts etc. The natural activity is seen in clouds etc.

20. Q. If activity is defined as motion, the stationing or resting may also be included in the activity as it is nothing else but activity of stoppage of motion.

A. This is not correct. The stationing is included in modification, as it is covered by this term.

21. Q. If stationing is included in modification, the activity may also be included in it. Thus, there should be only one term-modification instead of two terms - modification and activity- in aphorism 5.22.

A. The two terms have been kept in the aphorism to indicate that there are two types of modes- translational and non-translational (vibration etc.). The translational mode is called motion (kriya) while the non-translational mode is called modification. (Pravacanasāra verse 129 also mentions this fact).

22. Q. The priority and non-priority or posteriority apply to place, praiseworthy-ness or quality and time. The spatial priority and posteriority depend on the small and large number of spacepoints. The posterior means large number of spacepoints while prior means small number of spacepoints. With respect to praise-worthiness, the religion is prior or utmost because of its qualities of non-violence, truth etc. The non-religion is just the opposite of it. The temporal posteriority and priority is represented by a 100-year old and 16-year old respectively. Thus, the priority and posteriority have different meanings. They can, therefore, not be properly determined.

A. This is not correct. Here, these terms apply to time only as this section deals with it. The bachelor ascetic residing at distant place is posterior to the elder candāla residing at a near-place which is called prior.

23. The reality of existence of time is inferred from the above causal functions such as continued existence etc. It is said that

time is an entity characterising the growth and decay of other material entities.

24. Q. Let there be only the term 'continued existence' (vartanā) as function of time as modifications etc. are only its subdivisions.

A. This is not correct. The different terms have been mentioned to indicate the two-foldness of time in this world. The two varieties of time are- (i) real, primary or absolute time and (ii) empirical, conventional, secondary or apparent time. The real time is characterised by continued existence. It functions as its cause like motion etc. for the reality of medium of motion etc. It is postulated that every spacepoint in the universe-space is stationed by one time-instant (or time-atom, or time-grains). Each of them is non-connected with one another. These instants are pervading the universe with one-to-one ratio. They are non-composite and there is no primary-secondariness in them. The assumption of primary aggregation of spacepoints is being found only in case of the other realities of medium of motion and rest, living, space along with diatomic etc. aggregates of mattergy. This assumption of aggregation of spacepoints in atoms is secondary due to aggregation capacity in them.

The time-instants do not have either types of spacepointal aggregation. Therefore, they do not have the quality of extension as observed in case of other realities. They are mono-spacepointal. They are eternal as they do not have any cause for destruction. However, they are non-eternal due to their origination and destruction due to alien secondary causes. The time-instants are non-material as they do not have colour etc. despite the fact that they are recognised like the holed space-path of thread in the needle. They are inert as they have no transition from one spacepoint to another spacepoint.

In contrast, the apparent time is characterised by modification, action and priority-posteriority. It is designated as time as it is the basis for the temporal continued existence of

absolute time. This is itself ascertained by modifications in others and it causes ascertainment of other substances.

25. There are three popular types of apparent time- past, present and future. They are proved on the basis of mutual reference. It can be illustrated by the example of a person (Devadatta) who follows the line of trees and crosses each tree in due course. He is said to have crossed (the earlier tree), crossing (the current tree) and will cross the next tree. Similarly, there is the apparent time designation of past, present and future in case of substances following time-instants in order and maintaining their mode of continued existence.

In case of absolute time, the designation of past etc. is secondary. However, it is primary in case of apparent time. This designation is mutually referring too. A substance undergoing motion approaches the time-instant. It is said to be present due to its relationship with the existence of present time through that time-instant. Similarly, that time-instant is also called present time as it causes existence of the substances related with it. The same moving substance is called past when it has experienced the continued existential relationship with time. That time-instant is also similarly called past time. The moving substance is called the future when it will experience the continued existential relationship with time. Similarly, the time-instant will also be called the future time.

Similarly, there is apparent time in the human region of the universe in terms of different units like Āvalikā, Uchavāsa, Prāṇa, Stoka, Lava, Nālikā, Muhūrta, Ahorātra, Fortnight, Month, Seasons and Ayanas etc. due to solar motion every instant. This is possible due to their motions in this part of the universe. This apparent time is not found outside this region as these astral bodies have no movements there. This solar-motion-based time is utilized in knowing about the minimum, medium and maximum karmic durations, worldly-duration and current longevity of the

living beings in the lower, upper and middle parts of the universe through numerable, innumerable and infinite time-counts.

26. Q. The Buddhists proclaim that time is nothing else but actions as it is non-different from it. The action itself is ascertained by other actions (i.e. instants or Samayas etc.) and it causes the ascertainment of other actions in terms of present time. The unit of 'Samaya' is nothing else but the present time. The unit of 'Samaya' is nothing else but the time of immediate change in the action of atom. They both have common relationship. There is no other finer time to measure the 'Samaya' time. The aggregation of Samaya-action is called 'Avalika' etc. Thus, the successive units are nothing else but the aggregation of earlier action units. The ways of the world also support this contention as their time-behaviour is all action-based as is clear by the terms 'milking cows time, cooking time etc.'. Thus, it is the action only which is time leading to mutual ascertainment.

A. This is not correct. This postulate will lead to the possibility of elimination of the term 'time'. It is correct that the ways of the world are based on actions during 'Ucchvāsa' and Muhurtas etc.' However, designation of these terms must have a reason. They are not accidental. Their cause is the 'time'. It is observed that Devadatta is called staffed because of its connection with staff. He is not called accidentally 'staffed'. Similarly, the above temporal designations are due to time. Thus, time should be separately accepted. This will, otherwise, lead to the elimination of time-based ways of the world.

27. Moreover, the postulate of action-only time concept will lead to the negation of the present time. For example, a fibre is thrown into weaving, it has already transgressed the present. The fibre which will be thrown in the weaving is not yet thrown, it is in the future. There is no action between these two steps which is non-transgressing the present and non-happening in the future which could be taken as present. Secondly, the past and future are accepted only with reference to the present. Thus, in the non-

existence of the present, the past and future will also become non-existent.

Q. The Sāṅkhyas point out that there is present time defined as the group of actions starting from the beginning to the end of the process. It is said that the present time is that medium time when the action has begun but not completed yet.

A. This cannot be correct as it is contradictory to the Sāṅkhyan concept. Firstly, only the action was postulated as time. Now, the 'group of action' is being called as time. Secondly, the momentary actions cannot form a group. It is possible to have a present time for those systems like the Jainas who have a separate time entity characterised by the continued existence. They have the beginning of the action with the first moment and existence of action in the second, third and other moments substantively. Thus, they will have the group of actions until the end of completion of process like that of making an earthen pot. Thus, they can have the present time through their statement like 'pot is in the making'. However, if the entity of time is negated because of its separate perception, the action and group of action will also stand negated. The action is defined as the specific activity of the actors. Their activity is not perceived separately from the actors as the bendings of a serpent. They are not different from it like action. Moreover, the 'group of action' is also not different from component actions, thus, both will be negated. Secondly, an activity cannot ascertain another activity as it does not have a fixed position due to its momentary state. It is observed that fixed measure of Prastha (app. 1 kg) etc. measures the fixed grains. It is not observed that any non-fixed entity can ascertain another non-fixed entity.

Q. There is always a statement like 'vibrations like lamp (flame)'. Here the lamp is non-fixed and vibrations are also non-fixed. Thus, action will also ascertain another action.

A. This statement is unproved. The Jainas do not agree that the lamp-flame and vibrations are momentary because its

illuminatory and other functions last for many moments. The group does not have ascertainment and ascertainability together as the momentary entities cannot form a group.

Q. It is said that group of momentary sounds forms syllables and sentences. Similarly, actions may also form group of actions.

A. This is also not correct. The momentariness of sounds themselves is not proved as they are heard by people at distant places and times. This audibility cannot be proved by stating that sounds cause other sounds leading to a chain to be received by distant listener, as any momentary entity cannot initiate other entity. It cannot produce another sound at the moment it is itself produced. It can also not produce another sound in later moment as it itself becomes non-existent at this moment.

The time of appearance is the moment which has to come into immediate existence. However, this moment has no existence in the immediate moment. Thus, there can never be anyway for producing another sound.

The intelligence is the base for the seeds of impressions carried through earlier knowledge. This intelligence can also not have group-assumption as it has also the same nature of momentariness. However, the group of action can be formed under those systems which have the postulate of action being substantively permanent and modally non-permanent. Similarly, the intelligence may also have dual characteristic of permanence-cum-non-permanence, thus, becoming the base of impressions. This type of intelligence can have the tendency to ascertain others through the group of action caused by the potentiality and individuality. This group of action attains the designation of time due to its continued existence. Thus, the existence of apparent time is proved which also ascertains the existence of absolute time.

28. Q. Why the terms 'priority and posteriority' have been mentioned separately in the aphorism ? Let there be the coupling compound here.

A. They have been mentioned separately as they are mutually relative. One occurs with reference to the other.

29. Q. Why the term 'continued existence' (vartanā) has been taken in the first place ?

A. This has been taken in the first place as it is the most important one. The absolute time is ascertained by this term. The apparent time is also based on this. Thus, the first term has a high prominence.

Supplementary Notes

1. The commentary deals with the following points :

(a) Etymological and general meaning of the terms used in the aphorism.

(b) The continuity of existence (vartanā) is inferred from the regularity of originating and destroying modifications of the realities. It is the differentia of absolute time.

(c) The existential continuity cannot be due to solar or planetary motion as this motion observes a time schedule. It is symbolic of time. It can also not be due to spatial spacepoints as they may serve as substratum but they cannot assist the continuity of and minute changes in realities. The continuity could also not be due to being-in-existence only as it assists the being-in-existence. In fact, the time-assisted continuity defines the being-in-existence.

(d) The natural or non-natural changes in a reality, where one mode disappears and other appears, is known as modification. This represents modal state rather than substantive state. The modifications have two varieties - beginningful and beginningless (natural and non-natural). Modes of the living beings are different types of volitions while modes of mattergy are rainbow, colour of the pots etc.

(e) The following common questions have been considered on logical grounds :

(i) Does seed reside in the sprouts ?

(ii) Is the seed different from the sprouts ?

(iii) Is the seed fixed in the sprouts ?

These illustrations indicate that if absolutist view is accepted, there can never be modifications. However, the logic of absolutism does not apply to the polyviewists where substantive and modal standpoints answer these questions satisfactorily and in practical way.

(f) The growth of sprout from seed can easily be explained on basis of other factors like water, soil minerals, sunlight etc. assimilated by the seed instead of from the seed alone. This can neither be explained on the basis of permanence or momentariness of the reality. Many flaws have been indicated.

(g) The natural and non-natural activity is defined as translational or vibrational motion due to internal and external causes. The resting or non-translational activity is modification while activity is only translational motion. The two terms indicate two different types of activities.

(h) The priority and posteriority are applicable in case of location, laudation and time. However, these terms have been used here with reference to time only.

(i) The use of four terms as functions of time in 5.22 are meant to show that there are two varieties of time - apparent and absolute. The absolute time is in the form of free time-atoms spread in one-to-one correspondence over the spatial spacepoints. The time-atoms have following properties :

(i) They are indivisible, partless, mono-spacepointal.

(ii) They are permanent-cum-changing.

(iii) They are non-material and inert.

The apparent time is relative and is also the cause of knowing others. The present, past and future are relative and apparent times. It is used for knowing about the duration of karmas, this -worldly life-span and other-worldly life-spans etc.

(J) The activity only cannot be termed as time as if there is no time as separate entity, how one could call the popularly used units of time like Muhūrta etc.

2. There are three types of conceptions about time in Jaina scriptures:

- (a) Śvetāmbara scriptures mention time as the mode of the living and non-living. It is not a separate entity.
- (b) It is quality of living and non-living.
- (c) It is an independent category of reality having a specific property of non-extensivity along with other general properties.

Most scholars have opined that the concept of six realities has developed over the initial five extensive realities. That is why, time has not been counted in the first aphorism 5.1 along with four others.

3. However, the mention of functions of time in 5.22 even before postulating it as an independent reality in 5.39 indicates Umāsvāti's preferred view on this point. He places it at par with the reality of medium of motion and rest.

4. It could now be said that reality of time is acceptable to both the systems of Jainas. Both also agree that it has two varieties - apparent and absolute. They have been described in the commentary.

5. The commentary refutes four philosophical concepts about time to establish its independent character :

- (a) Time is nothing but planetary motions.
- (b) Time is nothing but the form of reality of space.
- (c) Time is nothing but being-in-existence.
- (d) Time is nothing but activity.

6. The semi-aphorism 5.22.24 clearly mentions that the continuity of existence represents absolute time while modifications, movements or priority-posteriority etc. are apparent time.

7. The Vaiśeṣikas have raised two points. They point out that the existence of non-perceptible time entity is proved by the effects seen in the different objects at different intervals. Secondly, though the time reality is one but its feeling of differentness (i.e. present, past, future etc.) is dependent upon the objects, conditions of the observers and auxiliary causes. This is relative rather than absolute.

However, the Vaiśeṣikas have a similar concepts about time with the exception of it being a mode of the living and non-living.

8. The semi-aphorism 5.22.25 indicates that the apparent time exists only in human region representing two-and-a-half continents of Jaina geography where there is planetary motion. This means that in post-human world (even in outer space of today), there is existence of apparent time, though we have to assume it for our purposes. It is also said that time is related only with non-permanent entities and not with permanent ones. Moreover, Sikdar has mentioned about a canonical postulate of time existing in occupied as well as non-occupied universe with not much details.

9. The terms 'modifications' (Pariṇāma) and 'translational or vibrational activities' (Kriyā) have been described in the commentary. Vidyānanda points out six types of modifications- (i) origination at birth (ii) growth (iii) decay (iv) destruction (v) transformation and (vi) existence. The vibrational activity has many types like movement, vibration, motion upwards or downwards, expansion, contraction and the like. The existence of these processes cannot be negated for the polyviewists.

10. The concept of time as an absolute entity could sustain itself upto the early part of the century. G. R. Jain has pointed out that time is a force assisting instrumentally in passing through different modes of entities. It may also be a source of maintaining the continuity. Bergson, Hughes, Eddington and many other scientists add that time is a potent factor in the process of evolution. The recent trend has somewhat a modified concept predicting independent existence of time as such.

11. The Jaina concept about two-fold time does not seem to be in tune with the current scientific concepts. They suggest that time is a relative and variable quantity depending upon the distance and velocity of the observer and participator. It has been calculated that the two brothers of the same age will have sufficiently age difference if one lived on earth and the other travelled in space for two years at a very high speed.

12. Though it is pointed out that time-atoms are located individually in spatial spacepoints proving its mono-dimensional character, but they are independent and inert entities. However, Einstein has postulated their interconnections - one non-existing without the other. This is a twentieth

century development. However, this proves one important point that space and time exist only wherever there is matter as agreed by the Jainas. However, according to J. Barbour, time is an illusion in the timeless universe. The arrows of time could be explained by abandoning time by changing our historical ideas radically.

13. The other properties of the reality of time will be dealt with under commentary 5.39.

It has been said that body (speech, mind, respiration) etc. are functions or manifestations of mattergic reality (Pudgala). However, many philosophies like Cārvāka and Buddhists define the living as mattergic. This creates a doubt about the characteristics of mattergy. They are, therefore, described in the following aphorism :

Sparśarasagandhavarṇavantah Pudgalāh 5.23

Touch, taste, smell and colour are the characteristics of mattergy 5.23.

1. The property of touch has been mentioned first because it is most predominantly experienced in objects. All objects have predominant touch. It is manifested first among all contactile sense organs. Moreover, this property is also comprehended by all worldly living beings.

2. Q. If predominance of objectivity is the criteria of mentioning the property of touch as first, the property of taste should be taken as first on the score that it is experienced even by those who are devoid of (or indifferent for) enjoying the sense of touch.

A. This is not correct. The manifestation of taste is possible only in presence of the property of touch. As it is experienced after touch, it has been given the second place in the aphorism.

3. Q. The Vaiśeṣikas argue that air manifests touch but it does not possess the succession of taste manifestation. Hence, the above logic is fallacious.

A. This argument is not correct as the Jainas agree that taste is present in air. All the four properties like colour etc. mentioned in the aphorism have an inseparable relationship with touch. (They are

concomittant). Hence, they are as manifestable in air as perceived in earthen pots etc.

Q. How, then, one does not observe or perceive colour etc. in the air as its touch ?

A. The sense of sight etc. have only gross objectivity. They comprehend only gross objects like the objects of the sense of smell. Hence, despite the existence of colour etc. in air, they are not grasped (because of fineness of air molecules).

4. The property of smell has been placed before the colour as it is non-ocular or not visible by the sense of sight.

5. The property of colour has been placed in the end as it is observed in grossness or in gross objects only.

6. The use of possessive case in terms of suffix form 'Vān' (suffix-'matup' of Sanskr̥ta) in the aphorism here means the permanent connection of these properties in mattergies. It could be exemplified by statement like 'milky figs' as milky juice is always possessed by the figs. Similarly, the mattergic realities always have permanent union with these beginningless inherent qualities of touch etc. Though these qualities have infinite modes, but only their fundamental types have been mentioned here.

7. Basically, the quality of touch has eight varieties (in four pairs) : (i) soft and hard (ii) heavy and light (iii) cold and hot and (iv) smooth and rough.

8. There are five tastes : Pungaent (alkaline), bitter, acidic, sweet and astringent.

9. There are two varieties of smell : good and bad.

10. There are five types of colour : blue, yellow, white, black and red. (This order is somewhat different in Pūjyapāda's commentary).

It must be known, however, that these qualities of touch etc. have one, two, three, four, numerable, innumerable and infinite modifications or subclasses.

Supplementary Notes

1. The commentary deals with the following points :

(a) The justification of the order of touch etc. in the aphorism 5.23.

(b) Some facts based on observation of Akalanka's period :

(i) In contrast to the Vaiśeṣikas, the Jainas postulate that these four attributes of touch etc. are co-existing ones. The air has all these attributes as against the Vaiśeṣikas who agree about its attribute of touch only.

(ii) It has been pointed out that colour is observable only in gross entities.

(c) The following classes of touch, taste etc. have been mentioned :

(i) touch : 8 (ii) taste : 5 (iii) colour : 5 (iv) smell : 2. These are the primary classes. They may have upto infinite subclasses.

2. This aphorism defines mattergy in terms of the above four coexisting properties. However, the aphorism 5.5 also indicates that the mattergies are perceptible through forms. The term 'form' has also been defined there to mean touch, taste, smell, colour and even shape along with their coexisting nature. In addition, it has also been pointed out that the mattergy and its attributes could be taken as different and non-different from modal and substantive point of view.

The aphorism 5.23 also describes the same and, thus, there seems to be repetitional flaw. However, it is not so as the aphorism 5.5 was meant to specify a comparatively specific characteristics of mattergy. But this aphorism has been composed to serve three objects :

(a) It defines mattergy in general in terms of its four (or five ?) concomittant properties.

(b) It refutes the Vaiśeṣika concept of specific attributes associated with specific mattergic entities like earth etc. This refutation has been done by a specific general inference like this :

"The earth, water, air and fire have all the four attributes as they contain one of them like the earthen pot etc."

(c) The term 'Pudgala' (mattergy) is also meant to refute Buddhist terminology to mean 'living unit' by this term. Here, it means only a non-living entity.

3. The Jainas do not postulate independent category of the realities of earth, water, air and fire as they take them as modes of mattergic reality only through the following inference-:

"The earth etc. are modes of mattergy as they have attributes of touch, taste etc. like space etc. as negative illustrations. The non-observation of taste etc. in them does not lead to their absence in them as it could logically lead to invalidate many such concepts of disputants also (like space, time, heavens, atom, mind etc.). The canons are authentic too in this respect."

4. The plural number in the term 'mattergies' indicates that they have many varieties, the two of which - atoms and aggregates are famous.

5. Uttarādhyayana (36.15) points out five coexisting attributes rather than four as in 5.23 and includes shape also along with them. When the coexisting property of shape was excluded- is a question mark. However, Tatia has expressed as the colour and shape (objects of sense of sight) generally go together, they might have been taken as one later. However, most Jaina authors have followed the four-fold differentia of mattergy.

6. The four types of properties are the basic qualities of mattergy in general. Out of them, the first quality of touch has eight kinds representing (1) thermal (2) gravimetric (3) structural and (4) electrical properties. There is no detailed qualitative or quantitative description about them in scriptures. However, these properties are basic for deciding the usefulness of any mattergic entity. Some Indian philosophies have also dealt with these properties. The current scientists have both types of details. G. R Jaina has detailed the ranges of different types of tactile properties as below :

	Minimum	Maximum
(i) Thermal properties, Temp.	- 273 °c	2×10 ⁷ °c (Sun)
(ii) Gravimetric, density	1 (water)	378× 10 ⁵ (stars)
(iii) a. Structural, Moh's Hardness	talc	diamond
b. " , Packing	amorphous	total crystalline
(iv) Electrical, Charges	0 or 1	+ or -

7. The commentary mentions five types of tastes- bitter, sour, acidic, astringent and sweet. The salty taste is not included, though Guṇaratna says 'sweet' means salt (?). However, no mechanism for taste-

sensation is given in canons. Moreover, these tastes do not refer to six food tastes with chemical structures for specific tastes. However, they do not have astringent taste and have only four tastes in place of the canonical five. They can measure the taste-intensity also through instruments. It is clear that the canonical tastes do not have any relationship with the nine literary sentiments (Rasas, tastes).

8. The general division of smell in good and bad categories seems to be not in tune with the days of olefactometers. The scientists have correlated smells with chemical structures too. They, now, have nine types of smells: (i) ethereal (ii) resinous (iii) balsamic (iv) ambrosial (v) garlic (vi) burning (vii) goat (viii) repulsive and (ix) nauseating. They have illustrated them also. There are special hair cells at the back of nose covering different areas in different living species. It is said that larger the area occupied by the olfactory cells, larger will be the smell sensitivity. The scientists also say that smell is 'taste at a distance'. They seem to feel that the two senses are co-existing. Hence, the Jaina principle of separate 2-sensed and 3-sensed living entities is under better clarification. As with smell, the taste is also experienced through taste buds in the different parts of the tongue.

9. Five colours have been mentioned in the commentary-blue, yellow, white, black and red. This order of colours is different in Sarvārthasiddhi. It is black, blue, yellow, white and red. Bhāskaranandi also adopts this order. Jainas believe colour is the object of the non-contactile sense of sight. The scientists have defined colour as all sensations arising from the activity of retina and its attached nervous mechanism. Muni Mahendra has shown that the eye perceives the colour of the object through the medium of light. Thus, the perceived colour, c_p depends on three factors- (a) specification of light, L (b) sense-quality, S and (c) inherent colour of the object c_o or

$$C_p = f(c_o, L, S)$$

The objective colour may have differing values if any of the factors are changed. Further, the colour of the same object may also be changed if its size (macro to micro) is changed.

The scientists have seven colours excluding white and black. The white colour indicates mixture of all colours while the black colour indicates absorption of all colours by the objects. They are VIBGYOR (violet, indigo, brown, green, yellow, orange, red). If white and black colours are also taken into account, there will be nine colours in all. Each colour is characterised by specific frequency range under the wave theory of light.

G. R. Jain has mentioned four types of colours- (i) natural (ii) pigmentary (iii) spectral and (iv) fundamental on the basis of colour being perceptible on assuming grossness as the aphrorist means that the five colours observed are natural colours. However, the rainbow and refraction process yield seven colours. It is very difficult to differentiate between spectral and fundamental colours without any amount of stretch of the basic concept. They have been taken normally as synonymous terms. The seven coloured spectrum represents a frequency range which could enable human eye to see the colours. There are frequency ranges beyond violet and red colours (ultra-violet and infra-red) which are beyond human visibility. Of course, animals like cats and others can see through this range also. Some scholars have pointed out that there are only three fundamental colours - those of the three basic quarks which have been found to be blue, yellow and red. It is also observed that when a body is heated gradually, it passes from infra-red to red, yellow, blue and white light in the end (as in electric bulbs). Thus, barring black and white, three colours are naturally, perchance, grossly observable. In any case, the five-fold colour concept of Jainas does not appear to be in tune with current science. The other colours are mixtures of these three - does not seem to be a scientific answer. The identification of frequency range suggests the fineness of the scientific observation which should be praiseworthy.

On the spectral basis, the order of Pūjyapāda seems to be little better as it, atleast, starts with one end (black) of the spectrum and ends with red at its other end. In it, white should be placed in the end with no spectral position. Thus, if the commentarian order is black-blue-yellow-red-white, then the first black will represent the ultra-violet range and the

three other colours will form the other end of the spectrum. Thus, the Jainian colour spectrum will have only three colours instead of seven of the physicists. It suggests that natural colours cannot represent the scientists spectrum. They cannot be as fundamental as the spectral colours. It is, however, a different matter which is a finer observation and nearer the truth.

However, despite differences between the Jaina concept and scientific details about these inherent attributes of mattergy, both agree to two facts- (i) there may be infinite number of attributable form (because of ranges of frequencies involved) and (ii) the four attributes are the inherent differentia of mattergyic entities.

10. As told earlier, shape was also taken to be an inherent attribute of mattergy. The scriptures mention between 5-11 shapes in contrast with 32 shapes by the scientists. The details are presented here in terms of a comparative table :

	Touch	Taste	Smell	Colour	Shape
Jaina postulates	8	5	2	3+2	5-11
Vaiśeṣikas	3	6	2	7	-
Scientific postulates	20	4	9	7+2	7, 32

The V-system seems to fare a little better for details of taste and colour attributes.

11. It must be mentioned that the concept of colour in gross-bodies only requires some clarification as the semi-aphorism 5.23.5 does not define the word 'gross' (Sthula). It is observed that the scientifically presumed basic units of quark (which are finest particles known at present) and the atoms of chlorine etc. have been shown to have colours. These colours have been instrumentally verified. Hence, the grossness should not be limited to eye-perceptibility only. It could be extended to fine instruments too. In view of the theoretical indivisibility of Jainian atom, all the fundamental particles and atoms of the scientists have been termed as aggregates invisible to the human eye.

12. The term 'mattergy' (Pudgala) has basically two varieties- (i) substantive and (ii) modal. The modal variety is the current form of transformed mattergy while the substantive variety is the basic entity in which transformations take place or from which new forms are made. Golden bangles and gold are illustrative examples.

After describing the general characteristics of material mattergic reality, the next aphorism mentions to learn about their other particulars or modifications :

**Śabdā-bandha-saukṣmya-Sthaulya-Sansthāna-bhedā-tamas-
chāyātapa-udyota-vantaś-ca 5.24**

The mattergic substances possess the forms of (i) sound (ii) combination (iii) fineness (iv) grossness (v) configuration (vi) division (vii) darkness (viii) shadow or images (ix) heat or hotlight (x) cold light and many others. 5.24

1. The terms sounds etc. have appropriate meanings. They should be taken here as expressed under coupling compound (addition) with possessive case in the end. (These terms may have three forms of meanings with respect to different grammatical cases - subjective, instrumental and abstract). They are given below :

- (i) Sound is (a) that which tells the meaning, (b) that by which the meaning is known or (c) meaning itself.
- (ii) Combination is (a) that which binds together, (b) that by which binding or aggregation takes place or (c) binding itself.
- (iii) Fineness is the mode or action of being fine. The fine is (a) that which indicates by gesture or effect , (b) that which is indicated by gesture or (c) indication itself.
- (iv) Grossness is the mode or action of being gross. The gross is (i) that which grows large, (b) that by which largeness is attained or (c) largeness itself.
- (v) Configuration is (a) that which gets shape, (b) that by which shape is formed or (c) shape itself.
- (vi) Division is (a) that which splits or dissociates, (b) that by which splitting takes place or (c) splitting itself.

(vii) Darkness is (a) that which darkens the soul or self due to rise of in-auspicious karmas, (b) that by which the soul is darkened or (c) blackness or obstruction itself.

(viii) Shadow is (a) that which obstructs or splits the light to form an equal sized image due to the presence of solid bodies like earth etc. (in the path of light), (b) that by which the image is formed through the above process or (c) the image or shadow itself.

(ix) Hot light or generally heat is (a) that which heats or pains the self due to rise of pain-producing karmas or other bodies, (b) that by which the living and non-living bodies get hot or (c) heat itself.

(x) Cold light or light is (a) that which illuminates the unveiled under cold conditions or (b) cold illumination or (c) light itself. (Moon light or glow worm is common example). All these modes are possessed by mattergic bodies.

2. Sound has two varieties : (i) lingual or language-resulting and (ii) non-language-resulting or non-lingual.

3. The language- resulting sounds have two varieties : (i) alphabetical or scripted and (ii) non-alphabetical or non-scripted. The scripted language has two varieties : (i) Sanskr̥ta and (ii) non-Sanskr̥ta. Sanskr̥ta is the language which serves as means of communication among the civilised, cultured or aryan people. Non-sanskr̥ta languages serve the same purpose among primitive people .

Non-scripted language is observed among living beings having two or more senses . They also serve as means of knowing the superiority or excellence in the knowledge of the gradually increasing - sensed beings . They also serve as means of learning the nature of things through the superior knowers or omniscients.

All this language-resulting sound is exertional (i.e. produced by non-natural sources or conscious exertions).

4. The non-language-resulting sound has two varieties depending on their genesis: (i) natural or spontaneous and (ii) exertional or experimental. The natural sounds are produced irrespective of human exertion. They are produced by thunder clouds etc.

5. The exertional sounds have four varieties depending upon their origin: (a) sounds of stretched membranes (Tata) are produced from stretching the leather membranes and are exemplified by drum, kettle drum, tambourine etc. sounds (b) sounds of stringed instruments (Vitata) are produced from playing musical instruments like violin, lyre, lute and the like (c) beating sounds (Ghana) are collisional sounds produced from collision or beating of metallic or non-metallic solid objects like cymbals, bells and clapping etc. (d) air-column based sounds (Sušira) are produced through playing wind-instruments like conch, flute etc.

Some philosophers (Vaiśeṣikas) postulate that the sound is the quality of space. This is not correct as has already been detailed earlier under aphorism 5.18.19.

Some other philosophers (Mīmāṃsakas) postulate that sounds are momentary and successively produced. They are destroyed as soon as their nature is known. They are, therefore, not capable of perceiving their meanings or objects. If this could be so, every alphabet or syllable should be able to perceive the meaning like the meaning about objects from words. If there can be perception of meaning from one letter or sound, it should be useless to pronounce many letters to form words. Secondly, the successively born and momentary sounds cannot co-exist to combine to give the meaning. One must, therefore, agree to an agency or medium which could be capable of giving the meanings for the sounds and expressible by them. This is known as 'Sphota' or linguistic symbol which is taken as eternal, non-corporeal, supra-sensual, partless and inert. (The word 'Sphota' means bursting forth or flash. As soon as sounds come out, they flash their meanings which are received by us. This term has been expressed in many English equivalents- like exposure).

This postulate is also not correct as there cannot be any relationship of expressive and expressible-type between the sound and its flash (Sphota). Here, the flash is expressible. The question is whether its expressibility is based on its independent existence. If it is so, there will be duality (of sound and its flash). In this case, what could be the reason it is not found before or after sounds? There could be two reasons: fineness or presence of obstructors. If fineness is the cause, it should

always remain inexpressible like the space. If it is said to go gross with sounds, it loses its eternality as it has undergone a change in nature. There does not also seem to be any obstructor for flash like the darkness for the presence of an earthen pot.

Q. The darkness is not an object, it is merely the absence of light.

A. This is wrong. The darkness is material as it undergoes intensity changes (from dusk to dawn) and colour changes like the blue colour. Hence, it could serve as obstructor in seeing the pitcher.

If the flash (Sphota) does not exist independently, it cannot become expressible. It would become an effect as it is produced by juxtaposition of sounds. Thus, sounds cannot become expressive one for the flash of sphota.

Moreover, there is a question whether the first alphabetical sound is expressive for the whole or part of the 'Sphota'. If it expresses for the whole, the other following sounds become useless. If it expresses the part of the 'Sphota', it loses its partlessness character.

Further, there is another point whether the expressive sounds serve the cause of (a) sphota (b) ear or (c) both. They cannot serve the sphota in the way the smells of soils are expressed by watering, because it is eternal and non-corporeal. It cannot undergo any change.

The sound can also not serve the ear like collyrium to the eye. It serves to remove some defects of the eye. In contrast, sounds can neither improve upon the deafness of the ear nor change the quality of the impaired ear. If it is said that sounds serve the healthy hearing sense organ, there is no other service to it except to perceive the meaning. When this purpose is served by the sounds themselves, what is the use of Sphota, then?

Similarly, no service could be performed by sounds to both - sphota and the ear simultaneously, as the above pointwise flaws will accrue.

Again, the sounds cannot cause expression of 'sphota' as they neither exist after their origination instant nor they exist at pre-origination instant. However, if it is pointed out that sounds cause expression to 'Sphota' despite their being momentary, what is the harm, then, in

assuming them as expressing the meanings themselves directly? In that case, Sphotism will become automatically unnecessary.

The expression of 'Sphota' cannot be compared with the illumination by lamp as the absolute momentariness of the lamp cannot be proved. The lamp is not extinct after self-illumination as it illuminates objects like pots etc., causing effects at distant places.

The expression of 'Sphota' by sounds can also not be compared with actions which are momentary and express generality of 'action-ness' by the Mīmāṃsakas. The Jainas do not approve their nature of actions as they do not accept the generality as a separate real incorporating reality (Dravya), quality and action categories. The 'action' is taken as non-different from matter category and it exists not momentarily but substantively.

Moreover, the sounds cannot express 'Sphota' as the nature of expressive and expressible is dis-similar. The visible and actionful lamp illuminates the pots etc. which have similar nature of tangibility and activity. The case of sound and Sphota is not so. While the sound is corporeal and active, the Sphota is reverse in nature. It, therefore, cannot be expressed by sounds.

It may further be asked whether the 'Sphota' is different from sound. If it is different, it cannot be received by the ear. If it is non-different, there will be sameness or identity between the two. Thus, there will be no expressibility of Sphota by sound because of identical nature.

Again, if Sphota is expressible, it would be non-eternal like pots etc. This logic is not fallacious due to the fact that space is expressible through knowledge despite it being eternal. Our logic will specify expressibility by corporeality. Moreover, it is also an effect like an earthen pot. But 'Sphota' is not seen as an effect because it is eternal. Hence, it could not be expressible.

The Sphota could also not be said to be expressible like intellect etc. (categories of Sāṅkhyas) as it would mean probandual parity. As one has to prove the expressibility of 'Sphota', similar is the case with these categories.

Moreover, there are no examples in which a non-corporeal, eternal and partless entity is expressible by a corporeal, non-eternal and composite entity. In the absence of proper illustrations, the probandum of expressibility cannot be proved.

Thus, it should be accepted that the words are in the form of sounds which are of dual-eternal-cum-non-eternal-nature. The sounds are eternal with respect to their mattergic substantivity. They are also temporally stable with respect to their modal general receivability by the ear at different times. However, they are momentary too with respect to their instant change in types, positions and destructions. This is the flawless postulate of Jaina philosophy.

6. Combination or bonding has also two varieties: (i) natural and (ii) exertional or experimental.

7. Natural bonding takes place irrespective of human efforts. It has two varieties : (i) non-eternal or with beginning and (ii) eternal (beginningless). The non-eternal bonding is due to the smoothness and roughness (positive and negative charges) in mattergy. It is exemplified by electricity, meteorites, rainfall, fire and rainbow etc. The eternal natural bonding has also nine varieties due to the three-fold (tri-typed) single bindings of three realities of medium of motion, rest and space. For example,

(i) Bonding of whole, half or quarter part of medium of motion.

(ii) Bonding of whole, half or quarter part of medium of rest.

(iii) Bonding of whole, half or quarter part of space.

The time atoms are never separated. Hence, their bonding is also eternal. Though the spacepoints of single living being has the property of expansion and contraction, they are never separated. Their bonding is also, therefore, eternal. The realities of medium of motion and rest, space and time are also never mutually separated, they also, therefore, have eternal bonding. Generally, many living beings are also eternally related with many other realities. Similarly, there is generally eternal bondings among the largest aggregates of mattergic realities. Though all realities have bonding nature, however, here, the bonding of mattergy is referred in this aphorism.

8. The natural bonding is the reverse of efforted or exertional bonding which is dependent on the human efforts. The term 'Visrasā' (natural) is an indeclinable word.

9. Exertion, effort or experiment means the activity due to body, speech and mind. Exertional bond takes place due to above activities of human or conscious beings. It has two varieties : (i) bonding between non-living bodies and (ii) bonding between living and non-living substances or realities. The bonding of non-living substances is exemplified by bonding of lac or resin and wood. The bonding of living-non-living materials is exemplified by bonding of karmas and quasi-karmas with living being. The knowledge-obscuring etc. are the eight karmas detailed later (in chapter 8). On this basis, karmic bonding is eight-fold. The quasi-karmic bonding is due to gross body etc.

In general, there are five types of bondings : (i) fastening (Ā-lapana) (ii) painting and plastering (Ālepana) (iii) jointing (sansleṣā) (iv) joining of body or body parts (śarīra) and (v) embodied bonding (living-non-living bodies).

The fastening type of bonding is represented by tight tying of (i) iron chain to a chariot or (ii) of a thick rope to a wooden cart so that they may be pulled properly.

The painting type of bonding takes place due to mutual laying and painting of materials like building of walls or palace by laying it with wet soil or clay, bricks etc. and plaster. This seems to be stronger bond than the earlier.

The jointing type of bonding takes place due to joining of materials through natural adhesives such as jointing of wood pieces by lac or resin.

The body bonding has five varieties: bonding between gross, protean, ejectable, luminous and karmic bodies and quasi-karmas. These bonds are further classified into fifteen varieties with respect to different bodies such as (i) gross-body-based bonds 4, (ii) protean-body-based bonds 4, (iii) ejectable body-based bonds 4 (iv) luminous-body-based bonds 2 and karmic-body-based bond 1. These bondings take place due to mutual mixing of spacepoints of different bodies such as :

A. Gross body-based : (i) One gross-body with the same or another gross-body (ii) quasi-karmic spacepoints of gross-body and luminous body (iii) quasi-karmic spacepoints of gross-body and karmic body (iv) quasi-karmic spacepoints of gross-body and quasi-karmic spacepoints of luminous and karmic bodies.

B. Protean body-based : (i) Quasi-karmic spacepoints of one protean body and another protean body (ii) quasi-karmic spacepoints of protean body and karmic body (iii) quasi-karmic spacepoints of protean body and luminous body and (iv) quasi-karmic spacepoints of protean body, luminous body and karmic body.

C. Ejectable body-based : (i) Quasi-karmic spacepoints of one ejectable body and other ejectable body (ii) quasi-karmic spacepoints of ejectable body and luminous body (iii) quasi-karmic spacepoints of ejectable body and karmic body (iv) quasi-karmic spacepoints of ejectable body, luminous body and karmic body.

D. Luminous body-based : (i) Quasi-karmic spacepoints of one luminous body and another luminous body (ii) quasi-karmic spacepoints of luminous body and karmic body.

E. Karmic body-based : (i) Quasi-karmic space points of one karmic body and another karmic body.

The embodied bond (two body bond) has two varieties - (i) eternal and (ii) non-eternal. The eternal bond is represented by the eight central space points in the living being occupying up and down positions in fours like beads in the garlands which never separate from one-another. The non-eternal bond is represented by all other space-points coming into bonding due to contraction and expansion caused by karmic factors.

Alternatively, just as anger-transformed soul is designated as anger, similarly the body-transformed soul may be designated as body like the red-hot iron mass undergoing oneness due to bonding. Thus, all the above said fifteen types of bonds may also be applied in case of embodied bonds. These body bonds have been mentioned with respect to the prominence of gross body etc.

Q. What is the difference between karma and quasi-karma ?

A. The action performed due to activistic volitions is termed as karma. That is the main cause of bonding of the soul. The quasi-karma is defined as mattergic modification like gross body etc. due to karmic fruition and which is the cause of exerting a force for experiencing pleasure and pain. It can be designated as 'little karma' (Īṣat).

Besides the definition, there is also difference between the two due to difference in their duration. The duration of karmas will be described in eighth chapter. The duration of quasi-karmas is described here :

- (1) The gross and protean bodies have karmic drippings equal to their duration.
- (2) The duration of gross body is 3 Palyopama (pit-based time unit), years, which means its duration varies from one Samaya (time unit) upto three Palyas.
- (3) The protean body has a duration of 33 Sagaras (a bigger pit-based time unit). It means it lasts from one Samaya unit upto 33 Sāgaras.
- (4) The ejectable body has a duration of one Antarmuhurta (App.48 minutes).
- (5) The luminous body has duration of 66 Sāgaras.
- (6) The duration of karmic body should be taken as that which corresponds to the maximum duration of the specific karmic species like knowledge obscuring etc.
- (7) The duration of physique-making karma of gross body, protean body, luminous body and karmic body is 20 crore × crore Sāgaras ($20 \times 10^7 \times 10^7 = 2 \times 10^{15}$ Sagaras) each.
- (8) The duration of physiquis-making karma of ejectable body is little less than 1×10^{14} Sagaras.

10. The fineness has two varieties - absolute and relative. The absolute fineness is found in atoms. The relative fineness is observed in wood-apple, myrabolan and plums etc.

11. Similarly, there are two kinds of grossness-absolute and relative. The absolute grossness is found in the largest aggregate pervading the whole universe. The relative grossness is found in plums, myrabolan, wood apple and palmyra fruit etc.

12-13. There are two kinds of configuration or shape - (i) regular and (2) irregular. The regular shape has definite geometrical configuration like circular, triangular, rectangular, square and spherical etc. Any configuration different from them is called irregular one. It is illustrated by different shapes of clouds which can not be defined accurately.

14. The division has six varieties - (i) cut-pieces, (ii) powder (iii) broken pieces, (iv) threshed material, (v) layered material and (vi) sparking materials produced through sparking and specific sounds. These varieties represent different processes of division through which different types of divided materials are obtained. In modern terms, division is a physical process. The different varieties can be illustrated as below :

(i) **Cut-pieces (utkara)** can be illustrated by wooden pieces through a sawing machine or hands etc.

(ii) **Powder (Cūrṇa)** can be represented by normal or fried flours of barley, wheat etc. produced by hand/mechanic grinding.

(iii) **Broken pieces (Khanda)** are represented by different parts of earthen pots due to breaking.

(iv) **Threshed material (Cūrṇikā)** is represented by pulses of the black and green lentils by grinding and threshing.

(v) **Layered material** is represented by layers of mica sheet separated manually or mechanically.

(vi) Materials produced through Sparks-cum-sounds (Aṇucatana) are represented by smithereens which are produced as sparks when red hot iron is hammered in blacksmith's workshop.

15. The darkness is the cause of obstruction of vision. The lamp light removes it and serves as illuminator of objects.

16. The shadow is caused by the obscuring of light. The materials like body etc. are light obscurers. They cause shadow (or image).

17. There are two kinds of shadows : (i) virtual image in the plane mirror showing mouth etc. to be laterally inverted (i.e. left side getting right and vice-versa) and without the change of color etc. and (ii) uninverted image like shadows or image on a modern cinema screen. They are observed through mediums other than mirror.

Q. Mīmāṃsakas point out that the point of lateral inversion due to clean plane mirror is not correct. There is no shadow or image on the surface of the plane mirror. The rays arising from the eyes strike the solid plane surface of the mirror and return back to the eye and see ones' own mouth etc.

A. This is not correct. If this is so, there will be possibility of not observing the lateral inversion which is a fact. Moreover, there is possibility of overextension of the logic. The eye rays should be able to see the mouth etc. after striking with the walls and returning back. Thirdly, the eye-rays from the body are not capable of receiving or seeing the image until associated with the mind.

18. Hot light (Ātap, heat) is the mattergic transformation characterised by hot light. It is due to the sun etc.

19. Cold light (Udyota, moonlight) is the mattergic transformation characterised by cold light. It is due to the moon, gems, firefly etc.

20 Q. The action or activity should also be numerated here as it is also a mattergic transformation.

A. It has not been enumerated here as it has already been implied before in connection with the non-active nature of space, medium of motion and rest.

21. Q. If action in mattergy is implied by the inertness of space, medium of rest and motion as per aphorism 5.6-7, the time may also be said to have characteristics of action as it has also not been included in the corresponding aphorism.

A. It is not so as time has not been mentioned in the realities in aphorism 5.1 which are referred to later in the intertness-stating aphorisms 5.6-7. Had the action in time been acceptable, the earlier aphorism should have mentioned time also along with others. Thus, the aphorism should have been 'Dravyāṇi Jivāh, Kālaśca'. The aphorism should, thus, have a shortened form with the exclusion of one 'ca' term in aphorism 5.3 and elimination of the aphorism 'Kālaśca' (5.39) altogether.

Q. The aphorism 'Kālaśca' is meant to indicate the infiniteness of instants of time.

A. This is not correct. This could have been done by a single aphorism like 'Ākaśasya Anantāh Kālasya 'ca' (the spacepoints of space are infinite. The spacepoints of time instants are also infinite). As this shortening process has not been applied, it indicates that time has no characteristics of action.

However, this inertness should be taken with respect to physical actions of movements or vibrations. It should not be taken with respect to existence etc. which are modal actions. Thus, the reality of time may be active with respect to its substantivity due to eternally inherent properties of existence etc. It may be inert with respect to the capacity of translational motion.

22. The activity or action has ten varieties as illustrated below :

1. **Efforted action (Prayoga)** : The motion of arrow, wheel etc. due to human effort.
2. **Bond-releasing action** : The motion of ebony seed of castor and tendu etc.
3. **Divisional action (Cheda)** : The production and motion of sound due to combination and division of mattergy as in conch, drum and ringing bells etc.
4. **Collisional action (Abhigāta)** : The motion due to collision between two or more mattergic objects like metal ball, green wood etc.
5. **Dipping action (Avagāha)** : The motion caused due to partial or total dipping of an object in other medium exemplified by motion of ship in water.
6. **Gravitational action (Gurugati)** : The motion caused by the property of gravity exemplified by the downfall of stones and iron-balls to the ground.
7. **Light-nessal action (Laghugati)** : The motion due to lightness of the objects exemplified by the upward motions of cotton, hollow gourd etc.
8. **Diffusional or transmissional action (Sancāra)** : The motion caused due to transmission of fine materials of matter due to diffusion etc. as the smelling motion of alcohol and vinegar etc.

9. **Conjunctional motion(Sanyoga)** : The motion caused by forceful conjunction of two objects exemplified by motion of clouds by air, chariot by elephants and pestle by hand.
10. **Natural motion (Svabhāva)** : The motion due to the inherent nature of the objects like the motion of air, fire, atoms, salvated beings and astral beings etc. It is observed that the natural motion of air is oblique while it is irregular through use of blower etc. The natural motion of fire is upwards while it is different due to different causes. The nature of motion of atoms is irregular. The motion of the salvated beings is upwards. The motions of astral beings is the regular encircling of the human world.

23. Q. The aphorism 5.24 has a possessive suffix (suffix Matup) in the end. This suffix is used where there is separation between the objects. For example, we use the words such as 'staffed Devadatta'. Here, the staff and Devadatta are separated objects. Their combination leads to the use of possessive suffix. Similarly, the use of this suffix in this aphorism indicates the sounds etc. are different from mattergic entities.

A. This is not correct. There is no rule about the use of this suffix in different objects only. We observe this suffix even in case of non-separate objects too as in the case of pithed column in trees and in-souled man.

24. However, sounds etc. are sometimes observed as different from mattergy with respect to different modes. They are substantively non-different also as mattergy itself is modified in the form of sounds etc. just like hot iron.

Q. If touch, taste etc. (4) and sounds etc. (10)- all are modification of mattergy, why the two aphorisms 5.23 and 5.24 have been composed separately ? The two aphorisms should be reduced to one only.

25. A. The separate aphorisms have been composed to indicate that (a) the modifications of touch, taste etc. occur in both-atoms and aggregates while modifications of sounds etc. are observed only in aggregates except in the case of absolute fineness which is observed only in atoms, while relative fineness is observed in aggregates.

Q. If this is the case for fineness, it should have been enumerated in the earlier aphorism 5.23 along with touch, taste etc. .

A. This is not correct. It has been specially enumerated here to indicate the opposite of the grossness.

26. Moreover, the two separate aphorisms have been composed with one more point in view. It indicates that the modifications of touch, taste etc. are homogeneous in character. It means that a hard touch will modify only in numerous varieties of two, three, numerable, innumerable and infinite qualities of hard touch. It cannot modify itself in other varieties of touch of different class like soft touch or heavy, light etc. types of touches. Similar will be the case of modifications of other varieties of touches. Similar will be the case of taste modifications. An astringent taste will modify itself only into different degrees of astringency without leaving its own class involving the destruction of earlier mode and originating in a newer mode. It will not modify with any other mode of taste like sour etc. It will be the same homoclass modification in case of smell too - good smell, modifying into different degrees of good smell. It will not modify into bad smell. The similar statement may be made for colour too. A while colour modifies into different degrees of white colours and not of any other colour.

Q. How will you explain when hard touch modifies into soft touch, heavy touch into light touch, positive touch into negative touch, cold touch into hot touch ? Similarly, how will you explain modifications of one taste into different tastes, one smell into different smells and one colour into different colours ? How will you also explain the modifications of one type into different types through combination of many factors?

A. This type of heterogeneous modification can be explained on the basis of the fact that the general class of touch etc. is not lost and origination and destructions cause the different modifications. For example, the class of touch will remain intact whether soft touch changes into hard, fine or cold touch. Similar statements may be made for modifications of other qualities.

27. Q. There are many other modifications of mattergy like propulsion, collision etc. They should also be enumerated here in the aphorism.

A. The word 'ca' (and, etc.) in the aphorism 5.24 connotes the inclusion of all the other observed and desired modifications. Whatever modifications are in consonance with the canons, they are all included through word 'ca' in this aphorism.

Supplementary Notes

1. The commentary deals with the following points :

- (a) The aphorism refers to ten manifestations of mattergy.
- (b) Detailed description about sound in terms of its classification and nature along with refutation of exposerism (Sphota) concept.
- (c) The description about five-fold combination between mattergic entities and mattergic-cum-living entities. Its five-foldness of efforted type has also been illustrated.
- (d) The description about relative and absolute fineness and grossness and two-fold configurations.
- (e) Six methods of division have also been mentioned.
- (f) The detailed description about shadow, darkness, hot light (light) and cold light has also been done.
- (g) The illustrative description of ten-fold activities found among mattergies is also there. The action has been taken as equivalent to motion.
- (h) The polyviewistic postulate of modes and the moded mattergy regarding their difference and non-difference has been made.
- (i) The aphorism 5.24 has been composed separately as most of these refer to the modes of aggregate only while the attributes of aphorism 5.23 refer to the attributes of atoms and aggregates - both.
- (j) The word 'ca' includes many other modes not included in the aphorism by name.

2. The etymological meanings of all the ten terms in the aphorism have been explained with respect to their being used in subjective, instrumental and abstractive case. The meanings also refer to the effects on the living units by the mattergies.

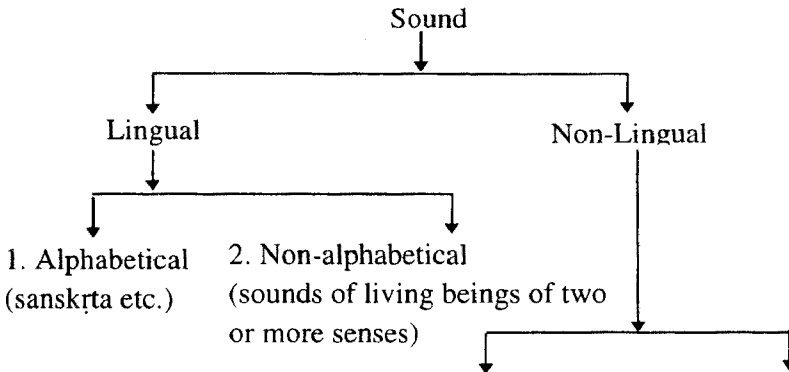
3. Pancāstikāya, 79 says that natural or artificial sound is produced by the collision of aggregates. Prajnāpanā points out that the fine mattergic sound is propagated by its own kinetic energy as well as impelling energy supplied by air or other entities in space. Niyamsāra states that sound is aggregatal and forms the fourth fine-gross class of their classification as it is received by non-ocular sense of hearing. This placement has been pointed out to be overlapping even by G. R. Jain as sound is taken as a form of energy along with light etc.

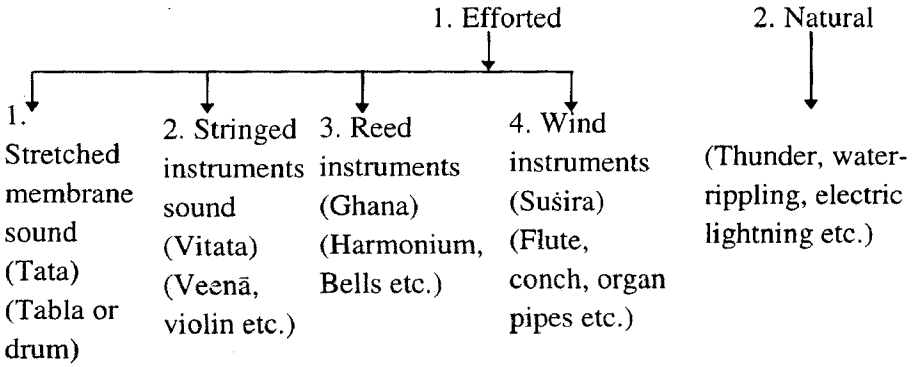
4. Prajnāpanā points out that sound is produced due to physical activities in the body to receive mattergic sound particles and pronounced in two instants through vocal activity. The material cause is the living being while the other factors are instrumental. Its fine particles have a shape of diamond and it can travel upto the end of occupied universe with high velocity.

5. The speech or sound forms the seventh variform out of eight major variforms. Its variform is finer than respiration and grosser than mind-vaiform.

6. The classification of sounds in the commentary may be illustrated through the following Table on the next page. It is said that the lingual sounds are always efforted. Mahendra Muni has given this table in somewhat different way which has no material differences.

7. It is observed that there is some difference in the meanings of the terms Tata etc. in some Jaina texts and texts of other systems. This has been indicate by G. R. Jaina and Jain in their articles. However, all these terms include all types of efforted sounds.





8. The science of sounds postulates it as a form of energy with wave propagation character having variable frequencies. The human audible frequency range is very limited. The intensity of sound is expressed in Deci-bells, a value of which over the critical one indicates the phenomena of sound pollution. This wave nature of sound is not found in this commentary or in any other ancient texts where only corpuscular nature is postulated. The logicians like Prabhācandra have refuted the Vaiśeṣika concept of water-wave-like or concentric circular bud type propagation of sound though Sikdar mentions otherwise without any scriptural reference. He also seems to translate sound particles as sound waves which is not correct. All this indicates Jaina concepts concurring with Newtonian age as in many other cases.

9. Despite some differences in theoretical side, the variety of efforted sounds is the same as taught in modern physics, of course on a solid quantitative basis. Also, the classification of different types of sounds seems to be little better in Jaina texts. The TSV classified the sounds in six classes- sounds of (i) stretched membranes (ii) stringed instruments (iii) cymbals and harmoniums (iv) wind instruments (v) collisional and (vi) lingual (alphabetical or otherwise). It does not include natural non-lingual sounds. The Pūjyapāda or Akalanka classification seems to be somewhat improved as shown in the above table.

In contrast, the scientists classify all sounds in two classes - (i) musical sounds and (ii) noises. G. R. Jain suggests that all sounds of the

table should be designated as musical ones except the natural sounds illustrated there. Secondly, the Jaina texts do not deal only with the human-based sounds, they also include the sounds of animals of all types. The Jaina classification also stands better than Vaiṣeṣikan one.

10. Akalanka has refuted the Exposerism of Mīmāṃsakas (Sphotavada) on solid logical grounds and has postulated the Jaina concept of sounds as below :

- (a) The words consist of sounds.
- (b) It has a dualistic nature of permanence-cum-non-permanence as against absolutist nature.
- (c) It is a mode of mattergic reality rather than quality. It is aggregatal in nature.
- (d) It is substantively permanent and modally non-permanent.

11. Vidyānanda has stated the following inferencial logistics for proving the mattergicity of sounds :

- (a) The sound is neither the quality of space nor it is non-mattergic because it is an object of external sense like smell etc.
- (b) The sound is a reality because it has activity like the arrows etc.
- (c) The sound is not the mode of mattergy because its touch, taste etc. are not perceptible like pain and pleasure. This inference is not correct as these attributes are non-manifest rather than non-existing.

12. Guṇaratna proves its mattergicity because (i) it is sense-perceptible (ii) it is produced by efforts (iii) it undergoes transformations (iv) it is obstructed/overpowered/ interfered (v) it produces echoes (vi) it expands and contracts and (vii) it deafens the organs when loud.

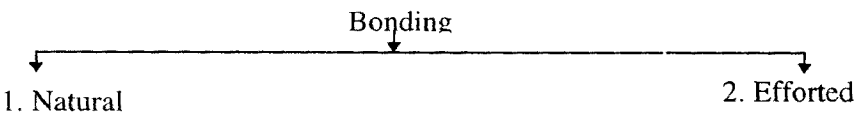
13. The human sound is expressed through alphabets, words and sentences to carry the proper meanings. The sounds of these constituents are always modal aggregates of mattergy. These are the material cause for sounds.

14. Bonding may be defined as combination or integration of atoms or aggregates together to form a single invisible fine or visible fine or gross composite physical entity. The bonded state of mattergy is its specific mode. The process of bonding involves unification of the same or different entities loosely or tightly to give an idea of the unity of the

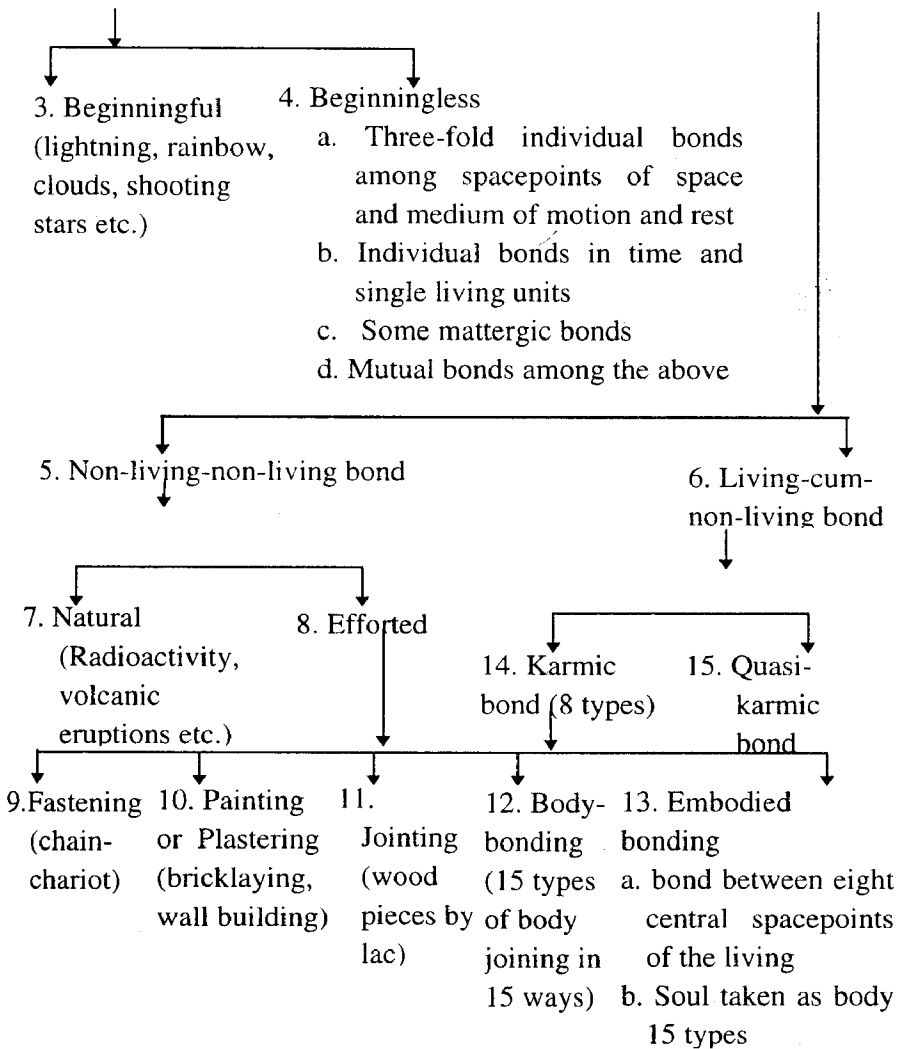
combined. This occurs due to homo-localisation and mutual entry into each others' spacepoints. This mode is not possible among non-mattergic entities like space, soul etc. as they cannot be united into one entity. This could be illustrated by combination of milk and sugar or baked gram flour and water etc. These are examples of physical bonding as the components can be easily separated. However, there could be chemical, biochemical or karmic bondages too. This could be partial or total too.

There are different types of bonding mentioned in the commentary and shown in the table ahead on the next page. This table shows more detailed classification of bondings than the Śvetāmbara version. However, there is mention of a third variety of bonding of mixed type besides the primary two involving the natural as well as efforted process as in the case of potter making a pot on wheel.

15. The sub-aphorism 5.24.7 is most important with respect to our current concept about bonding based on opposite electrical natures of bonding entities. This commentary is the second one which mentions that bonding take place due to opposite natures as in electric lightening, Pūjyapāda of fifth century A.D. was the first to mention this point. Before this, Bhagvati mentioned bonding due to an adhesive between entities. However, the bonding due to electrical nature applies mostly for chemical bonding (lightning etc.). The examples given under different types of bonding in the table are mostly physical bonds. Of course, some examples of chemical bondings are also found in this and some other texts in many references. The most important from the spiritual point of view is the bonding between the living and non-living entities like the karmic and quasi-karmic bonds. If opposite electrical nature is the criteria, one must presume that all factors leading to such bonds must have specific electrical character opposite to the karmic body with which this bond takes place. These two bonds cannot be equated with biochemical or chemical bond which are purely matter-matter bonds.



The Jaina world of Non-living



The karmic bond is a specific bond where living unit is directly involved and there is no thermal effect. It is homo-locational and its mutual entry character makes it physical. But as it is not like clothes on body or slough of a snake which could be taken off easily. It requires severe austerities to break it off. Hence, it could be less physical and more chemical.

16. There is nothing to add for relative and absolute fineness and grossness which is found in different types of mattergy. However, matter and energy are somewhat different in this respect. The energies have

better fineness than matter. The grossness and fineness etc. are the modes of mattergy because they are gross or fine and sense-perceptible like pots and fabrics.

17. The configuration or shape is also a mode of the mattergy. The regular shape has 5-11 varieties in different texts while the irregular shape may have innumerable varieties. However, the physique-making karma of configuration has six types only. It means the number of shapes have been increasing gradually.

18. The de-bonding, division or disintegration is defined as the splitting of bonded entities by physical or chemical means. The commentary gives its six varieties. All these processes represent only physical processes of division or debonding like bonding. There are virtually no chemical processes involved as in breaking by normal and electrical heating, electrical current passage where compounds are broken into their mattergic components. The debonding process is also important for karmic dissociation which has not been mentioned here as in the bonding discussion.

19. The next four modes of mattergy - darkness, shadow, hot light and cold light are finer forms than many other modes. The Mīmāṃsakas hold that darkness should be a category of independent reality as it has eye-perceptibility. But most systems do not agree to it. Some assume that it is only the state of absence of light. In contrast, the Jainas postulate that (i) the darkness is the cause of obstruction to visibility of things (ii) it is the anti-thesis of light (iii) it is not negation of light but is a specific combination with predominance of black colour and active entity like the blue colour.

It is said in scriptures that the brightness of day (light) and darkness of night is due to presence of auspicious and non-auspicious matter. Thus, it is a mattergic entity separate from light having corpuscular nature. It is bluish-black in colour in which things cannot be observed. It is beyond the range of visibility of human beings. But many animals like cats and owls can see in it. That indicates it as a form of light.

The current scientists tell us that light is a form of electromagnetic waves with varying frequencies. The human visible light frequency lies between 4000-7000 Angstroms. The dark-light frequency could be lower or higher than this range. It is called infra-red or ultra-violet range. Had it not been the form of light, how dark photography could have developed ? Thus, the textual reference to two forms of light-visible and dark are quite in tune with the physicists. It is a fine form of mattergy forming the third category of gross-fine in Kundkundas' aggregates based on eye-perceptibility.

20. The shadow is also an effect of light produced due to obstruction of light by an object. It also forms the third category as above like light or darkness etc. Its mattergicity is proved on the basis of (i) its coolness and (ii) satisfying nature. The sub-aphorism 5.25.10 also supports it due to its eye-perceptibility. Guṇaratna says that shadowic mattergy is also the cause of shadows and images. When the mattergic shadow falls on the mirror, one gets an image. Two types of images have been mentioned by Pūjyapāda and elaborated in this commentary. In fact, the images have two categories - (i) real and (ii) virtual. The text mentions both forms :

(i) Shadows form the category of real image forming only when light is obstructed by opaque (non-shining and not clean) objects. They are normally black in colour. All objects under shadow have a transformed colour in terms of black. Though the scientists agree to the formation of shadow in a similar way, but the Jainas go ahead to indicate their material nature.

(ii) The virtual images are formed by the reflecting surfaces of plane and clean mirrors when they are laterally inverted with no change in colour. It is pointed out that the inversion takes place due to specific type of transformations of shadow mattergies. These represent the phenomena a of reflection of light.

It seems that neither lenses nor photographic processes were popular upto eighth century. Hence, other images like those on cinema screens etc. are not mentioned in the commentary. However, the term 'image' may include these types which may also be un-inverted and real ones. The current physical science has, thus, improved and widened the

scope of scriptural shadows. For example, the texts do not have the phenomena like refraction etc.

21. The term 'Ātapa' (heat) and 'Udyota' (light) are also mattergic in nature. In fact, the text mentions them in terms of two varieties of light. It has been observed in the first instance that heat does not have light effect upto a certain point when objects are heated. After this, when heat effect is more prominent, light also gets associated with it. Thus, we have :

(i).	Sunlight	35% light	65% heat
(ii).	Electric lamp	7-10% light	90-93% heat
(iii).	Arc lamp	15%	85% heat
(iv).	Moonlight	99% light	1% heat

The current concept of heat may be taken as corresponding with sunlight (Ātapa) of the Jainas.

The second variety of light is moonlight, also observed in glowworm, firefly etc. where light effect is predominant over heat effect. For example, glow worm has 99% light and 1% heat.

The Śvetāmbara texts indicate a third form of light which is termed as lustre (Prabhā) which is light coming out from many jewels and gems etc. The light illuminates the objects in six directions.

The mattergic nature of light and heat could be taken in terms of two traditional concepts. These are fine and corpuscular by nature or they are in the form of energy (or electromagnetic waves). Formerly, Jainas postulated their corpuscular nature. However, many of their properties could be explained only on the basis of their wave nature. In fact, now it is assumed they have a dual nature- wavicular. This supports the adoption of Jinistic non-absolutism by the scientists. The phenomena covering wave nature of these energies are not found in Jaina texts. Hence, they have mainly corpuscular nature in these texts. This has been proved by the following inferences :

- (i) Heat (hot light) is mattergic as it heats up materials, it leads to sweating and is itself hot like fire.
- (ii) The light of any form (normal light, moonlight and lustre) is mattergic because it makes one cool, it makes one happy and satisfying like water and it illuminates the others like fire.

22. This commentary is important from the point of view of description of ten types of activities involving vibrations and translational motions with proper illustrations. Besides, this includes all other types of manifestations of mattergy like propulsion, collisions and the like. These activities mainly refer to mattergies whether natural or non-natural Their enumeration indicates how keen observers were the Jaina seers.

There is one more reference to twenty five activities in aphorism 6.5 where not only many vibrational activities are enumerated but many non-vibrational activities are also included there with reference to karmic influx. They, however, refer prominently the activities of the living ones.

23. The use of possessive suffix has been explained in terms of non-absolutistic way to mean difference and non-difference between the manifested and manifestations. This point has been dealt with in many cases earlier too.

24. Ācārya Bhikṣu has mentioned two types of mattergies in his 'Nava Padārtha (Nine Categories) : (i) Psychic and (ii) physical. The karmas, bodies and energies (heat, light etc.) are said to be psychic mattergies as they are changeable. In contrast, the rest ones are physical forms or modes of mattergy. However, these are specific forms and not general forms. Loka Prakāśa mentions motion '(gati) and' a-heavy-a-lightness' (agusulaghutva) as transformations of mattergy. Thus, we have a total of $10 + 1(\text{lustre}) + 4(\text{touch etc.}) + 2(\text{above}) = 17$ (Seventeen) characteriestic modifications of mattergy.

25. Uttarādhyayana seems to have some repetitions in two cases of (i) bonding or combination (sanyoga, ekatva, union) and (ii) debonding or division (vibhāga, pṛthaktua-separation). The enumeration of space-points has also been mentioned as an additional mode. If this last one is also added, the total forms of mattergy will turn out to be eighteen. There are six energy forms and twelve material forms as tabulated by Jain.

If this is the object of composing two different aphorisms, it should let be known what modifications are mattergic and what are having dual character. The next aphorism indicates about them :

Aṇavah Skandhāśca 5.25

The mattergies or Pudgalas have two varieties - (i) Ultimate atoms and (ii) Aggregates. 5.25

1. Ultimate atoms are those entities which have always the capacity to undergo modifications through their spacepoint-limited qualities of touch, taste etc and which are subject to designation of Anus (Atoms) by words. They are very fine. Their points of beginning, center and end are the same. It is said that an entity is called an ultimate atom (Parmāṇu, Parmāṇu Pudgala or Aṇu) which is the beginning, center and end in itself, non-perceptible by sense, and indivisible by nature.

2. The aggregates (Skandhas) are entities which have capacities for being perceived, taken and received etc. due to grossness. The conventional verbs are sometimes with proper meaning and sometimes without it. However, it is implied under these cases. Thus, the fine aggregates like di-atomics etc. are also called aggregates despite the fact that they can neither be taken nor received etc.

3. Both the terms in the aphorism 5.25 are in plural number. This denotes that not only the mattergy as a class is infinite but each of its variety - ultimate atoms and aggregates - is also infinite. Each variety represents a class of infinite type of entities by itself.

4. Q. Let there be the aphorism in the form of a single word 'Anu-Skandhah' only in place of two words. It will have a short form.

A. This is not proper. The two separate words have been used with specific purpose. The first term 'Aṇavah' refers to aphorism 5.23 which means that ultimate atoms have touch, taste, smell and colour. The second term 'Skandhāśca' refers to the aphorism 5.24 which means that sound and other modification there are aggregates. If the two words in the aphorism were not there, such a meaning could not be indicated.

5. Q. It is said that an ultimate atom is an entity which is only the last or ultimate cause of the universe.

A. This is not correct. Despite being the ultimate cause, it is also an effect as it is produced by divisions as will be described later in aphorism 5.27. Thus, an ultimate atom is a cause and an effect as well.

6. Q. There is no contradiction in postulating an ultimate atom as the ultimate cause only despite its occasional effect character.

A. This is not correct. The word 'only' with cause means a definiteness that it is the cause only and not an effect. [There should be a suffix 'also' with the cause to avoid the confusion and to give the realistic meaning.]

7. Q. The ultimate atom is eternal.

A. This is also not correct. It is eternal as well as non-eternal. There are many qualities like electrical nature etc. in ultimate atoms whose degrees are changing. Thus, modally ultimate atoms are non-eternal.

8. Q. The ultimate atom is eternally the smallest entity and it effects the formation of di-atomics etc. Hence, it is the ultimate cause only and can not be an effect. Moreover, it is not produced by division also.

A. If ultimate atom is inherently eternal, it cannot cause any effects like diatomics etc. as it cannot change its nature of atomicity. If these are its effects, it can also be effected by division, thus proving the nature of effectness of atoms. Moreover, until there is an effect, it cannot be called a cause also. One cannot be called a father until he has a son.

9. Q. The shadow etc. are the effects of eternal ultimate atoms.

A. This is not correct. The shadows are due to aggregates. There is shadow of objects consisting of infinite aggregates effected by many ultimate atoms. They are perceptible also. Thus, ultimate atoms cannot be the ultimate cause.

10. Moreover, the shadow is eye-perceptible. These visible phenomena cannot be caused by non-perceptible entities like ultimate atoms. Secondly, there is no eternal entity like ultimate atom as it is said to be produced by the division of aggregates.

11. Q. The ultimate atom is said to be permanent to indicate its eternity.

A. This is also not correct. There are qualitative modifications in the atoms in terms of varying degrees in their positive or negative electrical nature etc. There cannot be any object which could be devoid of modifications.

12. Q. It is contended that the ultimate causality statement regarding the ultimate atom is based on a certain standpoint. It is opined with respect to the fact that it is not an effect like diatomics etc. caused by the combination or association of ultimate atoms. However, substantively, it is permanent as it does not undergo destruction and origination.

A. It is agreeable that the ultimate atom may be the cause for effects like diatomics etc. with respect to the prominence of specific modal aspect while maintaining its permanence substantively.

13. The ultimate atom is partless and it has a single taste, single smell and single colour. It is only the composite objects like specific fruits which have many tastes and peacocks etc. which have many colours and cosmetics etc. which have many smells. The atom is partless and hence it has only single taste etc.

14. The ultimate atom has two non-contradictory touches. There may be one out of the two of hot and cold touches. There may be the another one out of the two contradictory electrical natures of positive and negative type. As the ultimate atom is mono-spacepointed, it cannot have contradictory qualities. (Thus, the ultimate atoms have five qualities in all)

The ultimate atom does not have the touches of heavy, light, hard and soft type as they are properties of the aggregates.

Q. How one can know about the existence of such highly imperceptible ultimate atoms ?

15. A. Their existence is known from their effects. The causes are indicated by its effects. It is not possible to have aggregatal effects like body, senses, elements and the like in the absence of ultimate atomic entities.

16. The properties of ultimate atoms can be properly learnt through polyviewistic approach. For example, why an ultimate atom may be the ultimate cause, it may also be the effect. It is the cause to produce aggregates like diatomics etc. It is the effect as it is produced by dissociation of aggregates. It is also an effect because it is substratum of its effecting qualities of different types. The ultimate atom could be the ultimate finest unit as it cannot be divided further. However, it could be

non-ultimate too with respect to spacepoints. It could be the finest because of its fine modifications. However, it could be non-fine too with respect to qualitative difference despite non-difference with respect to space points. It could be the finest because of its fine modifications. However, it could be non-fine too with respect to its capacity to cause non-fine effects. Substantively, it is permanent. However, it is non-permanent because it undergoes aggregatal modifications. It is also non-permanent as it undergoes qualitative modifications. It has five qualities as in 5.25.13-14 with respect to its non-spacepointedness. However, it has multiplicity of qualities with respect to its capacity to undergo modifications of multi-atomic aggregations. It is a cause as it is inferred through its effects. However, it may not be a cause as it is a subject of direct knowledge through its modes. All these properties are summarised in the verse (of unquoted source) : "The ultimate atom is the ultimate cause. It is finest and permanent. It has one taste, smell and colour. It has two non-contradictory touches. It is recognised through its effects."

17. Q. What are the aggregates ?

A. The aggregates are those entities in which the ultimate atoms are found in a bonded condition. There are three types of aggregates- (I) Whole aggregates (ii) part aggregates and (iii) sub-part aggregates. The whole aggregates are specifically bonded forms of infinite-times-infinite ultimate atoms. The part aggregates are half the size of whole aggregates. The sub-part-aggregates are half the size of part aggregates or one-fourth the size of whole aggregates.

The earth, water, fire and air etc. are forms of the aggregates. The touch, taste etc. and sound etc. are the modes of the aggregates. The objects of touch etc. and sound etc. (aphorisms 5.23-24) like pitcher, fabric etc. are called the earth. The water is also an aggregatal mattergy as it is its modification. The smell is also directly perceptible there.

Q. The water has no smell by itself. The smell felt in it is due to the earthy substances combined or dissolved in it. Their smell is taken as water itself has the property of smell.

A. This is desirable. We do not observe any time when water may be smell-less or it may be without earthy combinations. Moreover, the

smell is invariably related with touch. Thus, it should be taken as the property of water itself. This could be proved by the following syllogistic form of inference, 'the water has smell, because it has taste like the mango fruit'.

Similarly, the fire has also modes of touch etc. and sound etc. as it is also the effect of earth like the pitcher. It is seen that the fire is the effect of earthy woods etc. which have touch etc. Moreover, the fire is the modification of aggregatal mattergy. It is observed that the intaken earthy food material is metabolised into bile, humus and phelgm. Here, bile means digestive fire. Thus, the fire has touch etc. as it is the effect of earthy substances.

Similarly, air has also modifications of touch etc. and sounds etc. because it has touch like pitcher etc. Moreover, the air is also a modification of earthy substances. It is observed that intaken earthy food is metabolised into humus (air), bile and phelgm. Here, humus is air - a form of vitality. Thus, the air should also be taken as having touch etc.

The above discussion refutes the Nyaya and Vaiṣeṣika view that earth, water, fire and air haṁve four, three, two and one qualities of touch etc. respectively as each of the qualities is invariably related with the other qualities.

Supplementary Notes

1. The commentary deals with the following points :

(a) The etymological meaning of the specific terms 'aṇu' (ultimate atom) and 'skandha' (aggregate) have been given in terms of qualitative and quantitative transformations and acquiring grossness due to atomic associations.

(b) There are infinite types of mattergies which could be basically classified in two categories - each consisting of infinite varieties calling for plural number in each.

(c) The ultimate atom is a physical reality. It is an effect as well as the cause for making aggregates. It can not be absolutistically cause only as TSV indicates because it is produced by the dissociation of aggregates also.

(d) Similarly, all properties of ultimate atoms should be accepted with respect to substantive and modal point of views. Thus, they will have aspectwise contrasting properties :

	Substantive properties	Modal properties
1.	Finest	Cause of gross aggregates
2.	Cause	Effects
3.	5-attributal	Multi-attributal
4.	Permanent	Non-permanent
5.	Last of the divisions	Non-last, qualitative differences
6.	Invisible	Modally visible.

(e) The basic ultimate atom has five basic qualities mentioned in the text. Thus, mass (dense/lightness) is not the quality of basic primary ultimate atoms. They are termed as 4-touch ultimate atoms.

(f) The ultimate atom is invisible but its existence is proved by omnisciental perceptions, scriptures, inference and its aggregatal effects.

(g) There are three kinds of aggregates- whole aggregates, half part of the aggregates and quarter part of the aggregates. The five elements of other systems are mattergic aggregates.

2. Many scholars have different english terms for these Jaina terms of this aphorism 5.25. It has already been pointed out that early scholars indicated two types of atoms (i) cause atom and effect atom and (ii) absolute(ideal) atom and apparent or practical atom. This has solved many of the difficulties of even current age. The general descriptions seem to refer to practical atom. The ideal atom of Jainas cannot be equated to any of the fundamental particles of today as they will be either practical atoms consisting of infinite ideal atoms or aggregates. Thus, the changing equivalence of Jainian ideal atom by many authors will be superfluous. However, it is found that many of the properties it attributed to (now ideal) atom involve many flaws in their explanations.

The term 'Skandha' has been translated as aggregates here rather than molecules as the later refers to only chemical and more stable

combination while 'aggregation' refers to physical combination also along with the chemical ones. The texts have more illustrations for physical effects and combinations rather than chemical ones. Thus, 'aggregate' is a better coin. Newer authors are adopting it for its wider applicability.

3. Vidyānanda points out that the two-fold classification of matter in 5.25 refutes the absolutist views of atomism or aggregatism accepted by other systems like Buddhists. This refutation is based on two facts :

(i) The aggregates are mostly perceived directly as composed of smaller particles. They cannot be called confused forms as otherwise, all our knowledge and popular ways based on them will also have to be called false. However, their divisibility can be inferred :

The octa-atomic or other entities are divisible (upto single atomic entities) because they are composites along with perceptibility.

(ii) The existence of ultimate atom is proved by its effects and scriptures. Thus, two-fold matter in 5.25 is an established fact.

4. The aphorism 5.25 contains the word 'ca' in the end. By giving plural number to the two terms, it has been pointed out that the word 'ca' indicates that the aggregates have also touch etc. along with aggregations.

5. The aphorism 5.25 or its commentary does not deal with many purposeful descriptions about atoms. Many current researchers have delved deep into Jaina scriptures and found out valuable informations about atoms contained therein. Mahendra Muni, Sikdar, G. R. Jain, N. L. Jain and others have books and articles on this subject. The details could be summarised under four heads- (a) conservation properties (b) dynamic properties (c) varieties and (d) bonding (this will be dealt with under aphorisms 5.33-37 later).

The conservation properties include the substantive properties of matter in general and atoms in particular. They have been described under 1(d) above. The apparent atom has a size of 10^{-13} cm while the ideal atom may have a size of $10^{-\infty}$ cm as per Triloka-Prajñapti. A-heavy-a-lightness is another property for continuity.

The dynamic properties include (i) the natural and efforted motion of atoms (ii) the elastic and non-elastic collisions between atoms

(iii) seven types of motions involving linear and non-linear ones (iv) ten-fold causal contact motion (v) the maximum speed of atom to the extent of 10^{27} cm per unit Samaya (compare 10^4 - 10^5 cm per second by scientists) (vi) high combining capacity with other atoms or aggregates. (vii) three types of activities- natural, efforted and mixed and (viii) three types of resistances to motion. The reader is referred to literature for details.

The atoms have four varieties in the first instance- (i) substantive (ii) locational (iii) temporal and (iv) modal. This may be a historical point. However, keener observations classify atoms on the basis of their natural properties of touch, taste, colour and smell. They postulate $5 \times 5 \times 8 / 2 \times 2 = 200$ varieties of atoms moving to infinite varieties depending upon intensities of these properties.

The single atom is always unbounded but it has bonding capacity due to its charged nature serving as glue for bonding. However, it cannot combine with the living in its minutest form. Bonding may be due to partial or total contact. This commentary refutes the TSV opinion that the atom is the ultimate cause only and that it cannot be an effect (sub-aphorism 5.25.5-6). The scientists define an atom as a homogeneous unit which takes part in chemical reactions, forms aggregates and not found generally free in nature.

6. The aggregates are defined as those which could be received, handled and placed due to grossness. They may contain atoms from a minimum of two to infinity. However, there are some having two or more atoms which are non-perceptible. These are six-foldly classified by Kundkunda. The karmic aggregates are quite bigger ones consisting of infinite-times-infinite ideal atoms. The aggregates are always in bonded forms.

7. It may be mentioned here that sometimes an aggregate is also designated by the term mattergy (Pudgala) in literature. However, its meaning should be taken with reference to context.

8. It has been pointed out that the atoms in aggregates are in a state of motion. However, they may be so or otherwise also in the largest aggregate.

9-10. The diatomic etc. aggregates have a variable occupancy of spacepoints. They may occupy as many spacepoints as the number of atoms contained in them. However, they may also occupy lesser number of spacepoints depending upon the compactness of atoms in the aggregates. This means that aggregates may have variable sizes. A similar statement may be made in case of occupancy of components on the division of aggregates. This is agreeable to the scientists also.

11. The word 'atom' in this text should be understood as 'ultimate' or 'apparent' atom as per context.

12. Thānam, Bhagavati, ADS, Triloka-prajnapti and many other texts have used the term 'Parmāṇu' or 'Parmāṇu pudgala' in place of 'aṇu' used here. It is not clear why the aphorist has preferred the term 'aṇu' in 5.11 and 5.25 despite earlier tradition of use of different terms in this regard. However, the aphorist's term 'aṇu' means 'paramāṇu' or 'paramāṇu pudgala' (ultimate or apparent atom) as is clear by the use of these terms in the commentaries of these aphorisms.

It is enquired whether the atoms and aggregates are eternal or non-eternal. It is postulated that they are non-eternal and produced by various methods. The next aphorism indicates the methods by which the aggregates are produced :

Bheda-Sanghātabhyām Utpadyante 5.26

The aggregates are produced by the methods of dissociation, association and association-cum-dissociation 5.26.

1. Dissociation is defined as the cleavage or division of aggregates bonded due to internal and external causes.

2. Association or combination is the unification, bonding or jointing of discrete entities.

3 Q. As there are two processes, there should be a dual number-ending in the aphorism here.

A. The plural number-ending indicates a specific meaning of the aphorism. It indicates that there are not only two processes to produce aggregates, but there is a third process too - a mixed process of the two single processes, i.e. dissociation-cum-association.

4. The term 'Utpadyante' (produced) contains a prefix 'ut' attached to the root 'padi'. It means the aggregates are produced.

5. The fifth case ending in the aphorism represents the causes for producing aggregates. Patanjali Mahābhāṣya points out that all the case endings could be there to indicate instrumental factors or causes. This means that they are produced due to association, dissociation and association-cum-dissociation. For example, a di-atomic aggregate is produced by the association two atoms. A di-atomic aggregate and an atom or three discrete atoms produce a tri-atomic or three space-pointed entity on combination. A combination of two di-atomics, a tri-atomic entity and an atom or four discrete atoms produce tetra-atomic entity. Thus, numerable, innumerable and infinite atoms or entities combine to produce correspondingly designated aggregates. These aggregates produce other smaller aggregates upto di-atomics by their dissociation. The same bigger aggregates can produce other smaller aggregates upto di-atomic due to their simultaneous association and dissociation where some are dissociated and some are associated.

Supplementary Notes

1. The commentary deals with the following points :

(a) Definition of association and dissociation in terms of union or bonding of discrete atoms or splitting or dissociation of bonded atoms.

(b) The plural number in the aphorism indicates that not only combination or decombination, are the processes, for formation of aggregates and atoms, but there is also a third process of mixed nature, where these processes occur simultaneously or successively.

(c) The combination of two, three etc. atoms to form di-atomic, polyatomic, numerable etc. - atomic aggregates have been illustrated. Similarly, the decombination of poly-atomic aggregates to the diatomic aggregates has also been illustrated. There could be no aggregate with less than two ideal or apparent atoms. The mixed method of this type has been elaborated rather than illustrated.

2. The illustrations given indicate that this aphorism is meant to detail methods of formation of aggregates rather than atoms (which will be specifically dealt under 5.27).

3. The three methods of formation of aggregates are just akin to the three methods of combination taught in general science today. (i) Direct combination (Sanghāta), (ii) Direct dissociation (Bheda) and (iii) single and double displacement (mixed process). The commentary does not illustrate these methods with concrete examples, but the following cases represent them :

(i) Iron + Sulphur--> Iron Sulphide.

(ii) Water->2 hydrogen + Oxygen

(iii) Iron + copper sulphate--> Copper + iron sulphate.

(iv) Barium chloride + Copper Sulphate-> Barium Sulphate +
Copper chloride.

It is clear that the third mixed method has now two varieties involving displacement of either or both the radicals to form new molecular aggregates. It is also evident here that these methods represent chemical compound formation.

4. However, there are certain conditions besides the atoms or aggregates to form newer chemical aggregates. This commentary does not deal with them. These conditions have been pointed out in other texts like Bhagavati. They are - (i) intimate contact (ii) non-elastic collisions (iii) bonding capacity due to specific electrical charges (iv) catalysts in the form of containers (metals) and (v) transformational orientation. Until these conditions are fulfilled, the aggregation will be physical rather than chemical.

Secondly, the partial union leads to physical aggregation while total union will lead to the chemical combination.

5. The conditional character has been mentioned in this commentary in terms of internal and external causes representing the inner structure and the above conditions for combination and decombination.

6. The three methods of this aphorism 5.26 could further be taken as indication of three forms of valency-electrovalency, co-valency and coordinate valency involving dissociative ionisation, sharing and transference and sharing of atomic outer electrons during chemical

reactions. The valency concept seems to be more basic than the processes indicated by this aphorism.

7. There is no mention of the methods by which decomposition or decombination takes place. But G. R. Jain points out four modern methods :

- (i) ionic dissociation in solution (sodium chloride sodium⁺ + chlorine⁻),
- (ii) thermal dissociation
- (iii) pressure dissociation
- (iv) particle bombardment. Radioactive dissociation may also be added to this list.

8. Vidyānanda has refuted the concept of non-formation of atoms (as they are taken as eternal) and aggregates (as they are manifested only like the stars under moon). He mentions that both of them can be produced as they are modes of mattergy. The atoms are causes as well as effects. Similar is the case with aggregates.

9. The formation of aggregates, as above, has been referred to with respect to apparent atoms, it appears. However, the formation processes may also be applicable in case of fundamental particles of today and ideal atoms of scriptures.

10. The Śvetāmbara version of this aphorism indicates the order of the processes in reverse order. It mentions union first and division next. This seems to move from gross to fine processing. However, there is no difference in the overall meaning of the aphorism 5.26.

The aphorism 5.26 indicates the possibility of producing atoms and aggregates by all the three processes. The next aphorism intends to refute this specially in the case of atoms :

Bhedā-daṇuḥ 5.27

The ultimate or apparent atoms are produced by dissociation or division only 5.27.

Aggregate $\xrightarrow{\text{dissociation}}$ atoms.

1. The earlier aphorism implies that in contrast with aggregates, atoms are produced by dissociation. Despite this fact, this aphorism 5.27 is meant to indicate that atoms are produced by dissociation only. It does

not require the additional term with a meaning of 'only' (Eva). It is just like the meaning of the statement 'one eats water' which means 'one eats water only and nothing else'. The meaning has a sense of 'only' automatically. (Here can one replace the word 'eat' by 'drink' as water is drunken rather than eaten ?)

Supplementary Notes

1. The commentary deals with the following points :
 - (a) The atoms (and its components named as fundamental particles whose number is increasing day by day) are produced by the method of division only.
 - (b) The aphorism 5.27 makes this point as a rule over the statement of 5.26.
2. The 'atom' (aṇu) has already been defined earlier. Generally, the word should be taken as equivalent to current atom here which is the apparent atom.
3. The ideal atoms are also produced by division.
4. Vidyānanda has refuted the views of Vaiṣeṣikas and Buddhists regarding the production of atoms or aggregates. It is said that they are all specific forms of disjunction or conjunction spread over space due to the these processes. This will involve non-formation of both on logical grounds. If conjunction of components leads to production of the composite, why disjunction of composite could not lead to production of components ?

It can not be said that atoms can not be produced due to their eternality because the atoms are only substantively so and not modally. The di-atomic etc. are material causes and the disjunction processes are instrumental causes for their production. There is no valid proof that the aggregates are produced from the atoms but aggregates can not form atoms. As an inference, one can say that atoms or other fine particles are produced from the division of aggregates as they are fine like the split fabrics or powders etc. There is no contradictory inference for this.

The aggregates are generally produced by association. However, the aphorism 5.26 indicates other processes too for their production. The

following aphorism 5.28 indicates the utility of inclusion of other processes in aphorism 5.26 :

Bheda-Sanghātābhyām Cākṣuṣaḥ 5.28

The eye-perceptible or visible aggregate is produced by the combination of the processes of dissociation and association 5.28.

The aggregates are formed by the association of infinite numbers of atoms. However, the aggregates so formed have two varieties. Some are eye-perceptible like gross bodies while others are non-perceptible like karmic bodies.

Q. How a non-perceptible aggregate can become a perceptible one ?

A. The non-perceptible aggregate can become perceptible by the combined process of dissociation and association. It can not become perceptible by the process of dissociation only.

Q. How the process could be explained ?

A. If a fine aggregate is dissociated in parts and if they are also fine and they do not change their fineness, the resulting aggregates will be non-perceptible only. However, when the fine aggregate dissociates and its parts are associated with other aggregates, the combination foregoes the fineness, attains the grossness and becomes perceptible.

Fine aggregate \longrightarrow Fine agg. + Fine agg. \longrightarrow imperceptible

Fine Aggregate $\xrightarrow{\text{Disso.}}$ Fine agg. + other agg. \longrightarrow perceptible aggregate.

Supplementary Notes

1. The following points are dealt with in the commentary :

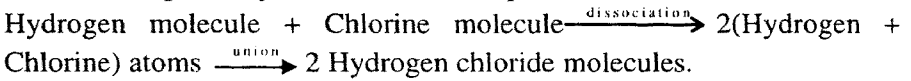
(a) The aggregates formed even from infinite ideal atoms have two varieties : (i) eye-perceptible and (ii) non-eye-perceptible.

(b) The non-eye-perceptible aggregates become perceptible by the mixed process involving division and union. The fine aggregate becomes still finer on division. But if this form unites or reacts with another aggregate, it may give an eye-perceptible aggregate.

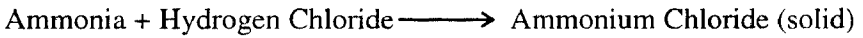
2. Vidyānanda improves upon the commentary by stating that eye-perceptibility here should be extended to all-sense-perceptibility by implication. Thus, all non-perceptible aggregates can be made perceptible through the combined process.

3. The aggregates produced through the three processes may have any size, greater than, lesser than or equal to the sizes of their aggregating components. This may be perceptible or otherwise. This means that each of the processes has a capacity to produce perceptible as well as non-perceptible aggregates. However, if perceptible aggregation is desired, it is only the third way.

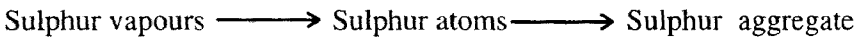
4. The commentary does not illustrate the process. However, many current examples may be cited. For example,



This example indicates that when gaseous hydrogen and chlorine molecules react, they first divide into more fine atoms which, then, combine to give perceptible hydrogen chloride molecule. Another example may be given where solid products are obtained :



The gases are generally supposed to be invisible. The gaseous reactions, however, yield visible products. The non-perceptible may be similar or dis-similar. The case of visibilisation of similar aggregates may be exemplified by the following :



This aphorism, thus, indicates that division or atomisation is an essential step for visibilisation of the formed aggregates. This is qualitatively in tune with the current theory of reaction mechanism.

5. It must be pointed out that sense-perceptibility appears to be due to specific transformational nature or structural specificity of the aggregates.

6. It also appears that this aphorism deals with apparent atomic aggregates rather than ideal atomic ones which are normally invisible even upto the infinite atomic combinations including karmas etc.

7. The eye-perceptibility means not only the colour-perceptibility but also the perceptibility of the coloured and configurational object as they are inseparable substantively. There cannot be any mattergic entity without colour and shape etc.

It has already been said that the medium of motion and rest etc. are instrumental causes of motion, rest, occupancy, continuity and bodies etc. These entities have been designated as 'Dravyas' or physical realities. However, the term 'Dravya' has not been defined. The next aphorism defines it :

Sat-dravya-lakṣaṇam 5.29

The Dravya or physical reality is characterised by existence 5.29.

The entities of motion and rest etc. are called physical realities because they have the property of existence. Whatever exists is a reality.

Q. How, then, the term 'existence' is defined ?

A. The existence may be defined as an entity which may be sense-perceptible or supra-sensual which undergoes origination and destruction along with its permanence due to internal and external causes as defined in the following aphorism 5.30.

The medium of motion etc. are called physical realities as they represent existence. The next aphorism defines the term 'existence' characterising the realities :

Alternatively, the realities like medium of motion etc. are in existence due to their instrumentality in various ways. It indicates that they may be in non-existence when they are not serving their causes. The next aphorism 5.30 is intended to refute this contention by defining the term 'existence' in terms of its three-fold characteristics. It is because of this that the realities do always exist despite absence of their specific functions :

Utapāda-vyaya-dhrauvya-yuktam Sat 5.30

The existence is characterised by origination, destruction and permanence 5.30.

1. The origination is defined as the attainment of a different or new mode from the earlier one by a living or non-living entity due to many internal and external causes despite maintaining its own basic class. The process is illustrated by the change of earth into the mode of a pot.

2. The destruction is defined as the loss of earlier mode of the entity despite maintaining its basic class. It can be illustrated by the loss of wet mode of earthy mass to originate the dry earthy pot.

3. The permanence is defined as the continued maintenance of the basic entity due to absence of origination and destruction in its eternal and inherent nature. It can be illustrated by the continued existence of earth during its mode of wet mass and pot-form etc.

4. Q. The aphorisms 5.30 contains the term 'Yukta' (with a sense of 'has') associated with origination etc. The use of this word is not proper here because it is used with reference to the conjunction of two separately existing entities like a staffed man where man and staff are separately existing.

A. This is not correct. The root 'Yuji' involves the sense of existence.

Q. How the root 'Yuji' involves the verb of existence ?

A. All the verbal roots represent modes. Modes mean actions or existence. All root words are subject to this existence with specific meaning. Thus, there is no difference in meanings whether there is association of the word 'Yuktam' (has) or not in the aphorism 5.30.

Q. If all the root words have existential meaning, how the roots like 'Edha' (root : to grow) etc. will have the meanings of 'to grow' etc. ?

A. The specific meanings like 'to grow' etc. can be there only when there is the general meaning of existence. Nothing can grow which does not exist like the ass's horns.

Q. Let there be the aphorism with a possessive ending.

A. This is not correct. It will also involve the same objections and refutation as before. It is seen that Devadatta and cows are separate entities, still he is said to be the owner of cows (possessive suffix, go-mān). This is not the case with the three-fold characteristics and the realities. They are not separate from them. Hence, the use of possessive suffix is objectionable in this case. However, there are many cases like 'man with soul' and 'pithed stem' where possessive suffix is used even in the case of non-different entities. This is a refutable issue. Hence, the possessive suffix is not justifiable.

6. Alternatively, the root 'Yuji' means 'involvement'. Thus, the aphorism 5.30 should mean that the processes of origination, destruction and permanence are involved in 'existence'.

7. Thirdly, the root 'Yuji' should mean combination. It is observed that the modes and modifieds are different in some respects. If they are taken as permanently non-different from each other, there will be the possibility of non-existence of both of them.

8. The word 'Sat' (existence) has many meanings. It means praise as in paraiseworthy man. It means respect. It means existence. It means 'being' as in 'how a person being initiated could speak false' ? In this aphorism, this word means existence with reference to the context.

9. Q. The realities are involved only in origination and destruction. Thus, there is no reality different from them. How there could be the characteristics of permanence in them ?

A. The questioner has not understood the desired meaning here. The permanence has been attributed here with respect to substantivity and not with respect to the difference from origination and destruction. If permanence should have been there with respect to their difference from the reality, it would have been non-permanence because of their non-difference from the reality. Alternatively, if the reality is permanent due to difference of origination and destruction from it, it may also be permanent because of their difference from the reality.

Alternatively also, the questioner has not understood the desired meaning. It is not postulated that the reality is absolutely non-different from origination and destruction. If it is so, there will be loss of permanence because of absolute non-difference of reality with them. Hence, we postulate that the reality is different from origination and destruction in some respects (modes) and it is non-different from them in some respects (substantivity). During the period of destruction and origination, the reality does persist and, hence, it is different from them. Similarly, even during these processes, the reality does not lose its identity, and, therefore, it is non-different from them. Thus, there will be no objection from the absolutists. Had the origination and destruction been absolutely different from the reality, they would have been found

separately from it. Similarly, the absolute non-difference also poses the problem of non-existence of the other in the absence of either of the two because they have the same differentia.

10. Moreover, the logic is self-contradictory. If the reason, given for proving the non-permanence of reality due to non-difference of origination and destruction, is absolutely non-different from proven-ness, it will either prove the other view also or it will have objection to one's own viewpoint like the other's viewpoint.

11. Q. If origination, destruction and permanence are taken as different from the reality, they will have separate existence and there will be non-existence of reality and the corresponding non-existence of the origination etc. in the absence of their substratum (reality). Thus, there will be no differentia and differential. This relationship is not observed in case of non-existent entities like son of a barren lady, sky-flower and ass's horns.

If the reality and the above three processes are taken as non-different, the differentia becomes the differential and it leads to the contradiction with the observations. Hence, the origination etc. could not be the differentia of the reality.

A. This is not correct. The Jainas postulate polyviewism with respect to difference and non-difference in this context. The modes and modifiabiles may be illustrated by the observed fact of a man, with common characteristics of caste, family and colour etc., who holds mutually specific (sometimes seemingly contradictory) relationships like father, son, brother, brother-in-law etc. with respect to different relations. In this case, the particular man does not become different due to the difference of relationship. Similarly, the relationships do not become non-different due to non-difference with respect to his different capacities like becoming father, son, etc. Similarly, the man is non-different in each case with respect to the quality of being human. In the same way, the different modes of the reality due to specific internal and external causes are different with respect to modes and they are non-different with respect to prominence of substantivity. Thus, there is neither non-difference of reality at any time nor non-possibility of differential-

differentia characteristics. Thus, the existence is defined as the mono-location of origination, destruction and permanence. The reality is that which involves these three characteristics.

Supplementary Notes : (5.29 and 5.30)

1. The commentary deals with the following points :
 - (a) The existence or be-ingness is the differentia of the reality.
 - (b) The term 'Sat' has many meanings like respect, laudation, etc. Its relevant meaning of existence has been taken here.
 - (c) The existence has been defined as consisting of three process of origination (of new modes), destruction (of old mode) and permanence (of basic reality). It means continuity though change. There can not be any transformational activity in a permanent entity.
 - (d) The meanings of these terms have been illustrated.
 - (e) These three processes should be taken as non-different from the reality in some respects and different from it in some respects. The substantive and modal view point should be applied here.
 - (f) It is not correct to say that the property of permanence is nothing but a form of non-difference from the processes of origination and destruction. The non-absolutistic concept substantiates the three-fold differentia of the reality.
 - (g) This differentia applies to both types of realities-living and the non-living.
2. Vidyānanda indicates that the differentia of existence (or its three forms) is the general differentia of the reality applicable to its defiled or undefiled states. It is a tritimal and all-locational definition of reality. It applies to all the realities and their coexisting or successive modes.
3. The Śvetāmbara version of TSB does not have the aphorism of 5.29. It has only 5.30 in its place with a long commentary.
4. There are varied opinions about the nature of existence in different philosophical systems as below :

- (i) Vedānta Existence is permanent only due to unitary recongnitional knowledge

- (ii) Buddhas Existence is momentary only due to its ever-changing nature.
- (iii) Sāṅkhyas Reality is existent but one purely permanent (Puruṣa) and the other (Nature) purely momentary.
- (iv) N-V system Some are permanent while others are changing only.

In contrast, the Jainas postulate that existence will always mean a three-fold character-substantively permanent and modally originating-cum-destroying. Every reality, thus, consist of two parts- a permanent intrinsic part and a non-permanent extrinsic part. The accurate nature of reality is, thus, always two-fold and it should be examined in that way only. It cannot be called existent if either of the two characters are absent.

5. The above type of existence is a primary characteristics of the reality and not a secondary one. It is, thus, different from the quality of existence as agreed by other systems.

6. The 'existence' can have no separate varieties. It is only of one type characterising the reality with infinite modes.

7. There are some differences between the Jainas and Vaiśeṣikas regarding the nature of generality (a category of reality) and existence (like eternity and eternal-cum-non-eternity).

8. Another definition of the reality will be mentioned in 5.38 elaborating this aphorisms in another form.

9. The three-fold character of realities could be illustrated as below :

- (i) The mattergic reality has this character observed and experienced directly as in the substantivity of gold through its different ornamental transformations.
- (ii) The non-mattergic realities of the medium of motion and rest are said to be substantively permanent (and inert too). However, they undergo natural a-heavy-a-light pulsations due to the presence of and movements of mattergic bodies in and through them maintaining their substantivity.
- (iii) The case of non-mattergic space is also similar to the above two.

- (iv) The embodied soul is substantively permanent as soul. However, it undergoes modifications due to its association with karmas through mental, physical, volitional and vocal activities. Its modes are alien-caused. The disembodied soul has also substantive permanence. However, it also undergoes self-caused modes in its intrinsic properties of knowledge and conation etc.
- (v) Time is also a non-living and non-mattergic entity with a uni-dimensional character. It is permanent with respect to absolute time and non-eternal with respect to apparent time and changes or movements taking place in objects.

10. This definition of reality in terms of continuity through changes is in agreement with the scientific concept of law of conservation of mass and energy (mattergy) which states the amount of mass and energy together in a system remains constant despite their transformations in this or that form. This law is quantitative while this aphorism states it more or less qualitatively.

Q. It is contended that as substantivity is the characteristic of the reality, the modes are also similar. If one of them is non-existent, the other will follow suit and, thus, there will be possibility of non-existence of the reality.

A. This would have been correct if the characteristics of perceptibility, substantivity, non-livingness, non-consciousness etc. would have been as momentary as the modes of the earth mass, pot and cup etc. The next aphorism indicates that despite the origination and destruction of modes, the substantive nature of reality is permanent.

Tad-bhāvā-vyayam Nityam

5.31

The permanence is defined as non-deviation from the basic nature (or that-ness) by an entity 5.31.

Q. What should be understood from this aphorism 5.31 ?

A. The word 'Dravyam' (reality) should be applied to the aphorism. This will mean that a permanent reality is that which does not deviate from its basic nature.

Q. What is meant by the word 'tad-bhāva' or thatness ?

1. A. The 'that-ness' (or tad-bhāva) is the cause of recognition like the memory 'this is that only'. This is not accidental. It occurs when we see an object in the same form as seen before. If the earlier state is absolutely refuted and only the creation of the new state is postulated, there will be no memory and the ways of the world dependent on it will not be there. Thus, the permanence is ascertained by the non-deviation from 'that-ness' of an entity.

2. Q. It is opined that there is contradiction in stating that an entity does not get destroyed (when it is destroyed) while under destruction and it does not originate while under origination (when it is originated).

A. There is no contradiction as the statements have been made with different aspects. There would have been contradiction if the origination, destruction and permanence would have been postulated with the same aspect. It would have been contradictory like to state a man as father and son with the same respect of genitor. There would be no contradiction with respect to the statements under different aspects.

Supplementary Notes

1. The following points are dealt with in this commentary.

(a) The permanence is defined as the maintenance of substantivity, self-sameness, unitary recognisability and non-destruction of modality.

(b) The concept of absolutistic origin or destruction of an entity will lead to the loss of recognisability and loss of worldly ways.

(c) The permanence and changeability are not inconsistent with each other as they are taken with different aspects. It is just like a man being a father, son, brother-in-law etc. with different aspects.

2. The word 'Bhāva' in the aphorism means mode, transformation or substantive nature. The non-destruction of modality or substantivity is the cause of unitary recognisability or self-sameness or that-ness.

3. This aphorism only defines the term 'permanence'. However, when it is considered with respect to objects, it should be taken with non-absolutist view point. It will mean that permanence occurs only in some respects. In other or modal (origination or destruction) aspects, the objects may not be so. Pūjyapāda has specifically mentioned this point.

The flaws in absolutist approach have already been mentioned. Akalanka has mentioned this point only indirectly.

4. The implied meaning of this aphorism may be that the non-permanence may be defined as that where self-sameness is not maintained.

5. The scientists deal only with mattergic objects. For them, definition of substantive permanence means conservation and continuity of total quantity of mass and energy. This is not only qualitatively but quantitatively also in tune with the aphoristic definition of permanence.

The alien systems still feel the impossibility of permanence of an entity while it originates and gets destroyed. It is postulated that they believe in modes undergoing origination and destruction. But the modes can occur only in existent and permanent reality. In fact, every entity has substantive as well as modal aspect and the statements are made under one of these standpoints. The next aphorism intends to describe the standpoints:

Arpitā-anarpita-siddheh 5.32

The opposite qualities (of say, permanence and temporarines) in an entity are proved to be existing there with respect to the aspects of prominence and non-prominence 5.32.

1. Every entity is multi-aspectal. The term 'prominent' (primary or Arpita) indicates the prominence of specific aspect of the entity based on certain objective. [Those aspects are called non-prominent or secondary (Anarpita) which, though existing in an entity, are not to be described as prominent].

2. The term 'non-prominent' or secondary (Anarpita) is just the reverse of the prominent.

These two aspects prove the permanence and existence of different entities. For example, the earthy mass may be permanent with prominent aspect of perceptible reality, because it does deviate from its substantive meaning. However, when the same multi-aspectal entity is desired to be described with respect to the modal earth mass, the

substantivity aspect becomes non-prominent and the earthy mass is called non-permanent as the mode of earthy mass is temporary.

If an entity is taken only substantively, there will be loss of ways of the world as there is no entity devoid of modes. Similarly, if only modal standpoint is accepted, still there will be loss of the ways of world as there could be no reality without substantivity. When both of these aspects are joined together, they will be capable of smooth worldly dealings, as the entities have been proved to have dual nature.

Thus, the existence and permanence are proved on the basis of aspectal prominence and non-prominence.

Supplementary Notes

1. The commentary deals with the following points :
 - (a) Any object or reality has infinite attributes.
 - (b) The terms used in the aphorism indicate the primariness (or prominence) or otherwise of the intended object or its property.
 - (c) The existence of seemingly contradictory properties like continuity and changeability, eternality and non-eternality, difference and non-difference etc. in any object of knowledge can be proved on the basis of our intention- primary or secondary.
 - (d) The statement has been illustrated with a common example like the earth and the earthen pot. It is permanent with respect to primarily substantive earth while it is non-permanent primarily with respect to its changing modes like earthen pot etc.
 - (e) There will be loss of the ways of the world if intentioned treatment it not kept in view. They are possible only under the concept of aspectal duet.
2. Vidyānanda adds an inference in support of the above criterion- there is no contrariness in possession of contrary attributes by an object as they can be proved by relating them with primary or secondary character like the different standpoints.
3. The contradictory statements may seem to be appropriate when they are looked from the point of their partial or total character.
4. In fact, the nature of any object is neither absolute permanence nor changeability but it is a different class by itself. It has an aspect-based

dual nature which is known as continuous-cum-changing or permanent-cum-non-permanent.

5. If an object has non-aspectual contradictory natures, there will be eight types of flaws- (i) contrariety (ii) intermingling (iii) interchange (iv) doubt (v) hetero-location (vi) infinite regression (vii) non-knowledgal negation and (viii) flaws of non-unitary entity. These flaws cannot be there if the nature of the object is accepted as belonging to a third category as in point 4 above.

6. The TSB adds some illucidatory remarks in its commentary. It points out existence to be of four types- (i) substantive existence (ii) prosodial or modal existence (iii) originaional existence and (iv) destructional existence. Each of these existences have three varieties- (i) singular number based entity (ii) double number based entity and (iii) plural number based entity. The first type is not subject to worldly ways. The rest of the three deal with worldly ways of existence. They are subject of knowledge depending upon intentions. The modal and originaional existences are modal standpoint. The first two are forms of substantive standpoint.

7. This aphorism is very important for the worldly ways of all kinds. It is the basis of non-absolutism, and aspectwise treatment methodology of the Jainas. The aphorism points out only two aspects- primary and secondary. If primary is prominent, the secondary will automatically become negative with its respect. If secondary becomes prominent, the primary will turn negative with its respect.

When these two aspects are considered together, there is a third form called 'indescribable' as any language could not describe both types of intention simultaneously. These three predicates have been modified into seven predicates under the Septadic predication principle of the Jainas. They can now be statistically proved by the following formula :

$${}^3c_3 + {}^3c_2 + {}^3c_1 = 7$$

The principle of complementarity of physics also substantiates it. Kothari, Mardia and Mukherjee have done yeomen service to give this philosophical principle a scientific turn.

8. This theory of multi-aspectal considerations has been subject to criticism by many old and new scholars of repute during the ages. However, the theory of relativity has given it a solid logical and verifiable ground. The principle of uncertainty is nothing but the predicate of indescribability. It is now confirmed that the micro-world is full of contradictory aspects such as - (i) light or any other form of energy has a corpuscular as well as wave nature (ii) the electrons also face the same fate (iii) we are observing the past in present as light takes some time to come to us while coming from the object (iv) both the concepts of geocentricity and heliocentricity are reasonable with specific aspects (v) we have different body weight at different places (vi) Newtonian laws are correct with reference to macro-world. The relativity theory is correct for both- the macro and micro world. Thus, it is a part of it.

9. The theory of multi-aspectal considerations has three popular names- Syād-vāda (aspectal statements), Anekāntavāda (multi-aspectal theory) and Sapta-bhangi-vada (theory of Septadic statements). On the basis of conceptualism, it may be called the theory of relativism to distinguish it with the theory of Relativity. It will avoid confusion. In fact, the theory of relativity should be taken as an extension of philosophical theory to world of physical sciences where credibility is dependent upon verifiability.

10. The concept of primary and secondary type of treatment is highly practical for life in general. It allows all to presume all systems as partial truth, and, thus, develops tolerance and mental accommodation capacity for a smooth private and public life.

11. Currently, an effort is going on to extend and apply this concept to all walks of complex life of today just as management, industrial disputes, legal practices, personal and psychological development and so on. The practice of this theory makes one wiser.

Q. The existence is dependent upon many standpoints. On this basis, the production of aggregates by the three methods as in 5.26 is justified. The question is whether the aggregates are produced only by association etc. or there is some more fundamental cause for their formation.

A. It is postulated that the aggregate formation or bonding takes place upon unionisation due to combination of bondable entities. This process is known as association.

Q. If this is so, it should be explained why there is bonding between mattergies due to non-deviation from their basic nature and there is conjunction in some cases and there is no such bonding in some other cases ?

The next aphorism 5.33 is intended to respond to this query suggesting that despite the common factor of non-deviation from mattergic nature and conjunction, there is some mutually exclusive characteristic in infinite modes of mattergic entities which cause bonding :

Snigdha-rukṣatvād-bandhah 5.33

The bonding of atoms or aggregates is caused due to the electrical or surfacial property of positive (smooth) and negative (rough) nature of the entities 5.33.

1. The smooth (Snigdha) is the manifestation of the mode of affinity or smoothness due to internal and external causes. (It also represents electrical nature).

2. The rough is the manifestation of the mode of roughness due to internal and external causes. Smoothness is characterised by the mode of oiliness or positivity. The roughness is the reverse of smoothness, i.e. sandiness or negativity. The fifth case represents the causality of these factors in bonding.

The bonding between atomic mattergies takes place due to them causing formation of diatomics etc. Two entities of smooth and rough character materially join together to form a diatomic aggregate. Similarly, aggregates containing numerable, innumerable and infinite atomic species or spacepoints are formed.

3. The quality of smoothness can be quantitatively expressed in terms of one, two, three, numerable, innumerable and infinite smoothness. The indivisible section of the single unit of quality of smoothness is the minimum. Higher orders may contain two, three,

numerable, innumerable and infinite times the units. The atoms have such smoothness in varying numbers.

4. The roughness has also varying numericality in terms of numerable, innumerable and infinite units. The atoms have such a roughness in varying numbers.

5. It is observed that different objects have gradually varying degree of smoothness. This could be illustrated by the fact that (i) the goats milk and its butter has higher smoothness than water (ii) the milk of cow and its butter has still higher smoothness than that of the goat's one (iii) the buffalo's milk and its butter has still higher smoothness than that of the cow's one and (iv) the milk of the she-camel and its butter has the highest smoothness with reference to all the above.

Similarly, gradually varying degrees of roughness are also observed. The straw-powders are rougher than dust particles. The sand particles are rougher than straw particles. Just as, we have varying degrees of smoothness and roughness in objects as above, we can infer that atoms will also have differing degrees of these qualities.

The aphorism 5.33 indicates general atomic bonding due to smoothness and roughness. However, the next aphorisms indicates exceptions to this rule :

Na Jaghanya-guṇāṇām 5.34

The atoms having minimum degree of smoothness and roughness (zero or one) do not have mutual bonding 5.34.

1. The thigh part of the body is the lowest part having lowest value than any other higher parts of the body. Just as this thigh has a low value, similarly other objects or qualities may have low values. The objects with lowest values are termed as 'minimum-valued' objects.

2. The term 'guṇa' in the aphorism has many meanings. It means qualities of colour etc. It means numerically multiple like two-times, three-times etc. It also means service like a service-rendering saint. It also means richness as 'this country is rich in cows and grains'. It also means equivalence of components like rope twice or thrice as long. It also connotes the idea of secondariness just as we are not important persons in

this village. However, the word 'guṇa' here has a sense of numerical multiplication or parts. Those atoms or entities are called minimum-valued with respect to smoothness and roughness which have the minimum numericality of these qualities.

Thus, the aphorism means that there will be no bonding between (a) atoms with unit smoothness (b) an atom with unit smoothness and atoms with two, numerable or innumerable units of smoothness (c) an atom with unit smoothness and an atom with unit roughness (d) an atom with unit roughness and an atom with multiple roughness (e) atoms with unit roughness (f) an atom with unit roughness and an atom with two, numerable, innumerable units of roughness.

The aphorism 5.34 leads to general bonding except in case of entities with minimum value of smoothness and roughness. This is not canonically desirable. The aphorism 5.35 indicates another exception :

Guṇasāmye Sadṛśanām

5.35.

There will be no bonding between similar entities which possess equal values or number of smoothness or roughness 5.35.

1. The word 'similar' means entities having same class of smoothness or roughness.

2. The term 'guṇasāmye' means numerical equality of the above qualities.

3. Q. The term 'similar' is not necessary in this aphorism as the term 'numerically similar' serves the purpose.

A. This is not correct. If there had been no word 'similar', it would have meant that there will be no bonding between bi-valent smooth and bi-valent rough entities or between trivalent smooth and trivalent rough entities and so on because of numerical similarity. (This is undesirable). The inclusion of the term 'similar' means a condition of no bonding as below :

There will be no bonding between similarly charged similar atomic entities like those between bivalent smooth or bivalent rough entities.

4. Alternatively, there is another opinion about the inclusion of the word 'similar'. It negated the earlier opinion of bonding between similarly charged dissimilar entities like bivalent smooth and bivalent rough etc.

5. Thirdly, it is also opined that the inclusion of word 'similar' means to indicate that there will be bonding between entities of similar qualities with dissimilar intensities (or numericality) also in addition to bonding of entities of dissimilar qualities with dissimilar intensities, i.e.,

2-smooth + 3-smooth \longrightarrow Bonding

2-smooth + 3 rough \longrightarrow Bonding

The aphorism 5.34 leads to the possibility of bonding between entities of similar quality and dissimilar intensity as above. However, the aphorism 5.36 indicates an exception to this point also :

Dvyadhikādi-guṇānām Tu 5.36

There is bonding between entities when they have their qualitative intensities varying by (not less than) two or more 5.36.

1. The word 'Dvyadhika' (two or more) means an intensity difference of 2 over the minimum intensity of two, i.e. $2+2 = 4$. This means that 2 units of Snigdha/Rukṣa may combine with 4 units of Rukṣa/Snigdha.

2. The word 'ādi' (beginning with) with 'Dvyadhika' means kinds of intensities. It leads to a meaning of two or more than two, i.e. five etc. Thus, there should be bonding between the following intensity units :

2 Snigdha + 4 Rukṣa \longrightarrow Bonding

2 Snigdha + 5 Rukṣa (and more) \longrightarrow No Bonding.

The qualities of smoothness or roughness may be similar or dissimilar here. This leads to the condition of bonding that two entities may have bonding under the following two conditions :

(a) They may have similar or dissimilar qualities.

(b) Their intensities must differ by two units (barring the minimum).

There cannot be bonding between any other combinations. This can be illustrated by pointing out that there will be no bonding between 2-unit smooth atom with 1,2 or 3-unit smooth atom. The same atom, however, will also not have bonding with 5,6,7,8, numerable,

innumerable and infinite unit smooth atom. However, it will have bonding with 4-unit smooth atom. Similarly, a 3-unit smooth atom will have bonding only with 5-unit smooth entity and not with any other entity. The 4-unit smooth entity will have bonding only with 6-unit smooth entity and not with any other entity. Similar statements may be made with larger entities.

In the same way, a 2-unit rough entity will have no bonding with 1,2 and 3-unit rough entity along with 5-unit and higher unit entity. It will have bonding only with 4-unit rough entity. However, a 3-unit rough entity will have bonding with 5-unit rough entity. Similar statements should be made with other larger entities.

Moreover, it can also be illustrated with reference to dissimilar entities. A 2-unit smooth entity will have bonding with a 4-unit rough entity only and not with 1,2,3 or 5 etc. unit entities. In the same way, a 3-unit smooth entity will have bonding with 5-unit rough entity and so on. It is said in *Ṣat-Khandāgama*, *Vargaṇā* Section 5.6.36 that there are three conditions of bonding:

- (i) A smooth entity binds with another smooth or rough entity when its intensity differs by two units.
- (ii) A rough entity binds with another rough or smooth entity when its intensity differs by two units.
- (iii) There is no bonding between similar or dissimilar entities with minimum intensity.

The above rules postulate the bonding between atoms to produce aggregates from diatomics to infinite atomics.

3. The inclusion of word 'Tu' (however) indicates the termination of the section of conditions of negation of bonding and proclaims the specifics about bonding.

4. Q. Why the bonding between mattergies is taken as combination between them ? Merely their collection together may serve the purpose.

A. This is not correct. If mere collective combination of entities is taken as bonding, there will be no transformation and mutual homolocalisation of entities. It will be just like the fact that there will be no

fabric merely by collection of white and black fibres. Thus, there will be no bonding proper.

Supplementary Notes (5.33-36)

1. The commentary deals with the following points with reference to atomic or mattergic bonding in the aphorisms 5.33-36. They are being dealt with together here :

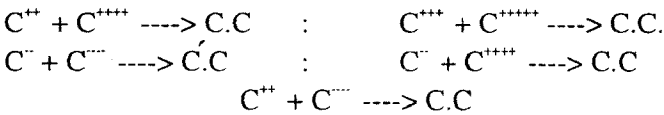
(a) There are four rules of atomic bonding:

(i) The bonding takes place between the entities which have opposite electrical characters (positive or negative as per 5.24). These have quantitative values. (However, we do not find any details about them).

(ii) There can be no bonding between entities which have quantitatively minimum of the electrical charges which is generally one (or zero ?). Thus 1^+ and 1^- or 1^+ and 2^- or 2^+ etc. and 1 may not combine.

(iii) There can be no bonding between the entities- (a) which have similar charges with similar intensity (b) which have dissimilar charges with similar intensity i.e. there is no bonding when the entities are 2^+ , 2^+ or 2^+ and 2^- etc.

(iv) There is bonding between two entities when their similar or dissimilar charges differ by two units. For example, there will be bonding between



(b) The commentary mentions the charges in terms of smoothness and roughness where comparative numerical quality can be judged on the basis of some common examples in increasing order as shown in the text. On the basis of the common examples, we have different qualitative and quantitative characters of charges in different atoms and bonding entities. The 5.24 has already mentioned the electrical nature of these terms.

2. P.C. Shastri has given a table to summarise the bonding rules as per this commentary as below:

S. No.	Quantitative Character of Charges	Qualitative nature of entities			
		Similar		Dis-similar	
		T.S.	Dhavlā	T.S.	Dhavlā
1.	Minimum + Minimum	No	No	No	No
2.	Minimum + more than minimum	No	No	No	No
3.	Similar + Similar (but more than minimum)	No	No	No	Yes
4.	Non-minimum + (non-minimum + 1)	No	No	No	Yes
5.	Non-minimum + (non-minimum + 2)	Yes	Yes	Yes	Yes
6.	Non-minimum + (non-minimum + 3 or more)	No	No*	No	Yes

The table indicates that the rules in Dhavla seem to be somewhat differing from these aphorisms. The Dhavla rules seem to be better in tune with current concepts.

3. The Śvetāmbara version concurs mostly with Dhavlā with an additional bond possibility in case of dis-similar entities of category 2 and similar categories of category 6 above marked with *. Vidyānanda also seems to support Dhavlā. Its view, therefore, differs from Akalanka, Pūjyapāda and Kundakunda. Three points of difference are notable :

- Bonding between minimum and non-minimum charged entities.
- Bonding between quantitatively dissimilar but similar entities.
- Bonding between similar or dis-similar entities differing in charges by two or more than two.

4. These bonding rules apply to atoms and aggregates or mattergic combinations in general. However, they have not been illustrated with common examples.

5. The bonding rules given above may be taken as precursors of modern electronic theory of valency. It postulates three types of bonding :

(a)	Electronic valency	between +,- charges	mostly Inorg. Compounds
(b)	Covalency	similar nature and equal charges	a. mostly Organic Compds. b. molecular formations
(c)	Co-ordinate valency	similar/dissimilar nature and charges differing by 2 or more units.	Sulphur trioxide etc.

6. The value of 'minimum' in the aphorism has been taken as 1. However, currently it could be zero also depending upon the filling of outermost orbits of atoms. The inert gases form zero-valent elements. It was formerly believed that they do not combine as per the aphorismic rule 2 above. However, they have also been found to combine to form typical compounds under drastic conditions. It seems that zero group or zero charged atoms were unknown for long, what to say of Akalanka time. This point has not been mentioned by other scholars during their scientific evaluation of the Jaina theory of bonding. However, some explanation has been given on the basis of the fact that when atoms are within a nuclear distance, they may reverse their charges or acquire them to combine together. This could be possible in case of covalent combinations also. However, the bonding rule 2 indicates that minimum charged entities could exist in free states as they have no (now poor) combining capacity.

7. In fact, Vidyānanda points out that the meaning of the term 'minimum' should be taken as indivisible corresponding sections of atoms or other binding entities which have minimum charges. Their existence is proved by the common observations of varying degrees of extension and diminutions. It means that at the minimum stage of charge, the entities are non-bonding. Secondly, the extreme fineness may also be the cause of non-bonding.

8. The concept of bonding by total or partial contact only between atoms or fine aggregates does not stand logical scrutiny. Hence, bonding should be based on difference in electrical nature.

9. Vidyānanda refutes the contention of negation of the quality of roughness or negative electrical charge on the basis of taking it as non-existence of positive charge. He says if one is negated, the other will also be negated. They are independent as well as interdependent qualities directly experienced by common man.

10. It is now known that it is not only atoms which combine together to form newer species. In general, not only any diatomic or polyatomic molecule is an aggregate but all chemical compounds are also aggregates. They also combine together to form never aggregates. We may have some examples here for their combinations :

Hydrogen Peroxide + Potassium Iodide \rightarrow Potassium Hydroxide + Iodine

Calcium Oxide + Carbon Dioxide \rightarrow Calcium Carbonate

Ammonia + Hydrochloric Acid \rightarrow Ammonium Chloride

These combinations also follow the bonding rules. Thus, the bonding rules have been extended to inert gases and aggregatal combinations too in the twentieth century.

11. The bonding rules of these aphorisms are generally applicable for apparent atoms. However, they could be applicable to component parts or fundamental particles of today as illustrated by G.R. Jain. The only point of interest will be the huge energetic considerations in these cases which is not normally taken into account. Secondly, he has also pointed out some difficulty in explaining formation of heavy electrons, protons etc. where some entities of similar charges combine under high energy in the deep interiors of atomic nuclei or some secret corners of space favourable to such combinations. The formation of current hydrogen atoms (with 1 electron and 1 proton), formation of atomic molecules (like hydrogen and oxygen) and the like has also not been mentioned in the aphorismic bonding rules. The concept of opposing spins or differing energy levels may be the answer of scientists. The theory of bonding has, thus, been extended to cover newer phenomena under better and finer knowledge.

12. Despite this point, it has to be admitted that Jainas have provided the basics for bonding among atoms and molecules which may have formed the basis of current scientific theory of bonding. Some seemingly discrepancies in Jaina theory could be removed by modified explanations of the scriptures as has been partly observed in case of Śvetāmbara version. Some recent authors have made a few additional suggestions in this regard involving some revolutionary points raised by A. K. Jain recently.

13. Some recent scholars (per chance without knowing Sanskrit) have stated that the meaning of 5.33 should be taken as so mean the possibility of bonds on three counts : (i) positive-positive entities (ii) negative-negative entities and (iii) positive-negative entities. This seems to be wrong as there is only singular number in the aphorism. Had the aphorist meant three-fold bonding, he should have plural number in the aphorism like the aphorism 5.26 which indicates three processes through the plural number in the aphorism. His contentions on the wrong basis are, therefore, not consistent with scriptures.

What type of transformation is there during bonding? The next aphorism 5.37 elaborates this point :

Bandhe-dhikau Pāriṇāmikau Ca 5.37

During bonding, the higher qualitative numericality of an entity transforms and amalgamates the entity of lower quality into its own type 5.37.

1. Here qualitative intensity or numericality is being described. Hence, the word 'quality' is to be supplied here. Thus, the word 'adhikau' means having higher numerical quality (or charge).

2. It is observed that the mass of jaggery is sweet. If there are some dust particles falling on it and stick to it for sometime, they are also coated and become sweet due to this (physical) transformation. Similarly, any larger mass transforms the smaller mass into its own nature. A four-unit smooth roughness will transform the two-unit smooth roughness. It foregoes the earlier state and attains a new specific state forming a new unit of aggregate. Otherwise, in the absence of such a transformation,

there will be change of touch, taste, smell and colour etc. only just like the change of colour to green on mixing the white and yellow colours.

3. There is another rendering of this aphorism 5.37 where the word 'adhikau' has been replaced by the word 'samādhikau'. This is the Śvetāmbara tradition. This means that a two unit smooth can transform a two unit smooth entity also during bond-formation. (These sub-aphorismic examples illustrate the nature of atomic bonding to be mostly physical but the illustration of change of other properties lead to somewhat chemical nature of bonding also).

4. This rendering is not correct as it is canonically contradictory. The Śatkhandāgama text in its subsection of bonding under section of Variform (Vargaṇā) postulates that there is bonding under dissimilar smoothness and dissimilar roughness. There is no bonding under similar smoothness and roughness. It is because of this that aphorism 5.34 excludes the bonding under similarity of intensity and quality. Thus, the Śvetāmbara rendering is contradictory to the canons.

5. Q. The canons postulate bonding between similar or dissimilar entities excluding minimum numericality. This leads to bonding between similar entities in quality and intensity. Thus, there is no canonical contradiction.

A. This is not correct. The questioner has not understood the correct meaning of canons. The word 'similar' here does not mean quantitatively similar but qualitatively similar. The 'similar' means homologous and dissimilar means heterologous. The homologous entity with 4-unit intensity of smoothness has a bonding with 6-unit intensity in smoothness. Similarly, a dissimilar entity with 4-unit intensity of roughness will have bonding with 6-unit roughness.

Q. What is the object of all this reference ?

A. It illustrates the process of karmic bonding with the living soul. The living soul binds infinite spacepointed karmas through its mental, vocal and physical activities. These karmas are of the nature of knowledge-obscuring karmas etc. with a duration of thirty crore (30×10^{14}) Sagara time units etc. They bind with the soul deeply transforming its nature accordingly and do not dissociate easily.

Supplementary Notes

1. The commentary deals with the following points on the nature of entity formed due to bonding through the above rules:

(a) The word 'transformation' means acquiring a new mode and disappearance of earlier mode.

(b) The higher degree components transform or absorb the lower degree components into their own nature like the wet jaggery transforming the tasteless sand falling onto it into a sweet tasting entity.

(c) The Śvetāmbara version of 5.37 maintains two types of transformations during bonding- (1) the higher degree based transformation of lower degree components and (2) the equal degree transformation of equal degree components. This version is not correct as it is contrary to scriptures. The meaning of the scriptural verse has a sense in tune with 5.37. It does not support the Śvetāmbara contention.

2. Many examples have been cited where these types of transformations are observed like sugar and water or sugar-candy in milk where the solid particles are dissolved. However, all these examples represent physical processes rather than chemical ones and virtually there is no change in the basic nature of entities involved. However, they prove that some type of transformation does take place- whether physical or chemical.

3. The theory of bonding based on electrical nature refers to the chemical bonding where the binding entities appear to become one unit with similar or dis-similar nature and inseparable from each other by easy means. This unitary appearance occurs due to homo-localisation and interpenetration of one-another into their spacepoints. It is observed that the new unit so formed may have three or four types of nature chemically- (i) neutral (ii) alkaline (iii) acidic and (iv) amphoteric or complex. Formation of salts like sodium chloride (neutral nature), sodium carbonate (alkaline in nature) ferric chloride (acidic) and proteins (complex) illustrate the above fact. These examples refer to the overall nature of the new aggregates formed. This transformed nature depends upon the nature of the combining entities.

4. The scriptures do not mention such cases. However, it is clear that the chemical bonding may result in (i) similar (ii) dissimilar or (iii) complex nature of the newly formed units. Sometimes the nature of combining entities are also transformed during the process in the new unit. For example, there may be valency change as in the case of chlorine in hydrochloric acid, chlorine dioxide and chlorine heptoxide (1,4 and 7 valency). There may be change in the nature of combining entities, just as in the case of chlorine. It has a negative charge in hydrochloric acid and a positive charge in chlorine dioxide and heptoxide. Similarly, hydrogen also becomes negative in sodium and potassium hydrides in contrast to hydrochloric acid. There may be changes in nature due to ionisation process where all types of transformed nature may be observed as in the above examples.

5. These examples support the Śvetāmbara version of this aphorism partly and indirectly.

6. The above physical and chemical processes indicate the basic fact that bonding of any type involves the transformation in the nature of newly formed entities. The chemists have extended their area from physical ones to the chemical ones also.

7. The most important part of the commentary of 5.37 is a statement regarding the nature of karmic bondage with the living units. This bond is quite different from the non-living-non-living-bond. It is a bond between living and non-living entities. It is said that the worldly soul is embodied and material. The mental, vocal, and physical activities import specific nature to the embodied living enabling it to bind with the infinite-atomic karma particles spread over the surroundings having specific but opposite nature with high intensity of positive or negative charges. The duration of karmic bond with the living indicates its strength. The bond may be so strong as to last for a maximum of 70×10^{14} Sagara units of time if it is a deluding karma-bond. The different karmas have different durational strength varying between a minimum of 48 minutes to many Sagaras.

The living -non-living bond of karmas is a special type of bond not clearly explainable in physical or chemical terms. However, it occurs

between the charged embodied living and charged karma particles, it could be represented as

Karmically bonded living⁺ + new karmas (due to volitional or other activities) → New karmic bond (this may also be associated with dissociative process).

The Jaina texts have mentioned about the possible nature and charges for different activities :

1. delusion /aversion	Sinful	Heavy	- charge
2. attachment	good/bad	Heavy/light	- charge
3. Infinite Bliss etc.	Auspicious	Light	+ charge

Bhagavāti Sūtra also says that the living and karmas are tied, touching, interpenetrating and affixed with each other by the attracting glue-like substances (charges ?). The energetic, durational and strong austeritic considerations (no thermal change, longer duration, harder penances) in the process indicate it to be of highly physical nature bordering chemical bond occurring between two material entities (embodied soul and karmas).

The earlier aphorisms mention the terms 'realities' (Dravyas) with the living ones as one of them. However, the realities have not been characterised as yet. The aphorism 5.38 indicates that they have differentia (which could be expressed in another form with reference to the earlier aphorisms 5.29-30) :

Guṇa-paryaya-vaṭ Dravyam . 5.38

The realities are characterised by attributes and modes 5.38.

1 Q. The realities have attributes and modes. As the two are non-different, the possessive suffix of 'Matup' (Vaṭ), does not stand scrutiny here. However, if the two are taken as different, there will be possibility of their non-existence.

A. This is not correct. The possessive suffix is also observed in case of non-different entities like the ring of gold. The realities may be

different from their characteristics in some respect, and may be non-different in some respects. The use of possessive suffix is, thus, justified.

2. Q. This definition of the reality is not correct as there is no designation of attribute (Guṇa) found in Jaina text. This is found only in other systems. The Jainas have only two terms- reality and modes. That is why, there are only two standpoints- substantive and modal. Had there been the third one, the third variety of standpoints should also have been there. Thus, in the absence of designation of the term 'attributes', the aphorism 5.37 does not seem logical.

A. This is not correct. The term 'attribute' (guṇa) has been sermonised in scriptures like 'Arhat-Pravacana-Hṛdaya' (Heart of the Sermons of the Enlightened) and others. It is said there that the attributes are defined as substrates of the realities and devoid of other attributes. It is also quoted in Sarvārthasiddhi in the form of a verse under aphorism 5.38 which means that the attributes are the differentia of realities. The modes are the modifications or transformations of the realities The realities are always associated with them. It has inseparable connection with them. It is also permanent.

Even in the persence of attributes, there is no necessity for the third standpoint as there are only two forms of any reality- general and particular. The term 'attributes' has synonymity with terms like generality, invariable concomitance and natural association. The mode has synonymity with the terms like particular, specificity and transformation. The substantive standpoint refers to generality. The modal standpoint refers to particularity. The reality is defined as the collective form of these two states inseparably related. There cannot be any third standpoint as its objects as they are always aspectal precepts. However, their collective form is the subject of organs of knowledge (Pramāṇa), as it is all - aspectal precept.

3. Alternatively, let the aphorism should mean that the attributes themselves are the modes. The origination, destruction and permanence are the modes. The attributes are not different from these modes. Thus, the possessive suffix can also be used in case of this type of common relationship between the two.

4. Q. If attributes are modes, the two terms representing attributes and modes have the same meaning. Thus, there should be either of the two terms in the aphorism. Hence, the adjective of the attribute in the aphorism is meaningless.

A. This is not so. It has an objective of refuting the tenets of other systems like Vaiṣeṣikas etc. They postulate that the attributes are different from realities. But this is not so. If they are different, they cannot be observable. Hence, the transformation or change in the reality is called a mode. The attributes are forms of modes. They do not form a different class. Thus, the qualifying term 'attribute' is useful.

Supplementary Notes

1. The commentary deals with the following points :

(a) After describing the etymological and three-fold existential differentia of reality, the third form of differentia in terms of possessive attributes and modes has been mentioned.

(b) As in many cases, the possessive suffix is applicable in different and non-different entities.

(c) The attributes refer to general differentia while modes refer to particular differentia. The general one represents substantivity and the particular one refers to modality. Thus, the two terms have independent existence.

(d) This differentia of possession of attributes and modes by the reality is meant to refute the Vaiṣeṣika contention regarding difference between them. There can be neither of them in each other's absence.

2. Vidyānanda says that this third definition under 5.38 is the formal definition of reality elaborating the differentia of existentiality in an another form. It also indicates that the reality cannot be flawlessly defined in the Vaiṣeṣika way as to possess activity, attributes and inseparable causality.

3. This differentia of reality is also meant to substantiate the two varieties of polyviewism. The possession of attributes-part represents polyviewism-in-coexistence while possession of-mode-part represents polyviewism-in-succession. This means that attributes are coexisting while modes are successive.

4. This aphorism may be taken in three ways - (a) the reality is that which possesses attributes, (b) the reality is that which possesses modes and (c) the reality is that which possesses attributes and modes. All these forms are appropriate under the condition (1) when attributes are also taken as modes and (2) when they are taken as aspectually different.

5. The differentia can be stated in one more form- a reality is associated with (i) intrinsic and inseparable attributes and (ii) changeable modes.

6. This definition is a synthesis of two extreme views of Vedāntins and Buddhists emphasizing absolute permanence (attributes only) and momentariness (modes only).

7. The attributes refer to the capacitative differentia while modes refer to the functional one of the reality. The attributes are the causes to effect modes in a reality.

8. Every reality has specific attributes which differentiate it from other realities. The living one has knowledge, conation or consciousness as its specificity while the non-living mattergy has materiality as its specificity. If the specificity is not there, there could be no identification. When specific attributes undergo transformations, they are known as modes. The particular type of knowledge- sensory or vocable etc. - is the mode of the attribute of knowledge.

9. It is known that any reality is an aggregation of infinite attributes. The common man can know only some of them, not all. However, they may be useful for the worldly ways.

10. The scientists also agree to the definition of reality in terms of continuity through changes as has been detailed earlier. However, they have gone more quantitative in their descriptions in comparison to the scriptures.

11. The aphorist postulates six realities in the universe in contrast to the other Indian philosophical systems. They have been detailed earlier, However, the reality of time will be detailed in 5.39.

The characteristics of the realities have been mentioned. Thus, there is a topic of realities. The following aphorism mentions the reality of time which has not been described earlier :

Kālaśca 5.39

Time is also a reality 5.39.

1. Time has all the inherent characteristics of a reality as mentioned in 5.30 and 5.38. Therefore, time is also said to be a reality.

2. Q. How the time has characteristics of a reality?

A. The same characteristics of reality can be proved for time as are found in other realities like space etc. For example, its permanence can be proved by its persistence in its own nature due to its inherent internal causes. The origination and destruction of time are dependent upon alien or external causes. They may also be due to internal causes with respect to the rhythmic rise and fall in time due to the specific property of individuality (A-guru-laghutva).

Similarly, the time also possesses general and particular attributes. The particular attribute of time is the maintenance of continuity through changes. The general attributes are (i) non-livingness (ii) imperceptibility (iii) fineness and (iv) individuality etc. The modes of time satisfies both types of characteristics as mentioned earlier. (The proof for its existence has already been explained in aphorism 5.22 in terms of its function in assistance in continuity through changes). Its placement at the end of all the five realities has also been explained earlier. It would have the property of extension, had it been described, along with the rest of the realities).

The time is proved to be a reality. The following aphorism 5.40 indicates whether it is one like space or numerable, innumerable or infinite in extent :

So-ananta-Samayah 5.40

The time consists of infinite Samaya units. (A 'Samaya' unit is the smallest and infinitesimal fraction of time instant) 5.40.

1. The atoms of primary absolute time have already been said to be innumerable like the spacepoints of extensive medium of motion etc. However, this aphorism is intended to determine the extent of apparent time. The present time consists of one instant or Samaya unit only. But the past and future times have endless time units of Samayas. Thus, the

apparent time is said to have infinite Samayas units. (The value of Samaya unit is not found in scriptures. However, Jain has shown the smallest time unit, i.e. Samaya to have an approximate value of $10^{-380} - 10^{-500}$ Sec. The current science goes upto 10^{-42} Sec. at present. Thus, the Jaina Samaya unit of time is comparatively very small).

2. Alternatively, this aphorism is intended to determine the extent of absolute time. Though the absolute time-grain or time-atom may be one, but it has infinite modes for assisting changes in realities. It is because of this that a single absolute time-atom is figuratively said to be infinite.

The Samaya unit of time is the smallest (and finest) extent of time (taken by one atom during its movement from one spacepoint to its immediate spacepoint). The different multitudes of Samaya units of time are defined as Avalika etc. in scriptures.

Supplementary Notes (5.39-5.40)

1. The commentary deals with the following points :

(a) Time is also an additional reality besides the five already mentioned because it is also characterised by all the differentia of reality like space etc.

(b) It is permanent because of its self-based persistence in its own nature of maintaining continuity through the attribute of a-heavy-a-lightness. It is originating-cum-destroying in terms of apparent time units represented by different modes of things. It has attributes of general and particular category.

(c) Its existential proof has already been mentioned in 5.22 as in the case of other realities.

(d) The reality of time has two varieties- absolute and apparent. The absolute time exists in the form of innumerable fine time grains (or quantas) on each spacepoint of universe space. The apparent time has infinite Samaya units extending over past, present and future. The present time has a duration of one Samaya only. The absolute time may also be called infinite figuratively because it is the cause of continuity in the infinite mode of entities.

(e) The Samaya, Avalika etc. are the apparent time units in use.

2. The aphorism 5.22 mentioned the functions and services of absolute and apparent time, but it did not elaborate its nature as an independent reality. The aphorism 5.39 responds to this issue.

3. The Śvetāmbara version of this aphorism is somewhat different from 5.39 given here. The wordings indicate that the reality of time is accepted by some scholars (while others may not accept it). Both types of references are found in scriptures. However, the Digambaras have their firm opinion in accepting it as a reality- thus, postulating the concept of six realities.

4. Pūjyapāda has raised a question why the postulate of time as reality has been made separately at this point. It is opined that this has been done purposely to show distinctness of time from other realities in terms of its nature, extension, types and activity. Thus, non-extensivity, discrete multiplicity and mono-dimensionality are the main distinctive points for common man. The apparent time is more practical for common man. The absolute time seems to be hypothetically real.

5. The reality of time is limited to the occupied space like the medium of motion or rest. This maintains the division between the occupied or pure space beyond.

6. The supplementary notes on 5.22 discuss the scientists views on the concept of time. It was nearly similar upto pre-relativity days. But it has undergone drastic change in the post-relativity period. The concept of absolute time and independent existence of time has been modified into a 4-dimensional space-time continuum. This interrelation is agreeable to the Jainas. However, the scientists feel no value for the concept of absolute time. They agree vertical measure of apparent time. Now, time is a dynamic quantity. The apparent time, nevertheless, cannot be there without its absolute counterpart- the Jainas feel.

7. Vidyānanda has mentioned a number of attributes and modes of the reality of time in terms of (a) modes - (priority-posteriority, assistance in activity and transformation) and (b) attributes (fineness, substantivity, continuity, successive change, non-materiality, a-heavy-a-lightness, combination, division, numeration, extent).

8. It is said that substantively the reality of time has spacepoints extended upto the end of the occupied universe which are innumerable in number and modally it is infinite in terms of Samaya units. The time-dimensions are open at both ends in a closed space.

9. The Jainas have an apparent time cycle of ascending and descending nature covering 20×10^{14} Sagara units. However, it is not a circular cycle to return to the origin at any time. One can never return to past by going through the future. However, this time cycle has been going on regularly from beginningless time.

10. The canons point out that the term 'infinite' is a number, the value of which cannot be accurately calculated. However, it is pointed out that the salvated souls are infinite times larger than the number of non-liberatables, the past Samayas are innumerable times larger than the salvated ones, the liberatables are infinite times larger than the past Samayas and the future time Samayas are infinite times the liberatables.

11. The history of concept of time has been detailed by Howking in his famous book. Accordingly, it has undergone changes through four stages : (1) absolute time (2) relative time (3) imaginary time and (4) real time. The second law of thermodynamics states that in a closed system, disorder increases with time, leading to the concept of three arrows of time distinguishing past from the future and giving a direction to time. The thermodynamic arrow of time gives direction of disorder, the psychological arrow of time gives direction of our feeling about passage of time where past is remembered. The cosmological arrow of time gives direction about the expanding universe. Thus, there will be three types of apparent time which is a relative time only.

It has been said that a reality is defined as consisting of attributes and modes. Now, what are the attributes? The aphorism 5.41 intends to respond to this point :

Dravyāśrayāḥ Nirugṇāḥ Guṇāḥ

5.41

The attributes are defined as substrates of realities and devoid of other attributes 5.41.

1. The term 'substrate' (Āśraya) here may be denoting a locative or accusative case. It may represent a locative case when it will mean an entity where the attributes reside. Thus, there will be a suffix 'gha' with the masculine substratum. Alternatively, it may represent an accusative case when it will mean an entity which is occupied by attributes. The term 'reality' has already been defined.

2. Q. If the attributes had been defined only as those which reside in the realities, there would be the possibility of diatomics etc. becoming an attribute because they are effects which are substrates for their causes like atoms.

A. This contention is not correct. The term 'devoid of another attributes' is given in the aphorism to refute this possibility. There are attributes like colour etc. in diatomic etc. They can not, therefore, be attributes by themselves.

3. Q. If attributes are defined only as substrates of realities, the modes of shapes etc. of pitcher, will also become attributes as they have reality as their substratum and they are also devoid of other attributes.

A. This is not correct. The term substrat of reality' removes this possibility. The substrate-substratum relationship implied here is that of permanent nature. The modes are not so. Thus, there cannot be possibility of attributeness in modes.

Q. The term 'substrate of reality' is not necessary in the aphorism as attributes can be proved to be substrates even without this term as there cannot be attributes without substratum and there is no other substratum for them besides realities.

A. This is not so. The term 'substrate of reality' here indicates that modes are excluded from this definition.

4. Q. Does it mean that additional terms in aphorism 5.41 indicate additional meanings ? Does this justify exclusion of modes from this definition?

A. This is not correct. One can have an alternative meaning here. The compound word 'substrate of reality, has a sense of residence in another entity with a possessive meaning. The suffix is observed only in those entities which are permanently associated. Thus, the attributes are

those entities which reside permanently in the reality. As the modes are occasional, they are not included here. Thus, permanently associated characteristics are called attributes. These may be exemplified by existence etc. and knowledge, conation etc. of the living entities. The non-livingness etc. and colour etc. are attributes of mattergic reality. The knowledge about pitcher etc. are modes of the living while transformations of earth into jar, cup etc. are modes of mattergy.

Supplementary Notes

1. The commentary deals with the following points:

(a) The word 'substratum' may be referred to either as a locative case or accusative case.

(b) The logical support for the two terms defining the attributes :

(i) The term reality serving as substratum (of attributes) is there to (a) exclude the possibility of modes like pot etc. to be called attributes as they are substratum for touch, colour etc. and they are also attributeless. In fact, this term becomes superfluous as it is an undisputed fact that attributes cannot be without substratum. Its utility is, therefore, to define the term in such a way that modes are excluded. This definition is that attributes are ever-coexisting properties of a reality. The modes are, on the other hand, casual or changing forms.

(b) The term 'attributeless' is meant for excluding the possibility of diatomic entities being called as attributes as their substratums are atoms. However, as they have attributes of colour etc., they are material effects.

2. Vidyānanda has pointed out that the term 'reality serving as substratum' has another use. It excludes the possibility of attributes being called as 'realities because they are substratum for qualities like attributeness, colourness etc. This concept will lead to the negation of attribute-attributed relationship. They are not substrates of realities but of attributes themselves. Moreover, the basic attributes cannot be as figurative as the above ones because figuration is not possible in the absence of basic attributes.

3. The scholars have distinguished between attributes and modes. The attributes are coexisting with realities while modes are occurring in succession.

The term transformation (Pariṇāma) has been used many times earlier. However, it has not been defined. The aphorism 5.42 defines it :

An alternative introduction to this aphorism 5.42 may also be given. The Vaiśeṣikas postulate attributes as different from the realities. This is not completely agreeable to the Jainas. They point out that the attributes may be different from the realities with respect to name, significance, cause of origination etc. However, as they are not found separately from the realities and they represent transformations in the nature of realities, they are non-different too. Now, what is the definition of transformations, then?

Tad-bhāvah Pariṇāmah 5.42

Transformation or modification is defined as a process of undergoing changes of origination and destruction while retaining one's basic nature 5.42.

1. The that-ness (tad-bhāva) is defined as non-deviation of one's specific nature of the realities like medium of motion etc. It is defined as to maintain that-ness.

2. Transformation has **already** been defined in 5.22.

3. The transformation has two varieties- (I) beginningless or eternal and (ii) beginningful, transient. The eternal transformation is illustrated by function of motion etc. of medium of motion etc. It is not there that the realities of medium of motion etc. are earlier and their functions are later or vice-versa. Their relationship is beginningless. The origination of functions due to external causes are the transient transformation of the same realities.

Q. Some scholars postulate beginningless transformations in imperceptible realities like the living being, medium of motion and rest, space and time. In contrast, the perceptible mattergic realities have transformations with beginning. The living ones also have beginningful transformations (due to activity and passions etc.).

A. This is not correct. All the realities have to be accepted to possess the dual transformations for their existence, otherwise they will be permanently non-existing.

Q. How this could be explained?

4. A. The dual nature of transformations in all the realities could be proved on the basis of two standpoints of substantivity and modality. However, canons postulate that the four imperceptible realities like medium of motion and rest, space and time do have beginningless as well as beginningful transformations while the realities of the living and mattergy have sometimes perceptible transformations too.

Supplementary Notes

1. The commentary deals with the following points :

(a) The meaning of the terms in the aphorism 5.42.

(b) The non-vibrational or non-translational transformation in or of an entity has been termed as 'mode' or 'modification'.

(c) The modifications may be associated with the reality or its attributes.

(d) The modes have two varieties - beginningful and beginningless. The self-caused or natural modifications of material or non-material realities are beginningless. They may be beginningful also if caused due to alien causes like the presence of mattergy or karmas.

(e) The Śvetāmbara version postulating specific types of modifications has been refuted on the basis of substantive and modal standpoint approach.

(f) The modifications in non-material realities are learnt through scriptures while those of the worldly living and mattergy may be directly observable along with canonical statements.

2. The TSB indicates that the worldly living has modifications due to twelve types of activities- eight types of right and wrong knowledges (5, 3), and four types of conations. They may be of both types.

3. This aphorism 5.42 deals with the definition of modifications. They have been classified in more than one way. One form is referred by Devasena. Accordingly, there are two types of modifications : (i) indistinct and (ii) distinct. Every reality undergoes indistinct modifications which are fine, momentary and inexpressible. In contrast, the distinct modes are gross, observable, expressible and lasting. It is said that indistinct modes are there in all the realities while distinct modes are observable in mattergy and worldly living entities.

4. The Śvetāmbara version has three additional aphorisms to elaborate the types of modifications. Their meaning differs from this commentary. However, their commentaries agree in essence with the Digambara contention of two-fold modifications in all the realities. These additional aphorisms have been taken care of by Akalanka in his semi-aphorisms 5.42.3-4.

5. This aphorism indicates that the modes are different from attributes as they are modifications in attributes themselves. They are successive rather than co-existing.

6. Logically, Vidyānanda agrees that the modes themselves have two varieties- co-existing and successive. Thus, both the modes are involved in the modal standpoint. Hence, there is no necessity for a third-tributal-standpoint.



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Appendix B : (a) Abbreviations

A	Antar-Muhurta/Under-Muhurta, Answer
A/As/IN	Asankhyeya, Innumerable number
A _v	Āvalikā
AV	Arhat Vacana (Journal)
cQ	Counter-question
CON	Cosmology, Old and New
D	Dhanusha (195 cms app.)
D-	Digambara
H-	Hasta (Unit of length), Hindi
IJHS	Indian Journal of Histry of Science
JMLS	Pt. J.M.L. Shastri Fel. Vol.
JSD	Jain Siddhant Dipika (Tulsiji)
JSK	Jainendra Siddhant Kosha
K _v	Destructional right faithed
KCK	K.C. Kasliwal Fel. Vol.
KCS	Kailash Chand Shastri Fel.Vol.
N	Numerable
P	Palyopama Units
PMK	Physique-making Karma
Q	Question
R	Response
S-	Śvetāmabara
S	Sagaropama, Stimulants
S _m	Samayas
SCD	S.C. Divakar Fel. Vol.
SS	Sarvārtha-Siddhi
T.P.	Tulsī Prajnā, Ladnun
TRV/RV	Tattvārtha-Rājaa-Vārtika
TSV	Tattvārtha-Śloka-Vārtika
TSB	Tattvārtha-ādgigama-Bhāṣya
UA	Utsedha Angula

(b) Publishers

1. APS : Agama Prakashana Samiti, Beawar, Raj.
2. ASS : Adarsh Sahitya Sangha, Curu, Raj.
3. BJ : Bharatiya Jnanapitha, Delhi-3
4. CJPS : Central Jain Publishing House, Lucknow
5. DD : Divyadarshana Trust, Bombay
Trust
6. DDVSP : Dharma Darshana Vijnana Shodha Prakasana,
Baraut
7. JS : Jain Shiksha Kosha, Satna
8. JSS : Jain Sanskriti Sanrakshaka Sangha, Sholapur
9. JVB : Jaina Vishva Bharati, Ladnun
10. LDI : Laljibhai Dalpatbhai Institute, Ahmedabad
11. MJS : Mahavir Jain Shodha Sansthana, Mahavirji, Raj.
12. MLBD : Motial Banarasidas, Delhi-7
13. MKPS : Marudhar Kesri Prakashan Samiti, Beawar, Raj.
14. PBS : Prakrta Bharti Sansthana, Jaipur
15. PVRI : Parśvanāth Vidyāpitha, Varanasi-5
16. RG : Raichandra Granthmala, Agas, Guj.
17. STM : Śvetāmbara Terapanthi Mahasabha, Calcutta
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19. TTM : Today & Tommorrow Publishers, Delhi-5
20. TYP : Terapantha Yuvaka Parishada, Ladnun, Raj.

Appendix C : Introductory : Dr. N.L. Jain

Born Shahgarh (Chhatarpur), M.P.

Education Shastri (Jain Philosophy), Acharya (Ind. Phil.) M.Sc., (Chem. B.H.U), Ph.D. (Glasgow, UK) Post-Doc (Tallahassee, USA)

Positions Professor of Chemistry, M.P. Govt. Services, Principal Investigator, HR-1, UGC, New Delhi-2, Project Investigator, INSA. New Delhi-2 (Current), (Held many honorary official and faculty Positions)

Academic Achievements/Awards/Honours

Various Merit scholarships and debate awards, All India Children Literature Award,(IV). Lal Award for translation, Second Research Paper Award, Indore, Honoured at Dharmasthala, Kundakunda Jnanpith, Mahavir pathshala, Satna, Jain Center, San Francisco, USA.

Work on Jainology

120	Research Paper on Jainology	65	Seminars attended
08	Seminars organised	10	Books published, 3 under publication.
12	Talks on AIR.	04	Translations in English (Procanons).
05	Editorships of Scholars' Felicitation Volumes.	10	Authorship and Translations of Chemistry books.
05	General books (Travel and Children literature).		

Associations

World Jain Mission, Theosophical Society, Jaina Center, Rewa, Jaina Scholar's Association, Digambar Jain Trust.

Listed in

Learned Asia, Rifacimento, Science Writers in Hindi, WHO'S WHO in children literature (UNESCO), Jaina Scholars.

International Conferences and Lectures

- (1) International Anti-vivisection Society, London, 1962.
 - (2) Parliament & Assembly of World Religions, USA, 1989,1993.
 - (3-5) Intl. Congress of History of Science, (Hamburg, 1989, Zaragosa, 1993, Liege, 1997)
 - (6) Intl. Congress on Peace and Non-violent Action, India, 1991,1999
 - (7) Intl. Conference of History of Maths, Maebashi, Japan, 1999
- Lectures at Many Jaina Centres in USA/UK.

Interests

Ecology and Environment, Disarmament & Non-violence, Religious principles & Conflict Resolution, Science and Religion.

STANDARD TRANSLITERATION

अ	a	ए	e	क्	k	च्	c		
आ	ā	ऐ	ai	ख्	kh	छ्	ch		
इ	i	ओ	o	ग्	g	ज्	j		
ई	ī	औ	au	घ्	gh	झ्	jh		
उ	u	अं	ana	ङ्	ṅ	ञ्	ñ		
ऊ	ū	क्ष	kṣ	त्र	tr	ज्ञ	jñ		
ट्	ṭ	त्	t	प्	p	य्	y	ऋ	ṛ
ट्	ṭh	थ्	th	फ्	ph	र	r	लृ	lṛ
ड्	ḍ	द	d	ब्	b	ल	l	स्	s
ड्	ḍh	ध्	dh	भ्	bh	व	v	श्	ś
ण्	ṇ	न्	n	म्	m	ह	h	ष्	ṣ

Index

—A—

- absolute time, 51, 174, 175, 179, 180, 181, 232, 255, 256, 257
- accommodation, 39, 69, 83, 87, 104, 110, 114, 115, 116, 117, 118, 131, 133, 137, 139, 140, 141, 142, 143, 238
- action, 30, 36, 62, 81, 83, 84, 86, 88, 140, 150, 173, 175, 176, 177, 178, 190, 193, 197, 199, 200, 203
- activities, 9, 18, 20, 21
- activity, 30, 39, 67, 75, 82, 83, 84, 85, 86, 87, 88, 89, 92, 95, 96, 111, 136, 138, 140, 151, 153, 154, 155, 173, 177, 180, 181, 182, 187, 193, 195, 200, 203, 206, 230, 253, 256, 257, 261
- addition compound, 17
- afflictions, 5, 16
- aggregates, 25, 28, 30, 31, 33, 68, 78, 79, 102, 104, 105, 107, 108, 109, 114, 116, 117, 118, 132, 135, 146, 154, 157, 174, 186, 189, 195, 201, 203, 206, 209, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 238, 239, 242, 244, 246
- aggregation, 104, 105, 106, 135, 154, 172, 174, 175, 176, 190, 218, 222, 226, 254
- a-heavy-a-lightness, 89, 90, 212, 257
- Ajīva**, 34, 43
- Aliveness, 159
- all-sense-perceptibility, 225
- alphabetical, 190, 192, 205
- AnekĀntavĀda, 237
- Angula, 95, 124, 125, 267
- anonymistic trend, 7
- Aphorismic Treatise on Reals, 1, 9
- aphorisms, 1, 6, 10, 11, 14, 15, 16, 17, 22, 23, 24, 26, 38, 46, 61, 64, 70, 71, 73, 93, 97, 103, 146, 160, 161, 199, 201, 212, 216, 218, 220, 227, 232, 239, 243, 244, 246, 251, 262
- Aphorist Author**, 3
- Apōrva, 137
- apparent time, 51, 174, 175, 176, 179, 180, 181, 182, 232, 255, 256, 257, 258
- ass's horns, 55, 56, 63, 65, 67, 106, 133, 134, 142, 167, 171, 228, 230
- association, 27, 31, 37, 39, 40, 53, 84, 122, 125, 149, 150, 151, 154, 214, 220, 221, 224, 225, 228, 232, 238, 252
- asylum of attributes, 27, 59
- atma, 268
- atomic, 24, 25, 26, 30, 33, 46, 47, 51, 69, 79, 82, 92, 96, 103, 107, 108, 109, 116, 118, 119, 121, 128, 135, 144, 149, 150, 151, 156, 157, 215, 217, 218, 221, 222, 224, 226, 239, 241, 243, 246, 248, 250
- atoms, 26, 28, 30, 31, 33, 37, 40, 53, 60, 62, 68, 69, 78, 79, 87, 102, 103, 104, 105, 106, 107, 108, 109, 110, 116, 118, 119, 121, 134, 135, 136, 174, 180, 182, 186, 189, 194, 197, 200, 201, 203, 206, 212, 213, 214, 215, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 238, 239, 240, 242, 243, 244, 245, 246, 255, 258, 260
- attainment, 1
- attributes, 25, 26, 27, 28, 33, 40, 41, 46, 48, 53, 54, 55, 56, 58, 59, 60, 61, 62, 63, 65, 67, 68, 71, 74, 76, 77, 78, 82, 83, 84, 85, 87, 88, 90, 102, 109, 137, 184, 185, 186, 188, 189, 203, 206, 235, 236, 251, 252, 253, 254, 256, 257, 258, 259, 260, 261, 262
- autocommentary, 2, 4, 5, 8, 9, 14, 15, 16, 23

—B—

beginningful, 114, 166, 179, 260, 261
 beginningless, 42, 67, 77, 97, 102,
 111, 114, 122, 123, 125, 151, 166,
 168, 179, 184, 194, 260, 261
 being-in-existence, 179, 181
 Biology, 10
 birth, 8, 10, 18
 bonding, 16, 24, 25, 26, 31, 33, 97,
 151, 194, 195, 196, 197, 206, 207,
 209, 212, 218, 219, 220, 221, 222,
 238, 239, 240, 241, 242, 243, 244,
 245, 246, 247, 248, 249, 250
 Buddha, 19
 Buddhist, 17, 19, 20, 72, 138, 156,
 157, 185

—C—

capacitative differentia, 253
 cause, 20, 23
 celestials, 5
 changeable modes, 253
 characteristics, 25, 28, 31, 35, 36, 37,
 43, 44, 60, 63, 67, 70, 76, 78, 83,
 86, 89, 92, 107, 123, 125, 127, 131,
 132, 133, 141, 142, 150, 159, 183,
 185, 189, 199, 227, 228, 229, 230,
 232, 233, 251, 254, 255, 259
 chemical bonding, 207, 249
 Cold light, 190, 199
 communication, 15
 completions, 5
 conation, 39, 71, 85, 89, 112, 121,
 155, 163, 254, 259
 condensation, 118
 configuration, 166, 189, 198, 208
 conjunction with livingness, 27
 conjunction with realityness, 54
 conjunctive, 151, 200
 conscious, 71, 123, 150, 151, 152,
 153, 154, 158, 191, 195
 consciousness, 9, 28, 37, 44, 67, 72,
 74, 97, 132, 135, 137, 149, 152,
 158, 163, 168, 169, 233, 254
 continued existence, 51, 165, 166, 174,
 175, 177, 179, 227

contraction, 24, 29, 104, 118, 122,
 123, 124, 125, 126, 127, 169, 182,
 194, 196
 contradictory properties, 235
 conventional motion, 165
 corpuscular nature, 205, 209, 211
 cosmic space, 101, 103, 104, 105, 113,
 114, 121, 138

—D—

darkness, 30, 143, 152, 189, 192, 198,
 203, 209, 210
 debonding, 209
 Deci-bells, 205
 deficient-sensed, 151, 152
 degrees of roughness, 239
 degrees of smoothness, 239
 deluding karma, 250
 destiny, 94, 123
 destruction, 26, 43, 44, 53, 61, 67,
 73, 83, 84, 89, 90, 95, 101, 102,
 145, 149, 153, 159, 161, 164, 166,
 169, 170, 171, 175, 182, 202, 214,
 227, 228, 229, 230, 231, 233, 234,
 252, 254, 260
 destruction-cum-subsidence, 73, 84,
 95, 145, 149, 153, 169, 170
 diatomic, 31, 174, 220, 221, 239, 246,
 258, 259
 diatomics, 103, 213, 214, 242, 258
 difference, 4, 5, 11, 17, 24, 31, 33, 34,
 35, 36, 49, 51, 52, 54, 57, 58, 59,
 60, 61, 62, 63, 65, 66, 67, 72, 77,
 78, 81, 83, 86, 87, 89, 91, 92, 93,
 94, 99, 100, 101, 102, 110, 124,
 125, 127, 144, 149, 153, 182, 197,
 203, 205, 211, 215, 223, 228, 229,
 230, 231, 235, 241, 244, 246, 253
 differentia, 60, 72, 76, 109, 123, 125,
 126, 127, 138, 141, 143, 144, 146,
 163, 179, 186, 188, 229, 230, 231,
 251, 252, 253, 256
 digestive fire, 170, 216
 disembodied pure soul, 162
 disquisition doors, 5

The Jaina world of Non-living

dissociation, 27, 31, 39, 40, 53, 123,
150, 151, 154, 209, 215, 217, 220,
221, 222, 223, 225, 226
Dravyas, 25, 26, 226, 251

—E—

Echoes, 148
efforted sounds, 205
ejectable body, 196, 197
electrical charges, 222, 243
electronic theory of valency, 245
embodied soul, 120, 121, 124, 125,
145, 154, 232, 251
energy-obstructing, 84, 145, 149, 153,
170
entities, 26, 27, 28, 30, 31, 34, 36, 40,
41, 42, 43, 45, 47, 48, 50, 51, 52,
53, 54, 55, 56, 58, 59, 61, 63, 64,
65, 67, 72, 73, 76, 77, 78, 79, 80,
81, 83, 84, 85, 86, 87, 88, 90, 92,
93, 94, 97, 100, 102, 105, 109, 111,
113, 114, 115, 116, 117, 118, 119,
121, 123, 133, 135, 136, 137, 138,
139, 143, 146, 150, 152, 153, 154,
156, 157, 158, 161, 164, 165, 167,
168, 170, 171, 172, 174, 178, 182,
183, 185, 187, 188, 201, 203, 206,
207, 209, 212, 213, 214, 215, 218,
220, 221, 226, 227, 228, 230, 235,
238, 239, 240, 241, 242, 243, 244,
245, 246, 247, 248, 249, 250, 251,
253, 256, 259, 262
essence (Sattva), 135
eternal relationship, 139, 151
existence, 10, 26, 27, 28, 30, 33, 36,
37, 42, 44, 48, 50, 51, 53, 55, 59,
62, 65, 67, 70, 71, 72, 73, 75, 77,
85, 87, 92, 99, 101, 102, 105, 106,
107, 110, 115, 124, 128, 134, 135,
136, 138, 139, 140, 141, 142, 143,
150, 154, 156, 159, 160, 164, 165,
166, 167, 168, 172, 173, 174, 175,
177, 178, 179, 181, 182, 184, 192,
200, 215, 217, 218, 227, 228, 229,
230, 231, 232, 233, 235, 236, 238,
245, 246, 251, 253, 255, 257, 259,
261

expansion, 24, 29, 104, 115, 118, 121,
122, 123, 124, 125, 126, 127, 169,
182, 194, 196
Exposerism, 26, 33, 202, 206
extensive, 25, 26, 27, 45, 46, 63, 181,
255
external senses, 152
extrication, 93, 121, 127
eye-perceptibility, 76, 189, 209, 210,
225, 226

—F—

factors, 16
fallacy, 109
feeling-producing karma, 161
fire, 31, 45, 59, 61, 68, 69, 84, 86, 87,
102, 104, 130, 136, 166, 170, 185,
194, 200, 211, 216
five-sensed, 96, 133, 152
formation of mattergies, 25
fruition, 146, 153, 155, 156
function, 39, 40, 48, 50, 102, 128, 129,
130, 134, 137, 138, 139, 145, 149,
152, 154, 156, 160, 162, 168, 169,
170, 174, 255, 260
Functions, 25, 29
fundamental, 79, 80, 107, 108, 184,
187, 188, 189, 218, 223, 224, 238,
246

—G—

general differentia, 231, 253
go, 17, 21, 39, 47, 54, 73, 91, 111,
186, 192, 210, 228
gross body, 122, 195, 196, 197

—H—

hair cells, 187
hair-crest of the frog, 17
heterogeneous modification, 202
homogeneous, 201, 219
homolocalisation, 129
Hot light, 190, 199
human, 9, 10

—I—

- ideal atom, 108, 109, 217, 219
 immutable, 74, 75, 76
 indistinct modifications, 262
 individuality, 83, 89, 90, 141, 178,
 254, 255
 infinite regression, 27, 43, 58, 66, 70,
 109, 110, 111, 143, 236
 infinity, 51, 100, 101, 102, 103, 144,
 219
 influx, 5, 11
 inherent nature, 82, 86, 141, 200, 227
 inherential consciousness, 168, 169
 inscriptional records, 4
 inseparable relationship, 183
 inter-contacts, 134
 interference, 40, 155
 interpenetrating, 50, 115, 251

—K—

- karma, 5
 karmic body, 85, 93, 120, 122, 123,
 124, 125, 146, 155, 157, 196, 197,
 207
 karmic durations, 176
 Kinds of mattergy, 25
 knowledge-obscuring karma, 95, 147,
 149, 153

—L—

- language, 237
 language-resulting, 190, 191
 latency, 132
 law of conservation of mass and
 energy, 66, 232
 living, 1, 7, 9, 10
 living being, 40, 72, 74, 87, 92, 93, 96,
 97, 112, 119, 120, 122, 130, 132,
 142, 151, 154, 162, 163, 170, 194,
 195, 196, 203, 261
 logical flaws, 27, 166
 luminous body, 120, 127, 157, 196,
 197

—M—

- manifesting-in-birth type, 161
 manifesting-in-matter type, 161
 manifesting-in-soul type, 161
 material, 35, 41, 43, 45, 46, 47, 49, 50,
 52, 53, 64, 68, 71, 72, 75, 76, 77,
 79, 81, 82, 85, 86, 89, 93, 96, 103,
 107, 114, 115, 116, 117, 122, 123,
 124, 125, 126, 127, 137, 138, 139,
 140, 142, 143, 146, 147, 148, 152,
 155, 156, 157, 158, 159, 161, 163,
 164, 174, 175, 180, 189, 192, 198,
 203, 205, 206, 210, 211, 212, 216,
 224, 250, 251, 260, 261
 mattergic senses, 147, 148
 mattergy, 25, 27, 28, 29, 30, 33, 34,
 39, 40, 44, 45, 46, 47, 49, 52, 67,
 68, 74, 76, 78, 79, 81, 83, 86, 87,
 88, 92, 94, 104, 105, 107, 110, 114,
 128, 129, 130, 142, 143, 144, 146,
 149, 154, 155, 156, 157, 158, 160,
 161, 166, 169, 174, 180, 183, 185,
 186, 188, 189, 194, 195, 199, 200,
 201, 202, 203, 206, 208, 209, 210,
 211, 212, 213, 216, 218, 219, 223,
 232, 254, 259, 261
 meditation, 7, 11, 149
 medium of motion, 27, 34, 39, 40, 41,
 44, 45, 46, 47, 48, 63, 64, 67, 74,
 76, 80, 82, 85, 87, 92, 93, 94, 95,
 97, 98, 110, 113, 114, 124, 125,
 127, 128, 130, 131, 132, 133, 134,
 135, 136, 138, 139, 140, 141, 146,
 157, 159, 164, 165, 166, 174, 181,
 194, 199, 226, 227, 232, 255, 257,
 260, 261
 medium of rest, 33, 34, 36, 37, 38, 39,
 41, 44, 45, 48, 50, 74, 75, 76, 80,
 81, 83, 88, 93, 94, 110, 113, 115,
 116, 125, 128, 129, 130, 132, 137,
 138, 139, 194, 199
 memory, 8, 16
 mind, 11, 23, 30, 33, 45, 48, 61, 64,
 68, 72, 73, 79, 88, 105, 127, 135,
 136, 137, 142, 144, 145, 146, 149,
 150, 151, 152, 153, 154, 155, 156,
 157, 158, 183, 185, 195, 199, 204

The Jaina world of Non-living

modal, 17, 31, 42, 53, 64, 75, 78, 80, 87, 88, 96, 110, 123, 133, 140, 141, 143, 166, 168, 173, 179, 180, 185, 189, 194, 200, 206, 214, 217, 219, 231, 234, 235, 236, 251, 252, 261, 262

modal approach, 17

modification, 51, 53, 54, 68, 74, 153, 164, 166, 167, 168, 169, 173, 175, 179, 180, 197, 201, 202, 213, 216, 260, 261

momentariness, 152, 154, 156, 160, 170, 171, 178, 180, 193, 253

mono-spacepointal, 102, 103, 109, 110, 180

motion, 25, 27, 28, 29, 30, 33, 34, 36, 37, 38, 39, 40, 41, 44, 45, 46, 47, 48, 49, 50, 63, 64, 67, 74, 75, 76, 80, 81, 82, 83, 84, 85, 87, 88, 89, 90, 92, 93, 94, 97, 98, 110, 113, 114, 115, 116, 124, 125, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 143, 146, 147, 154, 157, 158, 159, 164, 165, 166, 173, 174, 175, 176, 179, 180, 181, 182, 194, 199, 200, 203, 212, 219, 220, 226, 227, 232, 255, 257, 260, 261

multitude of attributes, 27, 61

mythology, 9, 10, 11, 14, 16

—N—

natural modification, 166

needs, 20

neo-karmas, 78, 90, 100

non-alphabetical, 190

non-conscious, 150, 151, 153, 154

non-contradictory, 35, 214, 215

non-cosmic space, 101, 103, 105, 138

non-difference, 4, 17, 33, 35, 36, 54, 59, 60, 61, 62, 86, 102, 124, 125, 149, 153, 203, 211, 215, 229, 230, 231, 235

non-elastic collisions, 219, 222

non-entities, 152

non-existence, 36, 37, 44, 70, 71, 72, 87, 101, 102, 107, 110, 134, 135, 136, 138, 141, 142, 150, 166, 167,

172, 173, 177, 227, 228, 229, 233, 246, 251

non-existential, 36, 173

non-fixed spacepoints, 95

non-instinctive, 152

non-language-resulting, 190, 191

non-living, 10, 25, 27, 33, 34, 35, 36, 37, 41, 43, 44, 45, 46, 48, 49, 51, 52, 63, 66, 69, 70, 71, 72, 73, 78, 79, 80, 89, 90, 92, 113, 136, 137, 156, 158, 162, 165, 166, 181, 182, 185, 190, 195, 207, 227, 231, 232, 250, 254

non-material, 41, 45, 46, 47, 49, 50, 52, 64, 68, 71, 72, 75, 76, 81, 82, 85, 89, 114, 115, 116, 122, 123, 124, 125, 126, 137, 138, 139, 146, 157, 158, 159, 164, 175, 180, 206, 261

non-mattergic, 28, 103, 105, 124, 146, 147, 148, 153, 155, 206, 232

non-natural modification, 166

non-separate, 78, 86, 140, 150, 168, 201

—O—

obstructing karma, 95, 170

Occupancy, 25, 26, 29, 94, 104, 110, 113, 118, 119, 120, 121, 124, 125, 220, 226

omniscience, 3

one-sensed, 152, 169

one-to-one correspondence, 180

operation, 94, 147, 159

origination, 8, 26, 44, 53, 61, 67, 71, 82, 83, 87, 89, 101, 102, 140, 141, 154, 164, 166, 168, 171, 175, 182, 193, 202, 214, 227, 228, 229, 230, 231, 233, 234, 252, 254, 260, 261

overpowering, 148, 155

—P—

paranormal experiments, 127

paranormal phenomena, 158

parinĀma, 164

particular differentia, 253

The Jaina world of Non-living

passions, 72, 95, 157, 261
 Perduration, 30
 peripheral, 98, 101, 103
 permanence, 26, 27, 31, 33, 54, 60, 65,
 66, 67, 87, 150, 160, 164, 172, 178,
 180, 206, 214, 227, 228, 229, 230,
 231, 232, 233, 234, 235, 236, 252,
 253, 254
 pervasive, 43, 49, 55, 76, 83, 87, 88,
 93, 114, 121, 124, 126, 128, 130,
 131, 132, 137, 138, 139, 142, 143,
 150
 philosophy, 1, 9, 19
 physical, 1, 5, 7, 9, 11, 12, 17, 18, 20
 physical bonds, 207
 physical mind, 64, 68, 73, 79, 149,
 155, 158
 physical speech, 146, 147
 physiology, 10
 physique-making karma, 5, 37, 89, 94,
 95, 123, 145, 147, 149, 153, 161,
 169, 170, 197, 208
 polyviewism, 18, 20, 32, 151, 169,
 230, 253
 polyviewism-in-coexistence, 253
 polyviewist, 18
 polyviewistic approach, 17, 26, 125,
 143, 149, 168, 173, 215
 polyviewism-in-succession, 253
 positioning, 41, 168
 possessive case, 35, 57, 78, 93, 119,
 128, 129, 137, 154, 184, 190
 possessive suffix, 17, 57, 58, 77, 78,
 201, 211, 228, 251, 252, 253
 Prākṛta language, 1
Protean body, 196
 psyche, 158
 psychical mind, 68, 73, 149, 157, 158
 psychical speech, 146, 155, 156
 psychology, 11
 general, 11
 pudgala, 30, 40, 107, 220
 Puruṣa, 153, 231

—Q—

qualified, 8, 17, 112, 142, 150
 qualitative transformations, 217

quality, 46, 66, 70, 72, 78, 84, 89, 97,
 101, 126, 130, 135, 136, 137, 142,
 147, 148, 150, 151, 153, 171, 172,
 173, 175, 181, 184, 186, 187, 191,
 192, 193, 206, 217, 230, 232, 239,
 241, 243, 246, 247, 248
 quantitative transformations, 217
 quasi-karmic, 195, 196, 207

—R—

Rājvārtika, 12, 20
 real, 23
 real atom, 108
 real image, 210
 realisation, 37, 84, 123, 146
 reality, 5, 25, 26, 27, 28, 30, 31, 33,
 34, 38, 40, 41, 43, 44, 45, 46, 47,
 48, 49, 50, 51, 52, 53, 54, 55, 56,
 57, 58, 59, 60, 61, 62, 63, 64, 65,
 66, 67, 68, 69, 70, 71, 72, 74, 75,
 78, 80, 81, 82, 83, 84, 85, 86, 88,
 89, 90, 92, 93, 96, 99, 101, 102,
 109, 110, 111, 114, 116, 121, 125,
 126, 128, 130, 131, 132, 133, 135,
 139, 142, 143, 144, 146, 148, 149,
 157, 162, 164, 166, 174, 179, 180,
 181, 183, 185, 189, 200, 206, 209,
 217, 227, 229, 230, 231, 232, 233,
 234, 235, 251, 252, 253, 254, 255,
 256, 257, 258, 259, 260, 261, 262
 Reals, 1, 9, 16, 34, 266
 reasoning, 7
 redox changes, 170
 religion, 1
 religiosity, 7, 16
 respiration, 28, 30, 67, 144, 154, 156,
 157, 158, 159, 183, 204
 restraint, 5
Revival of Aphorismic Texts, 14
 right conduct, 11
 right faith, 7
 right faithed, 266
 roughness, 194, 238, 239, 240, 241,
 243, 246, 247, 248
 Rupa, 78

—S—

- salvation, 1, 2, 4, 5, 7, 8, 9
 Samaya, 264
 Samayas, 165, 176, 255, 257, 267
 Sapta-bhangi-vada, 237
 Sattva, 135
 seed, 86, 166, 167, 168, 169, 171, 180, 200
 sense, 19
 sense-imperceptibility, 71, 72, 76
 senses, 9, 30, 68, 69, 71, 72, 83, 95, 144, 145, 147, 148, 149, 150, 151, 152, 155, 161, 187, 191, 215
 sensory knowledge, 16
 separate, 5, 8, 26, 50, 54, 59, 63, 65, 70, 73, 77, 78, 81, 86, 93, 130, 131, 138, 140, 144, 148, 150, 152, 160, 165, 167, 177, 181, 187, 193, 196, 201, 209, 213, 228, 229, 232
 shadow, 30, 189, 190, 198, 203, 209, 210, 213, 214
 Skandhas, 212
 sky-flower, 171, 230
 smoothness, 194, 238, 239, 240, 241, 243, 248
 solar motion, 165, 176
 soul, 43, 44, 46, 64, 71, 72, 73, 78, 83, 84, 85, 87, 93, 95, 109, 112, 120, 121, 122, 123, 124, 125, 126, 127, 135, 136, 142, 145, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 168, 169, 190, 196, 197, 206, 228, 232, 248, 250, 251
 sound, 10, 26, 30, 33, 47, 59, 68, 96, 109, 142, 143, 147, 148, 153, 155, 156, 178, 189, 191, 192, 193, 200, 202, 203, 204, 205, 206, 213, 216
 Space, 25, 29, 30, 39, 43, 45, 82
 spacepoints, 25, 28, 29, 36, 58, 69, 74, 80, 81, 92, 93, 94, 95, 96, 97, 98, 99, 102, 103, 104, 105, 106, 107, 109, 110, 113, 114, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 145, 149, 150, 152, 155, 156, 174, 179, 180, 182, 194, 196, 199, 206, 215, 220, 239, 249, 255, 257
 space-time continuum, 48, 50, 52, 257
 species, 16
 spectral, 187, 188
 speech, 30, 62, 144, 145, 146, 147, 153, 154, 155, 156, 157, 158, 160, 167, 183, 195, 204
 speed of atom, 219
 Sphota, 192, 193, 194, 202
 spiritual, 1, 7, 9, 11, 18, 26, 46, 69, 163, 207
 spiritual reals, 1, 7, 9
 spiritualist ecology, 163
 spotted saints, 5
 sprout, 166, 167, 168, 169, 170, 171, 180
 standpoints, 9, 10, 19, 31, 78, 180, 234, 236, 238, 251, 261
 statistical probability, 118
 status-determining karma, 89
 Stimulants, 267
 stoppage, 11
 subsidence, 73, 84, 95, 145, 149, 153, 166, 169, 170
 substantivity, 42, 54, 64, 80, 81, 125, 156, 167, 168, 194, 200, 229, 230, 232, 233, 234, 235, 253, 257, 261
 substrat, 258
 substrat of reality, 258
 substrate, 43, 60, 73, 104, 110, 111, 113, 114, 140, 143, 258, 259
 Substratum, 29
 successions, 152, 170
 supplementary notes, 23

—T—

- tactile properties, 186
 taste buds, 187
 tattva, 63
 Tattvārtha sūtra, 12, 15
 Tattvārtha Sūtra, 1, 3, 6, 9, 13
 temporal, 53, 174, 175, 176, 219
 terminology, 12, 18, 22
 theory of relativism, 33, 237
 theory of Relativity, 237

The Jaina world of Non-living

time, 2, 5, 7, 8, 19, 20, 25, 26, 27, 28,
33, 34, 38, 39, 41, 42, 43, 44, 45,
46, 47, 48, 49, 50, 51, 52, 60, 67,
69, 72, 74, 75, 80, 81, 88, 97, 98,
99, 100, 101, 109, 111, 113, 115,
121, 123, 131, 134, 136, 150, 152,
164, 165, 166, 171, 173, 174, 175,
176, 177, 178, 179, 180, 181, 182,
183, 185, 194, 197, 199, 200, 216,
230, 232, 237, 245, 248, 250, 254,
255, 256, 257, 261

time atoms, 121

time cycle, 257

transformation, 30, 62, 76, 114, 134,
142, 144, 156, 166, 171, 172, 182,
199, 234, 242, 247, 248, 249, 250,
252, 257, 260, 261

translational mode, 173

translational motion, 89, 137, 143,
154, 180, 200

transmigration, 10

Treatise on Reals, 1, 9

types of infinities, 101, 102

—U—

ultimate atom, 27, 30, 44, 97, 212,
213, 214, 215, 217, 218

ultimate atoms, 26, 28, 30, 31, 107,
213, 214, 215, 217

universe space, 39, 111, 113, 114, 115,
116, 119, 141, 256

—V—

Vācaka, 3, 4, 6, 11, 14, 15, 16

valency, 222, 245, 249

variform, 158, 204

vartana, 179

Vārtikas, 12, 16

vibration, 173, 182

virtual images, 210

vitalities, 158

vocable knowledge, 5

volitional natures, 136

volitions, 72, 150, 160, 166, 180, 197

—W—

world, 1, 2, 7, 9, 10, 16, 17, 19, 20

World of non-living, 10

wrong faith, 151

—Y—

yoked, 98, 103

—4—

4-touch mattergy, 158

—8—

8-touch mind-variform, 158

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