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Cosmology in India Before Einstein

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ABSTRACT

The Characteristics of all that can be conceptualized and hence named and defined in the world through comparison and contrast is the Science of VaisheShika (1) [2]. This includes a conceptual representation of space and grass visible matter, which is taken to be constructed out of the varying motions of anu. The most fundamental particle of matter.Vaisheshika approaches basic concepts in the characteristic manner. Vaisheshika is observer centric but acknowledge that certain entries are necessary within the conceptual frame work throgh at though there is no direct way of experimental verification of these enteries .

In this paper our emphasis is to examine vaisheshikatriya the sutras of kanadsal though the important commentary by the fifteenth century schelorsinha [3] and sankaramisra [4] will also be used for clarification , whenever necessary.

Keywords: Dravya, Dik, Kala, Space homogenneity, Dinections, Nityan.

2. Drvya – The bulding block

पृथिकापस्तेजो वायुराकाशं कालो दिगात्मा मन इति द्रव्याणि [1] [1] [5]

Earth water , five , Air Akasa , time , space, atma , mind are only nine drayyas ! 1.5 .

Space is one among these nine and Kanadarecongnizes it is an independent positive entry which is nither absence of matter nor an abstract concept. Every dravyas has an indentifier these nine dravyas have specific gunas/ a Hributes associated with them like the dravyaeart has smell associated as the primary gunalattribute to if An under standing of dravyas can be arrived a the analyscing their attributes and their interactin with the rest of the world . thedravyas shall not be analysed in this paper but it is important to understand the division of the dravyas.

The first four dravyas earth, water, fire and air are associated with a sense organ each as sense of smell, taste, sight and touch respectviely Al though sound is menficned as the identifier of akasa- the five dravyas which is not translated here as either specific reasons that shall be dealt with sepevately.

Time , space , atma and mind are the internal or nityadravgas and none of them perceivable by any of sence organs is a basic definition in vaisesika . Time , space and akasa are in cartable of motion (by sutra 5.2.21) and is only the first four dravgas and mind which are capable of motion . the mind is also not visible because it is by nature of anu like fundamental partiale , which is not visible by sutra 7.1.23.

3. Definition of Dik (space) and Kala (Time)

इत इदमिति यत्स्त्दव्न लिंयांम

That which given rise to such (cognition and usage) as this (is remote etc) from this (the same is) the make of space 2.2.10

Space is identified through the fact that it can provide the context to describe objects as being sepemted spatially spatial separation can only apply to metter since enternaldravyas which are in capble of motion can neither be separated nor brought together . althagn mind can move , it is invisible , therefore all that remains in kanads classification of dravges is matter. The seperaion is an idenfier and in=dentification is with reference to the observing mind – it is also significant that the displace mant of matter is observed relative to another pace of matter in sankaMisva'scommertary of this sutra an argument is built about the similarily of space and time in term of their gunal attribution and a question is raised about the requirement of new entity called apace to be reconnized .both space and time are characterstrzedby gunalattributer of partuaapartval being together – separated in kanadas definition the dravyer are understood and defmed they their gunaslattributer and each of these dravyas is non repetitive and unique . therefore have and space can be reconnized asteroid separate entitieriff their difference is establesheed. In yoga varestion [s] which discus indian cosmological perspective corrected with many other words a similar concept of vavging time with different universe is mentioned space for kanda is devoid of mothion and there fore it is only the metter in motion which the cosmos is mentioned and space is still this frts with the idea of indian cosmological model in which time is said to collapse in the rest period between the cosmic cveation and dissolution and that must be true if time is a function of stue of motion or the cosmos which come to a rest in this period between cveation and dissolution [7-13]

4.1 space asdravyas

द्रव्यत्वनित्यत्वे वायुना व्याखयाते [(2)(2)(11)]

Being a dravya and space are explained by Air (2, 2.11)

Space is eternce . It is concluded to be a dravya and that encompasses. Hypothesis like space is an independent entity . It is existent. It is unique. It is padartha. It is homogeneous

4.2 Space homogeneity

तत्वमभावेन [(2) (2) (12)]

The unity by existence . 2,2,12

Sankaran Mishra's defines it as that which differentia totes one from two or it is that kind of a gunal attributes which gives a sense of discreation about the state of dravya discussed.

4.3 Directions inspace

कार्यविशेषण नानात्वम ‖(2)(2)(13)‖

The diversity (of space) is due to the difference of effects 2.2.13

This means anout come the specifickind of work under consideration and because space motion , work in question can only refer to the work done by matter in space .

4.4 Space time as the fundamental matrix .

आदित्यसंयोगाद्भूतपुर्वाद्भविष्यतोभूताच्चप्राची ‖(2)(2)(14)‖

The direction comes to be regarded is the east , from the past , future or present conjunction of the sun 2-2-14.

In this sutra space and time are connected by the motion of sun which observation is also found in many commentaries.

In commentaries of sutra 2.1;5

त आकाशो न विध्यन्ते [(2) (1) (5)]

SankraMisrawhildeting the altributes of akasa states that not only in akasa absolutely colourless but based o the same argument even timtand space are devoid of the attributes of rupa, rasa , gandha and sparsh. Time and space have the same attributes associated with them . He concludes the commentary of this sutra stating that it follows that time and space are the fundamental entities of everything " सर्वधार्तैय दिक्कालयो :" in absence of either space or time indicates absence of motion and as is later established in this paper no gunalattributes can exist in absolute rest or when time collapse to zero . space and time has to be the fundamental matrix of the matter world and the observing mind can never escape either space or time during the process of observing the universe in the kanadasiddhartaehandrika of Gangadhurisastri says. [14]

परापख्य व्यवहारा साधारण कारणे परत्वा परत्वे !

ते च द्रिविधे दिक्कृतेकालकृते चेती !!

This division of time is said to be caused by the intelligence and in space it results from conjunction and disjunction of real matter and so the intelligence of the observation plays a secondary role.

In the food note of udayvirshastris book [15, page 103] it is mentined that Chandrakant Bhattacharya is of the opinion that space , time and even akasa are the same . Which are seen as different entities because of nature of effects as observed by mind in the se interaction with matter

4.3 Direction

तथा दक्षिणा प्रतीची उदीची चा (2) (2) (15)

South west and north also are similarly (22.15)

एतेन दिगन्तरालानि व्याखयातानि (2) (2) (16)

By this , the intervals of the directions in space are explained 2.216. in there two sutras the four main directions east, west, north, south beside when four more directions between there four directions are account for as relative to the position of the observer as concept which arise and became of the nature of motion of matter in space hence space itself id homegevoures and has no division of directions on herent in it

5.1 नित्यं –Eternality

The nature of both space and anu the most fundamental fartrde sutra 7.18 in vaisheshika are sard to be explained in the chapter. That disudsednitjaletennal

सदकारणवन्नीत्यं (4) (1) (1)

The eternal is that which is existent and uncaused 4.1.1

5.2 Anu in real time

तस्य कार्यय लिन्गगं (4) (1) (2)

The effect is the mark of the ultimate anu 4.12 initial motion of anu.

अग्नेरुधर्वजन्म वाज्योसित्भ क्वपन्म्नन

मन्स्च्शध्य्म कमाक्स्थ्कारितं (5) (2) (3)

The initial upward flaming of five , the initial side ward blowing of air and the initial action of anu and mind are caused by adristam 5.2.13

6. Matter and motion

कारण भावात कार्य्यभाव: (4) (1) (3)

The existence (of color etc) in the effect from existence in the cerse 4.1.3.

7.1 म्ह्त्यनेकद्र्व्यव्न्त रुपथ्न्चोप्ल्ब्ध (4) (1) (6)

Possession of what is composed of more than one kind of matter

Is annuspherical

नित्यम परिभंद्लम (7) (1) (20)

The eternal is parimandala 7.1.20.

अन्क्संयोग्स्त्वप्रितिशिदं (4) (1) (4)

Conjunction of anu is nost restricted 4.2.4

Anu is conctuded to be a partiede

अतोविप्रित्म्नु (7) (1) (10)

The contrary of the isanu 7.1.10.

Conclusion

The examination of the various section of the vaisheshika sutra reveals that kanada used in this frame aere of define

Observable though the effect of motion in a very consistantmameu when the univerrecoser to be at the end of the cosmic cycle .matter is not annihilated rather, the collection of anureachoo a qupescent state where they do not under go any motion and thus became invisrble to observation , the anu in if self is not observable and is thus an abstraction which is why we have not used the term afom for it.Konada frame worth de fies the usual cateogories of realist versas idealist since for him matter in itself is a result of motion. In this fram work time and space arise out of the motion thatanu obtains due to its interactions to this extent the observer is central to kanada's scheme

Kanada's emphasis on analysis of categarier is also found in the complementiarytradistion of logic (22-25) and the application question (26-27) .

The oder of tanmatre in the consolose of samkhya , which viewel as a kind of potentral out of which materiality emerger has feature similar to that of anu in the vaisheshika system

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