

Evidence of Hindu Religion on the Theory of Chomsky's Transformational Grammar*¹

Koot van Wyk

Visiting Professor

Department of Liberal Education, Kyungpook National University

Sangju Campus, South Korea

Conjoint lecturer of Avondale College

Australia

Abstract

The purpose of this paper is to broaden the links to Noam Chomsky, the American linguist in order to show that he is not only a product of his own professors or immediate surroundings, nor from links he willingly made to the 17th-19th century scientists and philosophers but also further back to the Hindu mathematician linguist Panini. Individual studies were made in the past to each of these aspects separately but this paper brings concepts together to form a network of similarity of ideas that stands ultimately in contrast to another reality of understanding, that is, two sets of networks. Panini was a Hindu linguist and the Colonial upsurge in Sanskrit studies brought Westerners in contact with this grammarian. What became clear from this paper is that past history and ideas have a pop-up role to play when scientists are at loss what to do or say in their description of science. The scientist is not working purely empirical but his/her epistemology is subconsciously or unconsciously molded by "proof-text" statements of great minds in the past that aligned with the lifestyle choice of the scientist. Chomsky pulled together in his linguistic description statements from scientists that support his own idea. Understanding Hindu religion better, enabled one to see lines of correspondence with the theory and axioms of Leonard Bloomfield and further, also with that of Noam Chomsky in his design of the Transformational Grammar. Knowing more about Panini and his disciples brought one ultimately to understand the epistemology behind transformational grammars and to realize that the conflict with Traditional Grammar is more than a formal or functional one but rooted deeper in a difference of monotheistic Judeo-Christian epistemology, on the one side, with deistic philosophies or pantheistic Hindu epistemology on the other.

1. Introduction

Anyone working with grammar theory has to go through Chomsky² and working long enough with him, will realize his indebtedness to Leonard Bloomfield³.

*The present study is the result of this researcher's past and ongoing education in comparative linguistics. Koot van Wyk has a DLitt et Phil in Comparative Semitic Linguistics and a ThD. He is married to SookYoung Kim (PhD) and lives in South Korea. They have taught the community for more than 5 years Lifelong English Education together in a Combo style teaching scenario. Both are conjoint lecturers of Avondale College, Australia. She has also a B.S. Biochemistry from Yonsei University, Seoul, Korea; an M.S. Biology from Chung-Nam National University in Daejeon; M. Div from Andrews University Theological Seminary (1993). She has worked between 1983-1990 for the Biochemistry Department, of South Korea at the Ginseng and Tobacco Research Institute in Dae-jeon and published a number of articles with the colleagues of the lab in science.

¹F. Staal did a similar investigation of the role of Chomsky for the Human Sciences: F. Staal, "Noam Chomsky between the Human and Natural Sciences," *Janus Head. Journal of Interdisciplinary Studies in Literature, Continental Philosophy, Phenomenological Psychology, and the Arts* (Special Supplemental Issue, Winter 2001), 25-66. See also the work of T. Benes, (2004). Comparative linguistics as ethnology: in search of Indo-Germans in Central Asia (1770-1830). In: J. Jenkins (Ed.), *German Orientalism*, Duke University Press, Durham (NC) (2004) = Comparative Studies of South Asia, Africa and the Middle East 24, 2nd part, pp. 97-180, especially pp. 117-132.

²Noam Chomsky, (1966), *Cartesian Linguistics. A Chapter in the History of Rationalist Thought*, New York: Harper & Row; *ibid.*, (1975), *Reflections on Language*, Pantheon; *ibid.*, (1980), *Rules and Representations*, New York: Columbia University Press; *ibid.*, (1986), *Knowledge of Language: Its Nature, Origin, and Use*, New York, Wesport, Conn. and London: Praeger; *ibid.*, (1988), *Language and the Problems of Knowledge, The Managua Lectures*, Cambridge and London: M.I.T; *ibid.*, (1995), *The Minimalist Program*, Cambridge, Mass. and London, England: The MIT Press; *ibid.*, (forthcoming), "Language and the Brain" (Address at the European Conference on Cognitive Science, 27th-30th October, 1999, Siena).

³L. Bloomfield (1939), *MenomoniMorphophonemics, Travaux du cerclelinguistique de Prague*, 8:105-115.

And working with Bloomfield the path ultimately leads to his dependency on the Hindu Grammarian, Panini from the 5th century BCE.⁴ It is not only Leonard Bloomfield that was fully involved with Sanskrit and Panini sciences, also predecessors like Franz Bopp (1816) and Jacob Grimm (1819) and August F. Pott (1833) experimented with this new approach.⁵ Reacting against the Behavioristic model of linguistics,⁶ the American Jew Noam Chomsky returned to the older Mentalistic theory which he accepts that a child is born with innate structures in his genes, that contains a universal grammar, and which the child can recognize.⁷ With his *Syntactic Structures* of 1957, Chomsky entered the field of linguistics and for the next decades, he brought worldwide changes in the approaches to grammar.⁸

M. Sandmann reminded that “we cannot simply rely on theoretical pronouncements of leading linguists . . . one who has converted himself into a philosopher, has tried to state his case in the light of some philosophical system which did not do full justice to his work.”⁹ Chomsky himself had praises for the work of Panini.¹⁰

2. Literature Review

Noam Chomsky

In the review of the literature on the subject a very good start is to read articles published by the Sanskrit scholar F. Staal on the role of Sanskrit in modern sciences, linguistics, and especially uplifting Chomsky as a discoverer of the ancient work of the Hindu grammarian Panini. Staal compared Hindu ritual concepts with the concepts of Chomsky on language.

Noam Chomsky is described as a voluntary socialist with an anarchist ideology. One may add that an anarchist is one with a voluntary socialistic outlook applying him/herself with a militaristic psychic. Chomsky has a rebellious flavor in his writings.¹¹ One can see his rebellious attitude in his axiom: “The intellectual tradition is one of servility to power, and if I didn’t betray it I’d be ashamed of myself.” His philosophy of education is one of motivating students to do whatever they like without interference whatsoever, thus breeding the seeds for anarchism and chaos. Permissive education cannot guarantee a future. In linguistics his main contribution is the influential transformative-generative grammar “which is an attempt to describe the syntactical processes common to all human language mathematically” (Smith, 1999). It is at this turning-point of mathematics that one is able to analyze his sources better. The connections of Chomsky’s “deep structure” concepts in linguistics were connected by F. Staal to Hindu ritual.¹² Staal’s review of Chomsky as the revival of Panini is interesting:

⁴ “‘Thanks to ‘the grammar of Panini’, ‘no other language, to this day, has been so perfectly described’ as ‘Sanskrit’ (BL 11) (cf. 7.3; 8.5). Perhaps to accentuate his turn against school grammar, Bloomfield expropriates from the terminology of ‘the ancient Hindu grammarians’: ‘sandhi’, ‘samprasarana’, ‘karmadharaya’, ‘davanda’, ‘tatpurshana’, ‘amredita’, ‘bahuvrihi’, ‘dvigu’, and ‘avyayibhava’, accrediting them as ‘technical terms of linguistics’ (BL 186, 384, 235, 237). He also commends ‘the Hindus’ for ‘the apparently artificial but eminently serviceable device’ of the ‘zero element’, which he equates with ‘nothing at all’ (BL 209); but surely the difference between zero and nothing is precisely the point -- that we can ‘view’ ‘absence as a positive characteristic’ (BL 264f) (cf. 2²⁶; 5¹²; 6¹⁶; 13.28)?” Notes on Bloomfield retrieved from <http://www.beaugrande.com/LINGTHERBloomfield.htm>.

⁵ W. Betz, “Vergleichendehistorische Grammatik” in H. Jansen, H. Stammerjohann and others, *Handbuch der Linguistik* (München: NymphenburgerVerlagshandlung, 1975), 551 “Mit seiner Deutschen Grammatik gehört Jacob Grimm nach und mit Rask und Bopp zu den Begründern der deskriptiven vergleichenden historischen Grammatik bzw. Sprachwissenschaft, die gegenüber der altnormativen Grammatik eine neuwissenschaftliche Betrachtung einleitete.” It was new since the Judeo-Christian-Arabic influenced western epistemology was totally different than the Hinduistic epistemology.

⁶ R. R. K. Hartmann, *Dictionary of Language and Linguistics*, 26 defined it as “The study of human behaviour in observable stimulus-response situations”.

⁷ A. D. de V. Cluver in *Studyletter*, 117 Linguistics I (Pretoria: University of South Africa, 1980), 13.

⁸ Ada Kasher (ed.) (1991), *The Chomskyan Turn*, Cambridge Mass. And Oxford: Basil Blackwell.

⁹ M. Sandmann, 29.

¹⁰ It is not possible to demonstrate a direct citation from Panini but that he had respect for this Hindu scientist is clear from scattered remarks.

¹¹ One can see his rebellious attitude in his axiom: “The intellectual tradition is one of servility to power, and if I didn’t betray it I’d be ashamed of myself.”

¹² In the Bookreview of F. Staal (1989), *Rules without meaning: Ritual, mantras and the Human sciences*. Toronto Studies in Religion, vol. 4. New York and Bern: Peter Lang., the reviewer Paul J. Griffiths in *History of Religions* vol. 31(4), 1992, 412-414 said: “Staal’s descriptive analysis of the Agnicayana and other Vedic ritual acts attempts to show that there is a

“The first major contribution of Noam Chomsky was to show that syntax is independent from phonology and semantics. This led to major advances in linguistics but the analysis continued to be phrased in terms of rules, which had been employed for more than two and a half millennia (they go back to Panini’s Vedic predecessors).

Then Chomsky made another radical change: he showed that the formal properties of syntax may be derived from more abstract principles. Syntax and phonology, then, are essentially different (Sylvain Bromberger and Morris Halle 1991). The evolutionary antecedents must also be different, but how does this affect the oversimplified question with which I started and for which my two earlier sections paved the way, namely: Was language selected for knowledge or communication? Chomsky, the greatest linguist since Panini, has always emphasized that language is not primarily for communication but serves other functions such as the expression of knowledge, thought or ideas. What do we mean, he asks (1980:230), by “communication” in the absence of an audience, or with an audience assumed to be completely unresponsive, or with no intention to convey information or modify belief or attitude? It seems that either we must deprive the notion “communication” of all significance, or else we must reject the view that the purpose of language is communication. Chomsky’s emphasis on language as a cognitive system and means for the expression of truth continues a European tradition in which Wilhelm von Humboldt played the key role (see, e.g., Chomsky 1964; 1966). Humboldt (1836) defended the view that no language should be regarded merely, or primarily, as a means of communication. According to him, the instrumental use of language (its use for achieving concrete aims) is derivative and subsidiary. Chomsky’s development of these ideas within a contemporary scientific framework has shaped modern linguistics and psychology and led to new disciplines such as the cognitive sciences.”¹³

All the aspects that are included in this research were covered by Staal during his lifetime (1930-2012). What was not done in research enough is to have a realistic assessment of the role of Chomsky in linguistics since most articles and books operate with a romantic hermeneutics of Chomsky. The scientific jargon raises him to dignity in such a way that sight is lost of the anarchistic nihilism that he has brought the science of linguistics at.¹⁴

3. Method

The attempt to underline the religious axioms in Chomsky’s Transformational Grammar is to investigate the proof-text predecessor scholars of Chomsky and their proof-text predecessors hoping to uncover the final origin of his ideas. It will mean that the path from Chomsky has to go through Bloomfield, De Saussure, Whitney, Von Humboldt, Von Schlegel, Whitehead, Bopp, Rask, Grimm, Bhartrihari, Nagarjuna, and Panini until the Hindu holy book, the Sanskrit. If links can be established between all these scholars including the religious Hindu works, then the likelihood that Hindu religion influenced Chomsky will be enhanced.

4. Results and Discussion

4.1 Panini’s religious connections¹⁵

Nandini Sahu wrote articles on Panini (2008) and provides one with many myths and legends how the gods gave Panini his theoretical knowledge and how he wrote it down by “divine inspiration” or “divine revelation”.

The myths and legends¹⁶ were well known by the Chinese pilgrim Huan Tsang (602-664 AD).¹⁷

‘deep structure’ underlying them, just as Chomsky has suggested that there is a similar structure underlying the generation of particular linguistic sentences.”

¹³ F. Staal, (2001, Winter), “Noam Chomsky Between the Human and Natural Sciences,” Janus Head. Journal of Interdisciplinary Studies in Literature, Continental Philosophy, Phenomenological Psychology, and the Arts (Special Supplemental Issue, Winter 2001), 25-66. <http://www.janushead.org/gwu-2001/staal.cfm>

¹⁴ The concepts: that one cannot know for sure; truth is a paradox; every statement can be taken in two ways; certainty is fluid; one should get away from prescriptive science to descriptive science; are all old philosophies that has plagued humanity since their degeneration after the Fall.

¹⁵ “While Panini’s work is purely grammatical and lexicographic, cultural and geographical inferences can be drawn from the vocabulary he uses in examples, and from his references to fellow grammarians. Deities referred to in his work include Vasudeva (4.3.98). The concept of dharma is attested in his example sentence (4.4.41) dharmamcarati ‘he observes the law’”. The fact that deities appear in his grammar is already an indication where the religion is impacting his grammar, and knowing Hindu religion better, this is what one would expect. The word “purely” stands under review. <http://en.wikipedia.org/wiki/Panini> (retrieval date: 2007-05-27) and elaborated with copyright by Ovidio Limited 2006-2009. http://www.shorthand.eu/pini_en.html. Shorthand.eu : Panini A European Informational Website learn more. Panini.

According to myths the “blockheaded” Panini went to the Himalayas and offered a sacrament to the (god) Lord Siva and the knowledge he was shown resulted in his grammar. Even though it is just legends and myths, the researcher is already in the domain of the metaphysical.

4.2 Textual Criticism of Panini’s Grammar

The scientific requirement for Panini’s Grammar is no different for his literature than for history or for any other book of the Ancient Near East or the Orient. What separates us from Panini is what Gotthold Lessing (1729 – 1781) called, “the ugly ditch”¹⁸ which means that between what is facts and fiction is a great divide. Any researcher has to jump from data to quasi-data over this divide and what he/she is willing to frame as important carries from that moment no longer empirical science but belief, or faith, or whatever one wants to call it. It is no longer positivistic science. It is not necessarily the reality of the past but the fragmented and layered nature of tradition adding and changing the original brings with it a very complex text critical history. One has to prove that the text was transmitted with high accuracy. Added to that, it must be demonstrated that the text in various centuries shows no signs of additions or omissions. It has to be shown that an uncontaminated text is indeed the original of Panini. If one is willing to be excited with Panini’s grammar, what about the myths and legends imbedded and connected with it?

4.3 Predecessors of Chomsky were Sanskrit scholars

None of us drink from wells that we have dug and Chomsky is no exception. There is a baggage of sources that each scholar carries that originates years, decades, centuries, even millennia before. It is a composite of proof-text sources that receives occasionally a side reference in a footnote or short comment, but which indicates the philosophical stream that the writer or scholar is tapping for inspiration. A number of issues are at stake here: Chomsky is cardinal for a new way in linguistics changing the focus from traditional grammar design to transformational-generative grammar design. He admits that great grammarians of the past shared and contributed to his inspiration. He is still revered in those circles today. All the “great” spirits that he cites as his pioneers all had one thing in common: they studied Sanskrit and admired Panini the Hindu grammarian. And this is where this article originated. Anyone who has but just a glimpse of understanding of Hindu philosophy and religion will know that this pantheistic religion views all the sounds of language as gods. The gods are eternal and thus language in a person has an eternal ring to it in us.

The literature review revealed that a number of scholars were aware of the religious implications of accepting Panini as pioneer to one’s thinking. Other scholars added insights of the role played by post-Panini Buddhist monks especially Nagarjuna and his concepts of language.

¹⁶ Many examples of myths and legends can be seen at Nandini Sahu, “Articles Panini” 27th January 2008 at <http://www.bolokids.com/2008/0554.htm>. “Once there was a sage called Varsa. He had two disciples, Katyayana and Panini. While Katyayana was very sharp, Panini was a blockhead. Worried by this ill-luck, Panini left his gurukula and went far away into the Himalayas. There he practiced sacrament in order to please Lord Siva. Satisfied with his austere penance, Lord Shiva emerged before him and granted him the bonus of intellect. Then God performed holy dance in his ecstasy and gave birth to fourteen holy Sutras Aphorism by beating his drum fourteen times. Blessed with astuteness, Panini accepted them and returned home. Then he composed a grammar of Sanskrit language which became the first and the most perfect grammar that could ever be composed.”

¹⁷ “Xuanzang (Chinese: 玄奘; pinyin: Xuánzàng; Wade–Giles: Hsüan-tsang Sanskrit: हवेनसांग (c. 602–664), born Chen Hui (simplified Chinese: 陈祜; traditional Chinese: 陳禩; pinyin: Chén Huī) or Chen Yi (simplified Chinese: 陈祜; traditional Chinese: 陳禩; pinyin: Chén Yī), was a Chinese Buddhist monk, scholar, traveler, and translator who described the interaction between China and India in the early Tang Dynasty,” <http://www.cyclopaedia.info/wiki/Huan-Tsang>. He is known for his work recorded in detail in the classic Chinese text *Great Tang Records on the Western Regions*, which in turn provided the inspiration for the novel *Journey to the West* written by Wu Cheng'en during the Ming Dynasty, around nine centuries after Xuanzang's death.

¹⁸ “If no historical truth can be demonstrated, then nothing can be demonstrated by means of historical truths. That is: accidental truths of history can never become the proof of necessary truths of reason . . . That, then, is the ugly, broad ditch which I cannot get across, however often and however earnestly I have tried to make the leap.” Kierkegaard had the opposite view that with *eternal consciousness* one can cross the ugly ditch. As the father of existentialism, he is also the product of his sources. For a discussion of the *ugly ditch* approaches see G. E. Michalson, Jr. “Lessing, Kierkegaard, and the ‘Ugly Ditch’: A Reexamination,” *The Journal of Religion* Vol. 59, No. 3 (Jul., 1979), 324-334. Article Stable URL: <http://www.jstor.org/stable/1202420>.

He presumably lived in the time of Origen until after Jerome since the date is not established. One must remember that the greatest problem is textual criticism of Panini and Nagarjuna¹⁹ and this aspect received attention by some scholars.

Buddhist philosophy and Hindu religion thus moved into the arena for consideration of the role of Chomsky and the new linguistic trend. Modern scholars like F. Staal traced not only the influence of Panini and Nagarjuna on modern linguistics the Chomsky way, but also the role of Plotinus and Stoicism which shows remarkable correspondences with the ideas of Nagarjuna. Staal studied Neo-platonism and the Advaita in 1961. After Nagarjuna was Bartrhari, also a Buddhist. He had the idea expressed in Sanskrit as Devanagari स्फोट. Staal mentioned that Noam Chomsky's concept of "deep structure" and "surface structure" seems also to have been influenced by Bartrhari. (F. Staal, *The science of language*, Chapter 16, in Gavin D. Flood, ed. *The Blackwell Companion to Hinduism* Blackwell Publishing, 2003, p. 357-358). The traditional grammar ideology has a long history that may even be earlier than that ascribed to Panini. The lateness of sources removes the investigator of comparative ideas from the actual author of the ideas. It is lamentfully a handicap that Lessing Gottwald understood very well with his "ugly ditch" concept. The Sanskrit scholar Wilhelm von Humboldt compared the traditional grammar and that of Panini and it is worthwhile to see his view contrasting that of Chomsky and his pioneer sources cited.

Von Humboldt said that comparing Panini and the traditional grammar deriving from Greek ideology, there is no comparison to the excellence of the traditional grammar. The results of this study indicated that advances were made in the understanding of the psychology of language, the sociology of language, the cognitive aspects of language but on a pragmatic level of teaching a beginner from zero to understanding, there is just no grammar yet developed to do that and that the transformational-generative grammar and its links until today has not succeed to produce a roadmap grammar for the beginner to learn a new language. After more than 60 years, there is no such grammar as Otto Jespersen or Goodwin for the Classical Greek or any of the languages Akkadian, Sumerian, Middle Egyptian, Late Egyptian, Coptic, Syriac, Aramaic, Latin, Mishnaic Hebrew, Phoenician, Canaanite dialects, or any of the modern languages. Part of the concept of Chomsky is the importance to sever ties with the creationist frame of reference and Jewish description of the origin of all things including languages. Although a Jew himself, and writing his dissertation on the Modern Hebrew verb, he shelved the tradition of his forefathers and embraced Hindu concepts as well as Buddhist concepts. He may not have done it with attentiveness and may just be the product of his Sanskrit Pioneers preceding him.

¹⁹ The works of the following scholars indicate a wide variety of opinions as to what exactly was the complete list of works of this philosopher. The scholars differ: Winternitz, Robinson, T. R.V. Murti, D. Seyfort Ruegg, C. Lindtner (13 works), and P. L. Vaidya (Mabbett, Ian, 1998. "The problem of the historical Nagarjuna revisited", *Journal of the American Oriental Society*, 118(3): 332-346). He pointed out that the "The credentials of the Sunyatasaptati, the Vighravadydvartani and the Yuktisastika are rarely disputed." Some of the works traditionally attributed to Nagarjuna (and accepted as his works by C. Lindtner, such as the Bodhicittavivarana and the Vaidalyaprakarana, have had their authenticity seriously questioned (T. Vetter, *Asiatische Studien* 46.1 (1992): 393). See also the doubts expressed in Jan Yun-hua, "Nagarjuna, One or More? A New Interpretation of Buddhist Hagiography," *History of Religions* 10 (1970): 139-53. "The Lankavatara, known in Chinese and Tibetan translations, dates from as early as the fifth century. Chapter X was added to it, presumably between 443 and 513 A.D., the dates of the translations of Gunabhadra and Bodhiruci, respectively" (Mabbett 1998). See also M. Walleser, "The Life of Nagarjuna from Tibetan and Chinese Sources," 437; D. T. Suzuki, ed., *The Lankavatara sutra* (London: Routledge & Kegan Paul, 1932), 226-95. There is for example an inscription of an image that was donated to the student of Nagarjuna "on paleographical grounds the inscription has been dated to about 600 by Burgess, to 450-500 A.D. by Ramachandran" (Mabbett 1998). See also J. Burgess, *The Buddhist Stupas of Amaravati and Jagayyapeta in the Krishna District, Madras Presidency* (reprint, Varanasi: Indological Book House, 1970). It is impossible to have been the student of Nagarjuna. "Indian sources offer little from this time until about the eleventh century, when their distance from the origins of traditions about Nagarjuna severely limits their usefulness" (Mabbett 1998). Indian sources are more legendary and mythical surrounding Nagarjuna according to Mabbett and Chinese sources are deemed more reliable. All sources are centuries after the death of this philosopher. The problem of the historicity of the philosopher is pointed out by Mabbett (1998) "There was very possibly, then, one original Nagarjuna, but to him was added a legend which ramified. This legend, in turn, inspired the adoption of the name of Nagarjuna by many later texts written at different times, and likely also by some later teachers in the tantric tradition. In seeking the historical reality of these texts and teachers, therefore, we are not looking for some particular individual who was "the tantric Nagarjuna," or perhaps "the medical Nagarjuna," or "the alchemical Nagarjuna," who happened to have the same name. We are looking for the multiform particular manifestations of a single legend. These later manifestations need not be embodied in any new authentic Nagarjuna. They may be embodied in different ways of using the name."

4.4 More on Nāgārjuna

Richard Hayes discussed the role of Nāgārjuna.²⁰

In a chapter entitled “Nāgārjuna and the Limits of Thought,” Jay Garfield and Graham Priest²¹ make the following observation about Nāgārjuna.

... his influence in the Mahāyāna Buddhist world is not only unparalleled in that tradition but exceeds in that tradition the influence of any single Western philosopher. The degree to which he is taken seriously by so many eminent Indian, Chinese, Tibetan, Korean, Japanese, and Vietnamese philosophers, and lately by so many Western philosophers, alone justifies attention to his corpus. Even were he not such a titanic figure historically, the depth and beauty of his thought and the austere beauty of his philosophical poetry would justify that attention. While Nāgārjuna may perplex and often infuriate, and while his texts may initially defy exegesis, anyone who spends any time with Nāgārjuna thought inevitably develops a deep respect for this master philosopher.²²

Despite the optimism of Hayes (2003) and Garfield and Priest (2002) about the role of Nāgārjunathe reality is that textcritical issues need to be resolved first before one can make an literary assessment of the greatness of a scholar. Authentication and legitimization of his/her thoughts depends on authentic and legitimate texts.

An interesting sentence that is attributed to Nāgārjuna is “what has already been moved is not moving; what has not yet been moved is not moving. Independently of what has been moved and what has not yet been moved what is being moved is not moving”. A correction of the concept of Nāgārjuna is necessary for the last part of the sentence: “what is being moved is [partly] not moving” partly, because that part that was moved is not moving any longer and that part that is remainder is also not yet moving, only the touch-area and object touching is moving so if the distance of the moving is the length of three lengths of the object then 66 and a third% is not moving and 33 and a third% is moving. The present moves while the past and future does not move any longer or not yet. Traditional grammar independently from Nāgārjuna maintained the same principles since these are ontological questions and existential experiences. The past denotes in traditional grammar an action completed while the future denotes an action not yet started (motionless) and only the present is engaged in motion or action which is ongoing. The analysis of motion by Nāgārjuna’s is not new but actually very obvious and empirical in *Sitz im Leben* situations.

4.5 Semitic linguistics and Nāgārjuna

Semitic linguistics indicate that the concept that Nāgārjuna is trying to verbalize was already understood that way 2583 BCE and later cuneiform texts. Eblaitic and Akkadian languages do not have a present tense like Greek, Latin, German, English are related languages. It only has past tense and future tense verbs. Jacques Doukhan explains it this way: “Finding himself in the wake of action, the Hebrew forges his identity in becoming of his movement towards the future.”²³ Doukhan indicated that “Indeed, the chronological reality of History is not ignored, but through his identification with the past and future events, the Hebrew places himself in the historical perspective”. The Paal form פעל means “he acted” and is used where one would expect a present in the English. There is no present verb. Hebrew as a language existed with Phoenician, Aramaic and other dialects like Moabite, Edomite, and Ammonite long before the time of Nāgārjuna. All of them share this attribute of the absence of a present verb. What Nāgārjuna is saying is that if the 49% is the point in which the action is taking place as process now then 1%-49% of that motion of the action is motionless and 50%-100% of that action is also motionless since it is yet to happen. The 1% of the actual motion is so small so little that it is irrelevant for consideration and thus even though there is motion it is motionless. This is what the Semitic linguists of Ancient times discovered earlier and that is why the semitic grammars do not have a present tense.

²⁰ Richard P. Hayes. 2003. “Nāgārjuna: Master of Paradox, Mystic or Perpetrator of Fallacies?” Paper prepared before the Department of Philosophy, Smith College. Retrieved from the following online site:
http://www.thezensite.com/ZenEssays/Nagarjuna/Master_of_Paradox.pdf

²¹ Garfield, Jay L., & Priest, Graham. 2002. Nāgārjuna and the Limits of Thought. In: Garfield, Jay L. 2002. *Empty Words: Buddhist Philosophy and Cross-Cultural Interpretation*. Oxford: Oxford University Press. The problem is to authenticate his writings and textcritical issues creates major dilemmas. Between the survived text and the original text is a void gap which much guessing can originate.

²² Garfield & Priest, 2002, p. 86.

²³ J. Doukhan, *Hebrew for Theologians: A textbook for the study of Biblical Hebrew in relation to Hebrew thinking* (Lanham, Maryland: University Press of America, Inc., 1993), 205.

Sumerian Grammars also display evidence of language change. In his *Sumerian Grammar* by Otto Edzard (2003) he reminds us that proper names in Sumerian also underwent changes by phenomena like slurring, abbreviation, deformation by analogy and popular etymology.²⁴ Cuneiform Grammars and Dictionaries from more than a millennium before Chinese are available dating from 2300 BCE.²⁵ Dictionaries were bilingual and the grammars deals with exercises of repetition that is very insightful for language education.²⁶ Another language is Middle Egyptian Grammars that are insightful to languages from ancient times. These grammars are nearly two millennia before Panini and of the words from these ancient cultures, are still in use today, like *sesami* and *Pharaoh*.

4.6 Bhartrhari

Sphoṭa (Devanagari स्फोट, the Sanskrit for "bursting, opening", "spurt") is an important concept in the Indian grammatical tradition of Vyākaraṇa, relating to the problem of speech production, how the mind orders linguistic units into coherent discourse and meaning. The theory of sphoṭa is associated with Bhartṛhari (c. 5th century), an early figure in Indic linguistic theory, mentioned in the 670s by Chinese traveller Yi-Jing. Bhartṛhari is the author of the *Vākyapadīya* ("[treatise] on words and sentences"). Sanskrit sphoṭa is etymologically derived from the root sphuṭ 'to burst'. It is used in its technical linguistic sense by Patañjali (2nd century BCE), in reference to the "bursting forth" of meaning or idea on the mind as language is uttered. Patañjali's sphoṭa is the invariant quality of speech. The account of the Chinese traveller Yi-Jing places a firm *terminus ante quem* of AD 670 on Bhartṛhari. Scholarly opinion had formerly tended to place him in the 6th or 7th century; current consensus places him in the 5th century. Scholarly works are also wide and in between.²⁷ Bhartṛhari develops this doctrine in a metaphysical setting, where he views sphoṭa as the language capability of man, revealing his consciousness.²⁸ Indeed, the ultimate reality is also expressible in language, the śabda-brahman, or the Eternal Verbum.

Early indologists such as A. B. Keith felt that Bhartṛhari's sphoṭa was a mystical notion, owing to the

²⁴ Dietz Otto Edzard, *Sumerian Grammar* (Leiden: Brill, 2003), 4.

²⁵ The earliest known linguistic studies as a structure of language are commonly stated as the fifth century B.C.E. with Panini's grammar of Sanskrit, or the third or second century B.C.E., with Krates of Mallos's and Dionysios Thrax's grammars of Greek. Jacobsen points out that the ancient Babylonians, circa 1600 B.C.E., have the first recorded attempt, with revisions appearing through about 600 or 500 B.C.E. The Babylonians were, according to Jacobsen, attempting to preserve a large body of literature that was written in Sumerian, which was a dying language in the process of being replaced by Akkadian (Thorkild Jacobsen, "Very Ancient Texts: Babylonian Grammatical Texts," in Dell Hymes, *Studies in the History of Linguistics: Traditions and Paradigms*, 1974, 41-62). Salient points of Jacobsen's analysis of the Babylonian Grammars include a note that the form of Sumerian was kept (words, et al.) but that the analysis broke through the form for greater understanding, much as current analysis of Latin does in schools. In effect, it made the language live even though it was out of use.

²⁶ See the examples from actual texts by A. Poebel, *Grammatical Texts*. In Publications of the Babylonian Section, 4 (Philadelphia: University Museum, 1914) which gives insights to morphological changes, the sequence of the modifying elements, the active present-future themes, the preterit of the active, the active permansive, intransitive and passive themes, the noun-governed complexes.

²⁷ Wilhelm Rau, *Bhartṛharis Vākyapadīya / die mūlakārikās nach den Handschriften hrsg. Und mit einem pāda-Index versehen*, Wiesbaden : Steiner, 1977, *Abhandlungen für die Kunde des Morgenlandes* 42,4. Wilhelm Rau, *Bhartṛharis Vākyapadīya II : Text der Palmblatt-Handschrift Trivandrum S.N. 532 (= A)*, Stuttgart : Steiner, 1991, *Abhandlungen der Geistes- und Sozialwissenschaftlichen Klasse, Akademie der Wissenschaften und der Literatur* Nr. 7, ISBN 3-515-06001-4. Saroja Bhate, *Word index to the Vākyapadīya of Bhartṛhari, together with the complete text of the Vākyapadīya* (Delhi: Eastern Book Linkers, 1992.). Brough, J., (1952). "Audumbarayana's Theory of Language," *Bulletin of the School of Oriental and African Studies*, University of London, 14 (1.): 73–77. Coward, Harold G. (1997). *The Sphota Theory of Language: A Philosophical Analysis*. Motilal Banarsidass, The first part of this text is a good review of the metaphysical underpinnings in Bhartṛhari. Frits Staal mentioned that Noam Chomsky's concept of "deep structure" and "surface structure" seemed also to have been influenced by Bhartṛhari. (F. Staal, "The science of language," Chapter 16, in Gavin D. Flood, ed. *The Blackwell Companion to Hinduism* Blackwell Publishing, 2003, p. 357-358). See also Saroja Bhate, Johannes Bronkhorst (eds.), *Bhartṛhari - philosopher and grammarian: proceedings of the First International Conference on Bhartṛhari*, University of Poona, January 6–8, 1992, (Motilal Banarsidass Publishers, 1997). R. Herzberger, *Bhartṛhari and the Buddhists*, (Dordrecht: D. Reidel/Kluwer Academic Publishers, 1986). K. J. Shah, "Bhartṛhari and Wittgenstein" in *Perspectives on the Philosophy of Meaning* (Vol.I, No. 1. New Delhi.)1/1 (1990): 80-95. T. Patnaik, *Śabda: a study of Bhartṛhari's philosophy of language*, (New Delhi : DK Printworld, 1994). Maria Piera Candotti, *Interprétations du discours métalinguistique : la fortune du sūtra A 1 1 68 chez Patañjali et Bhartṛhari, Kykéion studi e testi*. 1, Scienze delle religioni, (Firenze University Press, 2006, Diss. Univ. Lausanne, 2004).

²⁸ Coward, Harold G. (1997). *The Sphota Theory of Language: A Philosophical Analysis*. Motilal Banarsidass,.

metaphysical underpinning of Bhartṛhari's text, Vākyapādiya where it is discussed, but it appears to be more of a psychological notion. Also, the notion of "flash or insight" or "revelation" central to the concept also lent itself to this viewpoint. However, the modern view is that it is perhaps a more psychological distinction. Many other prominent European scholars around 1900, including linguists such as Leonard Bloomfield and Roman Jakobson may have been influenced by Bhartṛhari. Frits Staal indicated that Chomsky was also influenced by him.²⁹

He theorized the act of speech as being made up of three stages: Conceptualization by the speaker (Paśyanti "idea"), Performance of speaking (Madhyamā "medium"), Comprehension by the interpreter (Vaikhari "complete utterance"). The road from Panini, Nagarjuna, Bhartṛhari leads through Sanskritians like:

4.7 Jacob Grimm and Panini

Jacob Ludwig Carl Grimm (4 January 1785 – 20 September 1863) was a German philologist, jurist with a strong interest in mythology, especially German mythology. In 1822 Grimm devised his rule of consonant shifts in pronunciation by using Greek, Latin and Sanskrit examples.³⁰

4.8 Rasmus Rask and Panini

"Rasmus Rask (1787–1832) was a Danish scholar who, having devoted the early part of his career to the Old Norse and Anglo-Saxon languages and literature embarked upon a journey overland through Russia to India in search of the cradle of the Indo-European languages. He was delighted to rediscover the Avestan Zoroastrian texts preserved by the Parsis which Anquetil du Perron had first reported on sixty years earlier, and further Avestan materials, as well as a lively Zoroastrian community.

On his return, he published, first in Danish and then in this German translation (1826), a thorough phonological and morphological analysis which showed that, contrary to the opinion of Anquetil's opponents, the Avestan language and its religious texts were neither a dim folk memory or a deliberate coinage based on Sanskrit, but a very ancient language, originating in Persia, and an important member of the Indo-European language family." Zoroastrianism is a religion. He wrote a book on it.³¹

4.9 F. Bopp and Panini

The first minute and scholar-like comparison of the grammar of Sanskrit with that of Greek, Latin, Persian, and German was made by Francis Bopp, in 1816 (second edition in 1856). In 1833 appeared the first volume of his *Comparative Grammar of Sanskrit, Zend, Greek, Latin, Lithuanian, Slavonic, Gothic, and German*. This work was not finished till nearly twenty years later, in 1852.³² He also wrote a Sanskrit grammar.³³

4.10 W. D. Whitney and Panini

²⁹ Noam Chomsky's concept of "deep structure" and "surface structure" seems also to have been influenced by Bhartṛhari. Frits Staal, "The science of language," Chapter 16, in Gavin D. Flood, ed. *The Blackwell Companion to Hinduism* Blackwell Publishing, 2003, p. 357-358

³⁰ F. Staal is intrigued by Grimm's sarcastic observation in 1851, eight years before Darwin challenged Creationism, the biblical way, when Grimm challenged God's ability to speak with a *God has teeth* statement. He argued that if God can speak He must have teeth and if teeth He must eat because that is why teeth are there (J. Grimm [1851] *Ueber den Ursprung Sprache*. Reprint 1958, 28). Both Staal and Grimm thinks *analogia entis* about a text that they consulted with a modus operandi of eclecticism only picking and choosing texts that they like without looking at the whole text corpus. God speaks through revelation, inspiration and illumination with the last two not even using His mouth at all. In fact, God also spoke through a donkey in the case of Bileam. Staal and Grimm is operating with sarcasm of the Bible, called *hermeneutics of suspicion* of which Feuerbach was the father and in line with Darwin's objective and that is why they are birds of the same feather clinging to each other epistemologically. Says Staal "Grimm's observation is consistent with Darwin's natural selection in that it shows, that any feature or organ selected for one reason may be used for another" (F. Staal, "Noam Chomsky between the Human and Natural Sciences").

³¹ Rasmus Rask, *Über das Alter und die Echtheit der Zendsprache und des Zend-Avesta, und Herstellung des Zend-alphabets: Nebsteiner Übersicht des gesammten Sprachstammes* (Cambridge Library Collection - Linguistics) (German) Paperback – 26 Nov 2009 translated by Friedrich Heinrich Von der Hagen, (London: Cambridge University Press, 26 November 2009). Rasmus' problem is that textcritically he is very romantic about his find: "Die Untersuchung führte mich zur vollkommensten Überzeugung von der Echtheit dieser alten Schriften und ihrer Sprache." The absolute "faith" he has in quasi-data here is really amazing.

³² Franz Bopp, 1791-1867, *A comparative grammar of the Sanskrit, Zend, Greek, Latin, Lithuanian, Gothic, German, and Slavonic languages*. translated by Edward Backhouse (London: Eastwick Publisher Hildesheim: G. Olms, 1985).

³³ Franz Bopp, 1791-1867, *Kritische Grammatik der Sanskrita-Sprache in kürzerer Fassung*, (Berlin, Nicolai, 1868).

William Dwight Whitney went to Germany in 1850 and for three years he studied Sanskrit and during his winters he spent time under Albrecht Weber, Franz Bopp and summers he worked under Rudolf von Roth at Tübingen. He wrote a grammar *The Roots, Verb-Forms and Primary Derivatives of the Sanskrit Language: (A Supplement to His Sanskrit Grammar)*. In 1854 he became professor of Sanskrit at Yale and in 1869 also in comparative philology. He served for a long time the *American Oriental Society*. Sanskrit is a religious language and its texts are deeply rooted in Hinduism and Buddhism. It is thus not possible for someone to have a mere interest in these languages without being affected in epistemology with the religion as well. This accounts for nearly all Sanskrit western scholars in our day as well. Whitney wrote metrical translations of the Hindu religious scriptures called Vedas and many papers on the Vedas and also on linguistics which were collected in the *Oriental and Linguistic Studies* series 1872-1874.

He was updated on the grammar of Panini. He wrote his Sanskrit Grammar in 1879 and it is noted for its criticism of the Ashtadhyayi, the Sanskrit grammar of Panini. Whitney felt that the Ashtadhyayi “containing the facts of the language cast into the highly artful and difficult form of about four thousand algebraic-like rules (in the statement and arrangement of which brevity alone is had in view at the cost of distinctness and unambiguousness).”

A number of studies on Whitney connect him with Chomsky.³⁴

4.11 A. N. Whitehead and Panini

László Főrizs published a presentation on “The relevance of Whitehead for contemporary Buddhist philosophy”. He discussed the role of Panini, Panini’s grammar as part of the Hindu *holy scriptures* called Vedas, the role of Kātyāyana and Patañjali and the role of a Buddhist philosopher with the name of Nāgārjuna who stretched the applicability of imaginative generalizations of the Hindu grammars of Panini in the area of motion analysis in language.³⁵ Nāgārjuna lived between 150-250 CE and was presumably operative between 167-196 CE but those dates are all disputed.³⁶

However, the textcritical authentication of his works is under dispute and hazy since his works survived in later than fifth century Chinese translations.³⁷ Főrizs indicated that Panini and his school “construction originated in the Sanskrit language itself as storehouse of human experience”.³⁸ Hindu grammarians believed that sounds are gods and these reside in the person in a pantheistic way. “It is this being, which exists in the mind alone (buddhisattā), that is the ground of all verbal behavior”.³⁹ The critic Bhattacharya indicated that Nāgārjuna would answer his critics by saying they “unduly mixing up facts of language with ontological considerations which are foreign to them:” which is not external being or primary being of things but superimposed being “which is conceived and externally projected by the mind of the speaker and hearer”. The main point is that it is viewed as an inside power residing in the mind of the speaker or user of language. Whitehead seemed to have made reference to the same concept when he said “And yet . . . one kept encountering this silent, innate worth in the most unlikely places: on the docks, in police courts, in slum tenements; there was no name for it, yet there it was, and one always knew it when encountered.

Truly, I may say to you that this is the only thing of any importance that I know; and, as you see, I cannot

³⁴ John Earl Joseph (2002). *From Whitney to Chomsky: Essays in the History of American Linguistics*. John Benjamins Publishing.

³⁵ László Főrizs published a presentation on: “The relevance of Whitehead for contemporary Buddhist philosophy”.

³⁶ I. Mabbett, “The problem of the historical Nagarjuna revisited”, *Journal of the American Oriental Society*, 118(3) (1998): 332–346. D. Kalupahana, *A History of Buddhist Philosophy* (1992). 160. J. Walser, *Nāgārjuna in Context: Mahāyāna Buddhism and Early Indian Culture* (New York: Columbia University Press, 2005). J. Westerhoff, *The Dispeller of Disputes: Nāgārjuna’s Vigrahavyāvartanī* (Oxford: Oxford University Press, 2009). J. Westerhoff, *Nāgārjuna’s Madhyamaka. A Philosophical Introduction* (Oxford: Oxford University Press 2009).

³⁷ I. Mabbett, “The problem of the historical Nagarjuna revisited”, *Journal of the American Oriental Society*, 118(3) (1998): 332–346. C. Lindtner, *Nagarjuniana* (Motilal, 1987 [1982], page 11).

³⁸ Főrizs page 3. The great linguistics listed as pioneers of the transformational generative grammar of Chomsky are all in one way or another tied into Sanskrit grammars, Sanskrit language and the Hindu influenced ideas and concepts of Panini built into his grammar.

³⁹ K. Bhattacharya, “Nāgārjuna, ’s arguments against motion.” *The Journal of the International Association of Buddhist Studies (JIABS)* vol. 8, no. 1 (1985): 9 op. cit. Főrizs page 7.

communicate it; all I can tell you is that I have ‘seen something’. But there are no words of it.”⁴⁰

Whitehead talks about encountering or being aware of a supernatural that he cannot describe. It is like the old issue between evolutionists and creationists. Some evolutionists like the concept of ID (intelligent design) which is a vague generalization with no specifics rather than the specific Creator God of the Bible for creationists. The non-descript ID is for them better than the descriptive Creator. Hinduism discovered this Fingerprint of the Creator God (Fibonacci’s spirals) in nature a long time ago and that is why their religion is pantheistic. Whitehead opted for a pan-psychism. He emphasized the importance of metaphysics in science and not only empiricism as methodology. Whitehead was interested in the role of science whether it should aim to be explanatory or merely descriptive and he suggested to Bertrand Russell: “This further question lands us in the ocean of metaphysic, onto which my profound ignorance of that science forbids me to enter.”⁴¹ He thought of a process-naturalism but in terms of a God complacent of leaving things as it is to just go on and on. Whitehead correctly perceived the importance of metaphysics for science and held that no-one is doing science without it. He was reacting against absolute empiricists that only want to do science without any metaphysical view.⁴² This notion to realize that science and metaphysics are intertwined was already realized by Hinduism since its inception and Panini understood it as well. That is why Hinduism is pantheistic and sounds of language are called gods. Whitehead wanted that pan-psychic to be busy with a process of creativity in everything.⁴³ There is no Savior or Future but there is improvement of creative components networking inside everything.⁴⁴

4.12 Sanskrit pioneer in Europe Karl Wilhelm Friedrich von Schlegel

Karl Wilhelm Friedrich von Schlegel (1772-1829) is considered the father of Euro-Indo studies. He studied Sanskrit in Paris and set up a journal *Europa* in 1803. Schlegel wrote *Über die Sprache und Weisheit der Indier* (1808) translated by this researcher as: “On the Language and Philosophy of the Indians,” and became the founder of the study of Indo-Aryan languages and comparative philology. He is considered a pioneer in Indo-Aryan studies. Sir William Jones (1746-1794), found similarities between Sanskrit and three other languages, Latin, Greek, and Persian, and that inspired Schlegel to make the claim, that India was the cradle of Western culture. He saw parallels between language and race, and started to speak of “Aryans” (the honorable people), who had moved from northern India to Europe. He founded Sanskrit studies in Germany and set up a printing press, with which he printed Bhagavadgita and Ramayana.

“In his famous work on the language and wisdom of the Indians published in 1808, Friedrich Schlegel considers that the world’s languages fall into two groups: the Indo-European one arising from “reason” (“Vernunft”) and the other, including explicitly the Semitic languages, emerging from an “animal-like torpor” (“thierische Dumpfheit”) (Schlegel, 1808, pp. 62–66).

This disastrous polygenetic theory became established in the cultural awareness of his time and extended beyond

⁴⁰“Dialogues of Alfred North Whitehead as recorded by Lucien Price. ”Boston, An Atlantic Monthly Press Book, 1953, page 195; op. cit. Fórizs page 10.

⁴¹ Alfred North Whitehead to Bertrand Russell, February 13, 1895, Bertrand Russell Archives, Archives and Research Collections, McMaster Library, McMaster University, Hamilton, Ontario, Canada.

⁴² Alan Van Wyk and Michel Weber (eds.).*Creativity and Its Discontents. The Response to Whitehead's Process and Reality* (Frankfurt / Lancaster: Ontos Verlag, 2009).

⁴³ “Every scientific man in order to preserve his reputation has to say he dislikes metaphysics. What he means is he dislikes having his metaphysics criticized” (George P. Conger, “Whitehead lecture notes: Seminary in Logic: Logical and Metaphysical Problems”, Manuscripts and Archives, [New Haven, Connecticut: Yale University Library, Yale University, 1927).

⁴⁴ God is immanent in the World and the World is immanent in God, a pantheistic view. Whitehead said “It is as true to say that God is permanent and the World fluent, as that the World is permanent and God is fluent. It is as true to say that God is one and the World many, as that the World is one and God many. It is as true to say that, in comparison with the World, God is actual eminently, as that, in comparison with God, the World is actual eminently. It is as true to say that the World is immanent in God, as that God is immanent in the World. It is as true to say that God transcends the World, as that the World transcends God. It is as true to say that God creates the World, as that the World creates God What is done in the world is transformed into a reality in heaven, and the reality in heaven passes back into the world... In this sense, God is the great companion – the fellow-sufferer who understands” (Alfred North Whitehead, *Process and Reality* (New York: The Free Press, 1978), 347–348, 351.

it (Timpanaro, 1972, p. XIII).⁴⁵ To declare that Semitic originated from “animal-like foolishness” is in the light of the absence of cuneiform and other Semitic inscriptions that was not yet discovered. A better understanding of Hebrew and Arabic would also have prevented him from his careless statement *supra*. We must remember that his lifestyle was one of promiscuity since he had a mistress Dorothea, and they flip-flopped from one religious persuasion to another: she Jewish, he Lutheran, then both Protestant and finally converted to Catholicism. He also wrote a novel *Lucinde* (1799) based on this loose love relationship, condemned by many as amoral and it was during these ontological skew life-experiences that he made epistemological skew statements. She was the daughter of the philosopher and theologian of Judaism, Moses Mendelssohn.

4.13 Wilhelm von Humboldt and Panini

Sanskrit cannot be considered a better option than the Traditional Grammar

In a letter by Von Humboldt, which his friend F. G. Welcker⁴⁶ received on 10th February 1826, Humboldt writes the following lines: ‘In all these studies on language I always return to the point, and hope to find an opportunity to really express it honorably correct, that the Greek language and Greek Antiquity remain primary, that the human spirit has ever brought forth. Whatever one might praise Sanskrit for, it does not match up to Greek, and also simply, as language.’ “Bei allen diesen Sprachstudien komme ich immer darauf zurück, und hoffe Gelegenheit zu finden, es einmal recht ordentlich zu sagen, dass die Griechische Sprache und das Griechische Alterthum das Vorzüglichste bleiben, was je der menschliche Geist hervorgebracht hat. Was man vom Sanskrit rühmen mag, das Griechische erreicht es nicht, auch ganz einfach, als Sprache, nicht.”⁴⁷ He is known for his book on the diversity of human languages.⁴⁸

It was his thinking on Chinese as a comparative language that led Humboldt to review some of his earlier concepts published in 1821 that Chinese is deficient because it does not have inflection.⁴⁹ Abel-Rémusat’s article in *Journal Asiatique* in 1824 changed his mind and he appraised the Chinese language highly in 1826 *Lettre à M. Abel-Rémusat sur la nature des formes grammaticales en général et sur le génie de la langue chinoise en particulier*.⁵⁰ In his treatise *On the Origin of Grammatical Forms and their Influence on the Development of Ideas*⁵¹ published in 1821, Humboldt had explicated a teleological conception of language evolution that tends towards the ultimate realization of the inflecting principle.⁵² Being without inflection, Chinese is held to lack grammatical forms more than any other language and therefore be deficient.⁵³ But having read Abel-Rémusat’s critique of his treatise on the origin of grammatical forms, published in *Journal Asiatique* in 1824, and in which Abel-Rémusat diplomatically requests Humboldt to acquire a profounder knowledge of Chinese, Humboldt understood that he had to reconsider his theory. The result was his famous *Lettre à M. Abel-Rémusat sur la nature des formes grammaticales en général et sur le génie de la langue chinoise en particulier*,⁵⁴ published in 1826, in which Humboldt not only appraises Chinese highly but also proposes a wholly revised grammatical theory.

“Thereafter, Humboldt considers the fact that all the possible semantic relations and modalities can be expressed

⁴⁵ Markus Meßling, “Wilhelm von Humboldt and the ‘Orient’ On Edward W. Said’s remarks on Humboldt’s Orientalist studies” *Language Sciences* Vol. 30/5 (September 2008): 482-498.

⁴⁶ Wilhelm von Humboldt, 1808. Briefe an Friedrich Gottlieb Welcker [BW]. Rudolf Haym (Ed.). Gaertner, Berlin, 1859.

⁴⁷ Idem., 134

⁴⁸ Wilhelm von Humboldt, 1836a. *Über die Verschiedenheit des menschlichen Sprachbaues und ihren Einfluß auf die geistige Entwicklung des Menschengeschlechts* [KE]. Di Cesare, D. (Ed.), Schöningh, Paderborn, München, Wien and Zürich, 1998. Wilhelm von Humboldt, 1836b. *On Language* [OL]. *The Diversity of Human Language-Structure and its Influence on the Mental Development of Mankind*. Translated by Peter Heath. Introduction by Hans Aarsleff. Cambridge University Press, Cambridge and New York, 1988.

⁴⁹ Wilhelm von Humboldt, 1785. *Gesammelte Schriften* [GS]. 17 vols. Edited by Albert Leitzmann. Berlin 1903–1936: B. Behr. [Reprint de Gruyter, Berlin, 1968], GS IV, pp. 309–311.

⁵⁰ J.-P. Abel-Rémusat, 1824. Compendium de “Sur la naissance des formes grammaticales” de Humboldt. *Journal Asiatique* V. Dondey-Dupré, Paris (Reprint in: Rousseau and Thouard [1999], pp. 119–124).

⁵¹ Idem. GS IV, pp. 285–313.

⁵² Jean Rousseau et Denis Thouard [éds.] (1999), *Lettres édifiantes et curieuses sur la langue chinoise : un débat philosophico-grammatical entre Wilhelm von Humboldt et Jean-Pierre Abel-Rémusat (1821-1831)*, Villeneuve d’Ascq, Presses Universitaires du Septentrion, p. 15, p. 21.

⁵³ GS IV, pp. 309–311.

⁵⁴ LAR. Full reference *supra*. GS V, pp. 254–308.

in each and every language. Hence, there is no such thing as a language without grammar. As the logical combinations are universal, Humboldt points out the existence of a universal grammar that is of a mental nature: '[...] more than any other part of language, grammar exists essentially in the mind'.⁵⁵ Aspects of this universal grammar may be materially rendered by sounds and forms of writing, but they need not be, as they are in any case present in the mind. Consequently, structural differences between languages can no longer be explained in terms of perfection or imperfection but only with regard to the question of whether or not a language makes the logical combinations perceptibly (phonetically and in its script) explicit. Humboldt maintains that, whereas the inflecting Indo-European languages do this to the greatest extent, Chinese refrains from this possibility as much as possible."⁵⁶

4.14 Ferdinand de Saussure and Panini

Ferdinand de Saussure credited Whitney with the arbitrary nature of linguistic signs (see F. de Saussure, *Course in General Linguistics* "Immutability and Mutability of the Sign"). De Saussure studied Sanskrit under Hermann Oldenberg and received his doctorate in February 1880 with the topic *De l'emploi du genitive absolue en Sanscrit*.⁵⁷ He went to Paris and lectured on Sanskrit, Gothic and Old High German plus other subjects. He taught in 1891 on Sanskrit and Indo-European languages the University of Geneva. In 1907 he began teaching the Course in General Linguistics until the summer of 1911.⁵⁸

"In modern times, scholars of Bharṭṛari have included Ferdinand de Saussure, who did his doctoral work on the genitive in Sanskrit, and lectured on Sanskrit and Indo-European languages at the Paris and at the University of Geneva for nearly three decades. It is thought that he might have been influenced by some ideas of Bharṭṛari, particularly the *spṛṇ* debate. In particular, his description of the sign, as composed of the signifier and the signified, where these entities are not separable - the whole mapping from sound to denotation constitutes the sign, seems to have some colourings of *spṛṇ* in it. Many other prominent European scholars around 1900, including linguists such as Leonard Bloomfield and Roman Jakobson may have been influenced by Bharṭṛari".⁵⁹

The moment one insists on the arbitrary nature of language whether meanings or sounds or structures, one is involved in pro-activism of a-normativism. Instead of rules or a standard to which one is to compare things, the tendency is to "loosen" the rules, abandon them and set up a vagueness and imprecise situation that cannot be transmitted to beginners of the language. Language didactics becomes then unfunctional and comes to a halt. We need to keep in mind that transformational-generative grammar in whatever derivative or associative form or trend, has not produced a grammar of the stature of Otto Jespersen and the like for the English language yet. The vagueness of "infinite possible structures" in language is part of this handicap that resulted. Is it language that is arbitrary or is it the free volitive aspect of human existence or ontology that is arbitrary and unpredictable. Of course any actions, gesture or linguistic utterance and sound will be arbitrary as a result of that. But, to call language arbitrary in essence as a result of that is putting it in the category of unpredictability and that is just not true. People communicate in stereotypes and humor, gag and satire genres flourish on this predictability.

4.15 Leonard Bloomfield and Panini

⁵⁵LAR, p. 131; transl. MM.

⁵⁶Markus Meßling, (2008).

⁵⁷D. Holdcroft, (1991). *Saussure: Signs, System, and Arbitrariness*. Cambridge University Press.

⁵⁸Jan Koster, 1996. "Saussure meets the brain", in R. Jonkers, E. Kaan, J. K. Wiegel, eds., *Language and Cognition* 5. Yearbook 1992 of the Research Group for Linguistic Theory and Knowledge Representation of the University of Groningen, Groningen, 115-120.

⁵⁹R. Harris, 1988. *Language, Saussure and Wittgenstein*. Routledge; Linguistic sign and the science of linguistics: the foundations of applicability. In Fang Yan & Jonathan Webster (eds.) *Developing Systemic Functional Linguistics*. Equinox 2013; E. F. Konrad Koerner, 'The Place of Saussure's Memoire in the development of historical linguistics,' in Jacek Fisiak (ed.) *Papers from the Sixth International Conference on Historical Linguistics*, (Poznań, Poland, 1983) John Benjamins Publishing, 1985 pp. 323-346.

Leonard Bloomfield, for example, a Sanskrit scholar himself,⁶⁰ was only blasting Latin based epistemology for Traditional Grammars because of its philosophy because he wanted to supplant the Western philosophical essence of linguistic theory and methodology with Hindu and Buddhist based epistemology. One cannot call it Oriental epistemology since Buddhism is a late arrival in the Orient arriving in South Korea in 332 CE and in Japan in 538 CE. The Orient was not epistemology-less before the arrival of Buddhism. Two groups that were targets of Bloomfield's censure are the philosophers who indulged in speculations as when they "took it for granted that the structure of their language embodies the universal forms of human thought" or also "of the cosmic order" and "looked for truths about the universe in what are really nothing but formal features of one or another language" (Bloomfield's *Language* = [hereafter BL]).⁶¹

"If they 'made grammatical observations', 'they confined these to one language and stated them in philosophic terms'.⁶² In particular, they 'forced their description into the scheme of Latin grammar', holding Latin to be 'the logically normal form of human speech' and to 'embody universally valid canons of logic'.⁶³ Bloomfield is far more impressed by early work on Sanskrit,⁶⁴ notably because 'the Hindus' 'were excellent phoneticians' and 'worked out a systematic arrangement of grammar and lexicon'"

"The other censured group is the 'grammarians' of 'our school tradition', who followed suit by 'seeking to apply logical standards to language'.⁶⁵ Their 'pseudo-grammatical doctrine' was to 'define categories of the English language as philosophical truths and in philosophical terms'.⁶⁶ They 'believed that the grammarian', 'fortified by his powers of reasoning, can ascertain the logical basis of language and prescribe how people ought to speak'.⁶⁷ They thus felt free to 'ignore actual usage in favour of speculative notions'.⁶⁸ They promulgated 'fanciful dogmas', 'doctrines', and 'rules', which 'still prevail in our schools', e.g., about "shall" versus "will".⁶⁹

His rebellion against 'fanciful dogmas' and 'doctrines' and 'rules' in 1933 is in the heart of the outcry of modernism, born in December of 1910 and which died in December of 1960. Modernism was an outcry against rules, doctrines, standards, norms and a plea for a-normativism. There is a paradox in Bloomfield's outcry against those who want to apply "logical standards to language"⁷⁰ on the one side abandoning logic as essence for analysis and then in the next instance his setting up of logic for analysis by appealing to mathematics as essence for analysis.⁷¹

This anomaly in Bloomfield has been pointed out by scholars already and it serve to illustrate that Bloomfield as Hindu supported Sanskrit grammarian wished to introduce Hindu epistemology to linguistics of which the

⁶⁰ Leonard Bloomfield, (1927). "On Some Rules of Pāṇini". *Journal of the American Oriental Society* 47: 61–70. See also Rogers, David E. 1987. "The influence of Pāṇini on Leonard Bloomfield." Robert A. Hall, Jr., ed., *Leonard Bloomfield: Essays on his life and work*, 89-138. Philadelphia: John Benjamins. Rogers illustrated that Leonard Bloomfield's synchronic grammatical works were strongly influenced by the sixth century BCE Indian grammarian Panini. The following aspects can be mentioned: Word formation, compounds, suppletion, zero, form-classes, and generality and specificity in Bloomfield's *Language*, *Eastern Ojibwa*, and *The Menomini Language* are all correlated with their counterparts in Panini's grammar of Sanskrit. Rogers further indicated that selections from a manuscript of Bloomfield's translation and annotation of the *Kasika*, a traditional Sanskrit work on Panini's grammar, provide concrete evidence for the influence of Panini on Bloomfield.

⁶¹ L. Bloomfield, 1933, *Language*. New York: Henry Holt. [BL = Bloomfield *Language*] BL 3, 5f.; cf. 13.16, 18. Retrieved from <http://www.beaugrande.com/LINGTHERBloomfield.htm>

⁶² BL 5.

⁶³ BL 8, 6; cf. 2.5; 3.50; 5.24; 6.5; 8.5; 9.25; 12.20f.

⁶⁴ Leonard Bloomfield, (1911). "The Indo-European Palatals in Sanskrit". *The American Journal of Philology* 32 (1): 36–57. doi:10.2307/288802. JSTOR 288802. See also Lehmann, Winfred P. 1987. "Bloomfield as an Indo-Europeanist." Robert A. Hall, Jr., ed., *Leonard Bloomfield: Essays on his life and work*, 163-172. Philadelphia: John Benjamins. A relative of Bloomfield, Maurice Bloomfield, was a famous Sanskrit scholar who translated Vedas. This is another source of influence on Leonard Bloomfield.

⁶⁵ BL 6; cf. 8.5, 17; 13.16.

⁶⁶ BL 500.

⁶⁷ BL 7; cf. 4.86; 8.4; 13.50.

⁶⁸ BL 7.4.

⁶⁹ Idem.

⁷⁰ BL 6; cf. 8.5, 17; 13.16; 4.4f.

⁷¹ BL 29, 146; cf. 2.82; 3.73; 5.86; 8.31; 12.33ff; 13.15.

traditional grammars, designed by monotheistic religious and secular scholars for millennia does not fit his pantheistic Hindu and Buddhist epistemology.

“‘Mathematics’ is a ‘specially accurate form of speech’, indeed, ‘the best that language can do’ ‘whole series of forms’, ‘in the way of selection, inclusion, exclusion, or numbering, elicit very uniform responses from different persons’.⁷² ‘The use of numbers’ is ‘speech activity at its best’ and ‘the simplest and clearest case of the usefulness of talking to oneself’ -- the latter being, as we saw, Bloomfield’s designation for ‘thinking’.”⁷³ Leonard Bloomfield came in conflict with traditional grammar and one can see it in his statements towards rebellion. ‘Many people have difficulty at the beginning of language study’ ‘in stripping off the preconceptions that are forced on us by our popular-scholastic doctrine’.⁷⁴ “His book [the publication of Bloomfield’s *Language* in 1933] fostered in American linguistics a spirit of confrontation not merely against rival approaches, but also against prevailing philosophy, pedagogy, language teaching, and the humanities at large.”

He complained about the Latin based concept of grammar.

“If they ‘made grammatical observations’, ‘they confined these to one language and stated them in philosophic terms’.⁷⁵ In particular, they ‘forced their description into the scheme of Latin grammar’, holding Latin to be ‘the logically normal form of human speech’ and to ‘embody universally valid canons of logic’.”⁷⁶ “Bloomfield is far more impressed by early work on Sanskrit, notably because ‘the Hindus’ ‘were excellent phoneticians’ and ‘worked out a systematic arrangement of grammar and lexicon’.”⁷⁷ Anyone who makes a philosophy of life shift in epistemology will react against anything that anchors the person to the past he absconded from.

He was a rebel against passing on status quo

“Bloomfield’s indignation has not only social and political motives, but professional ones as well. He is annoyed that ‘the knowledge’ ‘gained’ by ‘linguistics’ ‘has no place in our educational programme’, which ‘confines itself to handing on the traditional notions’.”⁷⁸

Creativity of language is unpredictable and infinite

“The human body’ and ‘the mechanism which governs speech’ are so ‘complex’ that ‘we usually cannot predict whether’ ‘a speaker’ ‘will speak or what he will say’.⁷⁹ ‘The possibilities are almost infinite’,⁸⁰ and ‘the chain of consequences’ is ‘very complicated’.”

Holistic view of communication

“Hence, ‘the occurrence of speech and the practical events before and after it depend upon the entire life-history of the speaker and the hearer’.”⁸¹

Elusive meanings theory

“Bloomfield contends that ‘the meaning of any given speech utterance’ could be ‘registered’ only ‘if we had an accurate knowledge of every speaker’s situation and of every hearer’s response’, so the linguist would have to be ‘omniscient’.”⁸²

Every speech act is unique

“Moreover, ‘every person uses speech-forms in a unique way’.”⁸³

Saussure and Bloomfield continuation theory

“Moreover, to uphold the Saussurian notion of system, Bloomfield ‘assumes that each linguistic form has a

⁷²BL 147, 512.

⁷³BL 29, 512; cf. 4.9.

⁷⁴BL 3f.

⁷⁵BL 5.

⁷⁶BL 8, 6; cf. 2.5; 3.50; 5.24; 6.5; 8.5; 9.25; 12.20f.

⁷⁷BL 296, 11; cf. 8.4, 54, 74; 12.20f.

⁷⁸BL 3; cf. 4.84.

⁷⁹BL 32f.

⁸⁰BL 3.3; 5.25, 28; 8.42.

⁸¹BL 23; cf. 5.28.

⁸²BL 74.

⁸³BL 75.

constant and definite meaning, different from the meaning of any other linguistic form in the same language’.”⁸⁴

Bloomfield against peer-checking and language teachers

“Besides, ‘the normal speaker, who is not a linguist, does not describe his speech-habits, and if we are foolish enough to ask him, fails utterly to make a correct formulation’.”⁸⁵ “Nor can we trust ‘educated persons, who have had training in school grammar’ and the ‘philosophical tradition’.”⁸⁶ “Indeterminate and mutable phenomena, he argues, would resist or compromise a scientific analysis.”⁸⁷

Bloomfield felt that maths is ideal to study language

“In Bloomfield's eyes, the ‘ideal use of language’ is in ‘mathematics’, ‘where the denotations are very precise’.”⁸⁸ ‘Mathematics’ is a ‘specially accurate form of speech’, indeed, ‘the best that language can do’ ‘whole series of forms’, ‘in the way of selection, inclusion, exclusion, or numbering, elicit very uniform responses from different persons’.”⁸⁹ ‘The use of numbers’ is ‘speech activity at its best’ and ‘the simplest and clearest case of the usefulness of talking to oneself’ -- the latter being, as we saw, Bloomfield's designation for ‘thinking’.”⁹⁰ His reverence for ‘mathematics’ jars somewhat, though, with his attack on ‘grammarians’ for using ‘logic’.”⁹¹

Bloomfield follows Saussure in the arbitrariness of language

“Though the stimulus-response model is essentially causal,”⁹² Bloomfield follows the Saussurian idea that ‘the connection between linguistic forms and their meanings is wholly arbitrary’ and again illustrates it with words for the same thing (“horse”) in different languages.”⁹³

Panini, Nagarjuna (50-250 CE), Bhartrhari (500-670 CE), Hindu and Buddhist epistemologies lies behind the linguistic theory of men like Whitney, Boas, Jacobson, De Saussure, Bloomfield, Chomsky and from here the list continues as modern scholars tried to do linguistics with Hindu epistemology avoiding the religion by some and incorporating the religion by others.

4.18 F. Staal⁹⁴ about non-verbal analysis of Panini's grammar and Noam Chomsky

“When studying the commentators’ examples of Panini's rule about the semantic features of the optative in Sanskrit, it dawned upon me that our nonhuman cousins and relatives engage in at least some of the kinds of behavior of ‘injunction, invitation, permission, respectful command, deliberation, or request’ without using language. There are nonhuman antecedents for the communicative complexity of many features of Panini's analysis and the classics of ethology describe them.”

(F. Staal, “Noam Chomsky between the Human and Natural Sciences”). The purpose of this Sanskrit linguist is to demonstrate that animal language or mantras and birdsongs are in a Darwinian way connected to human language and that the categories in communication between species among themselves cancels the traditional theory of creationism and intelligent design except design that comes from the inside of the creature themselves. This is where he tries to find Chomsky in all of this and he should find him there since that is the tenets of Hinduism and Buddhism as well.

“The need for a Darwinian account of the origin and development of language was stated most perspicuously and persuasively by Steven Pinker and Paul Bloom in their opening statement and final response to a collection of papers entitled "Natural language and natural selection" by linguists, biologists, psychologists, cognitive scientists,

⁸⁴ BL 158; cf. 2.26ff; 4.23, 26, 50.

⁸⁵ BL 406; cf. 4.54, 13.49.

⁸⁶ BL 4.4ff, 86; 13.16.

⁸⁷ But cf. 13.59.

⁸⁸ BL 29, 146; cf. 2.82; 3.73; 5.86; 8.31; 12.33ff; 13.15.

⁸⁹ BL 147, 512.

⁹⁰ BL 29, 512; cf. 4.9.

⁹¹ BL 4.4f; cf. 13.17.

⁹² BL 4.11; cf. 5.15

⁹³ BL 145, 274f; cf. 2.28ff; 3.3; 9.13, 36; 11.86.

⁹⁴ A number of publications of Staal are relevant for this research: J. F. Staal, "Euclid and Panini," *Philosophy East and West* 15 (1965): 99-116. Reprinted in: Staal 1988: 143-60 (see below); *ibid.*, "Mantras and Bird Songs," *Journal of the American Oriental Society* 105 (1985): 549-58; *ibid.*, *Universals. Studies in Indian Logic and Linguistics* (Chicago – London: The University of Chicago Press, 1988); *ibid.*, *Rules without Meaning. Ritual, Mantras and the Human Sciences* (New York etc.: Peter Lang, 1989, 1993); *ibid.*, "The Sanskrit of Science," *Journal of Indian Philosophy* 23 (1995):73-127.

and anthropologists in the December 1990 issue of the journal *Behavioral and Brain Sciences*. Pinker and Bloom state repeatedly that "language is a system of complex design and the only known explanation of such systems in life is natural selection." If we replace "the only known" by "one" this is a truism in the life sciences. Pinker and Bloom also give a brief "argument for design in language" (1990: 712-15) where they try to show that language enables humans to refer to the world. They start with nouns, verbs, adjectives etc. which "are exploited to distinguish basic ontological categories such as things, events or states, and qualities." They assume that language corresponds to the world although one of the main achievements of logic and philosophy has been to show that it does not (cf. note 2). This is an overemphasis in line of the arbitrariness of language theory that again is the deceptive fallacy that a chair is not four legged furniture to sit on. The same criticism that applies to Ludwig Wittgenstein applies here, if you do not seriously believe that the stone you are crossing a river is a stone, you will end up in the river itself. There is a one to one connection between language and the world around us. Connotation and denotation is not arbitrary.

4.19 F. Staal on animal language canceling Creationism and supporting Evolutionism

About animal language Staal concluded: "In important semantic respects: mantras and birdsongs do not express meaning systematically and may be used on all kinds of occasions. In syntactic respects, mantras are situated between language and birdsong: their syntax is hierarchical like language and not serial like the majority of birdsongs." My cats communicate with mantras. Two will approach the milk bowl together but each will lick five times in rotation. However, when the grandmother is there and she licks but do not like corporate licking of a particular cat (like her son-in-law) she will stop licking but hold the head bowed over the milk. It is an indication in a silent hierarchical way that the son-in-law has to get away soon. That is mantra communication. One does not find a cat trying to communicate with a human in a mantra and a human trying the same mantra will not succeed communicating with the cat either. Since cross-communication cannot work without stimulus-response tricks in a circus, or theater, one cannot compare birdsongs, mantras with human language.⁹⁵

⁹⁵ A number of investigations by Dorothy L. Cheney and Robert M. Seyfarth investigated how monkeys communicate: *ibid.*, "Vervet Monkey Alarm Calls: Manipulation through Shared Information?" *Behaviour* 93 (1985):150-166; *ibid.*, *How Monkeys See the World: Inside the Mind of Another Species*, (Chicago: The University of Chicago Press, 1990); *ibid.*, (1992), "Meaning, Reference, and Intentionality Vocalizations of Monkeys," in Nishida et al. (1992):315-328; *ibid.*, (eds.), "How Monkeys See the World," *Behavior and Brain Sciences* 15 (1992):135-182. The monkey did not evolve from another species. In an iconographical depiction of the hippie Egyptian Pharaoh Ikhnoton he is displayed on his stomach naked with some monkeys in circa 1380 BCE. There is no difference between the monkey's shape or posture and the current monkeys. This is 3394 years later. The same can be said about many fossils in museums. The human species and the ape species cannot be compared for evolutionary purposes since each were creatively DNA creatively designed for their own functions and purposes. The monkey was to be a playful shadow of a human for humor and stress relieve purposes. Within their species they have to communicate to survive and to live. It is an innate built in instinct. Minimalized correspondences with human complex communications will surface because these are the essentials for survival and living. These correspondences have nothing to do towards a process of humanizing apes. The publication of R. Dawkins denying this aspect is relevant here: Richard Dawkins (1986), *The Blind Watchmaker. Why the evidence of evolution reveals a universe without design*, New York - London: W. W. Norton & Co. The Middle-age Florentine Fibonacci (1208) has done us a favor to study the mathematical accurate spiral designs in fauna and flora as well as Russian scholars indicating the presence in DNA as well. Dawkins overlooked Fibonacci. The avian communication patterns should be there since all living organisms communicate or interact with each other to survive as species, see for example the findings of Christopher S. Evans, Linda Evans and Peter Marler, "On the Meaning of Alarm Calls: Functional Reference in an Avian Vocal System," *Animal Behaviour* 46 (1993):23-38. The studies on animal awareness and animal minds by Donald R. Griffin, (1981), *The Question of Animal Awareness. Evolutionary Continuity of Mental Experience* (New York: Rockefeller University Press, 1981); *ibid.*, *Animal Minds* (Chicago and London: The University of Chicago Press, 1992) are to underline the fact that animals are not brainless robots. The problem starts when artificial evolutionary schemes are invented to align with the universalism scenario of Hinduism and Buddhism. If one denies a beginning and an end then one has to invent a process and focus on it in evolutionary terms is the only way out. If one denies Catastrophism and clings to Uniformatism for the past reality, there will be major problems. Similar comparisons with human speech patterns and birds were published by J. P. Hailman, M. S. Ficken and R. W. Ficken, "The 'chick-a-dee' calls of *Parus atricapillus*: A recombinant system of animal communication compared with written English," *Semiotica* 56 (1985):191-224; *ibid.*, "Constraints on the structure of combinatorial 'chick-a-dee' calls," *Ethology* 75 (1987):62-80. The birds are not trying to communicate with humans but humans have the ability to try to communicate with all fauna. That survival is the key is illustrated by the study of Marc D. Hauser and Peter Marler, "Food-associated Calls in Rhesus Macaques (*Macaca mulatta*)," I & II, *Behavioral Ecology* 4/2 (1993):194-212. The female on the nest doing nest duty will have to depend on the male to bring food and communicate as such. More studies on animal communication are: J. Y.

It is like comparing apples, bananas and oranges. The apples did not originate from the banana. Staal is looking at data with Darwinian specs and weave Chomsky's ideas in and out around it. Chomsky is one of the advocates of the innate ability of humans to speak. Why if humans lived detached from cultures they cannot speak?

4.20 F. Staal and other studies on Indian logic and linguistics

The modern scholar F. Staal did many studies on Indian logic and linguistics and also compared Neoplatonism with Advaita and concluded:

"Although there are many other philosophical problems connected with Advaita and Neoplatonism, the main and characteristic trends of thought in both systems have been considered here. Undoubtedly both philosophies have much in common and many of their differences result from the different traditions from which each arose and to which each belongs. The main trend of thought of each of these philosophies is the secondary trend in the other. The main Neoplatonic theme is that there is a hierarchy of being, at the summit of which is the One, the most perfect and highly evaluated entity. In Plotinus there is also a tendency which stresses the perfection of the One to such a degree that the rest of the universe is nothing in comparison with it. In Advaita, on the other hand, the main tendency is to absolutely and uncompromisingly deny the reality of anything apart from the absolute Brahman. Here the complementary tendency is the acceptance of a vyāvahārika realm, which is, as avidyā itself, neither real nor unreal but anirvacanīya. It actually plays a very important role both in the theory and practice of Advaita. Therefore Neoplatonism is the more world-negating and Advaita the more world-affirming of the two. The historical success of Advaita lies more in its acceptance of the vyāvahārika realm including all philosophical and religious views as well as ritual and social practices, than in its teaching the non-dual Absolute with which the soul is essentially and eternally identical. This practical and synthesizing tendency of Advaita also explains its present claim of being a philosophy opposed to no other system of thought and therefore in the present age a solution for conflicting world views."⁹⁶

There is a comparison for Staal between Advaita and the teachings of Plotinus the neoplatonist. All the linguistic Sanskrit scholars prior to F. Staal are all enwrapped in this epistemology and their dissatisfaction with traditional grammar is part of this adoption of new strands in their thinking. Plotinus (204-270 CE) is the first Greek who viewed the world as produced not ordered or merely manufactured.

"The world's being is received; it is a product of the Deity, the One".⁹⁷ Porphyry (232-304 CE) was a student of Plotinus and Iamblichus the Syrian was a student of Porphyry around 330 CE. The attempt to bring together creationism (Jewish-Christian scenario) and evolution (pantheistic scenario) gave rise to the emanation concepts of Plotinus. Transformational-generative concepts are lying behind this philosophy.

It is in conflict with traditional Jewish and Christian ideas and can be compared to the frustrations of Bloomfield on the subject of language description, mentioned supra.

4.21 F. Staal comparing Indian religion and Christian religion

Lettvin, H. R. Maturana, W. S. McCulloch and W. H. Pitts, "What the Frog's Eye tells the Frog's Brain," *Proceedings of the IRE*, 47 (No.11) (1959):1940-1959. Reprinted in: McCulloch 1965: 230-255; Joseph M. Macedonia and Christopher S. Evans, "Variation among Mammalian Alarm Call Systems and the Problem of Meaning in Animal Signals," *Ethology* 93 (1993):177-197; Peter Marler, Christopher S. Evans and Hauser, D. Marc, "Animal Signals: Motivational, Referential, or Both?" in *Papousek* (1992): 66-86; Hanus Papousek, Uwe Jurgens, and Machthild Papousek, *Nonverbal Vocal Communication*, Cambridge: The University Press and Paris: Editions du centre national de recherche scientifique, 1992). A similar study that has tried to push the limits of primatology into a human domain is: Toshida Nishida, William C. McGrew, Peter Marler, Martin Pickford and Frans B. M. de Waal, *Topics in Primatology, I: Human Origins*, Tokyo: University of Tokyo Press, 1992). Repetitive syntactic structures in monkey calls will have to exist and semantics of these shattering calls do have meaning among themselves as indicated by J. G. Robinson, J.G., "Syntactic structures in the vocalization of wedge-capped capuchin monkeys, *Cebus nigrivittatus*," *Behaviour* 90 (1984):46-79; also mate choice calls among birds: W. A. Searcy, "Song Repertoire and Mate Choice in Birds," *The American Zoologist* 32 (1992) :71-80; Charles T. Snowdon, "Language Capacities of Nonhuman Animals," *Yearbook of Physical Anthropology* 33 (1990) : 215-243. The study by Roger Shepard, (1982), "Perceptual and Analogical Bases of Cognition," in: Mehler, Garrett and Walker (eds.) is important since the question is whether there is a perceptual base of cognition or analogical base of cognition by animals. It would be a combination of both similar to what one finds in humans but there is no originating relationship between the two sets of communication of the two species.

⁹⁶ F. Staal (1961), *Advaita and Neoplatonism. A Critical Study in Comparative Philosophy*. University of Madras, Madras.

⁹⁷ Julián Marías, *History of Philosophy* (New York: Dover Publications, 1967), 100.

Staal cited a conversation between an Advaitin and a denouncing Christian: “In a simple conversation one of the most representative Advaitins of this century, the 34th Jagadguru of the ŚrīnerīPīṭa, Chandraśekhara Bhārati Swāmīgal, has told the West that it need not adopt Advaita, but realize self-knowledge, the most profound aim of Advaita itself.

‘Why must it be’, impatiently demanded an earnest American tourist, ‘that you will not convert other peoples to Hinduism? You have such a beautiful religion, and yet you keep so many struggling souls out of it. If you say “yes” I will be the first to become a Hindu’.

‘But why’, came the counter-question, ‘do you want to change your religion? What is wrong with Christianity?’ Taken aback, but not daunted, the tourist said, ‘I cannot say what is wrong, but it has not given me satisfaction’.

‘Indeed, it is unfortunate’, was the reply, ‘but tell me honestly whether you have given it a real chance. Have you fully understood the religion of Christ and lived according to it? Have you been a true Christian and yet found the religion wanting?’

‘I am afraid I cannot say that, Sir’.

‘Then we advise you to go and be a true Christian first; live truly by the word of the Lord, and even if then you feel unfulfilled, it will be time to consider what should be done’.”(op. cit. Staal 1961: 233).

The mapping of the linguistic trends is getting attention in this writing since any future navigation can only be sensible if the past is considered comprehensibly.

5. Chomsky and his sources: a synthesis

F. Householder (1952) pointed out that there are two views on the metaphysics of language: *God’s Truth linguistic theory* and the *hocus pocus linguistic theory*.⁹⁸ The God’s Truth theory works with the understanding that everyone has a structure of language and that the work of the linguist is to discover and describe this structure. The Hocus Pocus linguist believes that there is no structure of language but only a mass of data unorganized and that the task of the linguist is to create a structure although partially since there is a chaotic mass of data out there in infinity combinations.

Householder continued to say that if you think of language as a building and you have to draw a navigation plan for tourists to go through it is a simple matter but not with a thinking that sees the building as a shapeless pile of bricks partially since the rest of the building cannot be seen, and to guide a tourist through that mess. P. L. Garvin (1953)⁹⁹ summarized the metaphysical aspect of linguistic debate as follows: “The status of linguistics as a discipline: is it primarily a set of operations to organize into a structure a set of otherwise disparate data (‘hocus-pocus’ linguistics), or is it a cognitive science, whose aim it is to gain knowledge of an existing structure which manifests itself in the data (‘God’s truth’ linguistics)?” Chomsky (1955)¹⁰⁰ of course wished not to enter into the metaphysical dialectics of the debate in the time of his doctoral dissertation in 1955 as he indicated at I-10 footnotes of his dissertation but he definitely sided with the *hocus-pocus linguistics* or *mathematical*¹⁰¹ games linguistics (as Householder et al branded it). If one looks at the views of one of the sources to Chomsky, Edward Sapir,¹⁰² one can see that he is opting for a *hocus pocus metaphysical* view but built into the intuition of the psychology of the mind of the person since he shifted apparently after 1921 to a psychological investigation of language.

When linguists mixed Evolution (from animals to humans evolving) with mentalism in linguistic theories they ended up with innate intuition theories of the origin of structures of language similar to birds having an innate intuition how to build a nest or sing a song. The metaphysical aspect is pruned in Deism, which is an absentee

⁹⁸F. W. Householder, Jr., “Review of Harris, Zellig S., *Methods in Structural Linguistics*”, *International Journal of American Linguistics* 18 (1952): 260-268.

⁹⁹P. L. Garvin, “Reviewed Work: *Preliminaries to Speech Analysis: The Distinctive Features and Their Correlates* by Roman Jakobson, C. Gunnar, M. Fant, Morris Halle” *Language* 29/4 (Oct – Dec 1953): 472-481.

¹⁰⁰Chomsky’s dissertation is available online as a PDF. <http://alpha-leonis.lids.mit.edu/chomsky/>. If the link does not help one can search the professor’s webpage and it is listed as a download option supra in his top register. N. Chomsky’s *Logical Structure of Linguistic Theory* (Doctoral Dissertation at Pennsylvania University, 1955). Supplied by Robert C. Berwick. Manuscript of 919 pages.

¹⁰¹For mathematics Chomsky followed P. Rosenbloom “The algebraic approach to language” in *Elements of Mathematical Logic* Appendix II (see Chomsky 1955, II-2).

¹⁰²C. N. Modjeska “A Note on Unconscious Structure in the Anthropology of Edward Sapir” *American Anthropologist* 70 (1968): 344-348. Online accessed at <http://onlinelibrary.wiley.com/doi/10.1525/aa.1968.70.2.02a00150/abstract>

God=Creator concept and some went further to make the metaphysical creativity (given in biblical terms to God the Creator) innate in the matter like Alfred Whitehead with his processional philosophy, so that creativity is not from a Creator but from naturalism or nature itself. They do see Fingerprints of God like the Creationists whether they are Evolutionists, Atheists, Deists or like Panini a Pantheist where every syllable is a god, and noticing Fibonacci's (1208) spirals in nature (flowers, pineapples, pine cones) in mathematical ordered forms, they acknowledge Intelligent Design but imminent by matter or nature itself and not transcendent (from a God Creator) like faithful Christians do. Similarly, is the reaction since the time of Pietism in the early 17th century with the reactions of scientists against religion, since religious monism was in power in the Holy Roman Empire of the Vatican between 538 until 1798 when Berthier arrested the pope and brought him to Napoleon's France and introduced a new world order of secularism.

When Chomsky wrote his 1965 work, he cited from these reactionists against religion of the 17th-19th centuries who opted for a non-Creation theory of language and linguistics based on Deism and Rationalism that challenges the Word of God. Since the Establishment is the church and they hated the church they hated the Bible that the church tried to uphold but failed to do due to persecutions, punishments, corruptions, abuse of power, chronism and other problems that the church were involved in. With the arrival of Indians due to Colonial trades with India, Panini theories of language arrived also in the 18th century and by the 19th century serious studies were done in Sanskrit to get behind this pantheistic metaphysical concept of language. Chomsky cited positively nearly all these Sanskrit scholars and anti-Establishment scientists of the 17th to the 19th centuries. That these sources of Chomsky are questionable to true faith, even in the absence of Religion as Government Establishment, is clear from a work *History of Rationalism* 1865. They posed a danger to religion, not the catholic faith but pure biblical faith. Modernism is known for their tapping in with the sentiments of the anti-Religious Establishment-nics. The Baby-boomers were liberal, secular, atheistic, and prone to embrace selectively and defiantly only that view.

Whether it is Bacon with his Deism or Panini with his pantheistic linguistic mathematical theories or whoever with their atheism, all operating with *suspicion hermeneutics* to Scripture, as long as it is not Theism and an *affirmative-hermeneutics* of Scripture, is the agenda under which he wrote. The following citations were made by Chomsky in his work in 1965: Chomsky cited from the work of Von Humboldt (N. Chomsky, *Aspects of the Theory of Syntax* [Cambridge, Massachusetts: The M.I.T. Press, 1965], 4, 9 [for generative aspects called *erzeugen*], 51 and 199). Von Humboldt was a Sanskrit scholar, a prerequisite for understanding Panini and Hinduism. He liked the work of James Beattie (1788) for the concept of Universal Grammar (Chomsky 1965, 5). Also Du Marsais (1729) cited in Sahlin (1928) for ideas on Universal grammar definitions (Chomsky 1965, 5). For ideas on *General Grammar and Reason* he cited Lancelot 1660 (Chomsky 1965, 6-7). Arnauld and Lancelot wrote a great work on grammar theory in 1660 together. Arnauld was a catholic who did a great deal fighting Calvinists. Arnauld (1662) is also cited by Chomsky (Chomsky 1965, 49). Lancelot is also cited for *Deep and Surface structure* ideas (Chomsky 1965, 199). Chomsky cited Cordemoy (1667) that the child has an ability to invent language (Chomsky 1965, 201). Chomsky accepted B. Russell's psychology of language (Chomsky 1965, 201).

B. Russell was the student of Alfred Whitehead. Chomsky rejected Locke because Locke rejected innate language ability but Descartes accepted it and also Leibnitz (Chomsky 1965, 203). J. F. Hurst (1865),¹⁰³ pointed out that Descartes protested against external authority for the first principles of belief. The struggle between Pietism and Orthodoxy in those days resulted in Rationalism. Leibnitz and Spinoza followed him. More on innate ability was said by Lord Herbert (1624) and Chomsky cited it (Chomsky 1965, 49). It is interesting that he cited from Lord Herbert as Hurst 1865: 114 described a testimony from him how he hesitated to publish his book *Tractatus de Veritate* and then fell on his knees and prayed that God should allow or prevent him to publish "I had scarcely finished these words when a loud, and yet at the same time a gentle sound came from heaven".

Like Locke Herbert taught that nature in itself have creative ability not necessarily miracles from God. He cited Cudworth (1731) positively (Chomsky 1965, 49). Leibnitz is a positive source for Chomsky (Chomsky 1965, 50). Leibnitz was the father of the philosophical system of Wolff (Hurst 1865, 103).

He felt that understanding atoms throws the Creator in the shade. Chomsky rejects Creation and wants Evolution "from the original hand of nature" (Hume 1748) Chomsky 1965, 51) since Hume said that the instinct to build a nest is in nature and also language in humans. Hume was recorded to have said: "Yes, I record facts, and draw my

¹⁰³ J. F. Hurst, *History of Rationalism* (New York: Hunt and Eaton, 1865), 103.

own conclusions. Is not that a good philosophy!" (Hurst 1865, 447). Experience is Hume's only sure guide as he said: "While we argue from the course of nature, and infer a particular intelligent cause, which at first bestowed and still preserves order in the universe, we embrace a principle which is both uncertain and useless, because the subject lies entirely beyond the reach of human experience" (Hurst 1865, 445).

In his dissertation, Chomsky complains about Hockett's criticism of Z. Harris and commented: "Thus the linguist is enjoined not to be misled by theories, but just to describe 'the facts' the 'real structure' of language, etc." (Chomsky 1955, I-10 footnote). This is ironical since it is the same claim that Hume made, that he records the facts and makes his own conclusions. It does not solve the problem.

6. Conclusions and Implications

The moment the link is created between the Hindu specialist Panini and Chomsky a religious epistemology is established. When that link is established from Panini to Nagarjuna the Buddhist philosopher and Bartrhari the other Buddhist philosopher and the influence of Bartrhari is linked to Bloomfield and Jakobson and De Saussure and all Sanskrit scholars are linked to each other as Bopp, Grimm and Pott are linked and furthermore the link between Stoicism or Plotinus is linked with Nagarjuna and further links with Whitehead then Panini and Sanskrit and Von Schlegel are linked and also Von Humboldt. Linked as such, religion appeared as the cot of the origin of modern linguistic theoretical epistemology, and this is identified. Even the philosopher Wittgenstein stands within this network and one characteristic of their dogma is that they tend to link to Darwin and Dawkins and their concepts like the modern scholar F. Staal did with discussion on human and animal language. The Chomskyan contribution is thus just an elevation of another dogma of a religious kind traced back through Buddhist philosophers and to the Hindu scholar Panini. Does religion play a role in this linguistic dogma? The answer is in the affirmative. A. N. Whitehead was seemingly correct that the metaphysical and empirical science cannot be properly described separately. The transformational-grammatical theories of Noam Chomsky is the Hindu's pantheistic religious concepts, clinically pruned from the gods of sound of the Hindus but keeping the same metaphysical net that was weaved long ago.

<참고문헌>(References)

- Abel-Rémusat, J-P., 1824. Comptendu de "Sur la naissance des formes grammaticales" de Humboldt. *Journal Asiatique* V (Dondey-Dupré, Paris 1824). (Reprint in: Rousseau and Thouard [1999], pp. 119– 124).
- Benes, T., Comparative linguistics as ethnology: in search of Indo-Germans in Central Asia (1770–1830). In: J. Jenkins (Ed.), *German Orientalism*, Duke University Press, Durham (NC) (2004) = Comparative Studies of South Asia, Africa and the Middle East 24, 2nd part, pp. 97–180, especially pp. 117–132.
- Betz, W., "Vergleichendehistorische Grammatik" in H. Jansen, H. Stammerjohann and others, *Handbuch der Linguistik* (München: Nymphenburger Verlagshandlung, 1975), 551.
- Bhattacharya, K., "Nāgārjuna's arguments against motion." *The Journal of the International Association of Buddhist Studies (JIABS)* vol. 8, no. 1 (1985): 9
- Bhate, S., *Word index to the Vākyapadīya of Bhartṛhari, together with the complete text of the Vākyapadīya* (Delhi: Eastern Book Linkers, 1992).
- Bhate, S., Bronkhorst, J., (eds.), *Bhartṛhari - philosopher and grammarian. Proceedings of the First International Conference on Bhartṛhari*, University of Poona, January 6–8, 1992, Motilal Banarsidass Publishers, 1997.
- Bloomfield, L., *Menomini Morphophonemics*, *Travaux du cercle linguistique de Prague* 8:105-115.
- Bloomfield, L., "On Some Rules of Pāṇini" *Journal of the American Oriental Society* 47 (1927): 61–70.
- Bloomfield, L., *Language* (New York: Henry Holt, 1933).
- Retrieved from <http://www.beaugrande.com/LINGTHERBloomfield.htm>
- Bloomfield, L., "The Indo-European Palatals in Sanskrit". *The American Journal of Philology* 32 (1) (1911): 36–57. doi:10.2307/288802. JSTOR 288802.
- Bopp, F., 1791-1867, *A comparative grammar of the Sanskrit, Zend, Greek, Latin, Lithuanian, Gothic, German, and Slavonic languages*. Translated by Edward Backhouse (London: Eastwick Publisher Hildesheim: G. Olms, 1985).
- Bopp, F., 1791-1867, *Kritische Grammatik der Sanskrita-Sprache in kürzerer Fassung*, (Berlin, Nicolai, 1868).
- Bosse, A., "'Orientalomanie'? Zu Friedrich Schlegels Konzeptionalisierungen von 'Religion' und 'Orient,'" A. von Bormann (Ed.), *Romantische Religiosität, Königshausen und Neumann* (Würzburg:2005), 225–

242.

- Brough, J., "Audumbarayana's Theory of Language," *Bulletin of the School of Oriental and African Studies*, University of London, 14 (1) (1952): 73–77.
- Burgess, J., *The Buddhist Stupas of Amaravati and Jagayyapeta in the Krishna District, Madras Presidency* (reprint, Varanasi: Indological Book House, 1970).
- Candotti, M-P., *Interprétations du discours métalinguistique: la fortune du sūtra A 1 1 68 chez Patañjali et Bhartṛhari, Kykéionstudi e testi*. 1, Scienzedellereligioni, Firenze University Press, 2006, Diss. Univ. Lausanne, 2004.
- Cheney, D. L., Seyfarth, R. M., "Vervet Monkey Alarm Calls: Manipulation through Shared Information?" *Behaviour* 93 (1985):150-166.
- ibid., *How Monkeys See the World: Inside the Mind of Another Species* (Chicago: The University of Chicago Press, 1990).
- ibid., "Meaning, Reference, and Intentionality Vocalizations of Monkeys," in Nishida et al.: 315-328.
- ibid., (eds.) "How Monkeys See the World," *Behavior and Brain Sciences* 15 (1992):135-182.
- Chomsky, N., *Cartesian Linguistics. A Chapter in the History of Rationalist Thought* (New York: Harper & Row, 1966).
- Chomsky, N. *Logical Structure of Linguistic Theory* (Doctoral Dissertation at Pennsylvania University, 1955). Supplied by Robert C. Berwick. Manuscript of 919 pages. Online download at <http://alpha-leonis.lids.mit.edu/chomsky>
- ibid., *Reflections on Language* (Pantheon, 1975).
- ibid., *Rules and Representations* (New York: Columbia University Press, 1980).
- ibid., *Knowledge of Language: Its Nature, Origin, and Use* (New York, Wesport, Conn. and London: Praeger, 1986).
- ibid., *Language and the Problems of Knowledge, The Managua Lectures* (Cambridge and London: M.I.T, 1988);
- ibid., *The Minimalist Program* (Cambridge, Mass. and London, England: The MIT Press, 1995).
- ibid., (forthcoming), "Language and the Brain" (Address at the European Conference on Cognitive Science, 27th-30th October, 1999, Siena).
- Conger, G. P., "Whitehead lecture notes: Seminary in Logic: Logical and Metaphysical Problems", Manuscripts and Archives (New Haven, Connecticut: Yale University Library, Yale University, 1927).
- Coward, Harold G. *The Sphota Theory of Language: A Philosophical Analysis*. (Motilal Banarsidass, 1977).
- Dawkins, R., *The Blind Watchmaker. Why the evidence of evolution reveals a universe without design* (New York - London: W. W. Norton & Co, 1986).
- De V. Cluver, A. D., in *Studyletter*, 117 *Linguistics I* (Pretoria: University of South Africa, 1980).
- Doukhan, J., *Hebrew for Theologians: A textbook for the study of Biblical Hebrew in relation to Hebrew thinking* (Lanham, Maryland: University Press of America, Inc., 1993).
- Edzard, D. O., *Sumerian Grammar* (Leiden: Brill, 2003).
- Evans, C.S., Evans, L. and Marler, P., "On the Meaning of Alarm Calls: Functional Reference in an Avian Vocal System," *Animal Behaviour* 46 (1993):23-38
- Garfield, Jay L., & Priest, G., "Nāgārjuna and the Limits of Thought." In: Garfield, Jay L. *Empty Words: Buddhist Philosophy and Cross-Cultural Interpretation*. Oxford: Oxford University Press, 2002).
- Garvin, P. L., "Reviewed Work: *Preliminaries to Speech Analysis: The Distinctive Features and Their Correlates* by Roman Jakobson, C. Gunnar, M. Fant, Morris Halle" *Language* 29/4 (Oct – Dec 1953): 472-481.
- Griffin, D.R., *The Question of Animal Awareness. Evolutionary Continuity of Mental Experience* (New York: Rockefeller University Press, 1981).
- Griffin, D.R., *Animal Minds* (Chicago and London: The University of Chicago Press, 1992).
- Griffiths, P. J., "Bookreview of F. Staal, *Rules without meaning: Ritual, mantras and the Human sciences.*' *Toronto Studies in Religion*, vol. 4 (New York and Bern: Peter Lang, 1989)" in *History of Religions* vol. 31(4), 1992, 412-414.
- Grimm, J., [1851] *Ueber den Ursprung Sprache*. Reprint 1958.
- Hailman, J. P., Ficken, M. S. and Ficken, R. W., "The 'chick-a-dee' calls of *Parus atricapillus*: A recombinant system of animal communication compared with written English," *Semiotica* 56 (1985):191-224.
- Hailman, J. P., Ficken, M. S. and Ficken, R. W., "Constraints on the structure of combinatorial 'chick-a-dee'

- calls," *Ethology* 75 (1987): 62-80.
- Hartmann, R. R. K., Stork, F. C., *Dictionary of Language and Linguistics*. (London: Applied Science Publishers, 1972).
- Harris, R., *Language, Saussure and Wittgenstein* (Routledge, 1988).
- Hauser, M.D. and Marler, P., "Food-associated Calls in Rhesus Macaques (*Macacacumulatta*)," I & II, *Behavioral Ecology* 4/2 (1993):194-212
- Hasan, R. Linguistic sign and the science of linguistics: the foundations of applicability. In Fang Yan & Jonathan Webster (eds.) *Developing Systemic Functional Linguistics*. (London: Equinox, 2014).
- Hayes, R. P., "Nāgārjuna: Master of Paradox, Mystic or Perpetrator of Fallacies?" Paper prepared before the Department of Philosophy, Smith College, 2003. Retrieved from the following online site:
http://www.thezensite.com/ZenEssays/Nagarjuna/Master_of_Paradox.pdf
- Herzberger, Radhika, *Bhartrihari and the Buddhists* (Dordrecht: D. Reidel/Kluwer Academic Publishers, 1986).
- Holdcroft, D., *Saussure: Signs, System, and Arbitrariness* (Cambridge University Press, 1999).
- Householder, Fred W. Jr., "Review of Harris, Zellig S., *Methods in Structural Linguistics*." *International Journal of American Linguistics* 18 (1952): 260-268.
- Hurst, J. F., *History of Rationalism* (New York: Hunt and Eaton, 1865).
- Hutton, C., "Introduction to Friedrich von Schlegel: Ueber die Sprache und Weisheit der Indier. Ein Beitrag zur Begründung der Alterthumskunde (1808)" in: C. Hutton (Ed.), *History of Linguistics, 18th and 19th Century German Linguistics*, vol. 4, (London and Tokyo: Routledge and Thoemmes, 1995), pp. v-xvi.
- Jacobsen, T., "Very Ancient Texts: Babylonian Grammatical Texts," in Dell Hymes, *Studies in the History of Linguistics: Traditions and Paradigms*, (Bloomington: Indiana University Press, 1974), 41-62.
- Joseph, J. E., *From Whitney to Chomsky: Essays in the History of American Linguistics* (John Benjamins Publishing, 2002).
- Joseph, J. E., "A Matter of Consequence. Humboldt, Race and the Genius of the Chinese Language" *HistoriographiaLinguistica*, XXVI 1/2 (1999), pp. 89-148.
- Kalupahana, David. *A History of Buddhist Philosophy*. (Hawaii: University of Hawaii Press, 1992).
- Kasher, A., (ed.) *The Chomskyan Turn* (Cambridge Mass. And Oxford: Basil Blackwell, 1991).
- Kerr, M. H., "Edward W. Said: Orientalism" *International Journal of Middle East Studies*, 12 (4) (1980): 544-547.
- Kim-Renaud, Young-Key. *Studies in Korean linguistics followed by an interview with Noam Chomsky* (Seoul, S. Korea: Hanshin Pub. Co., 1986).
- Koerner, E. F. K., 'The Place of Saussure's Memoire in the development of historical linguistics,' in Jacek Fisiak (ed.) *Papers from the Sixth International Conference on Historical Linguistics*, (Poznań, Poland, 1983) (John Benjamins Publishing, 1985), 323-346.
- Koster, J., "Saussure meets the brain", in R. Jonkers, E. Kaan, J. K. Wiegel, eds., *Language and Cognition* 5. Yearbook 1992 of the Research Group for Linguistic Theory and Knowledge Representation of the University of Groningen (Groningen, 1996), 115-120.
- Lehmann, Winfred P. "Bloomfield as an Indo-Europeanist." Robert A. Hall, Jr., ed., *Leonard Bloomfield: Essays on his life and work* (Philadelphia: John Benjamins, 1987), 163-172..
- Lettvin, J.Y., Maturana, H. R., McCulloch, W.S., and Pitts, W.H., "What the Frog's Eye tells the Frog's Brain," *Proceedings of the IRE*, 47 (No.11) (1959): 1940-1959. Reprinted in: (McCulloch 1965): 230-255.
- Lindtner, C., *Nagarjuniana: studies in the writings and philosophy of Nāgārjuna* (Copenhagen: Akademisk forlag, 1982).
- Mabbett, Ian, "The problem of the historical Nagarjuna revisited." *Journal of the American Oriental Society*, 118(3) (1998): 332-346.
- Macedonia, J. M. and Evans, C. S., (1993), "Variation among Mammalian Alarm Call Systems and the Problem of Meaning in Animal Signals," *Ethology* 93:177-197.
- Marler, P., Evans, C. S. and Hauser, D. Marc, "Animal Signals: Motivational, Referential, or Both?" in *Papoušek* (1992): 66-86
- Meßling, M., "Wilhelm von Humboldt and the 'Orient' On Edward W. Said's remarks on Humboldt's Orientalist studies" *Language Sciences* Vol. 30/5 (September 2008): 482-498.
- Michalson, G. E., Jr. "Lessing, Kierkegaard, and the 'Ugly Ditch': A Reexamination," *The Journal of Religion* Vol. 59, No. 3 (Jul., 1979), 324-334. Article Stable URL: <http://www.jstor.org/stable/1202420>.

- Modjeska, C. N., "A Note on Unconscious Structure in the Anthropology of Edward Sapir" *American Anthropologist* 70 (1968): 344-348. Online accessed at <http://onlinelibrary.wiley.com/doi/10.1525/aa.1968.70.2.02a00150/abstract>
- Nishida, T., McGrew, W. C., Marler, Pickford P. M. and De Waal, F. B. M., *Topics in Primatology, I: Human Origins* (Tokyo: University of Tokyo Press, 1992).
- Patnaik, Tandra, *Śabda: a study of Bhartrhari's philosophy of language*. (New Delhi : DK Printworld, 1994).
- Papousek, H., Jurgens, U., and Papousek, M., *Nonverbal Vocal Communication* (Cambridge: The University Press and Paris: Editions du centre national de recherche scientifique, 1992).
- Parret, H., *History of Linguistic Thought and Contemporary Linguistics* (Berlin: Walter de Gruyter, 1976).
- Pinker, S., *The Language Instinct. How the Mind creates Language* (New York: William Morrow & Co., 1994).
- Pinker, S. and Bloom, P., eds. "Natural Language and Natural Selection," *Behavioral and Brain Sciences* 13 (1990):707-784. Reprinted in: (Barkow, Cosmides and Tooby): 451-93.
- Poebel, A., *Grammatical Texts*. In Publications of the Babylonian Section, 4 (Philadelphia: University Museum, 1914).
- Rask, R., *Über das Alter und die Echtheit der Zendsprache und des Zend-Avesta, und Herstellung des Zend-alphabets: Nebst einer Übersicht des gesamten Sprachstammes* (Cambridge Library Collection - Linguistics) (German) Paperback – 26 Nov 2009 translated by Friedrich Heinrich Von der Hagen, (London: Cambridge University Press, 26 November 2009).
- Rau, W., *Bhartrharis Vākyapadīya / die mūlakārikāsnach den Handschriften hrsg. Und mit einem pāda-Index versehen*, Wiesbaden : Steiner, 1977, *Abhandlungen für die Kunde des Morgenlandes* 42,4.
- Rau, W., *Bhartrharis Vākyapadīya II : Text der Palmblatt-Handschrift Trivandrum S.N. 532 (= A)*, Stuttgart : Steiner, 1991, *Abhandlungen der Geistes- und Sozialwissenschaftlichen Klasse, Akademie der Wissenschaften und der Literatur* Nr. 7, ISBN 3-515-06001-4.
- Robinson, J.G. "Syntactic structures in the vocalization of wedge-capped capuchin monkeys, *Cebus nigrivittatus*," *Behaviour* 90 (1984): 46-79.
- Rogers, David E. "The influence of Pāṇini on Leonard Bloomfield." Robert A. Hall, Jr., ed., *Leonard Bloomfield: Essays on his life and work* (Philadelphia: John Benjamins, 1987), 89-138.
- Rousseau, J. et Thouard, D., [éds.] *Lettres édifiantes et curieuses sur la langue chinoise : un débat philosophico-grammatical entre Wilhelm von Humboldt et Jean-Pierre Abel-Rémusat (1821-1831)* (Villeneuve d'Ascq, Presses Universitaires du Septentrion, 1999).
- Sahu, N., "Articles Panini." 27th January 2008 at <http://www.bolokids.com/2008/0554.htm>.
- Searcy, W. A., "Song Repertoire and Mate Choice in Birds," *The American Zoologist* 32 (1992): 71-80.
- Seong, S-H., "Householder, Fred W., Jr. (1913-1994)" *Encyclopedia of Language & Linguistics* (Second Edition) (2006), 398-399.
- Shah, K. J., "Bhartrihari and Wittgenstein" in *Perspectives on the Philosophy of Meaning* (Vol. I, No. 1. New Delhi.) 1/1 (1990): 80-95.
- Shepard, R., "Perceptual and Analogical Bases of Cognition," in: Mehler, Garrett and Walker (eds.) (1982).
- Snowdon, C. T. "Language Capacities of Nonhuman Animals," *Yearbook of Physical Anthropology* 33 (1990): 215-243.
- Staal, F., "Noam Chomsky Between the Human and Natural Sciences," *Janus Head. Journal of Interdisciplinary Studies in Literature, Continental Philosophy, Phenomenological Psychology, and the Arts* (Special Supplemental Issue, Winter 2001), 25-66.
- Staal, F., *Advaita and Neoplatonism. A Critical Study in Comparative Philosophy* (University of Madras, Madras, 1961).
- Staal, F., "Noam Chomsky Between the Human and Natural Sciences," *Janus Head. Journal of Interdisciplinary Studies in Literature, Continental Philosophy, Phenomenological Psychology, and the Arts* (Special Supplemental Issue, Winter 2001), 25-66. <http://www.janushead.org/gwu-2001/staal.cfm>
- Staal F., *The science of language*, Chapter 16, in Gavin D. Flood, ed. *The Blackwell Companion to Hinduism* (Blackwell Publishing, 2003), 357-358
- Staal, F., "The science of language," Chapter 16, in Gavin D. Flood, ed. *The Blackwell Companion to Hinduism* Blackwell Publishing, 2003, p. 357-358
- Staal, J. F., "Euclid and Panini," *Philosophy East and West* 15 (1965):99-116. Reprinted in: Staal 1988: 143-60
- ibid., "Mantras and Bird Songs," *Journal of the American Oriental Society* 105 (1985): 549-58.

- ibid., *Universals. Studies in Indian Logic and Linguistics* (Chicago - London: The University of Chicago Press, 1988).
- ibid., *Rules without Meaning. Ritual, Mantras and the Human Sciences* (New York etc.: Peter Lang, 1989, 1993).
- ibid., "The Sanskrit of Science," *Journal of Indian Philosophy* 23 (1995):73–127.
- Suzuki, D. T., ed., *The Lankavatarasutra* (London: Routledge & Kegan Paul, 1932), 226-95.
- Symons, Donald, "On the Use and Misuse of Darwinism in the Study of Human Behavior," in Barkow, Cosmides and Tooby (1992): 137-159.
- Tarski, A. "Der Wahrheitsbegriff in den formalisierten Sprachen," *Studiaphilosophica* 1 (1935):261-405.
- Tarski, A. "Truth and Proof," *Scientific American* 220 (1969): 63-77.
- Van Wyk, A., and Weber, M., (eds.). *Creativity and Its Discontents. The Response to Whitehead's Process and Reality* (Frankfurt / Lancaster: Ontos Verlag, 2009).
- Vetter, T., *Asiatische Studien* 46.1 (1992): 393.
- Von Humboldt, W., 1808. Briefe an Friedrich Gottlieb Welcker [BW]. Rudolf Haym (Ed.). (Gaertner, Berlin, 1859).
- Von Humboldt, W., 1836a. *Über die Verschiedenheit des menschlichen Sprachbaues und ihren Einfluß auf die geistige Entwicklung des Menschengeschlechts* [KE]. Di Cesare, D. (Ed.), (Schöningh, Paderborn, München, Wien und Zürich, 1998).
- Von Humboldt, W., 1836b. *On Language* [OL]. *The Diversity of Human Language-Structure and its Influence on the Mental Development of Mankind*. Translated by Peter Heath. Introduction by Hans Aarsleff. (Cambridge University Press, Cambridge and New York, 1988).
- Von Humboldt, W., 1785. *Gesammelte Schriften* [GS]. 17 vols. Edited by Albert Leitzmann. Berlin 1903–1936: B. Behr. [Reprint de Gruyter, Berlin, 1968], GS IV, pp. 309–311.
- Walleser, M., "The Life of Nagarjuna from Tibetan and Chinese Sources," in *Asia Major: Hirth Anniversary Volume*, ed. B. Schindler (reprinted Delhi, 1979), 421-55
- Walser, Joseph. *Nāgārjuna in Context: Mahāyāna Buddhism and Early Indian Culture* (New York: Columbia University Press, 2005).
- Westerhoff, Jan. *The Dispeller of Disputes: Nāgārjuna's Vigrahavyāvartanī* (Oxford: Oxford University Press, 2009).
- Westerhoff, Jan, *Nāgārjuna's Madhyamaka. A Philosophical Introduction*, (Oxford: Oxford University Press, 2009).
- Whitehead, A. N., *Process and Reality* (New York: The Free Press, 1978), 347–348, 351.
- Yun-hua, J., "Nagarjuna, One or More? A New Interpretation of Buddhist Hagiography," *History of Religions* 10 (1970): 139-53. <http://en.wikipedia.org/wiki/Panini> (retrieval date: 2007-05-27) and elaborated with copyright by Ovidio Limited 2006-2009. http://www.shorthand.eu/pini_en.html. Shorthand.eu : Panini A European Informational Website learn more. Panini. <http://www.cyclopaedia.info/wiki/Huan-Tsang>.
- "Dialogues of Alfred North Whitehead as recorded by Lucien Price." Editor L. Price (Boston: An Atlantic Monthly Press Book, 1953).
- Alfred North Whitehead to Bertrand Russell, February 13, 1895, Bertrand Russell Archives, Archives and Research Collections, McMaster Library, McMaster University, Hamilton, Ontario, Canada.

한글초록

본 연구는 미국의 언어학자인 노암 촘스키(Noam Chomsky)가 그의 교수, 또는 그와 인접한 환경이나, 그가 자진하여 연관을 맺었던 17-19세기 과학자들과 철학자들에 의한 산물일 뿐 아니라 더 거슬러 올라가 힌두 수학자이며 언어학자였던 파니니(Panini)로부터 받은 영향의 산물임을 보임으로써 그와 관련된 시야를 넓히는 것을 목적으로 한다. 이러한 면에 관하여는 각각 독자적으로 연구된 바가 있으나 본 연구에서는 다양한 개념들을 함께 고려하여 이 유사한 사상간의 연계망(network)을 형성하고자 하는데 이는 궁극적으로 또 다른 이해의 실체와 대조를 이루고 있으며, 따라서 두 부류의 사상의 연계망이 존재함을 보였다. 파니니는 힌두 언어학자였으며 식민지 시대 산스크리트 연구 급증에 따라 서구인들이 이 문법학자와 접촉할 기회를 갖게 되었다. 학자들이 그들의 과학을 정의함에 있어 할 바를 몰라 당황할 때 과거의 역사와 사상들이 불쑥 예기치 않게 그들을 돕는 역할을 함이 이 연구를 통해 명확히 나타났다. 어떤 학자도 순수한 실증에 의해서가 아니라 그와 동일한 생활 방식을 선택했던 과거의 위대한 사상들의 “증빙자료”에 의해 잠재의식적으로 또는 무의식적으로 그의 인식이 끌리어 지게 된다. 촘스키는 그의 언어학을 정의함에 있어 그 자신의 사상을 지지하는 학자들의 서술을 한데 끌어 모았다. 힌두교를 더 잘 이해하면서 레너드 블룸필드(Leonard Bloomfield)의 가설과 원리가 이 종교와 합치함을 보게 되었으며, 더 나아가 노암 촘스키에 의해 고안된 변형 문법과 부합함을 보게 되었다. 파니니와 그의 문하생들에 대해 더 많은 지식을 얻게 됨에 따라 궁극적으로 변형 문법의 배후에 있는 인식론을 이해하게 되며, 이 문법과 전통적 문법 사이의 갈등은 형식이나 기능보다 더 뿌리 깊은, 즉 유일신론의 유대교-기독교적 인식론과 자연신론적 철학, 또는 범신론적 힌두 인식론 사이의 차이에 기인함을 이해하게 되었다.

[Chomsky, Panini, traditional grammar, critical of transformational grammar, dialectical linguistics, animal language]