LAW OF CONTRADICTION: A COMPARATIVE STUDY BETWEEN BUDDHIST LOGIC AND CLASSICAL TWO-VALUE LOGIC

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Prelude

The main contention of this paper is to compare and contrast LOC between East and West in the light of Buddhist Logic and Two-value (bivalence) classical logic. The history of Indian logic is broadly divided into three periods, namely, *Prāchina Nyāya* (250 BC), Buddhist Logic (Sixth Century AD), and *Navya Nyāya*. The Buddhist logic text *Nyāyapraveśa* (Introduction to Logical Method) had a great influence upon Indian and Chinese Buddhism and also among the Jainas. Buddhist logic bears very close similarities to syllogistic form and it can be represented and analyzed by standard deductive techniques. In Buddhist logic there we have two different perspectives, such as *pramāṇa-vāda* (doctrine of Proof) and *Hetu-vidyā* (the science of causes). *Pramāṇa-vāda* deals with the epistemological study of the nature of knowledge and *hetu-vidyā*is associated with the system of logic. Vasubandhu first in his *Vāda-vidhi* (A Method for Argumentation) was dealing with the logical and epistemological issues analytically and systematically. In this regard, he was influenced by the Hindu work *Nyāya-sutra*. Thus to understand Indian logic and Buddhist logic properly, we have to refer to the Indian tradition of inference (*anumāna*), epistemology (*pramāṇa),* and science of causes (*hetu-vidyā*). In a sense, classical Indian logic was based on *Nyāya* and Buddhist logic. Matilal remarks, "Logic in classical India is the systematic study of informal inference-patterns, the rules of debate, the identification of sound inference vis-a-vis sophistical argument, and similar topics."[1] Thus, according to Matilal, Indian Logic should be comprehended as being a different system of logic than modern two-value first-order classical logic as well as modern predicate calculus. Having said the so-called *anumāna –theory of Indian logic has its own logical merit.*[2] The other important point that has been raised by Motilal was that Indian logic was influenced by the *study of*

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[1] Motilal, B. K., "Introducing Indian Logic" in Generi, *included in Indian Logic: A Reader,* 1998, p.184.
[2] Mohanty, J. N., *Reason And Tradition in Indian Thought: An Essay on the Nature of Indian Philosophical Thinking,* New York, USA: Oxford University Press, 1992, p.106.

grammar,[3] whereas the so-called Classical Logic or modern Western logic was influenced by the study of mathematics.

The Role of LOC

LOC (Inconsistency) has played a pivotal role in every philosophical system in general and logic in particular. It is regarded as one of the Fundamental Laws of Thought. In Western classical two-value logic it has a distinctive connotation, unlike the Indian logic. LOC is the basic and fundamental principle of First Order two-value logic. It is purely formal in its application. However, when I look at Indian logic I find something different. Most of the Indian logical systems apply LOC either in the epistemological sense or on the basis of sciences of causes. In Indian logic, LOC functions under the Law of Contradictory Predication (*viruddha-dharma-samsarga)*. This is the Buddhist view of LOC. If I go to the Vaisesika system I observe that it takes LOC as *a real relation between two opposed real facts.*[4] As it contains two opposed real facts, it is called *dynamical opposition*. According to the Vaisesika system, it depends on *a variety of causation*. However, they did not say anything about logical contradiction. Buddhist logic differs from Vaiśeṣika in the sense that unlike the latter the former mentioned LOC. If I examine the aphorism of the Nyaya system, I observe that *they neglect contradiction as a relation between real facts*. Instead of that, they affirm a contradiction of *two judgments* where the one denying what the other affirms. The Sānkhya system also contained the relation of contradiction among the varieties of the relation between real facts. The Sānkhyas system in this respect has the same level as the Vaiśeṣika system. Even though the Sānkhya system has the allies of the Buddhists in their fight against the *Category of Inherence*, but unlike the latter, the former was noncommittal about the logical theory of contradiction. I think the Naiyāyikas approach of LOC is closely allied with the classical two-value logic. According to the Naiyāyikas, the meaning of contradiction is that "two things cannot coexist together at the same place and at the same time." However, Jainas flatly deny LOC because for them both affirmation and denial, which are essential for LOC, are untrue. The real relation was something halfway between *affirmation and denial.*

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[3] Matilal, B. K., *The Charater of Logic in India,* Albany, NY, USA: State University of New York Press, 1998, p.14.
[4] *Vaisesika System*, III, 1., 10-12.

Objective

In this paper, I propose to make *a naive attempt* to focus on the LOC in the light of classical bivalence logic and Buddhist logic. This attempt perhaps may not be something radical or new, but I do engage with the hope that my interpretation will depict the issue differently. I think that Western logic, in general, has a different implication in comparison to Eastern logic. If the logic of West and East would remain the same, it would then indeed be *a futile exercise to compare*. Further, I strongly believe that there is no point in one as authentic and the other as inauthentic. Every system has its own merit. When I take this issue, I had in mind various implications of LOC, such as *formal and informal*, *casual and other than causal*, *complete, and other than complete*, *epistemic, and other than epistemic*. I do think that the aforesaid comparison does not bear any sense if LOC has no various implications or senses. Thus in a sense, this paper appears as a comparative study between West and East on LOC. Of course, there is nothing exaggeration to assume that LOC is an effective principle of Laws of Thought without which human life in general and logic, in particular, remains incomplete When we find the relevance of LOC in human life, we are predominantly concerned with the informal uses of LOC. Except for some technical uses of LOC in Nyāya logic, the overall applications of LOC in Indian thought are content-based or theoretical-based. Indian logic, I do presume, is primarily *an epistemic logic*. Thus in a sense, Indian logic is more theoretical and informal than formal. As it is theoretical, it works under *the purview of causal connection*. On the contrary, classical two-value logic is formal. As it is formal, it is contentless. As it is contentless, it is not theoretical, but structural. As it is structural, it functions in the light of forms but not in the light of matters. As a result, it does not work under the purview of *causal connection*. As it ignores causal connection *(hetu-vidyā)* it is not epistemic-logic. In logic, there are three different interpretations of implications, such as *causal, material, and entailment.* The informal inference is guided by causal connection, the formal inference is guided by material implication, and the modal implication is guided by entailment. It is the admixture of both causal and material. If the aforesaid distinction stands, then from where the relevance of the comparative study of LOC comes? The relevance of comparison still holds because, to me, the sense of LOC, I do reckon, remains the same both in the classical two-value logic and Buddhist logic.

Different Senses of LOC

What then is the *sense of LOC*? The unique sense of LOC hinges on the various interpretations of its *sub-senses*. First, in the case of LOC, the basic components are complimentary with each other. The basic form of LOC is *p and not p*, (i.e., in symbol: p.~p). Here p and ~ p are two distinct components having different senses. They are complimentary with each other. They are polar components. They are complementary or polar in the sense that they *cannot co-exist with each other*. Here one component appears as the denial of the other and vice-versa. Second, when two complementary terms are conjoined with each other, *it leads to contradiction formally as well as theoretically or informally*. Third, LOC in the negative sense *contains the whole*. As it contains the whole, it says nothing. It is *transcendental* according to Wittgenstein. In this regard, Wittgenstein remarked, "Contradiction ...vanishes outside all propositions... Contradiction is the outer limit of propositions..."[5] I think Wittgenstein in his *Tractatus* has developed the modern interpretation of truth-functional logic. Here he claimed that every logical proposition has two senses, i.e., either the proposition is true or false. Thus when I attempt to compare the LOC of Buddhist logic with its Western counterpart, I must take Wittgenstein's interpretation of bivalence (two-value) logic most than any other.

For example, when I say without any intermission that *I am six feet tall and I am not six feet tall*, my statement leads into contradiction both conceptually and formally. A contradiction is false without exception because according to Wittgenstein it vanishes outside all propositions. As it is false without exception, it says nothing. It says nothing because it lacks participation. It contains the whole. Anything about the whole remains *non-participatory*. The formal sense of LOC, such as "p .~p" and the informal sense of LOC, such as "I am six feet tall and I am not six feet tall at 10 am on 15th August 2020" remains the same, even though unlike the latter the former is non-committal about matters or contents of p. Fourth, the form of LOC cannot be obtained without the concept of Negation, i.e., '~'. The sense of Negation remains the same in formal and informal applications. The negation of p is not-p and the negation of not-p is p. For example, in Buddhist logic, the negation of

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[5] Wittgenstein, L. *Tractatus Logico-Philosophicus,* translated by Pears, D. F., and B. F. McGuinness, Routledge, London and New York, 1991, p.40.

light is dark and the negation of dark is light. As there are only two senses of the proposition, it hovers within these. It is only for the sense of '~', we can develop bivalence or two-value logic. Every proposition has two senses. We cannot have different senses of a proposition without the help of Negation. For example, if the proposition p is true, then its negation would be false and *vice-versa*. Thus the concept of LOC would remain a far cry if we give up the concept of Negation. The Principle of Tautology, such as "P v ~ P" and the Principle of Contradiction (LOC in my sense), such as " p . ~ P" cannot be grasped without the concept of negation. Even to know that two propositions, such as p and q are not identical, we take the help of Negation, expressing it in the form of the symbol: p # q. Wittgenstein takes Negation as an operation and then remarked "Negation reverses the sense of a proposition." [6] One operation can encounter the effect of another. Operations can cancel one another. It retains the same in Buddhist logic as well.

Buddhist Logic

Let me delve into Buddhist logic to delineate the sense of LOC. It is a general perception that the origin of every judgment in Buddhist logic lies *in an act of running through.* In Buddhism, the manifold of objects is divided into two unequal parts, such as a limited number of similar things and a less limited number of dissimilar things. It then says *similar will be other than the dissimilar* and *the dissimilar will be other than the similar*. They mutually represent the *absence of each of the other*. That means they cannot co-exist. We have the same sense of LOC in classical two-value logic. In Buddhist terminology, I can say that the proposition p and the proposition ~p are dissimilar. They cannot co-exist with each other. *They mutually represent the absence of each of the other*. LOC in Buddhist logic represents a dichotomy. As an active part of consciousness, it begins with an active part of dichotomy. "As soon as our intellectual eye begins to glimmer, our thought is already beset with contradiction."[7] Unlike Western traditional logic, Buddhist logic offers a conceptual exposition of LOC. In this regard, it asserts that LOC is nothing but the expression of the fact that all cognition is *dichotomizing and relative*. It essentially means that here we can cognize a thing only *by opposing it to what it is not.* Thus

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[6] Ibid., p.42.
[7] Stcherbatsky, Th., *Buddhist Logic,* Matilal Banarsidass Publishers Private Limited, Delhi, 1994, p.404.

there are two components involved in the LOC of which one is the positive and the other consists of the negation or non-existence of the positive. Dharmottara says, "The different and the contrary cannot be conceived so long as the non-existence of the similar is not realized."[8] While illuminating LOC, Buddhists logicians used some corollary concepts, such as *similar, dissimilar, existence, non-existence, opposition, otherness, etc.* At times otherness and opposition are realized as representing the negation of the similar. Negation is conceived as the absence of the similar directly, whereas otherness and opposition are conceived of the absence of the similar indirectly. For example, the dissimilar class of fire will embrace (a) the simple absence of fire, (b) the presence of something other than fire, (c) the presence of something incompatible with fire, (d) the presence of something opposed to fire. Here the terms incompatible and different presuppose the *idea of simple absence.*

It should be kept in mind that that the concept of incompatibility (opposition) may have different logical connotations. It may be either *efficient or simply logical*. For example, the *hot* and the *cold* are efficient repugnancies of two things because they cannot co-exist without collision. What is hot cannot be cold and vice-versa. As per the simple logical opposition of two things are concerned, one is the *complete negation* of the other. For example, the blue and the non-blue. It is conceptually *a logical contradiction*. It is Antiphasis, i.e., *laksaniko virodhah.* I think Buddhist logic deals with the former and Aristotelian logic deals with the latter. But where lies the difference? To me, the *sense* remains the same in both cases. However, I do presume that *efficient repugnancy* is slightly indistinct than *complete negation*. In Buddhist logic, the negation at a particular moment cannot be complete, but it is unlikely in the case of classical two-value logic. The distinction between blue and non-blue is *logically exhaustive* and it can be asserted objectively. However, the distinction between hot and cold is not objective because hot and cold can be measured in *terms of degrees*. Particularly what is hot and what is cold at the minimal level is *subjectively determined*. Moreover, the issue of intermediary matters most in the case of *efficient repugnancy*.

However, when we read Dharmakriti we have the logical interpretation of LOC. According to Dharmakitri, in LOC there are two parts *of which the one is the*

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[8] Dharmottara, *Nyayabindutika,* p.21.

complete negation of the other. More succinctly, he asserts that there remains a contradiction in a couple whose essence is posited in a complete mutual exclusion. For example, *existence and non-existence* are a case in point. What does he mean by complete mutual exclusion (*parihāra, pari-tyāga, atyanta-tyāga, tritiya-prakāra-abhara)*? It essentially means exclusion *without anything intermediate.* From the ontological point of view, it will be called existence and non-existence, and from the logical point of view, it will be affirmation and negation of the same thing. It is not only a mutual reciprocated relation, it is *complete reciprocation*. In the case of complete mutual exclusion, one part is complimentary with the other. The conjunction of two complementary terms leads to LOC and the disjunction of two complementary terms leads to the Law of Excluded Middle (*henceforth: LOEM*). There are two different logical senses of LOEM, namely, *exclusive and inclusive.* In formal truth-functional logic, we apply the inclusive sense of LOEM, whereas, in the case of informal sense, we apply exclusive sense. What is the intended meaning of the sentence: either Ram will come or Shyam will come? It does not essentially mean that both Ram and Shyam will come. Therefore, if both will come, then the sentence would be false because it goes against the intended meaning of the sentence under consideration. But in truth-function logic, it is reckoning as true.

It thus seems that the term *opposition* that plays a significant role to cognize LOC may be different. It may be *real or dynamic*. Therefore, in Buddhist logic when we deal with the concept of *complete mutual exclusion* or *mutual repulsion* which interpreting LOC, we ascribe it metaphorically. Unlike the two-value logic, in Buddhist logic, the contradictory parts of a couple which are used metaphorically "can peacefully exist in close contiguity without interfering with the existence of one another, without the one encroaching upon the territory occupied by the other".[9] Is it not logical? If it is not logical, then where lies the relevance of Buddhist logic in LOC? I have categorically stated that when I deal with Buddhist logic, I emphasize the sense of LOC. I have already pointed out that there are various *sub-senses* of the sense of LOC. The sub-senses of the sense of LOC are extremely relevant while addressing a comparison between Buddhist logic and two-value classical logic. Moreover, I do presume that the aforementioned sub-senses have not degenerated

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[9] Stcherbatsky, Th., *Buddhist Logic,* op. Cit. P.402.

from the fundamental sense of LOC. In Buddhist logic, the concept of C*ontrapugnating causality* plays a pivotal role. In such cases, both the opposed parts are *mutually endeavoring* to oust one another out of their mutual positions. For example, light and darkness are the ones the complete negation of the other, and vice-versa. In the case of Cantrapugnating Causality, the logical relation of contradiction is retained as light is the complete negation of darkness and vice-versa. However, they cannot peacefully co-exist in *close contiguity* as the blue and the non-blue. According to Stcherbatsky, "There is a constant warfare between them; the one will be constantly striving to occupy the territory of the other."[10] I think the term " constantly striving to occupy the territory of the other" as used in the aforesaid remark of Stcherbatsky gives ample evidence in what sense the use of LOC in Buddhist logic differs from the use of the same in bivalence logic. When we say that p and ~p are complimentary with each other and their conjunction leads to LOC formally, the issue of "constantly striving to occupy the territory of the other" simply does not arise. However, the same matters most in Buddhist logic when we deal with LOC.

In this regard, the definition of LOC of Dharmakirti is extremely relevant. Dharmakirti says, "If a phenomenon is produced by the totality of its causes (and therefore) endures, but (suddenly) disappears on the approach of another phenomenon, there is between both these phenomena a (real) opposition, as, for instance, between cold and hot."[11] I think in the aforesaid definition "*the totality of its causes...endures*" certainly refers to Contrapugnating Causality, which I think is completely foreign in Classical two-value logic. In Buddhist logic, the intended meaning of the terms associated with LOC matter most. The same is unlikely in the case of two-value logic. Thus to me, it would be a prerequisite to conceive the meaning of the "totality of causes of the opposed phenomena". It is true to say that the denial of hot leads to cold and the denial of cold leads to hold. Does it then lead us to assume that the denial of hot causes to have a cold and vice-versa? Does the light, which in some junctures invariably follow on darkness effect of that darkness and vice-versa? These are some knotty philosophical questions that very often perplex philosophers. However, in Buddhist logic, we find a definite answer. In

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[10] Ibid., p.405.
[11] I quoted it from Stcherbatsky, Th., *Buddhist Logic,* Matilal Banarsidass Publishers Private Limited, Delhi, 1994, p.404.

Buddhist logic, it is affirmed that the cause of having something as cold lies in the denial of hot and vice-versa. It is reflected in the Buddhist theory of causation. It states that "every point of genuine reality is arising in functional dependence on a sum-total of preceding factors, which all are its causes." [12] Here the term "totality" contains both positive and negative magnitudes. They jointly help to have something as hot from something as cold. If one part is opposed to the other, it is at the same time doing something, i.e., it indirectly partakes in its production.

In Buddhist logic, one cannot rule out the cases of efficient repugnancy and it is unlikely in classical Aristotelian logic. However, this does not make sense to say that in all cases LOC is used in Buddhist logic in the aforesaid sense. For example, there is no question of doubt that light is the complete contradiction of non-light as there remains nothing intermediate between light and non-light. It is very similar to classical Aristotelian logic. It fulfills the LOEM principle as well. What do we think of light and darkness? Can we say that there is no intermediate between them? According to Buddhist logic, if light and darkness are considered real phenomena, then there always remains *something in the middle*. Even if the change is abrupt, even if the light appears all of a sudden with full swing on the very place, nevertheless we cannot rule out at least *one intermediate moment of twilight*. According to Buddhist logic in a normal situation, it requires at least three moments: *the ultimate moment of darkness, the initial moment of light, and at least one moment between them, for the change to take place.* That means the change from darkness to light is *a running through the process where we find at least three moments as an intermediary*. Now, if the three moments are taken as an intermediary, then LOC, as well as LOEM, cannot hold as per bivalence logic. I think this is one of the major differences between classical two-value logic and Buddhist logic about the application of LOC. Here the opposition is not complete concerning time. The same is not complete concerning space as well. For example, when the light is produced in a large room, darkness is annihilated only in that part of it that is nearest to the lamp. But in the remaining part, there is either twilight or darkness. According to Buddhist logic, "light is produced only as far the efficient forces producing it are capable of doing it."[13] Having said we

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[12] Ibid., p.405.
[13] Ibid., p.406.

have different interpretations even in Buddhist logic if we consider the logical opposition between *light and non-light*. Here the opposition between light and non-light is complete, exhaustive, and there is no twilight because *twilight is included in the non-light.* There is no intermediate between light and non-light either in time or in space. Here the relation between light and non-light is characterized by logical necessity and it is at par with the classical two-value interpretation of LOC.

Thus, we have two different interpretations of LOC in Buddhist logic of which one *may be considered* at par with the classical two-value logic and the other is non-classical two-value. The point is of course, what makes the difference? Western classical logic, being a formal logic, *essentially ignores the relevance of causality*. However, when we examine the same issue in Buddhist logic, it seems that Buddhist logic takes causal implications *(hetu-vidya*) while elucidating LOC. Buddhist logic, I have already mentioned on more than one occasion, identifies two different applications of LOC, such as *complete mutual exclusion* and *efficient repugnancy.*

What then do we think of pleasure and pain? In what sense they are interpreted in Buddhist logic under LOC? Hinayana observed that between pleasure and pain there is an indifferent feeling in the middle. Even careful study would reflect that in Buddhism there was considerable debate relating to the indifferent feeling. But we have a definite response in Buddhist logic about pleasure and pain. It states that if there is an indifferent feeling in the middle between pleasure and pain, then the indifferent feeling may be conceived either as not pleasure or not pain. If it is conceived as not pleasure then it must be included in the category pain. If, on the contrary, it is conceived not pain, then it must be included in the category pleasure. As a result, there are only two mutually exclusive parts, pleasure, and displeasure. Thus the debate is solved by assuming the fact that there are just two oppositions between pleasure and pain where the one is logical *without a middle term* and the other is *real with a transition part.*

Let us explain the point of *time duration* by citing *light and darkness*. There are efficient point- instants both in the case of light and also in the case of darkness. The transition from light to darkness and also from darkness to light *endures for some time* and during the enduration or so-called transition, there are *series of moments* in which the real causation exists between *efficient point-instants*. Among the series of moments, there is the last moment and the last moment of the series called darkness is

the real cause in the sense of dependent origination, and the first moment of the series is called light. As light and darkness are opposite and one is *transformed into the other through a series of moments*, there is the first (beginning) moment and the last (end) moment. When light is transformed into darkness, light is the beginning or first moment and the last moment of the series is called darkness. It is the cause of the first moment and it can be understood by dependent origination. According to Buddhist logic, even though light and darkness are two different moments of which one is the cause of the other when one transforms into the other, but they are not *mere moments.* They are different from other moments as they become *what they are*. They become the phenomena of light and darkness and unlike other moments they are *endured for some moments*. This is where the significance between *efficient opposition* and *real causation* essentially hinges.

What then is the distinction between *real causation* and *efficient opposition*? According to Buddhist logic, real causation like real existence belongs to *single moments only*; whereas efficient opposition is "between one assemblage of moments and another assemblage". Thus, unlike real causation, efficient opposition is *constructed just as the assemblages themselves* are constructed by the intellect. "In other words, the relation of efficient opposition is not an ultimate fact; it does not belong to the *Things-in-Themselves*, but only to constructed phenomena."[14] According to Buddhist logic, LOC does not apply to the Things-in-Themselves because logic is thought and thought is imagination. On the contrary, Things-in-Themselves is the ultimate reality. Logic thus cannot reach up to ultimate reality, i.e., *Things-in-Themselves.* However, this position of Buddhist logic cannot be accepted without begging questions. It was reflected from the words of Dharmottara. The debate was centered on whether the relation of efficient opposition was real or merely logical; whether it was transcendentally real or only phenomenal. Dharmattara attempted to solve this debate by assuming two different kinds of efficient opposition. He then goes on to say that just there are two kinds of causality, namely, transcendental and real, obtaining between point-instants and the other, being a category, metaphorical, obtaining between phenomena, just so there are two kinds of efficient opposition. In ultimate reality, there is however no relation of opposition

[14] Ibid., pp.407-8.

between entities as *things-in-themselves*. According to Dharmakirti, "When one fact has duration as long as the sum-total of its causes remains unimpaired, and it then shrinks as soon as another fact (being opposed to it) appears; it follows that both are (dynamically) opposed, (just as the sensations of heat and of cold)."[15] As it is constructed by our intellect, it is not ultimately real.

Concluding Remarks

It seems from the above observation that there are different interpretations of LOC in Buddhist logic. Let me specify first the stringent modern logical definition of LOC. It is *entirely formal and necessary*. The atomic form of LOC is p .~ p. It is the fundamental structure of LOC. Any proposition that fulfills this form would be regarded as a contradiction. Here the two components, namely, p and ~p are *mutually exclusive and exhaustive* without anything intermediate. It functions in *a logical space* where every possible situation is available at the very outset. In logical space, no new information will appear later on. In logical space, everything is available at the very outset. This is where the distinction between epistemology and logic hinges. In the case of epistemic logic, there remains the possibility of having new information that would vitiate or at least weaken the earlier epistemic conclusion. Moreover, epistemic logic functions in the empirical space. Logical space differs from empirical space in the sense that unlike the latter the former goes beyond *causal principle*. It is exhaustive in the sense that it contains *the whole and there remains nothing intermediate to add something or make off with anything.* Thus in a sense, *it says nothing*. It is, in Wittgenstein's sense, *transcendental*. What is transcendental goes beyond the purview of causal connection or causal efficacy.

A Relook after Strawson

Many logicians interpreted LOC in terms of *inconsistency.* Strawson (1976) for example, prefers the term inconsistency instead of contradiction. According to Strawson, one involves inconsistency if he utters two propositions *at the same time and same breath* of which one is the complete negation of the other.[16] For example, if John says at the same time and in the same breath that *he is a bachelor and he is not a bachelor*, he involves in inconsistency. This essentially suggests that in the case of

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[15] Dharmakirti, *Nyayabindu,* p.68.
[16] Strawson, P.F., *Introduction to Logical Theory,* B.I. Publications, Bombay.Calcutta. Delhi. Madras, 1976, p.3.

LOC or inconsistency in the Strawsonian sense, any interval or so to speak temporal gap is ruled out. However, Strawson inclines to say that if there is a *time gap* of saying between two contradictory remarks, then it would violate LOC. In Strawsonian sense, the statement like "I am a bachelor on 15th August and I am not a bachelor on 16th August2021" may not be contradictory because it is both empirically and logically possible that the person, who was a bachelor on 15th August, might be a married person on the 16th August 2021.

Thus, for Strawson, LOC of classical logic cannot work if we are allowed to justify it from descriptive content where epistemic issues involve. If I am asked by a student that Sir, how did you enjoy the marriage ceremony of my (his) friend that you (I) had attended? If I am replied in the form that "It was good and not good", then my student might say that Sir you are involved in *a plain contradiction*. How did the same ceremony be good and not good at the same time? Following Strawson, I can retort to the student by saying that if you allow me to justify then you can recognize that I am not involving in contradiction. I then say that the reception component of the ceremony was extremely good and the food quality and cuisine of the same was not good. So "it was good and not good". This position of Strawson may be closer to Jainas's position. Thus for Strawson, if we are allowed to take the descriptive content to appraise LOC, then we can overcome the *apparent contradiction*. The statement that I am over six feet tall and I am less than six feet tall can be overcome by saying that *I am just six feet tall.* Thus both LOC and LOEM can be violated if we are allowed to take help from descriptive content. I find propinquity between Strawson and Buddhist logic. As the fundamental assumption of Buddhism is momentariness, we cannot rule out a temporal gap between two moments. In Buddhist logic as every moment is different, therefore to say that he is a bachelor in one moment and to say that he is not a bachelor in another moment would vitiate LOC. The point then is: if we rule out the point instant (moment) and the Buddhist general position that every moment is different from every other moment, then to me Buddhist logic surely cannot work. On the other hand, if we admit the Buddhist position of the same then following Strawson I can say that the classical concept of LOC does not work at par with the Buddhist logic. However, the point, I do surmise, is that Buddhist logic attempts to overcome the charge at least from the causal point of view that every moment depends on the subsequent moment and there remains *a continuity and*

contiguity among the series of moments as I have mentioned after Buddhist logic in the case of light and darkness. Strawson does not accept the theory of dependent origination. Strawson would say that every moment is completely different from other moments. The world of facts is happening at every moment. Therefore, the classical principle of LOC cannot retain its sanctity, if the temporal gap is allowed. My position in this regard is that from a Strawsonian perspective, the LOC of Buddhist logic cannot reach up to retain the dignity of LOC of two-value classical logic. However, by saying so, I do not subscribe that Buddhist logic is irrelevant and if anyone thinks so, I am certainly not belonging to this camp. My position here is very simple and clear. *As Buddhist logic is not formal and classical two-value logic is formal, therefore to attempt to find out the formal implication in Buddhist logic in particular and even the whole Indian logic, in general, would be a futile exercise.* Having said the comparison is still praiseworthy because to me the sun-senses of the sense of LOC remain intact in both systems.

Other Insights

The basic problem with Buddhist logic, is that it cannot ignore the fundamental theory of *momentariness*. To me, Buddhist philosophy in general and Buddhist logic, in particular, has paid for that. If every moment is different from every other moment, then how can we interpret the continuity? In this regard, Buddhism brings the concept of dependent origination (*pratityasamudpada).* I am not entering into the debate. But I intend to say that the theory of momentariness and the principle of dependent origination appear as a serious threat to retain the logical dignity and logical sanctity of LOC. If I subscribe to the modern interpretation of LOC as a paradigm and evaluate the Buddhist interpretation of LOC in the light of that then surely cannot accommodate the Buddhist interpretation of LOC as logically genuine. In such a case it would not only violate the Strawsonian paradigm of inconsistency, it equally violates and overlaps the classical two-value paradigm of LOC. This position perhaps may be taken as *a narrow interpretation of LOC* as it puts emphasis only on the formal aspect of LOC. The question is of course: Can we overcome this hurdle and make the comparison *more viable and fruitful*? If so, how it can be justified? This is the crux of the problem where I have a point to say. My position is very simple and clear. I do not think at all that Buddhist logic interprets LOC very similarly to classical Western logic because the former acts under the

purview of causal law and principle, whereas the latter acts under the purview of logical space and strictly abided by the formal structure. As Buddhist logic is guided by the causal rule and principle, it functions in the empirical space. To me, logical space differs from empirical space because it is known that what is empirically impossible is logically possible. That means it can assess the possible situations which remained uncaused from ordinary causal principles.

Thus one point is clear that Buddhist logic deals with the theoretical interpretation of LOC, whereas Aristotelian logic or bivalence logic deals with the formal interpretation of LOC. However, I do reckon that the sense of LOC remained the same in both interpretations. So if we make the comparison more viable and fruitful, we must rely on the sense of LOC. I have already mentioned various senses of LOC and claimed that there are various sub-senses of the sense of LOC which remained common both in the classical two-value interpretation of LOC and in the Buddhist logical interpretation of LOC. For example, the sense of double negation remained intact in both systems. The negation of p is ~p and the negation of ~p is ~ ~p, i.e., p. Buddhist logic like the bivalence logic acknowledges that in the case of complete negation, the terms blue and non-blue are mutually exclusive as they cannot co-exist with each other. It is at par with logical contradiction. Having said that, to interpret LOC in terms of the principle of dependent origination and causal efficacy is altogether a different interpretation than to interpret the same from a purely formal structure. Thus I can say that the sense of LOC remains the same but the methods are different in both interpretations. Buddhist logic applies the theoretical method associated with *causal efficacy* whereas classical two-value logic or modern two-value propositional logic apples the formal method. The former depends on *causal efficacy*, whereas the latter depends on *formal efficacy.*

Let us re-examine the issue where it has been affirmed in Buddhist logic that there are two oppositions between pleasure and pain of which *one is logical without a middle term* and the other is *real with a transition part.* It affirms that what is logical is not real and what is real may not be logical. Here the term *real* is conceived in the sense of *causal efficacy* and it is contained in the empirical space. Now my point is that if the relation of this kind of contradiction reduces to a case of causality in Buddhist logic, would it then not be a misnomer to call it *a contradiction in the two-value classical sense*? Is it not causality simple? It was the opinion of early

Vaisesikas where *efficient opposition* as a relation is taken into account. Efficient opposition is a natural loathing between two things, such as, for example, the natural irreconcilable antagonism of the ichneumon and the snake. It seems that the Buddhists with certain reservations acknowledged the characteristic of the relation of *efficient opposition* as the relation between "something stopping and something stopped" (*nivartya-nivartaka-bhava)* where the stopping and the stopped were durations. According to Buddhist logic, efficient opposition includes the fundamental characteristic that the diminishing phenomena must possess duration very similar to the suspending phenomena. The causal relation associated with dependent origination obtains between the disappearing phenomenon and the superseding phenomenon had some duration. It is the outcome of metaphysical causation but not real causation because real causation exists between *efficient point-instants*.

What is conceived is that the Buddhist logical interpretation is all about of *predication of various terms*, such as blue and non-blue, hot and cold, light and darkness, etc. Buddhist logic takes each of these polar pairs through causal connection. But in modern truth-functional logic, the application of predication through causal connection is completely foreign. The former is theoretically based on causal efficacy but the latter is essentially formal and independent of causal efficacy. Secondly, as bivalence logic is formal and independent of causal efficacy, it completely ignores time duration, but it is unlikely in the Buddhist logic when it takes up LOC. Third, the formal interpretation of LOC expressed in the form of P . ~ P is exhaustive and there is no intermediary or time duration in between them, whereas, in the theoretically causal interpretation of LOC in Buddhist logic, there remains intermediacy between two opposed predicate terms. Moreover, I find formal dearth not only in Buddhist logic but in most of the Indian logical systems. Having said that I do not think that the formal efficacy and the causal efficacy of LOC that I have already outlined in the aforementioned systems are completely detached from each other. Rather I strongly believe that the formal efficacy of LOC contains the causal efficacy and goes beyond that. Otherwise, the sense of LOC cannot be retained almost the same in both systems. I have already justified it by saying that there are various *sub-senses of the sense of LOC* for which the comparison of LOC between Buddhist logic and bivalence logic became worthy. So I end the paper with a single-

line conclusion that the comparison between Buddhist logic and the classical two value logic finds its foothold if we rely *on various senses of LOC and nothing else.*