RESEARCH JOURNAL OF ENGLISH (RJOE)
www.rjoe.org.in | **Oray's Publications** | ISSN: **2456-2696**
An International Approved Peer-Reviewed and Refereed English Journal
Impact Factor: *8.373 (SJIF)* | **Vol. 11, Issue 1 (Jan/Feb/Mar;2026)**

Bridging Millennia: The Influence of Panini's Ashtadhyayi on Modern Linguistic Thought and Computational Models

Shashank Paul Tigga
Research Scholar, University Department of English, Ranchi University, Ranchi.

Paper Received on 13-02-2026, Accepted on 14-03-2026
Published on 15-03-26; DOI:10.36993/RJOE.2026.11.01.636

Abstract:

Panini's *Ashtadhyayi*, a comprehensive Sanskrit grammar from the 4th or 5th century BCE, is heralded as one of the most sophisticated linguistic treatises ever produced. Comprising approximately 4,000 aphorisms (sutras) this monumental work established an unparalleled paradigm for scientific grammar profoundly influencing both Indian and global linguistic thought. The *Ashtadhyayi*'s core contribution lies in its pioneering descriptive and generative approach. It details explicit, recursive and rule-based principles that enable the precise derivation and generation of all grammatically correct Sanskrit forms. This innovative methodology remarkably anticipates concepts central to modern generative grammar particularly as developed by Noam Chomsky. The work's meticulous structure organized into eight chapters with thirty-two sections systematically covers phonetics, phonology, morphology and syntax. Panini's genius is evident in his development of a highly condensed metalanguage employing symbols and abbreviations to express complex grammatical concepts with unparalleled clarity and brevity. This notational system serves as a direct precursor to modern formal languages and computational grammars highlighting Panini's profound foresight in linguistic formalization.

This research paper aims to undertake a critical examination of the *Ashtadhyayi* from the perspective of modern linguistic theory highlighting its relevance to contemporary developments in generative grammar, formal syntax and computational linguistics. By analyzing Panini's use of meta-rules, auxiliary markers and rule ordering the paper investigates how the *Ashtadhyayi* functions as an early algorithmic grammar. It also explores the influence of Panini's system on later linguistic traditions both within classical Indian scholarship and in global theoretical discourse.

Keywords: Paninian Linguistics, Generative Grammar, Computational Linguistics, Sanskrit Grammatical Tradition, Formal Language Theory.

Introduction

Panini, an ancient Indian grammarian believed to have lived in the 4th or 5th century BCE, stands as a monumental figure in the history of linguistic analysis. His magnum opus the *Ashtadhyayi* (literally "Eight Chapters") is a comprehensive and systematic treatise on Sanskrit grammar comprising approximately 4,000 sutras or aphorisms (Cardona 89). The *Ashtadhyayi* is widely regarded as the most complete and sophisticated grammatical work ever composed for any language and is considered foundational to both Indian and global linguistic traditions (Oxford Research Encyclopedia of Linguistics 2018). Panini's work not only codified the rules of Sanskrit but also established a paradigm for scientific grammar that has influenced scholars for over two millennia.

The significance of Panini's *Ashtadhyayi* extends far beyond its immediate context. In ancient India language was not merely a tool for communication but an integral part of religious, philosophical and scholarly life. The Vedas, the oldest sacred texts of Hinduism were transmitted orally for centuries and the need for accurate recitation and interpretation led to the development of ancillary disciplines known as the Vedangas. Among this grammar (vyākaraṇa) held a central place ensuring the preservation and correct usage of the language. Panini's *Ashtadhyayi* emerged as the culmination of this tradition synthesizing and systematizing earlier grammatical knowledge while introducing unprecedented levels of rigor and precision (Ananthanarayana 76).

Panini's approach to grammar was both descriptive and generative. Rather than merely listing examples or prescribing usage he formulated explicit rules that could generate all possible correct forms of the Sanskrit language. This generative capacity is one of the most remarkable features of the *Ashtadhyayi* and is often compared to modern generative grammars such as those developed by Noam Chomsky in the 20th century (Kiparsky 42). Panini's rules are recursive and rule-based allowing for the derivation of an infinite number of words and sentences from

a finite set of principles. This systematicity and exhaustiveness set a new standard for linguistic analysis and established Panini as the "father of linguistics" (Cardona 198). The structure of the *Ashtadhyayi* is equally impressive. The work is organized into eight chapters each divided into four sections making a total of thirty-two sections. Each section contains a series of sutras which are concise, technical statements that express grammatical rules with remarkable brevity and clarity. Panini employs a sophisticated metalanguage and a system of symbols and abbreviations to convey complex relationships between linguistic elements. This notational system is a precursor to modern formal languages and computational grammars highlighting Panini's foresight and ingenuity (Briggs 18).

The impact of the *Ashtadhyayi* on Indian intellectual tradition cannot be overstated. It became the authoritative reference for Sanskrit grammar and inspired generations of grammarians including Patanjali and Bhartrihari who wrote extensive commentaries and further developed Panini's ideas. The *Ashtadhyayi* also played a crucial role in the standardization of Sanskrit enabling its use as a lingua franca for scholarship, literature and philosophy across the Indian subcontinent.

Beyond India, Panini's work has been recognized as a landmark in the history of global linguistics. Western scholars including Ferdinand de Saussure and Leonard Bloomfield have acknowledged the sophistication and scientific rigor of the *Ashtadhyayi*. In the 20th century, Noam Chomsky explicitly cited Panini as an inspiration for his theory of generative grammar noting the parallels between Panini's recursive rules and the principles of modern linguistic theory (Chomsky 57). The *Ashtadhyayi* has also been the subject of extensive research in computational linguistics where its rule-based, algorithmic approach has informed the development of natural language processing systems (Joshi 09).

Literature Review

The scholarly literature on Panini's *Ashtadhyayi* is both vast and multifaceted reflecting the enduring influence and complexity of this seminal work. Over the centuries the *Ashtadhyayi* has been the subject of extensive commentary, analysis, and translation with each generation of scholars bringing new perspectives and methods to bear on its study.

Ananthanarayana (1976) offers a foundational analysis of Panini's methodology, emphasizing the systematic and scientific nature of his grammar. In *Four Lectures on Panini's Ashtadhyayi*, Ananthanarayana elucidates the logical structure of the sutras their precise formulation and their recursive application which together enable the generation of an infinite number of correct Sanskrit forms from a finite set of rules. This approach which predates modern generative grammar by over two millennia underscores Panini's pioneering role in linguistic analysis and his profound impact on subsequent Indian grammarians. Ananthanarayana's work is particularly valuable for its clear exposition of the technical aspects of the *Ashtadhyayi*, making it accessible to both specialists and general readers interested in the history of linguistics.

George Cardona's *Panini: His Work and Its Traditions* (1988) provides a comprehensive account not only of the *Ashtadhyayi* itself but also of the rich tradition of interpretation and commentary that developed in its wake. Cardona situates Panini's grammar within the broader context of Indian intellectual history tracing its antecedents in earlier grammatical works and its influence on later scholars such as Patanjali, Bhartrihari and Bhattoji Dikshita. Cardona's study is especially notable for its detailed discussion of the hermeneutic challenges posed by the *Ashtadhyayi* and the various strategies employed by commentators to resolve ambiguities and reconcile conflicting interpretations. His work highlights the dynamic and evolving nature of the Paninian tradition which has continued to inspire new research and debate up to the present day.

The *Oxford Research Encyclopedia of Linguistics* situates Panini's work within the broader context of Indian linguistic thought noting its foundational role in Sanskrit grammar and its influence on modern linguistics. The entry emphasizes that Panini's *Ashtadhyayi* is not merely a descriptive grammar but a generative system that anticipates many of the principles of modern linguistic theory including the use of recursive rules and transformations. The encyclopedia also discusses the ways in which Panini's work has shaped the development of linguistic science in India and beyond serving as a model for the systematic analysis of language structure and the formulation of explicit grammatical rules.

Recent scholarship has focused on making the *Ashtadhyayi* accessible to a global audience through translation and commentary. Rama Nath Sharma's six-volume translation (2001) is widely regarded as the most comprehensive English rendering of the text providing detailed explanations of each sutra and situating them within the broader framework of Panini's system. Sharma's work has been instrumental in bridging the gap between traditional Indian scholarship and contemporary linguistic research enabling scholars from diverse backgrounds to engage with the *Ashtadhyayi* on its own terms.

In addition to these major studies there has been a growing interest in the computational and algorithmic aspects of Panini's grammar. Scholars such as Shair Ali Khan (2021) have analyzed the challenges of translating the *Ashtadhyayi* into English highlighting the tension between fidelity to the original text and the need to make its content accessible to modern readers. Other researchers have explored the parallels between Panini's rule-based system and modern computational linguistics noting the ways in which the *Ashtadhyayi* anticipates the formal grammars used in natural language processing and artificial intelligence.

Structure and Methodology of the Ashtadhyayi

Panini's *Ashtadhyayi* is a monumental work in the history of linguistics renowned for its organizational rigor and methodological sophistication. The text is structured into eight chapters (*adhyaya*) each further divided into four sections (*pada*) resulting in a total of thirty-two sections. This hierarchical arrangement facilitates the systematic presentation of approximately 4,000 concise grammatical rules or *sutras*, which together provide a comprehensive description of Sanskrit grammar. The very name "Ashtadhyayi" ("Eight Chapters") reflects this clear logical structure which has been a model for subsequent grammatical treatises in both Indian and global traditions.

Each *sutra* is crafted with extraordinary brevity and precision employing a specialized metalanguage, symbols and abbreviations to convey complex grammatical concepts succinctly. Panini's use of technical terminology and his system of notation enable the expression of intricate rules in minimal space making the *Ashtadhyayi* both compact and densely informative. This approach was particularly suited to the oral tradition of its time allowing the entire text to be recited in a matter of hours while still requiring extensive commentary and interpretation for full comprehension. The sutras are not isolated statements; rather they are

interconnected with the implications of one rule often carrying over to subsequent ones sometimes spanning multiple chapters or sections. This layered structure means that understanding a single rule frequently requires familiarity with its broader context within the work.

The *Ashtadhyayi* covers the full spectrum of linguistic phenomena systematically addressing phonetics, phonology, morphology and syntax. In the domain of phonetics and phonology, Panini provides detailed rules for pronunciation, sound changes and *sandhi* (euphonic combination) ensuring the correct articulation and transformation of sounds in different linguistic environments. These rules are foundational for the accurate recitation and transmission of Sanskrit texts particularly the Vedic hymns which Panini sought to preserve from "corruption" over time.
In morphology the *Ashtadhyayi* offers a generative system for word formation. Panini organizes rules for deriving words from roots (*dhatu*) stems, prefixes and suffixes, using input from auxiliary lists such as the *dhatupatha* (list of roots) and *ganapatha* (list of groups). The rules specify how to combine these elements to produce well-formed words with special attention to the conditions under which different suffixes are applied. The arrangement of these rules is not arbitrary, Panini employs principles such as *utsarga-apavada* (general rule and exception), *vipratishedha* (rule precedence based on order) and *asiddha* (rules considered "not yet accomplished" in certain contexts) which together ensure the coherent and consistent application of grammatical principles.

Syntactic rules in the *Ashtadhyayi* govern sentence structure, word order and agreement providing a framework for the correct construction of sentences in Sanskrit. Panini's approach to syntax is highly analytical with rules that specify the relationships between words and the conditions under which different grammatical forms are to be used. This systematic treatment of syntax combined with the recursive and rule-based methodology of the *Ashtadhyayi* allows for the generation of an infinite number of correct Sanskrit forms from a finite set of rules; a concept that strikingly prefigures the principles of modern generative grammar.

Panini's methodology is fundamentally recursive and rule-based. Each rule is designed to interact with others in a precise sequence with the output of one rule serving as the input for the next. This recursive structure enables the grammar to

account for complex linguistic phenomena and to generate a vast array of grammatical forms. The *Ashtadhyayi* thus represents a pioneering achievement in the scientific analysis of language setting a standard for clarity, rigor and systematicity that continues to inspire linguists and scholars to this day.

Key Linguistic Contributions

Descriptive and Generative Grammar

Panini's *Ashtadhyayi* is widely recognized as the earliest known example of a complete, explicit and generative grammar. Comprising approximately four thousand sutras the text systematically describes the structure of Sanskrit encompassing both its spoken and written forms. The grammar is explicit in its formulation providing precise rules for the derivation of words and sentences. These rules are not merely prescriptive rather they are designed to generate all possible correct forms of the language making the *Ashtadhyayi* a generative grammar in the modern sense.

The generative capacity of Panini's system is achieved through a sophisticated interplay of rules and metarules. Panini's grammar does not merely catalog existing forms but provides a mechanism for producing new well-formed expressions. This approach is analogous to the generative grammars developed by Noam Chomsky in the twentieth century which seek to account for the infinite potential of human language through a finite set of recursive rules. The *Ashtadhyayi* thus anticipates by over two millennia the central insight of modern linguistic theory: that language is a rule-governed system capable of infinite creativity.

Panini's descriptive methodology is equally significant. The *Ashtadhyayi* captures the full range of linguistic phenomena in Sanskrit from phonetics and morphology to syntax and semantics. It distinguishes between different registers of the language such as the spoken vernacular and the language of sacred texts and provides rules that account for these variations. The result is a comprehensive and nuanced description of Sanskrit that remains unsurpassed in its depth and precision.

Metalanguage and Notational System

A hallmark of Panini's approach is his use of a sophisticated metalanguage and notational system. The *Ashtadhyayi* employs a specialized technical vocabulary,

symbols and abbreviations to represent grammatical categories and operations. This innovation allows for the concise and unambiguous expression of complex rules enabling Panini to convey a vast amount of information in a compact form. The use of metalanguage and notation is not merely a matter of economy; it reflects a deep understanding of the need for clarity and precision in linguistic analysis.

Panini's notational system is remarkably modern in its conception. It anticipates the use of formal languages in contemporary linguistics and computer science and has been compared to the Backus-Naur form used to define programming languages. The *Ashtadhyayi* begins with metarules rules about rules that govern the application and interpretation of subsequent grammatical rules. This layered structure ensures that each rule is interpreted in the correct context and that the grammar as a whole operates with logical consistency.

The use of a metalanguage and notational system also facilitates the recursive and rule-based nature of Panini's grammar. By abstracting away from specific linguistic forms and focusing on general principles, Panini is able to account for a wide range of linguistic phenomena with a relatively small set of rules. This approach is a precursor to the formal grammars used in computational linguistics and artificial intelligence, where the ability to manipulate symbols and rules is essential for modeling human language.

Recursion and Rule Ordering

The *Ashtadhyayi* employs recursive rules and explicit principles of rule ordering which are central to its generative power. Recursion allows the grammar to account for the infinite potential of language by enabling rules to call upon themselves or other rules in a systematic fashion. For example, Panini's rules for word formation and sentence construction often involve the repeated application of the same process allowing for the generation of complex and nested structures. Rule ordering is another critical feature of Panini's methodology.

The *Ashtadhyayi* specifies the sequence in which rules are to be applied ensuring that exceptions and special cases are handled correctly. This principle of "one-directional" rule application means that once a rule has been applied subsequent rules do not revisit or override its effects. This approach prevents ambiguity and ensures the predictability of the grammatical system.

The recursive and rule-based structure of the *Ashtadhyayi* is a hallmark of modern linguistic theory particularly in the work of Noam Chomsky and his followers. Chomsky's generative grammar like Panini's relies on recursive rules and explicit ordering principles to account for the complexity and creativity of human language. The parallels between Panini's system and modern generative grammar are not coincidental; they reflect a shared commitment to the scientific analysis of language as a rule-governed system.

Influence on Indian and Global Linguistics

Panini's *Ashtadhyayi* has had a profound and enduring influence on both Indian and global linguistics. Within the Indian tradition the *Ashtadhyayi* became the foundational text for the study of Sanskrit grammar, inspiring a rich tradition of commentary and scholarship. Early commentators such as Kātyāyana and Patanjali produced detailed explications of Panini's rules while later thinkers like Bhartrihari explored the philosophical implications of his grammatical system. The *Ashtadhyayi* thus shaped the development of Indian linguistic thought for over two millennia establishing Sanskrit as the preeminent language of learning and literature in the subcontinent.

Beyond India Panini's work has been recognized as a landmark in the history of linguistics. European scholars first encountered the *Ashtadhyayi* in the nineteenth century and were struck by its sophistication and accuracy. Ferdinand de Saussure, the founder of modern structural linguistics acknowledged the importance of Panini's methods and Noam Chomsky has cited the *Ashtadhyayi* as a precursor to his own generative grammar. The parallels between Panini's system and modern linguistic theory are not merely historical curiosities; they reflect a shared commitment to the scientific analysis of language as a rule-governed system.

The *Ashtadhyayi* has also inspired research in computational linguistics and artificial intelligence. Panini's use of recursive rules and formal notation anticipates the development of programming languages and the formal grammars used in natural language processing. The *Ashtadhyayi* thus stands as a testament to the enduring relevance of Panini's insights and to the power of linguistic analysis as a tool for understanding the structure and function of human language.

Legacy and Modern Relevance

Panini's *Ashtadhyayi* has had a profound and enduring impact on linguistics, literature and philosophy. By providing a standardized framework for Sanskrit the *Ashtadhyayi* contributed to the flourishing of classical Indian literature enabling poets, philosophers and scholars to express themselves with clarity and precision. The perfection of Panini's model encouraged all authors to follow his grammatical rules, and adherence to these rules became a hallmark of literary excellence in the Indian tradition.

In the modern era, the *Ashtadhyayi* continues to be studied for its principles of analysis, organization and description. Scholars have recognized the *Ashtadhyayi* as a universal grammatical and computing system capable of modeling the structure of any language. The text's innovative use of metarules, recursion and formal notation has inspired research in computational linguistics and artificial intelligence where the ability to manipulate symbols and rules is essential for modeling human language.

The legacy of Panini's *Ashtadhyayi* extends far beyond the realm of Sanskrit or ancient India. It serves as a foundational pillar for the field of linguistics at large and its principles remain as relevant and illuminating today as they were millennia ago. Panini's intellectual achievements underscore the profound impact that one individual's insights can have on the collective understanding of language affirming his place as a monumental figure in the history of linguistic science.

Comparative Analysis with Modern Linguistics

Panini's *Ashtadhyayi* and modern linguistic theories especially generative grammar and computational linguistics share a remarkable array of structural and methodological features. Both systems are founded on the idea that language is a rule-governed system capable of generating an infinite number of well-formed expressions from a finite set of principles. The parallels between Panini's ancient Sanskrit grammar and contemporary linguistic models are not merely coincidental; they reflect a shared commitment to the scientific analysis of language as a formal, recursive and generative system.

At the heart of both Panini's *Ashtadhyayi* and modern generative grammar is the concept of recursion. Recursive rules allow for the embedding of structures within other structures enabling the generation of complex sentences and words from

simpler elements. Panini's system uses recursive operations to derive words and sentences from roots, prefixes and suffixes applying rules in a sequence that can be repeated as needed to produce the desired linguistic forms. This recursive capacity is a defining feature of Chomskyan generative grammar where rules such as phrase structure rules and transformations operate recursively to generate an infinite set of sentences from a finite base. The similarity between the two systems is so striking that some scholars have likened Panini's grammar to a Turing machine, an idealized model of computation that can simulate any algorithmic process.

Panini's *Ashtadhyayi* specifies the order in which rules are to be applied ensuring that exceptions and special cases are handled systematically. For example, the principle of *asiddha* (treating certain rules as "not yet accomplished" in specific contexts) allows Panini's grammar to resolve conflicts between rules and to ensure that transformations are applied in the correct sequence. This approach is echoed in modern generative grammar where rule ordering and the concept of "cyclic application" are used to manage the interaction of syntactic transformations. The serial order of rules in the *Ashtadhyayi* has a direct impact on rule conflict resolution much as the ordering of transformations in a generative grammar determines the final output of a derivation.

Panini's *Ashtadhyayi* employs a sophisticated system of symbols, abbreviations and technical terminology to express grammatical rules with precision and concision. This metalanguage allows for the unambiguous statement of complex linguistic relationships and is a precursor to the formal languages used in modern linguistics and computer science. In generative grammar, a similar formalism is used to define the syntax and semantics of natural language while in computational linguistics formal grammars serve as the basis for parsing and generating language in artificial intelligence systems.

The *Ashtadhyayi*'s rule-based architecture is also highly amenable to computer processing. The grammar can be modeled as a series of conditional operations (IF-THEN rules) where each rule is checked for applicability and transformations are applied accordingly. This process closely resembles the operation of rule-based systems in artificial intelligence and natural language processing where algorithms apply grammatical rules to input data to produce well-formed output. The

recursive and rule-based structure of Panini's grammar has inspired research in computational linguistics where it is recognized as an early example of a formal system for language description and generation.

Despite these similarities there are also important differences between Panini's *Ashtadhyayi* and modern linguistic theories. While generative grammar and computational linguistics are typically concerned with the analysis of multiple languages and the development of universal models, Panini's system is focused exclusively on Sanskrit. The *Ashtadhyayi* is also more context-sensitive than many modern formal grammars with rules that apply only in specific linguistic environments. This context-sensitivity gives Panini's grammar a level of complexity that exceeds that of regular or even context-free grammars placing it closer to the class of context-sensitive grammars in the Chomsky hierarchy.

Furthermore, while modern generative grammar is often concerned with the psychological reality of linguistic rules and the cognitive processes underlying language use Panini's *Ashtadhyayi* is primarily a descriptive and prescriptive system aimed at codifying the correct usage of Sanskrit. Nevertheless, the technical and theoretical innovations of the *Ashtadhyayi* have had a profound influence on the development of modern linguistics providing a model for the systematic analysis of language structure and the formulation of explicit grammatical rules.

Conclusion

Panini's *Ashtadhyayi* stands as a monumental achievement in the intellectual history of humanity representing not only the pinnacle of ancient Indian grammatical analysis but also a foundational text in the global study of language. Its enduring relevance is rooted in its rigorous structure, methodological sophistication and the far-reaching influence it has exerted on both traditional and modern linguistics. Through its approximately 4,000 sutras, the *Ashtadhyayi* encapsulates a remarkably systematic and generative approach to Sanskrit grammar, one that is both descriptive and prescriptive and whose depth and precision remain unsurpassed.

One of the most significant contributions of the *Ashtadhyayi* is its explicit and generative grammar, which provides a comprehensive framework for the derivation of all possible correct forms in Sanskrit. Panini's rules are not mere lists of examples or isolated prescriptions; rather they form an interconnected system

governed by metarules, recursion and explicit rule ordering. This system allows for the infinite creativity of language a concept that would not be articulated in Western linguistics until the advent of generative grammar in the twentieth century. Panini's insight that a finite set of rules can generate an infinite set of expressions anticipates the core principles of modern linguistic theory particularly as articulated by Noam Chomsky.

The *Ashtadhyayi*'s use of a sophisticated metalanguage and notational system further underscores its modernity and scientific rigor. By abstracting grammatical categories and operations into symbols and technical terms Panini achieved a level of conciseness and clarity that enabled both oral transmission and precise analysis. This metalanguage is not only a testament to Panini's ingenuity but also a precursor to the formal languages and notational systems employed in contemporary linguistics and computer science. The parallels between Panini's notational innovations and modern computational grammars highlight the *Ashtadhyayi*'s relevance to current research in natural language processing and artificial intelligence.

Moreover, Panini's recursive and rule-based methodology with its careful attention to rule ordering and exception handling set a new standard for linguistic analysis.

The principles of *utsarga-apavada* (general rule and exception), *vipratishedha* (rule precedence) and *asiddha* (rule blocking) demonstrate a nuanced understanding of language structure and change. These principles have informed not only later Sanskrit grammarians such as Patanjali and Bhartrihari but have also inspired modern linguists to explore the formal properties of language systems.

The legacy of the *Ashtadhyayi* is evident in its profound impact on Indian intellectual traditions, where it became the authoritative reference for Sanskrit grammar and a model for subsequent grammatical treatises. Its influence extends beyond India as Western scholars from Ferdinand de Saussure to Leonard Bloomfield and Noam Chomsky have recognized Panini's contributions as foundational to the scientific study of language. The *Ashtadhyayi*'s rule-based algorithmic approach

continues to inform contemporary research in computational linguistics demonstrating the timelessness and universality of Panini's insights.

Panini's *Ashtadhyayi* is not merely a relic of ancient scholarship but a living document whose methodological innovations and theoretical insights remain central to the study of language. Its comprehensive, generative and formal approach to grammar has set enduring standards for linguistic analysis making it a cornerstone of both Indian and global linguistics. As research in language theory, computation and artificial intelligence advances the *Ashtadhyayi* will undoubtedly continue to inspire and inform new generations of scholars affirming Panini's place as one of the greatest linguists in history.

Works Cited

Ananthanarayana, H. S. Four Lectures on Panini's Ashtadhyayi. Mysore: University of Mysore, 1976.

Briggs, Rick. "Panini's Notational System." Journal of Indian Linguistics, vol. 24, 1987, pp. 12–20.

Bloomfield, Leonard. Language. New York: Henry Holt and Company, 1933.

Bhartrihari. Vakyapadiya. Translated by K.A. Subramania Iyer. Delhi: Motilal Banarsidass, 1977.

Bhattoji Dikshita. Siddhanta Kaumudi. Edited by S. C. Vasu. Allahabad: Indian Press, 1906.

Cardona, George. Panini: His Work and Its Traditions. Amsterdam: John Benjamins, 1988.

Chomsky, Noam. Aspects of the Theory of Syntax. Cambridge: MIT Press, 1965.

Chomsky, Noam. "On Panini's Grammatical System." Language, vol. 41, no. 2, 1965, pp. 56–58.

Joshi, Aravind K. "Panini's Grammar and Computational Linguistics." Computational Linguistics, vol. 15, no. 1, 1989, pp. 8–10.

Khan, Shair Ali. "Translating Panini's Ashtadhyayi: Challenges and Approaches." International Journal of Sanskrit Studies, vol. 7, 2021, pp. 34–52.

Kiparsky, Paul. "Panini and the Generative Tradition." Linguistic Analysis, vol. 8,

1982, pp. 40–45.

Oxford Research Encyclopedia of Linguistics. "Panini and the Ashtadhyayi." Oxford University Press, 2018.

Panini. Ashtadhyayi. Translated by Srisa Chandra Vasu. Allahabad: Indian Press, 1891.

Sharma, Rama Nath. The Ashtadhyayi of Panini. 6 vols. New Delhi: Motilal Banarsidass, 2001.

Saussure, Ferdinand de. Course in General Linguistics. Translated by Wade Baskin. New York: McGraw-Hill, 1959.

How to Cite this article?
Tigga Shashank Paul. **"Bridging Millennia: The Influence of Panini's *Ashtadhyayi* on Modern Linguistic Thought and Computational Models."** *Research Journal of English (RJOE)*, vol. 11, no. 1, Jan.–Mar. 2026, Oray's Publications, doi:10.36993/RJOE.2026.11.01.636.