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A Comparison Between Tibetan Buddhist Debates and Aristotelian Logic

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Abstract. Logical thinking is the fundamental form and tool of human rational activity, giving rise to representative logical systems in Eastern and Western philosophical histories. Aristotelian logic, which originated from ancient Greek rational reflection on nature and society, aimed to discover the truth. Tibetan Buddhist debate traditions, rooted in the Indian Nyāya tradition, are based on the Buddhist goal of "liberation through wisdom". This paper examines the similarities and differences between the "pratītyasamutpāda" and the "syllogism", arguing that although they shape rational paradigms of Eastern and Western traditions respectively, they complement each other significantly. The formal advantages of Aristotelian logic can facilitate the modern expression of debate, while the context sensitivity and dialectical principles of debate can compensate for formal logic's neglect of the cognitive subject. In cross-cultural dialogue, these two systems respectively embody "scientific rationality" and "religious wisdom". The paper suggests that research combining both frameworks has the potential to transcend single-cultural logical paradigms and provide significant insights for contemporary logic and philosophy. Future exploration can delve into integrating Buddhist debate with modern cognitive science, making cross-cultural and cross-traditional comparisons to construct a more inclusive and diverse global logical system.

Keywords: Tibetan Buddhist debates, Aristotelian logic, Prāsaṅgika method, syllogism, cross-cultural logical dialogue

1. Introduction

Logical thinking, as a vital form of human rational activity, holds a pivotal position in the philosophical histories of both Eastern and Western civilizations. The foundational system of Western logic—Aristotelian logic—emerged from the ancient Greeks' rational reflection on nature and society. Focusing on the pursuit of truth, it established a formal logical framework based on syllogistic reasoning, thereby creating the first comprehensive formal logic system in the Western tradition. Tibetan Buddhist debate, drawing upon the Indian Nyāya tradition, is rooted in the religious goal of Buddhism: "liberation through wisdom". Integrating logical reasoning with doctrinal inquiry and meditative practice, it forms a system that is both practical and speculative.

Though originating from different civilizational contexts, these two logical systems share a common focus on the validity of reasoning and the normativity of thought. This paper examines the

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core method of Tibetan Buddhist debate, the "Pratyutpanna-vāda method", and compares it with the cornerstone of Aristotelian logic, the syllogism. By comparing the similarities and differences between Tibetan Buddhist debate and Aristotelian logic, it reveals their underlying epistemological and religious-philosophical significance.

2. Fundamental characteristics of Tibetan Buddhist debate

The tradition of debate in Tibetan Buddhism originated with the introduction of Buddhism to Tibet in the seventh century. Drawing upon the logical framework of Indian Pramana (logic), it evolved over a millennium into the present system centered on the Abhidharma-samuccaya as its foundational text and the Prāsaṅgika Madhyamaka as its core dialectical approach. Pramāṇa logic gradually became internalized as a core tool in monastic education. Although monks engage in debates using the Tibetan language, even local Tibetan residents often cannot comprehend the content of these discussions. This is because, unlike contemporary debates, monastic debates require a specific linguistic system and adhere to strict formal structures. Consequently, despite using Tibetan, the content remains inaccessible to those who have not specifically studied debate methodology.

The most typical argumentative form in Buddhist debate is the "three-part argument" (trairūpya), composed of three elements: thesis, reason, and analogy. The "thesis" corresponds to the topic in the argumentative essays we have studied, the "reason" corresponds to the grounds, and the "analogy" corresponds to the example. For example: "Sound is impermanent (thesis), because it is a conditioned phenomenon (reason), like a bottle (analogy)." The "reason" must satisfy the three-characteristic criterion: it must be universally applicable to the thesis, necessarily present in similar cases, and definitely absent in dissimilar cases. This means the argument must be valid under specific conditions of cognition. The ultimate goal of debate is not merely to prove propositions, but to use reasoning to dismantle attachments and guide practitioners toward insight into ultimate reality. If any of the three characteristics is missing, the inference is invalid [1].

Unlike Aristotelian logic, Tibetan Buddhist logic does not rely solely on formal necessity—that is, whether an inference holds depends entirely on its "formal structure" rather than empirical facts. Instead, Tibetan Buddhist logic emphasizes the "dependent origination" and "cognitive conditions" of reasoning. The validity of an argument depends on whether it can generate correct cognition within a specific cognitive subject. In other words, the validity of reasoning is closely intertwined with epistemology, emphasizing the process of knowledge acquisition rather than abstract formal necessity [2]. Moreover, debate is not merely a logical exercise but a religious practice: through intense questioning and response, practitioners continually dismantle erroneous views at the level of thought, ultimately realizing the wisdom of emptiness—the impermanence and selflessness of all phenomena.

Modern scholars have attempted to reformulate the logic of Buddhist debate using the formal tools of mathematical logic and computer science. For instance, Hou Haosheng demonstrates that the "consequentialist approach" (consequence) in Tibetan Buddhist debates can be characterized through predicate logic and set theory, and even simulated using recursive algorithms to model the unfolding of debates. This perspective reveals that debate is not only a method of cultivation within religious traditions but also offers fresh angles for contemporary logic and cross-cultural philosophical dialogue [3].

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3. Aristotle's logical system

Aristotle stands as the founder of Western formal logic, and his logical system—the world's earliest systematized deductive logic—serves as the cornerstone of the Western logical tradition. In Aristotle's view, logic was not merely an object of knowledge or an independent discipline, but rather a methodology for identifying and ensuring the validity of arguments and the reliability of knowledge. He defined the basic unit of logical reasoning as the proposition, categorizing propositions into four forms: universal and particular, affirmative and negative, thereby providing a formal framework for reasoning.

The core of Aristotelian logic is the syllogism—a deductive argument consisting of two premises and a conclusion. The major term, middle term, and minor term form its central concepts. These three elements combine according to specific rules to constitute the syllogism's fundamental structure: the major premise (also known as the universal proposition), the minor premise (also known as the particular proposition), and the conclusion.

For example, (1) all humans will die; (2) Socrates is a human; (3) therefore, Socrates will die. Here, "all humans will die" is the major premise, "Socrates is a human" is the minor premise, and naturally, "therefore, Socrates will die" is the conclusion.

Unlike Buddhist logic that emphasizes "cognitive conditions dependent on the subject", validity in syllogistic reasoning relies entirely on formal structure—or the causal relationship between premises and conclusion—rather than on experience or human psychological habits. Thus, once the form is established, it holds for any rational subject. This formal necessity constitutes the foundation of deductive reasoning. In the Posterior Analytics, Aristotle further asserts that scientific knowledge must be grounded in necessary causal relationships, thereby establishing logic as the cornerstone of scientific methodology and philosophical argumentation [4].

Aristotelian logic continued to be widely inherited and developed throughout the Middle Ages. Through Boethius's translations and commentaries, logic became a core subject within the university's "seven liberal arts." Other medieval scholars, such as Aquinas and Ockham, building upon Aristotelian logic, not only expanded the scope of syllogistic application but also developed propositional logic and modal logic, introducing more complex discussions and forms of argumentation concerning "possibility" and "necessity" [5]. Until the emergence of modern predicate logic in the nineteenth century, Aristotelian logic consistently dominated the modes of thought in Western philosophy and science, demonstrating its profound and enduring influence.

4. Comparative analysis of Tibetan Buddhist debate and aristotelian logic

Tibetan Buddhist debate, centered on the Prāsaṅgika method, and Aristotelian logic, centered on syllogisms, though originating from distinct cultural and philosophical traditions, both focus on "the normativity of reasoning" and "the reliability of conclusions." At the same time, due to differences in religious objectives and philosophical stances, they exhibit significant distinctions.

4.1. Similarities between the two views

Formally, both Tibetan Buddhism's "principle-cause-example" and Aristotle's "major premise-minor premise-conclusion" exhibit a tripartite structure, with both arguments emphasizing the logical transition from the known to the unknown. The "cause" in the Prāsaṅgika syllogism and the "middle term" in the syllogism both serve as connecting bridges. For example, in the Prāsaṅgika syllogism "The color of a white conch shell has the nature of color, it ought to be a color, because it is white,"

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"white" connects "the color of a white conch shell" with "color." In the syllogism "All humans are animals, all animals are living beings, therefore all humans are living beings," "animal" connects "human" with "living being." Both employ the mediating function of the "middle term" or "cause" to ensure the coherence of the reasoning process.

Secondly, both require the validity of an argument to be grounded in a necessary connection between premises and conclusion. For instance, the modus ponens requires "whatever is q is p," while the syllogism demands "all M are P." Both employ universal quantifiers—"whatever" and "all"—to ensure the necessity from premises to conclusion. If this connection fails—such as in the modus ponens statement "whatever is white is red" or the syllogism "all animals are plants"—the reasoning becomes invalid.

Finally, they both have a striking similarity in the way they distinguish formal validity from substantive truth. In Tibetan Buddhist debates, a Prāsaṅgika syllogism is considered valid if it satisfies three conditions: "the thesis is valid", "the reason is valid", and "the example is valid". If either the "reason" or the "thesis" is false — such as "The white conch shell is red, therefore it is a colour"—then the syllogism fails in its "reason". Even if the form conforms to the correct Prasangika format, it cannot yield a valid conclusion. In Aristotelian logic, a syllogism must satisfy both "formal validity" and "truth of premises". If the content of the premises is false—such as "All circles are squares"—then even if the form of the reasoning is valid, it lacks truth. Both traditions reject reasoning that is "formally correct but substantively false."

4.2. Differences between the two views

Tibetan Buddhist debate and Aristotelian logic exhibit fundamental differences in both the foundational principles of their logical systems and their practical objectives.

First, regarding the criteria for determining argument validity, Aristotelian logic centers on formal necessity. The validity of its syllogisms relies entirely on fixed formal structures and the objective truth of premises. For instance, the structure "All M are P, all S are M, therefore all S are P" achieves universal applicability to all rational subjects once it satisfies formal rules, irrespective of the subject's subjective state [6]. In contrast, the assessment of validity in Tibetan Buddhist debate is closely tied to the concept of "dependent origination" and the cognitive context. "Dependent origination" is one of Buddhism's core doctrines, simply put, meaning that the existence, emergence, and transformation of all phenomena depend on the interplay of various conditions ("causes"). Nothing can exist independently of conditions or remain eternally unchanged. Buddhism uses "dependent origination" to emphasize that "there are no eternal, independent entities." Whether material or mental, all phenomena are the temporary result of conditions coming together; when conditions change, the phenomena themselves change accordingly.

This view contradicts the Western logical pursuit of eternal, unchanging truth. Returning to the validity of dialectical reasoning, consider the Prāsaṅgika syllogism from the Abhidharma-samuccaya: "The color of a white conch shell is a phenomenon, it ought to be a color, because it is white." Its validity depends on whether the knower has already established that "the color of a white conch shell is white" and is still investigating "whether it is a color." However, for those who have attained enlightenment or lack sufficient cognitive capacity, this syllogism may lose its argumentative significance [1][7]. One approach possesses universal applicability and greater objectivity, while the other is applicable only to specific individuals or contexts, rendering it more subjective.

Secondly, in terms of its argumentative function and objectives, Aristotelian logic is primarily oriented toward constructing a scientific knowledge system. It seeks to obtain universal, stable truths

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through rigorous deductive reasoning, with its application spanning non-religious domains such as natural sciences and ethics, serving as a universal rational tool. By contrast, the ultimate goal of Tibetan Buddhist debate is religious practice and wisdom-based liberation. Logical reasoning merely serves as a means to dispel ignorance through repeated questioning of doctrines in "affirming positions" and "counter-arguments", such as debates on concepts like "impermanence" and "non-self". This process guides practitioners in eliminating erroneous views and ultimately achieving the wisdom of emptiness and liberation. Furthermore, the argumentative style favors unidirectional deduction, which is the process of deriving particular conclusions from universal propositions, as set out in Aristotelian logic. In contrast, debate employs the dialectic of reductio ad absurdum. This involves constructing arguments that follow the opponent's premises or tracing their reasoning path to demonstrate that their position, if erroneous, must lead to absurd conclusions. For example, to refute the incorrect claim that "all colours are red", one could create the following syllogism: "The white conch shell has color; because it is a color; therefore, it must be red." This forces the opponent to revise their understanding.

Finally, from the perspective of conceptual categories and ontological foundations, Aristotle's logical conceptual system originates from abstractions of the empirical world—categories like "animal" or "human"—and does not depend on specific religious presuppositions, requiring only conformity with empirical facts. In contrast, the conceptual framework of Tibetan Buddhist debate is rooted in Buddhist ontology, involving concepts like "existence/non-existence" and "eternal/impermanent phenomena." These require interpretation through the core Buddhist doctrine of "anatta" (no-self). Consequently, Tibetan Buddhist debate cannot exist independently outside its religious context [1].

5. A synthesis of the two views

In the history of logic, Aristotelian logic and Tibetan Buddhist debate traditions respectively shaped the core paradigms of Eastern and Western rational traditions. As the West's first systematized deductive logic system, Aristotelian logic laid a crucial foundation for the development of Western scientific rationality through syllogisms. During the Middle Ages, Scholasticism utilized its framework to integrate theology and philosophy, while modern science employed its "formal validity" as a tool to construct a relatively complete scientific theoretical system. Aristotelian logic dominated Western modes of thought until the rise of modern predicate logic in the 19th century. Tibetan Buddhist debate stands uniquely within the Eastern logical tradition. Inheriting Indian Nyāya and integrating Tibetan local culture, it formed an argumentative system centered on the "prāsaṅgika" approach. This not only became the core curriculum of Tibetan Buddhist monastic education but also advanced the refinement of Buddhist epistemology through strict adherence to the "three characteristics of causes" (universal existence of the subject, definite existence of the same category, universal non-existence of the different category). More significantly, the emphasis on "cognitive context" in debate provides a distinct Eastern perspective on non-formal logic, differing from Western logic [8].

Beyond their differences, the two also exhibit complementarity, particularly in the bidirectional supplementation of logical methods and dimensions of thought. Aristotle's formalized logic offers tools for expressing Tibetan Buddhist debate in modern thought and language. For instance, converting the "Prāsaṅgika" into the logical structure

$$\forall_x(\mathrm{Is}(x, q) \rightarrow \mathrm{Is}(x, p)), \mathrm{Is}(s, q) \vdash \mathrm{Is}(s, p) \tag{1}$$

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through predicate logic resolves ambiguities inherent in natural language [9]. Conversely, the contextual dependency and emphasis on dialectics inherent in debate can compensate for Aristotelian logic's limitation of neglecting the cognitive subject, thereby preventing logical reasoning from ultimately degenerating into a purely formal formula.

At the level of cross-cultural logical discourse, the two represent the logical expressions of "scientific rationality" and "religious wisdom," respectively, facilitating a breakthrough from the single-culture logical paradigm. The scientific rationality embodied in Aristotelian logic, centered on the pursuit of objective, universal truth, propelled the modern scientific revolution. In contrast, Tibetan Buddhist debate is guided by religious wisdom, using logical reasoning to achieve the goal of wisdom liberation. Its focus on the "cognitive process" rather than "static truth" offers new insights for contemporary cognitive science [10]. Simultaneously, we must recognize that the dialogue between these two logical systems is not antagonistic but complementary: scientific rationality can leverage the contextual sensitivity of debate to avoid becoming a ruthless tool; religious wisdom can enhance its communicability and accuracy through the rigor of formal logic, thereby building a solid bridge for cross-cultural philosophical exchange.

Finally, for contemporary research in logic and philosophy, comparing the two offers multifaceted insights. At the level of logical inquiry, the dynamic debate process of the "prudent argument" in Buddhist debates inspired non-formal logic and artificial intelligence argumentation systems, thereby advancing the development of "dynamic logic." Aristotelian formalization methods, meanwhile, assist monks and scholars in untangling the intricate conceptual relationships within debates. For instance, formal analysis of the "color debate" ultimately reveals the conceptual linkage between "white-color-impermanence," thereby clarifying the underlying logic of the debate. Philosophically speaking, this comparison also prompts reflection on the theme of the universality versus cultural specificity of logic—logic is not an exclusively Western standard of rationality. Tibetan Buddhist debates in China demonstrate that different cultures can develop their own unique logical systems based on their philosophical traditions, offering diverse perspectives for contemporary cross-cultural philosophical research [7].

6. Conclusion

This paper systematically examines the core characteristics, similarities, and differences of the "Pratyutpanna-vāda" (Consequentialist Argumentation) in Tibetan Buddhist debate and the syllogism in Aristotelian logic, integrating multidisciplinary perspectives and textual resources. The research reveals that Tibetan Buddhist debate relies on cognitive context and pursues ultimate wisdom through religious inquiry, employing dialectical methods to dismantle attachments. Meanwhile, Aristotelian logic aims for formal necessity in reasoning and rigorous scientific knowledge construction, pursuing universal truth through deductive inference.

Although they are rooted in distinct cultural traditions, both adhere to the normative rational essence of the reasoning process. Historically, they each laid the foundation for Eastern and Western logical traditions, respectively, while exhibiting significant methodological complementarity. Formal logic can optimize the contemporary expression of debate, and debate's contextual sensitivity and dialectic can enrich the application of formal logic. In cross-cultural dialogue, the "scientific rationality" and "religious wisdom" they represent are not opposed. Instead, logical tools can facilitate communication between Eastern and Western logical systems, enabling dialogue among contemporary pluralistic rationalities. For contemporary research, such a comparison not only advances logical theory innovation but also encourages understanding logic's essence through diverse perspectives, thereby avoiding cultural biases.

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Future research may further explore the integration of debate logic with modern cognitive science while deepening cross-traditional comparisons between Aristotelian logic and Buddhist Nyāya, thereby providing theoretical support for constructing a more inclusive global logical framework.

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