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**STUDIES IN BUDDHIST HETUVIDYĀ
(EPISTEMOLOGY AND LOGIC)
IN EUROPE AND RUSSIA**

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This publication presents an overview of the situation in studies of Buddhist epistemology and logic in Western Europe and in Russia. Those studies are the young direction of Buddhology, and they started only at the beginning of the XX century. There are considered the main schools, their representatives, the directions of their researches and achievements in the review. The activity of Russian scientists in this field was not looked through ever before.

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В публикации представлен обзор положения дел в исследованиях буддийской эпистемологии и логике в Западной Европе и в России, являющихся молодым направлением буддологии и начинающих только на заре XX в. Рассмотрены главные школы, их представители, направления их исследований и достижения. Деятельность российских ученых в этой области ранее нигде не освещалась.

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Definition of subject

Before talking about the studies of Buddhist epistemology and logic (hetuvidyā) in what soever place, it is necessary to define the circle of those concepts of Buddhist philosophers that are identified today as epistemology and logic. It is important for the reason that in traditional Indian culture, where Buddhism was engendered, knowledge was structured in different ways. Those ways didn't coincide with the structure of knowledge which was widespread in the cultures of the West. And there was another collection of subjects than those which was codified in the synchronic literature of the Antiquity and Middle Ages in the West. One of classical disciplines in the Ancient India was theory of debates. In Sanskrit it signified by the terms (hetuvidyā – literally “science of reasons”, vādanyāya – “rules of reasoning”, tarkanyāya – “rules of debates”, tarkaśāstra, tarkavidyā – “science of debates”, vādauidyā – “science of reasoning”) and so on. In III–IV AD in Nyāya-school the content of science of debates was expanded with the addition of epistemological conceptions, and then the new science in addition to its old denominations received name Nyāya-śāstra (“science of methods [in a wide sense of cognition, of rational reasoning and so on]”). In “Nyāyasūtras” of Gautama-Akṣapāda plenty of space gave to examination just the problems of production of valid knowledge (pramā), its instruments (pramāṇa). Follow the nyāya-school Buddhists began to elaborate their own “science of methods of valid knowledge”. From XIII AD, when Buddhism already was forced out of India, they based upon an importance of epistemological problems and named that science as pramāṇavāda, pramāṇaśāstra and pramāṇavidyā (“science of the instruments of valid knowledge”). And its old names were not forgotten also. So all three sciences, two of which are successors of the first one, include the equivalents of Western epistemological and logical conceptions. But among them no one had been segregated as independent subject in Indian culture. So, hetuvidyā is only one, the latest of Sanskrit titles of discipline that are analogue of epistemology and logic.

As for list of conceptions which became a criterion for including the Buddhologists in our outline they can find it in basic manual “Nyāyabindu” (“Drop of method” – hereafter NB) by Dharmakīrti with the commentary “Ṭīkā” (here-

after – NBT) by Dharmottara. They set out in NB and NBT the essentials of epistemology and logic by Dignāga who was regarded as a founder of Buddhist variant of them. In NB and NBT are such epistemological conceptions as the theory of cognizability of the world (bāhyārthānumeyatvavāda), classifications of types of knowledge (pramā) and instruments for receiving of valid knowledge (pramāṇa) – sense perception (pratyakṣa) and inference (anumāna), – theory of reliability of the instruments of knowledge (pramāṇyavāda), teaching about the relations between pramāṇas. Into a logical partition of NB and NBT are included classification of kinds of inference (anumāna) and middle terms (hetu), classification of logical errors (ābhāsa, doṣa), – it contains the polemical errors also, – theory of meanings of linguistic expressions (apohavāda), as well as theory of discussions, or argumentation (hetuvidyā). Outstanding Russian Buddhistologist Th.I. Stcherbatsky included into them also the theory of the essence of judgments (vikalpa), which explained the differences between pure sensual and rational knowledge. In our outline we will present theoretical positions and the results of those Buddhistologists of Europe and Russia, who had exactly the above concepts as the subjects of their works.

And one more significant clarification. Today scholars don't rigidly tied to that country where they were born and were educated professionally. Very often experts on cross-cultural research, so as Buddhistologists are, make themselves international career: they are educated in different European countries when they are not European born. Buddhistologists develop their professional knowledge all over the world and they work as visiting professors all over the world too, sometimes in a few universities at once. For that reason it is very difficult to draw a boundary between European Buddhistologists and non-European ones, and it is very hard to include scholar in any one European school of Buddhism. Starting from limited size of our outline we fixed on the key figures only and left outside the researchers who though were educated in European universities but the most part of their academic lives spent in another countries. Also we fix as the aim for our outline to give general representation of the trends of the work of concrete scholars and of their methodology on the basis of their publications. We shall leave out of our outline (except for very few cases, when the person very much done for Hetuvidyā Studies) another kinds of their activity (such as the organization of Buddhist conferences, participation in them, participation in the publication of journals, collective monographs, teaching for students and aspirants etc.).

The beginning

The History of Hetuvidyā-studies in Europe is very young. If the first acquaintance of Europeans with Buddhist culture began at the end of the XVII century, and a document evidence of introduction to Buddhism became the book “Description du Royaume de Siam” (1691) [Loubère, 1700], by diplomat Simon de la Loubère, in which they told amongst all issues about Buddhism also, so about the appearance of deep academic Buddhist studies we may speak just from the beginning of the XIX AD when the work of M.F. Ozeray “Recherches sur Buddhou” was published (1817) [Ozeray, 1817].¹ From the middle of the XIX century Buddhology validated as special area of Oriental studies and have got large extent [Prebish, Keown, 2006, p. 359]. At that time Buddhologists saw their central task in the translation of main Buddhist texts, first of all, of canonical texts. And as Ch. Prebish and D. Keown wrote, many of Buddhologists in the West were the followers of some Buddhist school just as many modern Buddhologists [Prebish, Keown, 2006, p. 374]. The first publications on Buddhist logic and epistemology (hetuvidyā) were issued in the beginning of XX century. At that time three main schools of Buddhology were already formed: Older Anglo-German school (T.W. Rhys Davids, H. Oldenberg, E.J. Thomas), Leningrad school (headed by Th. Stcherbatsky) and Franco-Belgian one (de la Vallée-Poussin, Jean Przyluski, Sylvain Lévi, Paul Demiéville and Etien Lamotte) [Prebish, Keown 2006, p. 360; Conze 1967, p. 1]. Constanty Regamey wrote, that they continue on lines of the Russian school [Regamey, 1950, p. 247–248].

The First doctrine from logico-epistemological complex, which attracted the attention of the researchers of Older Anglo-German school, was the theory of argumentation (hetuvidyā) in her pre-Dignāgean form. It is present in the texts of the Pali Canon and in the texts near Canon, the likes of “Milinda-pañha” (“The Questions of King Milinda” – hereafter QM). QM was translated in the end of the XIX AD by Thomas W. Rhys-Davids (1843–1922) and published in the famous series “Sacred Books of the East” [Rhys-Davids, 1890–1894]. Methodology of the first investigators used philological method and historical methods mainly. In the Introduction to the First volume translator described QM in detail as a monument of Buddhist literature and history, but he didn’t say anything about theory of controversies, in accordance

¹ It is notable that the first publication of the Buddha biography in “Asiatic Journal” in 1825 belonged to Russian scholar Isaak Jacob Schmidt.

with which dialogs of king Milinda and Buddhist monk Nāgasena were leading. About that theory and about characteristics of discussions, in the process of which Buddhist dialectic (theory of debates) was elaborating and was included in oral Canon, C.A. Rhys-Davids (1857–1942) and S.Z. Aung said when they translated from Pali “Kathāvatthuprakaraṇa (“Manual / or Explanations of the subject of the dispute”) by Tissa Moggaliputta (I AD) from “Abhidhammapiṭaka” [Aung, Rhys-Davids, 1915]. In this writing debates in defense of Buddhism are expounded, but to say the truth there logical analysis of disputes still fall out of the area of consideration of the translators.

British school

For Professor of the University of Edinburgh Arthur Berriedale Keith (1879–1944) Buddhist studies wasn’t the only issue. He examined the logical conceptions of Buddhists in the context of polemics which they had with adepts of Nyāya and Vaiśeṣika, whose epistemology and logic were just his main subject. His exploration was the first turn at the rational tendency of Indian philosophy, which, as A. Keith said, was ignored before, and such attitude made difficulties for comprehension of Indian philosophical thought [Keith, 1968, p. 3]. In his book “Indian Logic and Atomism” [Keith, 1968] he gave an outline of the History of Indian epistemology and logic, the interpretations of main concepts from this area of knowledge in Nyāya and Vaiśeṣika schools, he analyzed an influence of Buddhist Yogācāra school on the logical and epistemological theories of all Indian schools. When was speaking on Dignāga’s epistemology he noticed that it is beyond of Yogācāra’s opinion because his doctrine of *pratyākṣa* reveals the elements which are not agree with idea of thought as the only reality [Keith, 1968, p. 99]. In particular Dignāga supposed that reality, with which consciousness went in contact during sense perception, was genuine (*vastu, paramārthasat*), but as a result of its momentary character it was unknowable. For construction of idea about that is known in sense perception a work of imagination (*vikalpa*) must be added [Ibid., p. 101]. For Dignāga the relation between logical mark and logical consequence is founded not by the connection of subject and its attribute in outer reality but by their relation which is constructed by consciousness. In the book there is A. Keith’s own interpretation of *trairūpya*-rule for middle term (*hetu*) [Ibid., p. 106].

British scholar Herbert Niel Randle (1880–1973) went to the same direction as A. Keith was: he studied Indian *hetuvidyā* as a whole and Buddhist *hetuvidyā* as a very important part of the tradition. In his article “A Note of the Indian Syllogism” [Randle, 1924] he draws the parallels between five-membered syllogism of *Nayāikas* and Aristotelian syllogism and also examined Buddhist rule for the middle term – *trairūpya* as it was exposed in *Dignāga*’s “*Hetucakra-ḍamaru*” (“The Wheel of reasons”). H. Randle built his comprehension of the rule in accordance with well-known “A History of Indian Logic” of S.Ch. *Vidyābhūṣaṇa* [Vidyabhūṣaṇa, 1978]. One of the features of Indian logic British scholar discovered in the fact that “The Indian logician does not abstract M (Probans) and P (Probandum) from their concrete embodiments; and he therefore distinguishes SM, or the Probans as it occurs in the Subject or minor term, from XM’s, i.e., the Probans as it is found in other concrete cases” [Randle, 1924, p. 399]. It was very important for some kinds of probans (‘existence,’ or ‘knowability’; or ‘audibility’), because “the Indian view of syllogism as an argument from Examples” and of such un-limited or peculiar property “casts a doubt on arguments employing such Probans” [Ibid.]. H. Randle cares much about out-of-logica (epistemological and ontological ones) foundations of Indian syllogism, in order to clarify whether there is “any way of laying down syllogistic canons other than that of the *Dictum de Omni et Nullo*?” (axiom of syllogism in traditional Western logic – N.K.). His conclusion is the next: for the best way to understand the spirit of *trairūpya* it is necessary to forget the axiom of syllogism, and to interpret the Indian syllogistic canons in the light of the original Indian conception of syllogism [Randle, 1924, p. 405]. However these words didn’t prevent later critiques from A. Keith to Randle for “the temptation to read our ideas into Indian logic” [Keith, 1932, p. 1045].

Next Randle’s publication “Fragments from *Diṅnāga*” [Randle, 1981] is more interesting for Sanskrit scholars inasmuch the book includes the translations from Sanskrit of “*Pramāṇasamuccaya*” by *Dignāga*. In this text Buddhist *hetuvidyā* and polemics with the opponents (*Akṣapāda*, *Uddyotakara*, *Praśastapāda*) are exposed together with their historical and philosophical interpretations. Indian special terminology for the *hetuvidyā* is subordinated to rather belletristic than scientific requirements and has a great variety and uncertainty. H. Randle made his own contribution for the comprehension of this terminology by the Western researchers, offered their own interpretation of difficult expressions. So, pre-*Dignāgean* definition of perception as “*kalpana-apoḍhām*” he interprets as “devoid of determinations” (without the determi-

nants), he means under determinants the categories of Vaiśeṣikas (genus, species, relations, qualities, and actions), which were considered by Dignāga as mere “fictions of the understanding”. H. Randle based his research on materials of S.C. Vidyabhuṣaṇa also, but treated them critically: he specified the Dating of Dignāga’s life, he more compared and analysed, rather than simply described the Indian concepts. When he cites the Dignāga’s wording of the *trairūpya*-rules for medium term, he says that they are parallel with *Prāśastapāda*’s definition, and the “three aspects” are: (1) the presence in the Minor term (*pakṣa*), (2) the presence in the similar examples (*sapakṣa*) and (3) the lack in the dissimilar examples (*vipakṣa*). The formula belongs to the time when the doctrine of invariable relation (*vyāpti*) has not yet appeared.

His other book “Indian Logic in the Early Schools” [Randle, 1930] was the publication of his PhD Thesis, and it was highly appreciated by colleagues, although it didn’t escape critics. A. Keith, in his review devoted to the book wrote about it as the work of the expert who wants to “make clear the intellectual efforts of Buddhists and brahmanists in the field of logic” and named it a significant contribution to the study of the history of Indian logic, which only comes from the efforts of researchers from many countries, in particular, G. Tucci from Italy [Keith, 1932, p. 1041]. An important method which H. Randle utilized for the clarifying of the history of Indian logic was the method of comparison of the each-other quotations by Indian authors.² A historical introduction to the book shows what a significant role played the discussions among Indian philosophers for the emergence of schools, for the establishment of communication between them and for the development of logical thinking in India. However, some conclusions of H. Randle were criticized by A. Keith: for example, that at the time “*Kathāvattu*” logic has not been yet, or that under *Sāṃkhya* and *Yoga* in the “*Arthaśāstra*” *Kauṭīliya* means *Vaiśeṣika* [Keith 1932, p. 1043]. Criticized by A. Keith also Dating Dignāga’s life as had place before *Prāśastapāda*, which was based on the adoption by H. Randle just an opinion by Th. Stcherbatsky [Keith, 1932, p. 1044]. Edinburgh Professor finds a more powerful argument of G. Tucci, who was dating the Dignāga’s life on the basis of comparison of the texts by Dignāga and *Prāśastapāda*. A. Keith believed also that H. Randle appreciates Indian logic too highly [Keith, 1932, p. 1045].

German Arnold Kunst was born in Poland (1903–1981) and for a long time worked in the Great Britain, but not only in this country. They called his ca-

² He valued the application of this method by T. Stcherbatsky very highly [Randle, 1926, p. 5].

reer “international” [Ruegg, 1983, p. 3]. His PhD “Probleme der buddhistischen Logik in der Darstellung des Tattvasaṅgraha” was defended at the Polish Academy of Sciences under the supervision of Stanisław Shayer and it was published in the “Mémoires de la Comission Orientaliste” [Kunst, 1939]. The book contains the German translation of the Chapter “Anumānaparīkṣā” from “Tattvasaṅgraha” by Śāntarakṣita with the comment “Pañjikā” of Kamalaśīla, made with the help of Tibetan and Sanskrit originals, and there are kārikās of Śāntarakṣita in Sanskrit and Tibetan languages too. The translation is well structured: it incorporates thematic headings, which allow us to trace the course of the debate, but they are absent in the Sanskrit original. They mark the discussed issues and allow us to understand who enters into discussion and whether he is on the side of the proponent or opponent. In 1951, A. Kunst, together with E.H. Johnston published in Brussels Sanskrit text “Vigrahavyāvartanī” of Nāgārjuna [Kunst, 1951].

Indian philosopher Bimal Krishna Matilal (1935–1991) had an international career too. He spent a considerable part of his scientific life (1977–1991) in the UK. He was the Spalding Professor of Eastern Religion and Ethics at Oxford University and wrote there his best works: “Epistemology, Logic and Grammar in Indian Philosophical Analysis”, “Logical and Ethical Issues”, “Logic, Language and Reality”, “Perception: An Essay on Classical Indian Theory of Knowledge”, “The Character of Logic in India” [Matilal, 1971; 1982; 1985; 1986; 1998] and others. He was educated in classic Sanskrit literature, but he was a representative of a new generation of scholars. He has absorbed two philosophical traditions (Indian and Western) from his great teachers at Calcutta and Harvard Universities. Two degrees were awarded to him: Tarkatīrtha (master of Logic) in Calcutta and PhD in Harvard. In his studies of Indian epistemology and logic B.K. Matilal combined brilliant knowledge of Sanskrit texts with Western methodology. He belonged to the cohort of comparativists who promoted the need of not philological only but philosophical interpretation of Ancient and Medieval Indian texts also. Only such interpretations would make them understandable for modern philosophers. He examined Buddhist *hetuvidyā* in the book “Epistemology, Logic and Grammar in Indian Philosophical Analysis” [Matilal, 1971] in the context of the whole rationalistic trends of Indian philosophy. There are very interesting topics about epistemology and logic of Dignāga and of his school, about the controversies between Buddhists and Nayāikas in connection with the exploration of empty terms and of negation by Nāgārjuna. His book “The Character of Logic in India” [Matilal, 1998] also has the chapters that contains a lot of valu-

able thoughts: about the role of Dignāga in the formation of a new paradigm of logical theory and about elaboration of induction by Dharmakīrti. In this book B.K. Matilal appreciated the achievements of Buddhist logic very much. In particular, about the Buddhist theory of meaning he wrote that “anyāpoha (exclusion of the other) has a clear advantage over the Naiyāyikas’ objective universal such as cowhood. Since “exclusion” is not construed as a separate reality, we need not raise the question of how it is related to what by its own nature excludes others” [Matilal, 1998, p. 104]. B.K. Matilal noticed not quite Buddhistic attitude of Dharmakīrti to the anupalabdhi-anumāna (inference on the basis of non-perception): Dharmakīrti didn’t share with his teacher Īśvarasena the trust to the inference, based on non-perception, for he believed that non-perception was not able to guarantee knowledge of the inseparable connection [Matilal 1998, p. 112]. When he analysed the contribution of Dharmakīrti in the development of the theory of inference and induction in his treatises “Pramāṇavārttika”, “Nyāyabindu”, “Hetubindu” and “Vādanyāya”, Matilal compared Dharmakīrti’s theory with a concept of causal or scientific inference of K. Hempel [Hempel, 1965], for it is found in the Dharmakīrti’s approaches to the investigations of the problem of induction a lot in common with the approaches to it from naturalists [Matilal 1998, p. 116].

Jonardon Ganeri belongs to the new generation of researchers too. He worked at many Universities around the world. Now he combines jobs of Professor of Philosophy at the British University of Sussex, of adjunct Professor of the Australian Monash University and of visiting Professor at University of Seoul Kyung hee. His first education was in mathematics and mathematical physics. Inspired by Indian philosophy, he used his scientific and mathematical baggage for the study of philosophical texts in Sanskrit. In the works of this author is clearly visible intention to deal with the fundamental characteristics of universals of different cultures which determinate the activities of their carriers in different areas: ethics, sciences, religion and philosophy. Named intention is also in those a few works which he devoted to Buddhist hetuvidyā. This part of the Buddhist doctrine attracted his attention, because it is closely linked with exciting for him questions of identity, consciousness and self-awareness, understanding, rationality, epistemology, logic and philosophy of language. In the article “Argumentation, Dialogue and ‘Kathāvathu’” [Ganeri, 2001] he describes a method of dialogue in the mentioned text – vādayutti. In the Chapter “Apoha, Feature-Placing, and Sensory Content” [Ganeri, 2012] from the collective monograph “Apoha. Buddhist Nominalism and Human

Cognition” (2011), the author connects the Buddhists to a discussion on sensory cognition, which proceeds in modern Western philosophy. He tries to understand the Buddhist concept of sensory perception in the context of Buddhist teachings as a whole, not in the context just epistemology. J. Ganeri traces “how sensory experience imposes restrictions on beliefs and judgments”, and how faith and judgment accountable and controlled by sensory experience [Ganeri 2012, p. 228]. The conclusion to which J. Ganeri has come by comparing Dharmakīrti’s ideas with modern Western concepts, is that “Dharmakīrti’s theory of perception can attribute to sensory content greater richness than a sense-data analysis does, then the apoha theory helps us to see how it is possible for sense experience normatively to constrain the content of our beliefs” [Ganeri 2012, p, 245] .

G. Tucci

For one of the founders of the Italian Institute for the Middle and Far East (IsMEO –Istituto per il Medio e l’Estremo Oriente), an eminent Italian scholar Giuseppe Tucci (1894–1984) Buddhism in all its manifestations and local forms has become the most important object of his research. He knew such languages of the Buddhist Canon as Sanskrit, Chinese and Tibetan, and it was the reason for his ability to do grandiose working for finding in the monastic libraries of Tibet and Nepal, reconstruction, translation and publication of previously unpublished Buddhist texts. Among his nearly 360 publications on various questions there are those related to Buddhist *hetuvidyā*. In one of his first article on this issue – “Buddhist logic before Dignaga” [Tucci, 1929] – you can find a lot of valuable information about the first steps of Buddhist logic before it transformed into a systematic doctrine. The main sources of this information for G. Tucci was two texts, preserved in fragments in Chinese: “The Essence of the Tools (*Upāya-hṛdaya*)”, the authorship of which is uncertain, and “Science of Dispute” (“*Tarka-śāstra*”), attributed by some researchers to Vasubandhu. In the same year he published his own translation-reconstruction in Sanskrit of those texts in the book “Pre-Dinnāga Buddhist Texts on Logic from Chinese Sources” [Tucci, 1929a]. Reconstruction was supplied with thorough scientific apparatus – comments and indexes. The method used by the researcher is the comparison of the special terminology in three languages (Chinese, Tibetan and Sanskrit), which was employed in the texts

of Aśaṅga, Dignāga, Sthiramati, representatives of Nyāya and Vaiśeṣika, Chinese commentators and which we can see in Chinese and Tibetan translations of Buddhist texts. The logical and epistemological concepts under the mentioned terms, – as the theory of debate (vāda), the doctrine of the instruments of reliable knowledge (pramāṇa), the doctrine of perception (pratyākṣa) and inference (anumāna), the members of inference (avayāva), classifications of logical errors (ābhāsa) in “Upāyahṛdaya”, “Vigrahavyāvartanī” of Nagarjuna, in the compositions of Aśaṅga, Vasubandhu, Praśastapāda and Caraka and their reception at Dignāga and Dharmakīrti are compared. These comparison allow, as G. Tucci himself wrote, to restore the lost original texts and to achieve a better knowledge of logical theories, accepted or formulated by Buddhist writers before Dignāga [Tucci, 1929, p. 481]. With the help of comparison Italian Buddhologist could see also that long before Dignāga logic under the name of tarka or hetuvidyā was convicted and condemned by ancient schools. It was assimilated by Buddhist “doctors” as at least an additional tool and developed in various independent directions. Great masters like Aśaṅga and Vasubandhu, and possibly many others whose names are lost, improved ancient rules of polemics (kathā or vivāda). Aśaṅga was the first, as far as we can guess, who introduced hetuvidyā in his dogmatic work [Ibid., p. 481–482].

In India “science of reasoning” (hetuvidyā) didn’t serve for the purpose of receiving the objective and true knowledge about the world, but since his birthday it was only used as a tool of debate on the metaphysical and soteriological issues. G. Tucci, ignoring this fact, places the responsibility for abandoning the search of new explanatory models (heuristics) in philosophy, for submission to elevated to dogma rules of epistemology and logic on Dignāga³ [Ibid., p. 482]. Another attack in the direction of the founder of Buddhist epistemology and logic became the Tucci’s denial to call Dignāga the founder of the theory of thrairūpya (three lakṣaṇa-theory) for medium term of inference. G. Tucci saw this theory already in Vasubandhu’s texts [Ibid., p. 480] and in anonymous pre-Dignāgean “Tarka-śāstra”, which, according to Chinese texts, was very influential in China and throughout Central Asia [Ibid., p. 483]. The first Buddhist attempt to reduce the number of members of the five-membered syllogism of Nyāya G. Tucci found in the comments of Sthiramati (approx. 540) on Mahāyānābhīdharma-saṅgīti-śāstra [Ibid., p. 477].

³He wrote: “...heuristic began to leave the place to logic and epistemology, an achievement for which Dinnāga was mainly responsible. Even for Vasubandhu logic was still a section of vāda”.

Tucci researched treatise “The Appearance of Nyāya “ (“Nyāyamukha”) by Dignāga [Tucci, 1930], the influence of epistemological ideas of Dignāga upon the theorist of Sanskrit poetry Bhamaha [Tucci, 1930a]. This article is also published in the first volume of a two-volume edition of “Opera minora” (“Small works”) [Tucci, 1971/ I], and in the same volume is the article about “Vādaiddhi” of Nāgārjuna and a little research on the question of authenticity of Dignāga’s authorship for the treatise “Nyāya-praveśa”. In the first issue of “Minor Buddhist texts” [Tucci, 1956] G. Tucci put their reconstruction in Sanskrit of two previously unreleased logico-epistemological texts: “The Instruction about the nature of reason” (“Hetutattvopadeśa”) of Jitari and “Introduction to the theory of debate” (“Tarkasopāna”) by Vidyākaraśānti. Reconstruction was carried out with the help of Tibetan translations. The value of the texts is in that fact, that they were textbooks for Tibetan monks and inspired them for their own development of Buddhist hetuvidyā. Jitari’s composition follows “Nyāya-praveśa” of Dignāga, and the textbook of Vidyākaraśānti, containing three chapters (about perception, “inference for the sake of oneself” and “inference for the sake of others”), not just follows “Nyāyabindu” of Dharmakīrti and the comment on this “Manual of Logic” (“Nyāyabindu-ṭīkā”) of Dharmottara, but, as found by the researcher, literally reproduces large fragments of these texts.

Franco-Belgian school

Role played by representatives of the Franco-Belgian school of Buddhist studies in the history of the study of Buddhist hetuvidyā, consists mainly in publishing and in the introduction to the scientific circulation of Buddhist texts in Sanskrit, Chinese and Tibetan languages and their translations into French. Buddhist epistemology and logic weren’t seen as special subject of study in this region. But in the tradition of this school was included the preparation of specialists with knowledge of several languages of Buddhist Canon: Pali, Chinese, Sanskrit and Tibetan, this greatly helped in the reconstruction often lost Sanskrit original. Thus, the contribution of Sylvan Lévi (1863–1935) in the study of Buddhist hetuvidyā were publications of many Sanskrit texts written in Yogācāra school, in particular, the authoritative “Mahāyānasūtrālaṅkāra” [Lévi, 1907–1911]. His pupil Louis De la Vallée Poussin (1869–1938) who knew Sanskrit, Tibetan and Chinese languages, has significantly expanded

the number of texts on Buddhist epistemology and logic available for study with the publication of Sanskrit texts “Mūlamadhyamakakārikā” of Nāgārjuna with the comment “Prasannapadā” of Candrakīrti [Vallée Poussin, 1903], the Tibetan translations of “Mādhyamakāvatāra” of Candrakīrti [Vallée Poussin, 1907] and “Nyāyabindu” of Dharmakīrti with “Ṭīkā” of Vinītadeva [Vallée Poussin, 1908–1913]. He translated into French extremely difficult “Abhidharmakośa” (“Encyclopedia of Abhidharma”) by Vasubandhu with autocommentary “Abhidharmakośabhāṣya” [Vallée Poussin, 1908–1913]. In translation, which became classical and still not exceeded, French Buddhologist used not only the Sanskrit original, but the Tibetan and Chinese translations of the “Encyclopedia of Abhidharma” also, a Sanskrit commentary on it by Yaśomitra and Japanese glosses. He completed one more fundamental work, it is the annotated translation of the Chinese compendium of Yogācāra “Vijñaptimātratāsiddhi” in the interpretation of Xuan-tsan [Vallée Poussin 1928–1929].

For a student of de La vallée Poussin, the Belgian Étienne Paul Marie Lamotte (1903–1983), who was the Professor at the Catholic University of Louvain, his being of prelate of the Catholic Church didn’t prevent to become a professional Buddhologist. He knew the major languages of the Buddhist Canon: Pali, Sanskrit, Chinese and Tibetan and used these languages in the work on the translation into French of “Mahāyānasamgraha” by Nāgārjuna [Lamotte 1944–1980]. The Swiss-French Sinologist and Orientalist Paul Demiéville (1894–1979), who was called the main Sinologist in France until the 2nd world war [Wikipedia], entered the history of the Buddhist hetuvidyā studies with their publications of Chinese sources and authoritative translations of Buddhist texts from Chinese: “Milindapañho” [Demiéville, 1924] and “Yogācāra-bhūmi” of Saṃgharakṣita [Demiéville, 1954]. A lot of today working researchers from different countries (primarily France, Belgium, India, Japan) were taught by the masters of the Franco-Belgian school and they published his works in French. Although today in France Buddhist studies flourish, but the problems of Buddhist epistemology and logic do not enjoy popular there.

But they attracted the attention of scientists, who studied in France and then made an international career. Among such scholars who was a student of the French school of Buddhist studies is a specialist in the field of Mādhyamaka philosophy David Seyfard Rugg (born 1931). Although he was born in New York, D. Rugg received professional education in Paris, was a pupil of J. Filozat, L. Renou, M. Lalou, and R. Stein, and he perfected in the field of Ti-

betan studies with the carriers of Buddhist culture in Europe, USA, India. C. Ruegg worked in different Universities around the world: in Leiden (the Netherlands), Seattle (USA), Hamburg (Germany), since 1972 he is in the School of Oriental and African studies in London. From 1991 to 1999, he was President of the International Association for Buddhist Studies. He has a lot of works on Indian and Tibetan Mādhyamaka, among them are not so much researches on the hetuvidyā. Two of them – “The Uses of the Four Positions of the Catuskoṭi and the Problem of the Description of Reality in Mahāyāna Buddhism” (1977) and “The Svātantrika-Prāsaṅgika Distinction in the History of Mādhyamaka Thought” (2006; Indo-Iranian Journal. Vol. 49. P. 319–346) were reprinted in the recent collection of essays of different years “Buddhist Philosophy of the Middle Way” [Ruegg, 2010]. The first article is devoted to the polemical technique of the “four-cornered denial” (catuskoṭi), which was used by Mādhyamikas, the second – to the history of Buddhist epistemology, that its period, when the Tibetan doxography divided the two branches (subschoools) of Buddhist thought: Svātantrika and Prāsaṅgika. Both branches are traced to Nāgārjuna and his disciple, Āryadeva. At the head of these branches stood Svātantrika Bhāvaviveka (VI century) and the Prāsaṅgika Buddhapālita (circa V century) and Candrakīrti (VII century). Svātantrika got its name because its adherents incorporated in the Mādhyamaka doctrine the “autonomous” (svatantra) inference (anumāna) and formalized reasoning (prayoga). This improvement is attributed to Bhāvaviveka, although this happened thanks to Dignāga [Ruegg, 2010, p. 160]. With the considering the large number of Sanskrit and Tibetan texts, the researcher is deciding here two questions: did Indian Mādhyamikas make use of the terms “Prāsaṅgika” and “Svātantrika”, and was this usage fruitful for the Buddhists themselves? He states that the Indians those terms didn’t use because they are “reverse translation” of Tibetan expressions in Sanskrit. Reveiwed the available modern Indological and Tibetological works that have addressed the question of the legality of the separation of the two brancher of Mādhyamaka, S. Ruegg comes to the conclusion that there is no definite answer to the second question, but there are different points of view.

German school

In the German school of Buddhology they study mainly Indian Buddhism, though the studies of Tibetan and Nepalese Buddhism are carried out also.

One of the founders of the school – Max Gebhard Lebrecht Walleser (1874–1954), was Professor of the Institute of Buddhist Art in Heidelberg. He published the Tibetan and Chinese translations of Buddhapālita’s comment on “Mūlamadhyamakakārikā” of Nāgārjuna [Walleser, 1913], as well as the translations of both texts in the German language. M. Walleser didn’t had a special interest in the *hetuvidyā*. The works of Nāgārjuna are very attractive for German researchers today (they are studied, for example, Félix Erb), but their logical-epistemological components aren’t so interesting.

Specialist in philosophy of Yogācāra Lambert Schmithausen (born 1939), which Eli Franco in his essay on Buddhist studies in Germany and Austria called “undoubtedly the outstanding Buddhistologist of twentieth century [Franco, 1999, p. 428], works with texts in Sanskrit, Pali, Tibetan, Mongolian, Chinese and Japanese. For him the problems of modern Buddhism are more interesting. Among many of his publications we may pick out two ones, in which covers the problems of Buddhist epistemology: an article about the definition of perception [Schmithausen, 1972] and the monograph on “consciousness-treasury” (*ālayavijñāna*) [Schmithausen, 1987]. In the first work he advanced a hypothesis about the origin of this concept *ālayavijñāna* in the connection with the need to explain the return of consciousness after states like *nirodha-samāpatti*, in which consciousness is interrupted, and gave his interpretation of the *ālayavijñāna* as consciousness, to which, all contaminated dharmas stick, as effect to cause [Schmithausen, 1987: § 3.13.8].

But at the same time for the Professor of the University of Heidelberg (from 2010) Birgit Kellner Buddhist *pramāṇavāda* became the main subject of many of her research works. She became a Master in Philosophy of Tibetan and Buddhist Studies in the University of Vienna (Austria) and a PhD in Indian Philosophy in the University of Hiroshima (Japan). From her Austrian teachers Ernst Steinkellner and Katsura Shōryū (he was a visiting Professor at the University of Vienna in 1992) she inherited an interest for the Buddhist *pramāṇa-vāda* in India and Tibet. B. Kellner translates, publishes, and explores the texts of the Buddhists, she is focusing on textual, philological analysis for the ascertainment of their historico-philosophical senses. Her work is published around the world, from Japan to the USA, where she also worked (in 2008) as a visiting Assistant Professor at Berkeley (University of California). Scientific activity B. Kellner is extremely diverse. As a Professor at the University of Vienna (2009), she conducts several research projects at the Universities of Vienna and Hamburg. The purpose of the projects is interdisciplinary, transcultural studies which may determine changes in relations between

Asian and European cultures in a globalizing world. It is beyond her special interests but includes the study of local Buddhist cultures. She is a corresponding member of the Austrian Academy of Sciences, and a member of the Alexander von Humboldt Foundation. She is joint editor of the Journal of the International Association of Buddhist Studies and of the monograph series in Wiener Studien zur Tibetologie und Buddhismuskunde. Among her translations of Buddhist logico-epistemological texts are a translation of kārikās 1647–1690 from “Tattvasamgraha” of Śāntarakṣita with the commentary “Pañjikā” of Kamalaśīla in the book “Nichts bleibt Nichts” (“Nothing remains nothing”) [Kellner, 1997]. In the book has place also a study of those texts, which contain polemics between Buddhists and Mīmāṃsāka Kumāriḷa on the problem of perception as an instrument of cognition of non-existence.

In the article on consideration of the problems of the self-awareness (svasaṃvedana) in Dignāga’s “Pramāṇasamuccaya” with autocommentary (hereinafter – PS(V)) [Kellner, 2010] B. Kellner with the help of the information contained in the commentary on these texts by Jinendrabuddhi proposed a new interpretation of the complex fragment PS(V) 1.8cd–10. In this fragment Dignāga interprets the self-awareness as purely subjective access to the mental states of the individual. The problem of self-awareness devoted one more article – “Self-awareness (svasaṃvedana) and Infinit Regresses: a Comparison of Arguments by Dignāga and Dharmakīrti” [Kellner, 2011], and in the article “Non-cognition (anupalabdhi) – Perception or Inference?” [Kellner, 1997a] presents the results of a study of the problem of perception. In the article “First logic, then the Buddha?” [Kellner, 2004] the author searches for the answer to the headline question, when she compares Sanskrit texts “Pramāṇaviniścaya” of Dignāga and “Pramāṇavārttika” of Dharmakīrti, with the comments on it “Pramāṇavārttikapañjikā” of Devandrabuddhi, “Pramāṇavārttikaṭikā” of Śākyabuddhi and Pramāṇavārttikasvavṛttiṭikā of Karṇakagomin (VIII century). For adequate understanding of the origins she uses the Tibetan translations of the texts. The question arises because the text of Dignāga begins with the worship of Buddha as a “tool of reliable knowledge”, and this attribute of the Buddha is present in the following texts. Inference is the tool of rational knowledge – all above-named Buddhist authors interpret Buddha as “the means to achieve liberation”. Liberation (nirvāṇa) is a super-rational state of consciousness. On the basis of rigorous textual analysis B. Kellner concludes that all the named Buddhists gave to inference different status. Śākyabuddhi depicts inference primarily as an instrument for dialectical and interpretative activities, suitable both for philosophy and so-

teriology, and this instrument allows Buddhists to establish contacts with representatives of other traditions. Karṇakagomin speaks about inference as the only tool for individual liberation. Very recent article by B. Kellner devoted to the problem of the visual image (ākāra) in Abhidharma and in Buddhist epistemology [Kellner, 2014]. It examined in detail the use of the term “ākāra” in “Abhidharmakośa” of Vasubandhu, which shed light on the meaning and history of the formation of the Buddhist epistemological concepts.

K. Oetke

Swedish scholar Klaus Oetke belongs to the representatives of analytical philosophy. Its activities are closely linked with the German school of Buddhist studies: he studied Indology, Sinology and philosophy in Hamburg, got degrees and taught (1973–1983) there too. He was visiting Professor in the USA and Australia, and since 1993, he took the Chair of the Department of Indology and Tibetan studies at the University of Stockholm. Pramāṇavāda is one of major issues for him, and because Buddhists have played in the history of its formation a very important role, many of his works K. Oetke devoted to Buddhist writings. In each work he offers some new models and interpretations of the concepts of Indian epistemologists and logicians, though sometimes they become a cause for criticism from colleagues [Kellner, 1997]. In his publications on philosophy of Nāgārjuna [Oetke 1989; 1990; 1991; 1992; 1996] he proposed a new interpretation of the philosophy of Nāgārjuna “rests above all on a rigorous new analysis of the “mechanism” of Nāgārjuna’s proofs of non-existence” [Franco, 1999, p. 427]. His fundamental research on Buddhist trairūpya-rule for middle term [Oetke 1994] raises a number of problems of historical-philosophical and hermeneutical character, it became a notable event in the hetuvidyā-studies. Historical and philosophical problems associated with “adequate consideration” of rules for the middle term (hetu), which seek the author and which are often not found in modern literature. The solution of the problems of the history of philosophy, as rightly argues K. Oetke, “serve the purpose of enriching our perspectives with regard to particular subject-matters, and possibly Oriental Studies could even aim at ... a new outlooks of history and society as well as conception of life” [Oetke, 1994, p. 6]. By raising the hermeneutic problem, he justifies the need to use such hermeneutic method that would take into account the various alternative

interpretations (philological, pragmatic) of the same text. But all of these alternatives should be based on a conscious and preferred, as well as explicitly and precisely formulated, principles [Oetke, 1994, p. 4], which wouldn't distort the meanings of the original texts. The author criticizes those researchers who allow too free interpretation (in particular, R. Hayes and Buddhologist, who included specification "exactly" – *eva* in the third point of the *trairūpya*-rule) [Oetke, 1994, p. 16].

In the history of Indian logic K. Oetke establishes the existence of two directions, in which the development of logical theory carried on: in the first, coming from Nayaikas, they worked for improving the conditions of inseparable connection (*avinābhāva*), in the second, which commonly traced from Dignāga, they refined *trairūpya*-rule for middle term. K. Oetke hypothesizes that the Canon of *trairūpya* was formulated after Dignaga, in "Nyāyapraveśa" by Śaṅkarasvāmin (mid. VI century) [Oetke, 1994, p. 20]. The autor analysed the Sanskrit and Tibetan texts "Vādaṅki" by Vasubandhu and "Nyāyapraveśa" by Śaṅkarasvāmin, criticism to the adress of *trairūpya*-rule from Nayāika Uddyotakara in "Nyāyavārttika", Sanskrit and Chinese versions of the treatises "Nyāyamukha" of Dignāga and "Pramāṇaviniścaya" of Dharmakīrti, he suggested the interpretations of meanings of the *trairūpya*-definitions by means of predicate logic, and he used the methodology of analytical philosophy also. The researcher found that "the complete set of the *Trairūpya* conditions is equivalent to the Vādaṅki-condition", i.e. *trairūpya*-conditions are present already in Vasubandhu's theory. "But it still remains open whether or not a subset of the former have the same import as the latter" [Ibid.].

In the texts of the Indian logicians K. Oetke distinguishes between epistemic and non-epistemic interpretations of *trairūpya*. The first is in the "Prašastapādabhāṣya", the second, called "realistic" – in Buddhism and Nyāya. Epistemic interpretation requires consideration the conditions of cognitive situation in the definition of *trairūpya*. The conditions of situation include a knowing subject who is aware of this situation. K. Oetke offers about two dozen symbolic models of those situations which are determined by different meanings of expressions *prasiddha* (certain) and *pramāṇataḥ* (known), and which are captured in formulas [Oetke, 1994, pp. 79, 81, 83, 84]. He compares the epistemic and non-epistemic interpretations. Exploration the relationship between the *trairūpya* and the inseparable relation (*avinābhāva*) leads the researcher to the conclusion that "a *Trairūpya*-doctrine which contains epistemic variants of the second and the third condition would fit a conception according to which the *Trairūpya*-requirements give...conditions for the

warranted assumption of an avinābhāva-relation and conceive the warrant as a not counterbalanced inductive support purely based on distributive facts” [Oetke, 1994, p. 110] . In the final Chapter of the book he examined the concept of svabhāvapratibandha (natural, essential relation) of Dharmakīrti, which contained in the “Pramāṇavārttika” with autocommentary. Although this issue do not related to the problem of trairūpya, but it contains implicitly the solution for the question “as to how acquisition of knowledge of universal propositions is possible” [Oetke, 1994, p. 121]. The author recalled that Dharmakīrti distinguished between two types of relations: the identity – tādātmya – lit. “having the same nature”; it had place between terms of inference when that should be displayed is the essential quality of the associated object, and causality – tadutpatti – lit. “[having] the origin from”. Dharmakīrti correlated these two types of connection with three types of reasons o (kāryahetu, svabhāvahetu and anupalabdihetu): kārya-hetu – with relation tadutpatti and svabhāva- and anupalbdhi-hetu – with relation tādātmya. Discourse of Buddhists in kārikā 27 K. Oetke interpreted in such a way that for Dharmakīrti epistemic variant of trairūpya, which we can see in conception of Praśastapāda, was closer than the variant of Dignāga. In the same time Dharmakīrti reduced three points of trairūpya-rule to two points: 1) that the probans is known to occur in pakṣa... and (2) that it is known that svabhāvapratibandha obtains between probans and probandum. And it seems that the citation of examples assumes the role of securing that the old epistemic Trairūpya-conditions b) and / or c) are fulfilled” [Oetke, 1994, p. 123] .

L. van der Kuijp

Dane Buddhistologist Leonard van der Kuijp (born 1952), now is working at Harvard, but he defended his doctoral thesis in Hamburg and so continues the tradition of German Tibetan Buddhist studies. In Germany he had also published some of his works [Kuijp, 1978; Kuijp, 1983; Kuijp, 1985]. Eli Franco appreciated L. van der Kuijp as the first researcher who has devoted a book to the study of the “new epistemology”, which appeared in Tibet between the XI and XIII centuries. The representatives of new epistemology have criticized the epistemology of the X–XI centuries, grown from comments on “Pramāṇavārttika” of Dharmakīrti. The book “Contributions to the Development of Tibetan Buddhist Epistemology: From the Eleventh to the Thir-

teenth Century” [Kuijp, 1983] was released in Wiesbaden (Germany) and includes four major essays on key thinkers of the period.

Austrian school

Extremely reputable today is a school of Buddhist studies at the University of Vienna. Austrian Buddhist studies has gained international status in 1880, when the Department of Indian Philology and Archaeology under the guidance of the eminent orientalist Georg Bühler (1837–1898) was founded. And exactly at the University of Vienna *hetuvidyā*-studies of Sanskrit, Tibetan and Chinese texts became a priority. One of the first scholar who began them was Erich Frauwallner (1898–1974). He was a versatile scholar and studied texts pre-philosophical (*Upaniṣad*) and philosophical, written in different *darśanas* (systems of world view), but most of all he was interested in the books on *pramāṇavāda*. He dedicated to it more than half of their articles, often quite large. “The first swallow” was a small study of the Sanskrit text by Dignāga “Bemerkungen zu den Fragmenten Dignāgas” (“Notes on the Fragments of Dignaga”) [Frauwallner, 1929], in which, as noted by Eli Franco [Franco, 1999, p. 451] already showed all the characteristic features of its methodology, namely: the use of Tibetan and Jaina texts for the reconstructions of the lost fragments of Sanskrit manuscripts. The work of E. Frauwallner “Dignāga, sein Werk und seine Entwicklung” (“Dignāga, its composition and evolution”) [Frauwallner, 1959] for forty years after the publication remained the best study on Dignāga [Franco, 1999, p. 451], and the proposed Dating of the life of prominent Indian thinkers [Frauwallner, 1961] has received wide recognition. His series of articles on the works of Dharmakīrti, published in the 60’s and 70’s of the twentieth century was the era in Indian studies of *hetuvidyā* and they determined the recognition of Dharmakīrti as a key figure in its history. Published by E. Frauwallner the most important texts on Buddhist epistemology and logic and their translations (1st Chapter of “*Pramāṇavārttika*”, “*Ālabambanaparīkṣā*”, “*Hetucakraḍamaru*”, “*Hetumukha*”, section of “*Pramāṇasamuccaya*”, “*Vādaavidhāna*” and “*Vādaavidhi*” and so on) has created a solid foundation for studies of his disciples. Among them are such “luminaries” of Buddhology, as Lambert Schmithausen, Ernst Steinkellner, Tilmann Vetter, Birgitt Kellner. New rise of Buddhist studies in Austria began, according to Eli Franco [Franco, 1999, p. 452], through the creation in 1973 at the University of Vienna Institute of Tibetology and Buddhist stud-

ies and through the invitation to the post of its Director Ernst Steinkellner (born 1937).

Steinkellner also specializes in the study of Buddhist *hetuvidyā*. He has done a lot for opening of the forgotten texts and for the reconstruction of the lost Buddhist texts preserved in other sources. He has greatly expanded the range of available for Europeans sources on Buddhist *hetuvidyā* when published and translated into German such Sanskrit and Tibetan texts as “Hetubindu” by Dharmakīrti [Steinkellner, 1967], the second Chapter (“Svārthānumāna”) from “Pramāṇaviniścaya” by Dharmakīrti [Steinkellner, 1973], when he published the first two chapters of the recently found in Tibet of Sanskrit text “Pramāṇaviniścaya” by Dharmakīrti [Steinkellner, 2007] and when he with his pupils prepared for publication sections of comment “Pramāṇasamuccaya-ṭīkā” by Jinendrabuddhi [Steinkellner, Krasser, Lasic, 2005; 2007]. Just recently his translation of the logical partition “Pramāṇavārttika” with the comment were published in the book “Dharmakīrtis frühe Logik” (“Early logic of Dharmakīrti”) [Steinkellner, 2013]. Translations of E. Steinkellner are accompanied by comments that clarify the relationship of the ideas of named thinkers with ideas of their predecessors and followers, and the comments have great importance for the creation of an objective history of Buddhist (and Indian) epistemology and logic. This history is bit by bit recreates in his works. So in the article “Die Entwicklung des kṣaṇikatvānumānam bei Dharmakīrti” (“Development by Dharmakīrti a proof of concept of momentariness”) [Steinkellner, 1968] the autor differentiates three stages in the history of the evolution of this proof, and in the articles “Wirklichkeit und Begriff bei Dharmakīrti” (“Reality and representation in Dharmakīrti”) [Steinkellner, 1971] and “On the interpretation of *svabhāvahetuḥ*” [Steinkellner, 1974] he examined the notion of *svabhāva* (identity), which plays an important role in the ontology, philosophy of language and logic of Dharmakīrti. Dedicated Dharmakīrti publications provoked a debate, primarily by Japanese scholars, as touched interpretation of Dharmakīrti accepted in Japan [Kellner, Krasser, Tauscher, 2007, p. XIV]. E. Steinkellner played the significant role in changing of stereotypical attitudes within the Buddhologist community to the Tibetan Buddhist tradition as unoriginal. Austrian Buddhologist, guided by the principle of contextualism that colleagues consider one of his main research principles [Kellner, Krasser, Tauscher, 2007, p. XVI], called when evaluating the achievements of Tibetan Buddhist intellectual traditions we must to consider of her own self-image, how the bearers of Tibetan culture make explicit their confused motives and intentions. This principle made it

possible to see the Tibetan version of Buddhism as alive evolving tradition and it was implemented in the articles devoted to the evolution of Buddhist epistemology in Tibet, such as: “*Tshad ma'i skyes bu* (‘True being’): the Meaning and Historical Significance of the Term”, “Early Tibetan Ideas on the Ascertainment of Validity (ñes byed kyi tshad ma)” [Steinkellner, 1983; Steinkellner, 1992].

Colleagues highly appreciate the pedagogical and organizational abilities of E. Steinkellner manifested in the fact that he spent a lot of time and effort for teaching of Indian (particularly Buddhist) philosophy around the world, for establishing international contacts within the Buddhologist community, for the organization of meetings and conferences at the University of Vienna and the Austrian Academy of Sciences. He takes an active part in the edition of special magazines. He was supervisor of many young scholars, many of them now work as professors in different countries (Gudrun Bühnemann, Michael Torsten Wieser-Much, Toru Funayama, Shunzo Onoda, Chizuko Yoshimizu and others). Some dissertations were published in the series “Wienener Studien zur Tibetologie und Buddhismuskunde”, founded in 1977. He also managed to bring together young scholars in the research group for the study of Buddhist epistemology and logic. It included Helmut Krasser, Horst Lasic and others who were published actively and define the face of the modern world Buddhology. In 1998–2006, E. Steinkellner headed the Institute of cultural and intellectual history of Asia of the Austrian Academy of Sciences (founded in 1991). With such intense activity, the scientist continues to publish translations from Sanskrit the most important works on pramāṇavāda and, despite his age, “remains open for new ideas, methods and development” [Kellner, Krasser, Tauscher, 2007, p. XXI].

Helmut Krasser (1956–2014) has replaced E. Steinkellner as Director of the Institute of cultural and intellectual history of Asia. His research interests extended to the field of Indology, Tibetan studies and Buddhist studies, where he worked with the Sanskrit, Tibetan and Japanese. As well as his teacher, he had a lot of graduate students, and led the workshops, where they were read and studied Buddhist texts (“Abhidharmakośa” with autocommentary). Among H. Krasser’s publications on hetuvidyā we can pick out two publications: the first was made together with E. Steinkellner and H. Lasic – it was a comment “Ṭkā” of Jinendrabuddhi on “Pramāṇasamuccaya” of Dharmakīrti [Steinkellner, Krasser, Lasic, 2007] and the second was an article “Are Buddhist Pramāṇavādins non-Buddhistic? Dignāga and Dharmakīrti on the Impact of Logic and Epistemology on Emancipation” [Krasser, 2007]. In the article

he again raises the question of how compatible in Buddhism are rational epistemology and logic, and super-rational state of liberation? This issue was discussed before by Th.I. Stcherbatsky, Sakya Paṇḍita, E. Steinkellner, S. Kimura, van der Kuijp and by many other medieval and modern authors. H. Krasser looking for answer in Sanskrit, Tibetan and Chinese texts of the Buddhists Dignāga, Dharmakīrti and Dharmottara, of medieval translators and commentators, as well as of their opponents. The result of reflection on the texts becomes the conviction that the epistemological writings of the Buddhists addressed to the opponents, their goal is to turn them from false doctrines; pramāṇas cannot enter opponents in the Buddhist Dharma, but pramāṇas must be explored, while misguided opponents lead the world in a wrong way; wisdom is born from reflection, functioning together with conventional reliable knowledge, so hetuvidyā-studies indirectly lead to the realization of the highest pramāṇas, i.e. to the Buddha [Krasser, 2004, p. 144–145]. All this assures us that the epistemology and logic were legitimized by named authors as a kind of religious activity.

Netherlands school

In the Netherlands school of Indology Buddhist hetuvidyā attracted the attention of comparativists as an important part of the traditional culture of India. Expert at Brahmanic learning (Vedas, grammar of Pāṇini, logic of Nāvyā-Nyāya) and the European Sciences (mathematics, physics, astronomy, mathematical logic and philosophy) Fritz Staal (1930–2012), who in the 60-ies of the twentieth century was a Professor of comparative philosophy in Amsterdam and in 1968–1991 was a Professor at Berkeley (USA), gave for hetuvidyā a place in his works, and he investigated it in the context of thinking about the possibility of dialogue between Western and non-Western cultures and about meaning of the dialogue. His reflections on Buddhist epistemology and logic founded with the texts of primary sources. They are presented in his collection of essays, speeches and reviews of different years “Universals. Studies in Indian Logic and Linguistics” [Staal, 1988]. In the introduction to the book author describes the results arising from the gathered materials: first, the justification of the principle of “Indeterminacy of Translation”, or “the Principle of Charity” by W. Quine (1908–1997), “which had thrown doubts on the possibility of communication between civilizations”, and shows how not to

isolate philosophy from running in the Humanities, especially in Asian studies; second, the demonstration that the Pandits opened the same universals as the West; third, the evidence that the Western social Sciences and Humanities should learn from Asia before they can help to pave the way to a common future of mankind [Staal, 1988, p. IX]. When he was exploring Indian logic, Netherlands philosopher sought answers to four questions: 1) are there any logical universals? 2) are there universals of linguistics? 3) what is the nature of Indian logic? 4) what is the nature of Indian linguistics? In the Chapter 1, about the correlation of language and logic in Indian thought, F. Staal employed a symbolic language for the interpretation of the reasoning of the Indian logicians. In the alphabet of the language were included variables, restricted them quantifiers and logical constants (copulas). He proves that the chosen symbolism is quite suitable for the formalization of complex expressions like *tatpuruṣa*, *bahuvrīhi*, as well as for the technical terms of Indian logic. He used Buddhist material in the chapters fifth (“Contraposition in Indian Logic”) and seventh (“Concept Pakṣa in Indian Logic”). In the fifth Chapter F. Staal formalizes the definition of *trairūpya* of Dharmakīrti and advances the hypothesis that the introduction of word *eva* quantifies all three points of *trairūpya*-rule, and the 2nd and 3rd rules are equivalent and together they form a logical contraposition. It wasn’t noticed by the earlier researchers of *trairūpya* Th.I. Stcherbatsky and J.M. Bocheński [Staal, 1988, p. 95]. E. Frauwallner did not attach much importance to the problem of quantification, when examined “Hetucakra” of Dignāga. But the Buddhists themselves (Dharmakīrti and his commentator Dharmottara) seemed to know the law of contraposition. In the seventh Chapter F. Staal, considering “Nyāyabindu” of Dharmakīrti with the commentary of Dharmottara in the translation into English of Th.I. Stcherbatsky, criticized in a very peculiar form an interpretation of the conception of inference by Russian Buddhologist. Th.I. Stcherbatsky wrote that the Buddhists did not distinguish the subject of the conclusion (*pakṣa*) and the predicate of the conclusion (*anumeya*). Staal calls this statement “muddles” [Staal, 1988, p. 135], but below acknowledges that “Stcherbatsky was partly correct in his interpretations. The confusion is partly due to Indian logicians themselves”, and that Th.I. Stcherbatsky “implicitly distinguished” of this ambiguity and reflected in their translations, by translating *pakṣa* sometimes as “subject of the conclusion” and sometimes as “thesis” [Staal, 1988, p. 136]. The responses at the indicated in the introduction questions F. Staal gives in the sixth Chapter: neither the linguistic structure of Sanskrit or Greek language leads to a particular logical structure, but it has been seen that certain struc-

tures of languages are related to the special logical doctrines [Staal, 1988, p. 128].

The second extremely prominent figure in the Netherlands school of Indology is Johannes Bronckhorst (born 1946), who was Professor of Sanskrit and Indology at the University of Lausanne (Switzerland) from 1987 till 2011. Amongst his numerous publications on a wide range of problems of Indian philosophy with *hetuvidyā*-studies is related his monograph “Language and Reality: on an Episode in Indian Thought” [Bronckhorst, 2011], in which material of the lectures at the Sorbonne are published. In the book is examined the evolution of ideas on the relation of linguistic expressions and their objective values in Indian culture on the material of Brahmanic sacred texts of the Upaniṣads, of the writings of grammarians, of orthodox and unorthodox darśanas. There is the contribution of Buddhists in the philosophy of language (on the materials of “Mahāprajñāpāramitā-śāstra” by Nāgārjuna, of “Abhidharmasamuccaya” by Asaṅga with the comment, of “Abhidharmakośa-bhāṣya” by Vasubandhu, of the texts by Dignāga) considered.

T. Tillemans

Tom Tillemans (born 1950) is named a Danish-Canadian Buddhistologist for his Danish roots and Canadian education. Currently he is a Professor at the University of Lausanne (Switzerland) and he participates in the Canadian project on the edition of the Tibetan Canon, therefore, he divides his time between Switzerland and Canada. His research interests include Buddhist texts in Sanskrit and Tibetan languages, and he gave a priority to *hetuvidyā* issues. He publishes and translates the texts of the Buddhists [Tillemans, Lopez, 1998; Tillemans 2000; Tillemans, 2008] and he examines their by the methods of textual analysis and of analytical philosophy. In the texts he is looking for new information on the innovations that have made both famous and little-known Indian and Tibetan thinkers in the history of Buddhist epistemology and logic.

Russian school

The researches of the *hetuvidyā* in Russia were launched in St. Petersburg by Theodor (Feodor) Ippolitovitch Stcherbatsky (1866–1942), who was a stu-

dent of the founder of Russian Buddhist studies Ivan Pavlovich Minaev (1840–1890). Th.I. Stcherbatsky played a huge role in the transition of the European Buddhology from the study of Buddhism as a religion to systematic studies of Buddhist philosophy. In accordance with the achievements and traditions of Russian Oriental studies, Th. Stcherbatsky stimulate the transition of Oriental science from the period of accumulation of original texts to their interpretations also. He proposed interpretations of the basic concepts of Buddhist philosophy (such as Dharma, Nirvāṇa, pramāṇavāda etc.), which had not lost its importance till now. Due to his achievements, in the 20–30-ies he was among the leading European Buddhist researchers, along with L. de La Vallée-Poussin (Belgium), M. Valzezer (Germany), S. Lévy (France), J. Tucci (Italy). Th. Stcherbatsky became his studies of Buddhist epistemology and logic with his own translations of the Sanskrit and Tibetan texts into Russian and English. Made for the first time, they were included in the Treasury of world Buddhology. Many of them were published in the famous series Bibliotheca Buddhica (“Buddhistic Library”), which was established in the Imperial Academy of Sciences in 1897 by Sergei Fedorovich Oldenburg (1863–1934).

Th. Stcherbatsky received excellent Sanskrit education in St. Petersburg and the University of Vienna. In Vienna he had a training at the largest European Sanskrit scholar Johann-Georg Buhler (1837–1898), in Bonn his teacher was brilliant German Buddhist Herman-Georg Jacoby (1859–1937). His special merit is that he first turned to logic-epistemological concepts of Buddhism, presented their to the European scientists in two books: “Theory of knowledge and logic, according to the teachings of the latest Buddhists” (hereinafter – TKL) and “Buddhist Logic” (hereinafter – BL). In the basis of both books is the same original material: author’s translation from Sanskrit and Tibetan languages very important text of Yogācāra school “Nyāyabindu” (“Drop of logic”, or “The logic Tutorial”) by Dharmakīrti (VII AD) with the comment “Nyāyabinduṭīkā” by Dharmottara (IX AD) and the study of these texts. The researching part embraces not only the teaching of the Buddhists pramāṇavāda, but a conceptual sketch of the history of philosophical thought of India, because Russian Buddhologist supposed, that the full meanings of “Nyāyabindu” were understood in the context of the entire tradition only. BL was written in English by the author himself, as he wanted to make it available to the world community of Buddhologists and of Indologists, the member of which he himself was. BL significantly expanded with the inclusion of Application: collection of translations from Sanskrit and Tibetan languages of the essay of opponents and defenders of Buddhist logico-epistemological concepts: brah-

min philosopher and encyclopedist, Vācaspati Mīśra, Buddhists Vasubandhu and Dignāga, famous Nyāya-Vaiśeṣika Udayana and others. In the book appeared also more detailed index of proper names and index of special terms, more detailed numeration of the text fragments which referred to the appropriate page and line in Sanskrit origin.

The concept of “Indian logic” received a systematic theoretical development in TKL and BL. Before Th. Stcherbatsky logical-epistemological heritage of Indian philosophers were either underestimated or its contents were introduced descriptively. The Russian researcher have interpreted the ideas of Indian philosophers in terms of European traditions, first of all, Kantian philosophy, and the doctrine of inference – by means of traditional non-symbolic logic, ascending to the Aristotelian syllogistics. He did not use symbolic language for writing patterns of reasoning of Indian thinkers that sometimes led to inaccuracies and aroused criticism from the part of researchers in the second half of the twentieth century. In particular, its interpretation of the rules for middle term of syllogism (trairūpya) was the subject of much controversy. Often criticism is not well deserved as it was done from the positions of either the modern logical theories that have spread much later the era of Stcherbatsky, or from the point of some aspects of Buddhism (for example, Chinese Buddhism). But Russian Buddhist didn’t use Chinese Buddhist texts in his research on Buddhist epistemology and logic.

In BL the concept of Buddhist (and all Indian) logic by Th.I. Stcherbatsky significantly evolved. If in TKL he used the language of traditional logic and transcendental philosophy of I. Kant, in BL his priorities have changed. In some cases he preferred authentic Indian terms, which made his interpretations of logical and epistemological ideas of Dharmakīrti and Dharmottara more authentic. In other cases he preferred the terminology of modern non-classical logic, and this made his works more interesting for specialists. As a result the language of English translation of “Nyāyabindu” became more laconic and closer to the original Sanskrit, more understandable in the context of philosophical discussion in India.⁴

To the professional philosophers are directed also the author’s comments in BL. There Stcherbatsky make the comparisons of Indian and Western logical-philosophical ideas, which were put forward by the most significant thinkers. Among them from Indian side are Vinitadeva, Dignāga, Kamalaśīla, Jinendrabuddhi, Vācaspati, other representatives of almost all basic darśanas; from

⁴For more detail see: Kanaeva, 2013.

the Western side there are S. Alexander, A. Bergson, B. Bosanquet, F.G. Bradley, V.E. Johnson, J.St. Mill, B. Russell.

Followers of the Th. Stcherbatsky's school of Buddhology (O.O. Rosenberg, E.E. Obermiller and others) were not engaged in the investigations of the hetuvidyā problems. In the late 30's. most of his students and colleagues-Orientalists were arrested and executed with ridiculous accusations for them. Academician himself have been attacked for his neokantianism. There were imposed constraints to publish his works in Russia (they were published in English only). For above reasons in 40's the studies of the Buddhist hetuvidyā in Russia practically disappeared.⁵ When in Russia the number of Buddhist studies began to grow again in the second half of the 70's and early 80-ies, Buddhist hetuvidyā again entered into the field of vision of the researches. But till now the successes of Russian scholars are not so impressive like of Western Buddhologists.

In 1989 the St.-Petersburg orientalist Andrey Vsevolodovich Paribok (born 1952) published the translation from Pali into Russian of Buddhist manual on controversy "The Questions of Milinda" ("Milindapañha") (hereinafter – QM), which presented the Buddhist theory of argumentation in its form before Dignāga. The book was published simultaneously in two series: "Pamyatniki pismennosti Vostoka" ("Monuments of the literature of the East"), vol. LXXXVIII and "Bibliotheca Buddhica", vol. XXXVI. The translation was accompanied by a short investigation and commentaries of the translator. The translator made his task to transfer the meanings of the QM in Russian language as precisely as possible in order to make the translation available not only for professionals, but also for a wide audience which were interested in the history of Indian culture and thought. A.V. Paribok selected Russian equivalents of the Indian expressions very carefully, trying to choose those that cause the same series of associations that Pali text caused in Indian readers. Translation is free from Western loan words and the translator leaved without translation such terms only which were implanted already in the discourse of Russian indologists.

The book includes also the reconstruction of the 1st book of the source text, which was done with the help of the comparison of Chinese and Pali versions. A.V. Paribok in his Introduction to the QM demonstrates his interest not only to the role of QM in the history of Buddhist literature but much more to the

⁵This fact was pointed out by Conze also. He wrote: "With Stcherbatsky's and Obermiller's deaths in the forties the Leningrad school has unfortunately come to an untimely end in the Soviet Union, and no traces of it can be detected at the present time" [Conze, 1967, p. 2].

logical side of the debate in defense of Buddhism. He wrote about the forms and methods of controversy, the role of the literary techniques such as repetition, examples, short terminology lists-mātrkās) in the solution of the theoretical problems. For understanding of the meaning of the Indian sages' debates he considers necessary to take into account the social context in which they occurred. To this end scholar evaluates the social importance of the positions of the two main participants of the dialogue in QM: unscrupulous debater king Miliṅda (Menander) and a Buddhist monk Nāgasena, when he names the first "disaster of culture", and the second – "the savior of the spiritual life from chaos". A.V. Paribok rightly sees the main determinants of the specificity of the Indian dialectics in the negative attitude to the discourse, that is rational thinking. If the purpose of Socrates dialectics was declared the joint realization of the truth, then in Ancient India "not a dialogue, not a conversation were the kinds of spiritual activities, which they saw as a means of new knowledge and understanding" [Paribok, 1989, p. 27]. "The dispute is the border of the doctrines, a reflection of their mutual otherness and small commensurability" [Paribok, 1989, p. 30]. This incompatibility was manifested, in particular, by attributing different meanings to the same terms [Paribok, 1989, p. 44]. And here Buddhism follows to an ancient pre-Buddhist tradition of debate, in which the discussion in Ancient India always had as its aim not the achievement of the objective truth, but the refutation of the opponents. The refutation is given the status of indirect proof, the structure of which corresponds to the law of Western classical propositional logic modus tollens: $(A \supset B), \neg B \vdash \neg A$. The conclusions A.V. Paribok about the absence in India scientific base for the formation of the concepts of proof [Paribok, 1989, p. 37] and ontological support for the concept of proof in Buddhism [Paribok, 1989, p. 38] are very interesting. He notes that logic, under which such proofs are, is not formal.

The researcher draws attention to the fact that the logical structure of a dispute in essential coincides with the form of a dialog between a teacher and a student, and that dialog of such kind was the source of an early version of the Indian syllogism. The numerous repeats in the QM confirm the thesis and they "serve as a guard against possible attempts...to substitute the thesis" [Paribok, 1989, p. 34]. A.V. Paribok also puts forward the hypothesis about the relationship of syllogism with psychological practices, and that in its beginning Indian philosophy was able to exist without strict logical proof and in Indian dialectics they used the syllogism as a form of production of some objective content in the minds [Paribok, 1989, pp. 35–36]. This is informal log-

ic, and in the dispute the application of the syllogism is not connected with the idea of objective truth, false or contradiction of statements [Paribok, 1989, p. 36]. On the addressee of the statement we can only say if he understands it or not. If he understands and agrees with it, it is unnecessary to use logic; if he doesn't agree, then they by logic destroy his disagreement. If he doesn't understand, then with the help of the syllogism it is possible to explain the meaning of some of the allegations and to help him achieve understanding [Paribok, 1989, p. 37].

In the QM dialogue is conducted in the form of five-membered syllogism of Nāya, however, the third members of the syllogism in QM and in Nāya-school are different. For Buddhists it was opammaṃ – “comparison”, “method of reasoning, which was reduced to the employment of comparisons”. For the Nāya 3^d member gets the name udāharaṇaṃ – its etymology is “an example, a presented instance of the sample”.

Buddhist māṭṛcās A.V. Paribok sees as “the forms of the existence of the concepts” [Paribok, 1989, p. 48] and as “a means of generation of concepts and its understanding” [Paribok, 1989, p. 46]. He said that māṭṛcās are “close to the language of the inner thinking” [Paribok, 1989, p. 47]. Among the forms of reasoning used in the QM, he notes anuloma (lit. “the hair growth”, “natural order”), pratiloma (“against the hair growth”, in an unnatural order”) and “questions bear-spears”. The structure of analogy: if A is B, then C is D. But C isn't D, therefore, A isn't B. For clarity, let's write this structure by means of classical propositional logic:

$$((A \equiv B) \supset (C \equiv D)) \wedge (C \equiv \neg D) \vdash A \equiv \neg B,$$

here A, B, C и D symbolize propositional variables, “¬” – negation, “∧” – conjunction, “⊃” – implication, “≡” – equivalence, “⊢” is a mark of a deduction.

The structure of pratiloma is: If D is not C, then A is not B. But you say that A is B. Therefore, C is D. In symbolic form: $((D \equiv \neg C) \supset (A \equiv \neg B)) \wedge (A \equiv B) \vdash C \equiv D$.

“Questions bear-spears” or questions, raising opponents “on the horns of a dilemma” (“meṇḍakā-pañhā”) put opponents in a hopeless situation: if their answer is “Yes”, then the one kind of the absurdity will follow, if their answer is “No”, then the other kind of the absurdity will follow. For example, in Chapter I question 1 is : If the Blessed one accepts the cult, it follow that he did not retired to rest, but connected with the world... he is an ordinary worldly person, and therefore, worship him is vain and fruitless. If the Blessed one retired

to rest, he is not associated with the world... and it's impossible to worship him – after all, if he retired there is no any relations between him and the world, and it's impossible to worship him, because the retired person can't accept any worship to him and cult of such person is vain and fruitless too [Paribok, 1989, p. 127]. Exploring the course of the debate in the QM, A.V. Paribok draws attention to another applicable rule of discussions, already noticeable in the Buddhist Canon: “to reduce confrontation of debating systems to one proposition” [Paribok, 1989, p. 29]. The facts that the translation QM by A.V. Paribok was the first full translation of the text into Russian and that the translator manifested their interest in the theory of the debates in QM makes this book noticeable phenomenon in the history of hetuvidyā-studies in Russia.

The next milestone of this story began with the publications of Andrei Alexandrovich Bazarov (born 1950), a scientist from the Institute of Mongolian, Buddhist and Tibetan studies, Siberian branch of RAS (Ulan-Ude). He translated from English and Tibetan into Russian and studied the section about debates of “The Entrance Gates for the wise”, the composition of the outstanding Buddhist Sakya Paṇḍita (Sa skya Paṇḍi ta kun dga' rgyal mtshan, 1182–1251) and from Tibetan – the part “Logic” of the Tibetan-Mongolian terminological dictionary of Buddhism “A Source of wise men”. The dictionary was created in 1741–1742 by two monks: Zhāng Zha hutuhta (lcang-skya ho-thog-thu) and Lobsan Danbi. In the section “Logic” of this dictionary there were systematized main categories of the 8 logical works by Dignāga and Dharmakīrti, which are the most authoritative in Tibet. Translation of the first text published in Bazarov's monograph “Institute of philosophical debate in Tibetan Buddhism” (1998), the translation of the second text was published in separate book, which was entitled with the name of the translated source (2001). In the monograph on Buddhists' dispute there are interesting not only those passages that describe the interpretation of Indian theory of discussion by Tibetan authors but the description of the practice of debate also. That practice was rooted and developed in Tibet and its descriptions are based on works of medieval and modern Tibetan authors and on the A.A. Bazarov's own field investigations. He carried out them in the regions of Russia where inhabitants profess Buddhism. The book outlines the key milestones of the formation of the Institute of philosophical debate within the monastic system of Tibet, which includes two kinds of monasteries: Universities (shadda) and the monastery for spiritual practices (dubda). Logic began to develop in the Transbaikalia's monasteries from the late eighteenth century and it was a strong tradition of

Gelukpa (dge lugs) till the 30-ies of XX century. The researcher sees the first merit of Tibetan lamas in the history of Buddhism in the creation of special Tibetan terminology on the basis of Sanskrit.⁶ Mastering in this terminology took place in the context of philosophical debates. Actually, its development, and not the establishment of objective truth, was the aim of philosophical controversies of Tibetan monks. The second achievement of lamas was the creation of textbooks, in which were recorded (but in the same time were dogmatized) the rules for the debates, lists of opponents,⁷ issues for consideration⁸ and the arguments. Among the manuals, the content of which is viewed in the monograph, there are the books of the authors of Geluk school which are included in the list of manuals for modern monks, for example, books wrote by Aghvan Tinlay Dondub (Ngag dbang 'phrin las lhun grub, 1622–1699), Jamian Shadpa (Jam dbyangs bzhad pa'i rdo rje, 1648–1722), and others.

In “The Source of wise men” the researcher sees a continuation of the traditional Buddhist activity in the construction of the classifications of basic categories, starting with the area of onto-psychology, then moving into the field of theory of consciousness, the theory of sense perception, theory of inferential knowledge and ending with the classifications of errors and elements of argumentation. He noted that within the school of philosophy, for the needs of which the Dictionary were written, there were no a fundamentally new concepts, no expansion of theoretical knowledge, but there were only the extending of traditional knowledge by detailed elaboration. A.A. Bazarov’s research found the continuation in his PhD Thesis (2004) on the theme: “The Buddhist school philosophy of Central Asia: Syncretism of logic-epistemological theory Pramāṇavāda and of practice of the normative refutation Prasaṅga”. A pivot point of the works is synthesis of epistemology (Pramāṇavāda) and theory of refutation (in the words of the author, “the doctrine of normative refutation”, Prasaṅga) in Tibet and Mongolia. This synthesis is assessed by the investigator as “a major achievement of the Tibetan and Mongolian logicians”. As the main determinants of this event are called reformist activity of Dzonhapa⁹ (rJe tsong kha pa blo bzang grags pa, 1357–1419) and his followers, the lack of opponents-non-Buddhists. With disappearance of outsider opponents

⁶ The most significant role in that process played Sakya Paṇḍita (XIII AD).

⁷ It was not allowed to discuss with eristics who didn't recognize any truthful propositions.

⁸ Standard issues for scholastic debate were: persons with their characteristics, examples, analysis of definitions and definienda.

⁹ Bazarov said that Dzonhapa moved near to version of logic as formal science.

Buddists had an opportunity to focus on solving school problems within the individual subtraditions. A.A. Bazarov refutes the thesis about the lack of development of the Buddhist teachings in Tibet and Mongolia on the basis that information which is in the school doxography and in the texts of Dzonhapa “Steps of the path” and “Exposition”, and also in the previously mentioned works “Source of wise men” and in the texts of Jamyan Shadpa I (‘Jam dbyangs bzhad pa’i rdo rje, 1648–1722), Zhāng Zha hutuhta (lcang-skya ho-thogthu, 1717–1786), Dandar lharamba (born 1758), Aghvan Dandar from Alashan (1759–1831) and other, lesser-known Tibetan writers. A.A. Bazarov found works of those authors in the storerooms of St. Petersburg and Ulan-Ude.¹⁰ In Tibet, the Buddhist philosophy is developing in line with the tendency to merge schools Yogācāra and Sautrāntika, which Tibetan theorists found mainly in “Abhidharmakośa” by Vasubandhu. In Gelug school Vasubandhu with Dharmakīrti were identified as Sautrāntikas of different directions. Though basically Tibetan scholastics followed Dignāga and Dharmakīrti, there are well visible innovations made by them in the field of Pramāṇavāda in their manuals. Particularly there the presentation of issues are dogmatized, research (or rather polemical) part of the Indian “root” treatises is excluded from them. In the manuals are demonstrated two classifications of the parts of Pramāṇavāda: in accordance with “Pramāṇavārttika” of Dharmakīrti and in accordance with 3 Tibetan genres: 1) daira (bsdus grwa) – “collection of educational issues” (theory of controversy); 2) lorig (blo rigs) – “conception of consciousness”; 3) dugrig (rtags rigs) – “theory of logic reasons”, which is named by A.A. Bazarov as “formal logic”. Next ideas were innovative too: conception of the initial semantic unity of “embryonic source of the truth” (words of the Buddha) and of two Buddhist Pramāṇas; justification of using of the Buddha’s words as authority, understanding of Prasaṅga as inference that combines a refutation and the construction of correct syllogism, and introduction of variables – khyo (khyod). They all appeared in Tibet in the XIII–XV AD.

In his works A.A. Bazarov demonstrates clearly how Indian Pramāṇavāda modified in a foreign cultural environment with its special rationality – notions of reasonableness, of validity, of truth.

Moscow Buddhologist Valery Pavlovich Androsov (born 1951) in 2000 published his translations from Sanskrit, Pali and Tibetan languages into Rus-

¹⁰ He discovered here 78 works on logic which were created as famous thinkers like Dignāga as unknown like Ratan Dharma Vati (Ratan dh’arma Iwati), Darhan Aymchi (Dar khan aemchi), Vagindra Bagu Siddhi (Lva g’indra ba tu si ddhis) and Galvabhadra sumati muti (Kalba bha dra su ma ti mu ti t’ a).

sian the most important philosophical texts of Nāgārjuna. He added to the translations a description of dialectical tricks which Nāgārjuna used during polemics with his opponents and which gained the reputation of a great disputant for him [Androsof, 2000]. Especially significant for the history of studying the Buddhist *hetuvidyā* from the number entered in this book is a treatise “Discussion about disagreements” (“*Vigrahavyāvartanī*”), including the debate on epistemological problems.

In 2002 in Moscow in the academic series “History of Western philosophy” two monographs under one cover appeared, which were dedicated to the epistemology and logic of Dignāga and Dharmakīrti and to its evolution in the VIII century: “The Problem of inferential knowledge in India and its solution in ‘*Tattvasaṃgraha*’ of Śāntarakṣita, with the commentary ‘*Pañjikā*’ of Shrī Kamalaśīla” by historian of philosophy Natalia Alexeevna Kanaeva (born 1953) and “Logical and epistemological attitudes of Dignāga and of his ideas’ successors” by historian of logic Elina Leonidovna Zabolotnykh (born 1962). Monograph of N.A. Kanaeva contains author’s translation of the Chapter “*Anumāna-parīkṣā*” (“Investigation of inference”) from famous Buddhist compendium “*Tattvasaṃgraha*” (“Collection of categories”) by Śāntarakṣita (725–788) with the comment “‘*Pañjikā*’ of his disciple Kamalaśīla¹¹ (740–795) and the research of the texts. The main aim of the work for the author became the searches for answers to the questions: what did the Buddhist *pramāṇavāda* look like a hundred years after the registration of its classical variant into “*Nyāyabindu*” of Dharmakīrti, were there any change in it or it after Dharmakīrti not developed? Continuing the traditions of the school Th.I. Stcherbatsky, N.A. Kanaeva reconstructed historical and philosophical context that defined the content and form of discussions on the issue of inference, that were unfolding in “*Anumāna-parīkṣā*” between representatives of different systems and schools of Buddhism. She also drew attention to the meanings of the questions that arise in connection with the problem of inferential knowledge for Indian philosophers themselves and compared out-of-logical (that is, ontological and epistemological) grounds of the concepts of inferential knowledge in India and in traditional syllogistic. For to make Indian and Western theories of inference comparable, she uses methods of symbolic logic those were used by J. Lukasiewicz for immersion of Aristotelian syllogistics in tradition-

¹¹ Translation was completed under guidance of famous philologist-indologist O.F. Volkova (1926–1988). It became the first translation of “*Anumāna-parīkṣā*” from Sanskrit into Russian.

al syllogistic¹² and methods of model schemes also. Symbolic interpretation for Buddhist rule of logical reason *trairūpya*-rule allowed N.A. Kanaeva not only to make comparisons between “devices” of Indian *anumāna* and Aristotelian syllogism, but also to clarify the meaning and, accordingly, the wording of the first point of *trairūpya* – *pakṣadharmatva*. In accordance with the canonical definition of *Dharmakīrti* in translation Th.I. Stcherbatsky, this rule requires the presence of the medium term in the subject of inference [Stcherbatsky 1984/I, p. 244]. For example, in the syllogism: “The is fire (s) on the mountain (p), because there is smoke (h)”, this rule requires the truth of the premise: “Smoke is on the mountain” (Aph). Logical analysis of the symbolic record of two modes “inference for the sake of other”¹³ demonstrates that *pakṣadharmatva*-rule extends not only on the cases with obligatory inherence of characteristic which is middle term of inference (h) in the minor term (p), but also with the cases where that characteristic is absent in the minor term together with major term (s). From a practice of reasoning of Buddhist logicians, obviously, it is correctly formulate the requirement of the first point of *trairūpya* next way: it is necessary to indicate the presence or absence of relations of inherence between minor and middle terms – Aph – Eph. In this formulation the rule is extremely reminiscent of the rule of medium term in the traditional syllogistic: medium term should be distributed at least in one premise (which means that it must be either fully included in the amount of one of extreme terms, or completely excluded from them). Th.I. Stcherbatsky, and many other researchers after him, who offered the interpretations of the *pakṣadharmatva*-rule equivalent to interpretation of Th.I. Stcherbatsky [see, for example: Vidyabhuṣaṇa, 1978, pp. 283, 291; Hayes, 1980, p. 230; Matilal, 1998, pp. 91–92], expounded it as a rule affirmative minor premise only. However, the syllogisms of difference in “*Nyāyabindu*” and “*Nyāyabinduṭīkā*” were formulated with negative minor premises.

¹² Lukasiwicz, 1959.

¹³ Formula for syllogism of similarity (positive modus of “inference for the sake of other”): $A h s, (p \approx p_s, A p_s h, A p_s s), A p h \vdash A p s$; Formula for syllogism of dissimilarity (negative modus of “inference for the sake of other”): $A s h, (E p_p, A p_h, A p_s), E p h \vdash E p s$, here A – universal affirmative propositions; E – universal negative propositions; p (from “pakṣa”) – subject of inference, minor term; p_s – subject of positive example; p_v – subject of negative example; s (from “sadhya”) – predicate of inference, major term; h (from “hetu”) – middle term; \vdash – symbol of logical inferability; \neg – symbol of negation; \approx – symbol of similarity relation.

The result of N.A. Kanaeva's reading of "Anumāna-parīkṣā" with its comment were also a statement about development of logic of Dignāga and Dharmakīrti by Śāntarākṣita and Kamalaśīla and the recognition, that there were trend of evolution from intentionalism to extensionality in the history of Indian logic.¹⁴ This trend manifested itself in the desire of logicians to subordinate the reasoning to strict rules, in particular to the *trairūpya*-rule which was discussed along with other rules for inferential knowledge in "Anumāna-parīkṣā".

E.L. Zabolotnyh in her monograph placed emphasis on the the formal aspects of reasoning of Indian logicians and she declared as her goal a proof of compatibility of Indian and Western logical theories. She immersed in the symbolic traditional syllogistic theory of inference of Dignāga and Dharmakīrti which contained in "Nyāyabindu" of Dharmakīrti with the commentary "Nyāyabindu-ṭīkā" by Dharmottara and in "Hetucakra" ("Wheel of reasons") by Dignāga, and then she analyzed the relations between middle and major terms in Dignagean logic. Those relations are comparing with the relation in Nyāya logic, which were described in "Nyāyavārttika" of Uddyotakara who undoubtedly followed Dignāga and Dharmakīrti, and with the relations between the terms in Aristotelian logic. Undertaken comparisons brought E.L. Zabolotnyh to the conclusion that Buddhist logicians (as Indian logicians in general) exploited methods of reasoning which were similar to the methods of Western logicians, that Buddhist logicians "applied the same rules, came to the opening of the same way of transforming the various structures" [Kanaeva, Zabolotnyh, 2002, p. 213]. In the monograph are also affected the components of non-classical logics which were used by the Indians: inductive logic, modal logic and temporal logic. The author joined those scholars who appreciated the theoretical level of Buddhist logic as very high and who believed that the study of ancient original logical traditions may in some way to promote the development of modern logic" [Kanaeva, Zabolotnyh, 2002, p. 215], although "syllogistic theory of Aristotle is more wide and rich" [Kanaeva, Zabolotnyh, 2002, p. 214].

In the beginning of twentieth century Moscow Indologist, known for her translations of the basic texts of Vaiśeṣika, Victoria Georgievna Lysenko (born 1953) paid attention on the Buddhist *hetuvidyā*. She has published a number of translations from Sanskrit into Russian of the texts of Dignāga and Dharmakīrti and several articles on the subject, then she summarized these

¹⁴Hypothesis about the existence of such trend in the history of Indian logic was expressed by G. Tucci and J. Bocheński yet.

publications in the monograph “Direct and indirect perception: a dispute between the Buddhist and Brahmanic philosophers (slow reading)”. The book includes research part and the anthology of translations of the text by Vasubandhu, Dignāga, Dharmakīrti, Vātsyāyana, Uddyotakara, Vāchaspati Miśra, Praśastapāda, Śrīdhara and Kumāriḷa Bhaṭṭa. The book was announced as the first part of a broader comparative study of Indian and Western teachings on perception. Following the tradition of the school of Th.I. Stcherbatsky, V.G. Lysenko connects “the severity of classical Oriental studies with the simplicity of popular literature” [Lysenko, 2011, p. 6]. The actualization of this topic in modern psychology, epistemology, and cognitive sciences caused her interest to the problem of perception (pratyakṣa). Especially important in this context is the question of directness or indirectness of perception, its decision allows to explain those stages of cognitive process which are before conceptualization. In India this issue was widely discussed and Buddhists played in its decision an extremely important role, and this role is widely covered in the book. V.G. Lysenko’s conclusion that the comparative development of the theme of perception will extend “the historical and philosophical horizons of analysis of this subject in Russian philosophical discourse” [Ibid] is well-founded.

After introduction for the readers to the wide range of issues that were discussed by Indian scholars-panḁitas (definition of the nature of perception, varieties of perception, its ability to give correct information (pramāṇatva), mechanisms of perception, tie of experience to language and thinking, whether perception is conscious, the question about the unity of the instrument, object and result of perception and so on), the researcher then describes position on these issues, which was held various Buddhist schools from the age of compiling abhidharmic texts till the era of mature Buddhist epistemology of Dignāga and Dharmakīrti. When she speaks of that in India the main distinctive features of perception were its clarity, brightness and spontaneity, she derives this epistemological ideal from soteriological ideal – Nirvāṇa – and justifies this conclusion by means of Buddhist interpretation of perception as clean givens, characterized by “a complete lack of categorization and verbalization (kalpanā)”. These qualities extremely remind of qualities of psychic state in the yogic meditation, in which Buddhists were “leading experts” [Lysenko 2011, p. 8]. There was not yet such a comprehensive and detailed study of Indian philosophers’ debate about the perception in Russian comparative studies, like monograph by V.G. Lysenko.

She also translated the Chapter “Research of perception” (“Pratyakṣa-parīkṣā”) from the “Tattvasaṃgraha” of Śāntarakṣita with the comment “Pañjikā” of Kamalaśīla (hereinafter–TSP)¹⁵. Translation published in the monograph on two epistemological chapters “Tattvasaṃgraha” (on the perception and on inference), which is just issued. In an accompanying article to the Chapter “Research of perception” V.G. Lysenko provides a number of interesting observations about the text. She noticed, that cognitive activity was for Buddhist philosophers a region of demonstration of the karmic impulses’ (saṃskāra, vāsanā, anuśaya, bīja), which have very important role in the formation of current and future state of the experience, and this role may be explained only in the context of the chain of rebirths, in the context of a continuum of interrelated cognitive episodes stretching from one existence to another” [Lysenko, 2014]. She also calls attention that the connection between theory of knowledge and theory of karma is very important difference of Indian epistemology from the Western epistemology, which is oriented at obtaining of objective knowledge. This knowledge does not depend on knowing subject, and especially on the rebirth of his spiritual essence or consciousness. The originality of the presentation of the philosophical ideas by Buddhists also was shown in this monograph by description of Śāntarakṣita’s and Kamalaśīla’s defence methods. V.G. Lysenko named them as “exceptions of opposite”. The method is connected with the Buddhist theory of meanings (apohvāda) and it represents not positive essence of the concepts, but the refutation of opponents critics of Buddhist doctrine, i.e. the negation of negation. An apologetic goal of the authors is detected clearly in the content of the discussions in TSP, and the main goal is “an attempt to reconcile the different positions and different opinions of the respected Buddhist thinkers, first of all, of Dignāga and Dharmakīrti” [Lysenko, 2014]. Apparently, with this purpose of reconciliation Śāntarakṣita and Kamalaśīla make corrections and additions in the classical definitions of the key epistemological terms by Dignāga and Dharmakīrti that the researcher closely follows and evaluates.

In the monograph is considered also the influence of the theoretical developments of grammatical school of Pāṇini on Buddhist epistemology, in particular, the concept of constructing activity of thinking (kalpanā). In this section, V.G. Lysenko expressed the hypothesis that distinction between the expressed word and the ability of verbalization made by Bhartṛhari was assimilated by Dharmakīrti, first in his definition of kalpanā, and that “Buddhist

¹⁵ It is the first translation of this chapter into Russian.

thinkers perceived mental sense and object meaning, contrary to widespread opinion that it was unknown to the Indian grammarians.” She compares different definitions of kalpanā and makes a number of important historical and philosophical conclusions: on a much broader understanding of the conceptual building of the Dharmakīrti than of the Dignāga, and on greater intimacy position of Kamalaśīla to the Bhartṛhari’s interpretation of kalpanā, rather than to the position of the Śāntarākṣita [Lysenko 2014]. Summing up the analysis of TSP, V.G. Lysenko says that the final clarity about the position of Śāntarākṣita in relation to understanding of the nature of knowledge doesn’t exist yet, but it is clear that he distanced himself both from “realism” of Vaibhāṣikā and from “representativizm” of Sautrāntika.

In recent decades in our country logicians demonstrate their interest to logical and epistemological components of Indian philosophical tradition, they include its interpretations in their books and articles. As examples we can indicate some publications: *Dragalina-Chernaya E.G.* Ontology for Abelard and Heloise. M.: , 2012; *Kryuchkova S.E.* The Art of argumentation and theory of debate in Buddhism // *Metaphysics of creativity / General ed. A.N. Loschilin.* Vol. 6. Moskow, 2013. S. 46–56; *Pavlov S.A.* Logic with the truth and falsity operators. Moscow: IPh RAS, 2004. This interest is very valuable and I hope that it will contribute to the creation in Russia of a new school of history of Indian logic, in which, as it is already in case of Europe and America, training in modern logic will be supplemented by training in languages of Buddhist Canon: Pali, Sanskrit, Chinese, Japanese and Tibetan.

The reviewed publications demonstrate sustainable interest of the European buddhologists to the logical-epistemological component of Buddhist philosophy. Today there is noticeable shift from narrow Buddhist studies to a broad comparisons of Buddhist teachings with those that have developed in the different philosophical traditions and at different times. In the hetuvidyā studies there were done much: they published in Tibetan, Chinese, Sanskrit (often reconstructed from the Tibetan and Chinese) and translated into many European languages the works of main theorists in this area: Dignāga, Dharmakīrti, Dharmottara, Śāntarākṣita and Kamalaśīla, Candrakīrti, etc.; they discussed the meanings of Buddhist concepts and offered different interpretations of them by means of Western philosophy and logic. The purposes of the interpretations were their authentic understanding in the context of Indian philosophy and in the context of world philosophy and the reconstruction of the objective history of hetuvidyā also.

The successes of Russian Buddhologists in this area are not as impressive. This is due to the absence of such training schools for the universal experts, well-versed in Western epistemology and logic, and who are able to work with the texts in main languages of Buddhism, which exist in many European Buddhist centers.

Abbreviation

VF – Voprosy Filosofii (journal), Moscow.

JIASBS – Journal of the International Association of Buddhist Studies, Heidelberg.

JIP – Journal of Indian Philosophy, (Dordrecht, Netherlands).

QM – The Questions of Milinda.

NB – Nyāyabindu.

NBT – Nyāyabindu-ṭīkā.

PEW – Philosophy East and West (Honolulu).

WSTBK – Wiener Studien zur Tibetologie und Buddhismuskunde. Monograph series published by the Arbeitskreis für Tibetische und Buddhistische Studien, Wien.

WZKM – Wiener Zeitschrift für die Kunde des Morgenlandes, Wien.

WZKS – Wiener Zeitschrift für die Kunde Südasiens, Wien.

WZKSO – Wiener Zeitschrift für die Kunde Süd- (Bde. 1–13: und Ost-)asiens, Wien.

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(эпистемологии и логики)
в Европе и России**

(на английском языке)

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