# Vedic ritual as medium in ancient and pre-colonial South Asia:

## its expansion and survival between orality and writing

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## 1. Introduction: ritual and other media for the transmission of the Veda.

Over the millennia, Vedic texts have been transmitted through different media:
well known is the transmission through manuscripts and the transmission in print,
and since very recently also in the form of CDs and DVDs. Although a high
antiquity is claimed and generally accepted for Vedic texts, especially for the
Ṛgveda, the available tangible textual sources, the manuscripts, are relatively
recent, none being older than the first half of the second millennium CE.[1] Since
(syllabic-alphabetic) writing itself is attested relatively late in India[2] (Aśokan
inscriptions of the third century BCE), and is adapted to Sanskrit and Vedic even
later, centuries or even millennia of *oral* textual transmission must have preceded
the currently available *tangible* textual sources. The transmission of Vedic texts
without writing over long stretches of time requires critical reflection on the
hermeneutical foundations of Vedic philology.[3]

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[1] The oldest dated manuscript in the Bhandarkar collection of Ṛgveda manuscripts recently
registered in the UNESCO program of World Heritage is from 1464 CE. See the documents
58+India+Rigveda and 58+India+Rigveda+fr accessible through www.unesco.org or
portal.unesco.org.

[2] Compared to the syllabic and near-alphabetic forms of writing that develop in the neighbouring
areas of especially Iran and Mesopotamia (cf. DANIELS & BRIGHT 1996: 33-72, 134-137, 515-
535), the syllabic-alphabetic writing systems of Kharoṣṭhi and Brāhmī appear, with the Aśokan
inscriptions in the third century BCE, relatively late in India. Cf. SALOMON 1995, 1998 ;
HOUBEN & RATH forthc.

[3] This I argued earlier in HOUBEN 2009 on the basis of a mutual analysis of (a) the text of
Ṛgveda 1.164 and (b) the ritual context which is apparently presupposed and which matches the
detailed ritual descriptions of later, mainly Yajurvedic sources. In the present article I explore

Even before Vedic texts were written down, they were transmitted through what can be considered a specially developed medium, a sophisticated form of oral transmission, to which I refer, for the sake of convenience, as pada-plus-saṃhitā recitation.[4] The tradition itself considers the pada-text, which forms a vital part of this pada-plus-saṃhitā recitation, a human invention.[5] Accordingly, there must have been a period when it was developed for the first time. On the basis of a comparative history of writing and orality in the Indo-Iranian cultural area, it is likely that the pada-version of the Ṛg-veda was developed towards the end of the 6th or the beginning of the 5th cent. BCE, when the western part of the Indian and Vedic world (Gandhāra and neighbouring areas) was confronted with the imperial use of syllabic and near-alphabetic scripts (HOUBEN forthc. b). Even independently from the geographic overlap and the similarities between the relevant written and oral modes of text transmission in 6th - 5th cent. BCE Gandhāra – which, a century later, would witness the production of Pāṇini's grammar regarded as "one of the greatest monuments of human intelligence" by Leonard BLOOMFIELD (1933:11) – we have to assume there was a time preceding the development of the oral pada-plus-saṃhitā recitation, in which the Vedic texts did not emerge out of nothing, and in which their careful transmission was required.

One medium to transmit them was necessarily there before the Vedic texts started to be transmitted in writing, even before they started to be fixed in the oral

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theoretical aspects of the same problem of Vedic text transmission over a long period without written sources.

[4]  At an early stage, a third, intermediate mode of recitation, the krama- ("step-by-step") pāṭha, came into use, next to the pada- ("word-by-word") and the saṃhitā- ("continuous") pāṭha. FALK (2001; see also 1990, 1993) proposes a relative chronology of several forms of Vedic text recitation (saṃhitā, pada, krama), but no attempt is made to link these forms with any absolute date or period. Arguments brought forward by BRONKHORST (1982, 2002) that there must have been an early written pada-text, would also suit the attested oral mode of pada-recitation (which replicates properties of writing, see below) and hence they do not necessitate the acceptance of a (non-attested) early written form of the pada-text.

[5]  This can be inferred from AA 1.1.16 *saṃbuddhau śākalyasyetāv anārṣe* as it poses a contrast between the pada-text of Śākalya and a corresponding text deriving from a seer (*ṛṣi*), apparently the corresponding saṃhitā-text. Cf. THIEME 1935: 3-5.

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medium of pada-plus-saṁhitā recitation, and that is the ritual in which the Vedic texts were being used. The introduction of new media, such as the pada-plus-saṁhitā recitation and writing, never fully ousted the ritual as a medium for the Vedic texts, although it did have definite repercussions on the ritual. The large majority of hymns of the oldest collection, the Ṛg-veda, explicitly presuppose either a specific ritual context or a general ritual context. If a specific ritual context is discernible, this may or may not correspond with the post-Ṛgvedic ritual as codified in classical texts such as the Śrauta-sūtras.

Since ritual is "always already" there in the Ṛg-veda,[6] it makes no sense to distinguish a period with, and a period without ritual. Major periods in the role of Vedic ritual as medium in the transmission of Vedic texts are rather to be demarcated through the successive association of Vedic ritual and Vedic texts with other media. This will be investigated first. Next, we will investigate the characteristics and ways of functioning of ritual, specifically Vedic ritual, as medium, as they precede and later on underly other media for the transmission of Vedic texts. On the basis of these investigations we finally draw some conclusions regarding the place of Vedic ritual as medium in pre-colonial South Asia and its expansion and survival between orality and writing.


2. Vedic ritual as medium and its association, successively, with other media


2.1 When Friedrich Max MÜLLER prepared the first printed edition of the Ṛg-veda, between 1849 and 1874, he had no direct knowledge of any ritual aspect of the Ṛg-veda, except through the commentary of Sāyaṇa. Since the aim of the editor was to remain close to the manuscripts and to exploit, in addition, all available additional grammatical and technical information about the text, it is in practice not significantly further removed from ritual than the manuscripts of the

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[6]  I take here the Ṛg-veda as the *fil conducteur* of the history of Vedic texts and rituals and of Vedic people. There are important distinctions and inner dynamisms related to different Vedic texts of the Yajurveda, Sāmaveda and Atharvaveda (cf. WITZEL 1995a, 1995b, 1997). It is not possible to analyze these further in the present article.

text. The editor made also intensive use of the pada-version to which he had similarly access through manuscripts, and of the grammatical treatise (Prātiśākhya) associated with the Ṛg-veda tradition. Thanks, especially, to the pada-version and its association with the continuous version, the textual reliability and precision achieved go far beyond what can be obtained for an ancient metrical text based exclusively on manuscripts. Since the oldest manuscripts of the Ṛg-veda go back to a time when the text was also being transmitted in ritual and in pada-plus-saṃhitā form, it does not suffice to say that Max MÜLLER's edition of the Ṛg-veda is based on manuscripts (of maximally a few centuries old): it is also based, especially, on the much older pada-version of the text. When, at a still much earlier period, the pada-plus-saṃhitā form of the Ṛg-veda was being constructed for the first time, this was done for the sake of a Ṛg-veda which was being transmitted within another medium, ritual.

2.2 From the point of view of the comparative cultural history of writing and orality (cf. studies such as W. ONG 1982, E. HAVELOCK 1957, 1963, 1986, and J. GOODY & WATT 1963, GOODY 1987, 2000), the Vedic tradition is a most exceptional phenomenon. Textual, inscriptional and script-historical evidence confirms, with "an almost mathematical certainty,"[7] that central Vedic texts were transmitted orally without the help of writing until several centuries after CE,[8] perhaps even till around the first millennium CE, when AL-BĪRŪNĪ (SACHAU 1888: 126) reports that the Ṛgveda had recently been written down for the first time by a Kashmirian brahmin, Vasukra. By that time, the oral transmission in pada-plus-saṃhitā form had been in use for more than a millennium. GOODY

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[7] As J. HALÉVY concluded, in 1884, "avec une certitude presque mathématique" (HALÉVY referred to after FALK 1993: 129), that Vedic and Sanskrit texts were not written down before Aśoka. See further discussion in FALK 1993: 119ff, 127ff, on the competing theories of G. BÜHLER and J. HALÉVY.

[8] On the basis of testimonies of early travellers to India (YÌ JÌNG, AL-BĪRŪNĪ.), we have to infer that the transmission of the Ṛg-veda through manuscripts had started very late – centuries after writing had become the major media for Buddhism, Jainism and brahmanical disciplines and philosophies – and it has always remained secondary or even marginal compared to the oral transmission of the Ṛg-veda.

and ONG were unable to fit the pada-plus-saṃhitā mode of transmission into their schemes of written and oral textual transmission. The parallel use of a word-by-word (*pada*) and a continuous (*saṃhitā*) version is indeed unique in the history of textual transmission in the world which has greatly contributed to the exactness of the transmission. Early grammarians, as we have seen, were aware of the constructed nature of the pada-version of Vedic texts, in contrast with the status of sacred text (*ārṣa*) of the continuous version of the Vedic hymns. This suggests that they originated not very long before Patañjali or, in the case of Śākalya, the reputed author of the padapāṭha of the Ṛg-veda, not long before Pāṇini (ca. 350 BCE).

2.3 Indo-european parallels suggest that the strong aversion to writing evinced in India is part of a larger pattern of similarities. The language of the Vedic people is intimately related to other languages in Asia and Europe which we now consider an Indo-European "family". Moreover, in the art of sacred poetry and in ritual and myth important and undeniable Indo-European similarities and continuities are visible as well. Given very extensive linguistic and cultural data it is reasonable to speak of communities in Asia and Europe that are culturally and linguistically related, that form a cultural and linguistic family. This is a cultural-linguistic, a "memetic" family, not a genetic family of Indo-european peoples.[9] An Indo-european aversion to writing down sacred texts even when it is used for secular purposes[10] could contribute to an explanation of the *motivation* of the

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[9]  Convergences between the "memetic" and the "genetic" family-relationships are of course possible though not necessary. The concept of race, that is, of subraces within the current human race, is in any case not supported by genetic evidence about the diversity of human populations, see, e.g., LONG J.C., KITTLES R.A. (August 2003). "Human genetic diversity and the nonexistence of biological races". *Human Biology* 75 (4): 449–71. doi:10.1353/hub.2003.0058. PMID 14655871.

[10] Considering the possibility of Indo-European thematics for philosophical reflection, the almost obsessive preoccupation with memorization in ancient India can perhaps be related to the glorification of memory as a path to knowledge by Plato, and to the intense preoccupation with memorization in ancient Greece. In PINCHARD's view, "'It should by no means surprise us ... that the evidence of a refusal of writing by members of the priestly or divinatory class in Indo-

Vedic people to cultivate orality and not to use writing for the transmission of their Vedic texts. However, it does not suffice to explain the specific and unique form developed in India for this oral transmission.

2.4 It can then hardly be an accident that the uniqueness of especially the word-by-word (*pada*) version in the transmission of the Ṛg-veda coincides with its geographic proximity to areas which have most ancient and intensive traditions of writing: Mesopotamia and Iran. As the Vedic pada-pāṭha marks the division into words and analyzes the mutual phonetic influence of these words, it does in this exactly what is to be done if speech or a continuous text is to be written down in a script that marks word boundaries and gives phonetic details of these words. This matches the conditions for those who write in syllabic or near-alphabetic scripts, such as Aramaic and old Persian cuneiform. It is well-known that the latter is near-alphabetic and that it could be deciphered in the nineteenth century because of its consistent use of a word separator. Familiarity with these scripts on the part of Vedic ritualists in, for instance, Gandhāra, was possible from the sixth and inescapable from the fifth century BCE onwards.

In the fourth century BCE, Pāṇini shows to be very well aware of the work of Śākalya. In his grammatical sūtras he refers four times explicitly to him (AA 1.1.16 [through anuvṛtti also 17-18], 6.1.127  [through anuvṛtti: 128], 8.3.19, 8.4.51), each time regarding issues that are related to the word-for-word text of the Ṛgveda and its relation with the continuous or saṁhitā te xt. Although Pāṇini's work presupposes a culture of orality and memorization, he is aware of writing (*lipi*). Two centuries later, Pāṇini's commentator Patañjali emphasizes the conscious, intellectual effort underlying the creation of word-by-word versions of

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European civilizations is so abundant, even when writing was often known and used in other contexts. Such a refusal is merely a matter of recognizing the natural impossibility of wisdom to be passed on as a book. Wisdom is what it is only as long as it establishes by itself its distance from writing." (PINCHARD 2009: 306, my transl. from french)

Vedic texts by stating that the authors of word-by-word versions should follow grammar, not vice versa.[11]

Taking all of the preceding considerations into account, the pada-pāṭha appears therefore as a competitive alternative, within Vedic oral memory culture, that replicates some of the features of writing. The development of devices for textual transmission in the two different, competing technologies of writing and orality, can be compared with the development of devices for flying, in the nineteenth and early twentieth century, in the two different, competing technologies of ballooning and aviation. One of the results of the adoption of the competitive alternative of the pada-plus-saṃhitā transmission was that Vedic culture succeeded in remaining remarkably immune for the shift to writing which was adopted by its neighbour, Avestan culture, at a much earlier date (the Sassanid archetype of ca. 400 CE[12]), even if they both shared an (Indo-european) aversion to the writing down of sacred texts.

2.5 It has been observed by Michael WITZEL (1997: 323) about the pada-version of the Ṛg-veda that it

> may look like a complete innovation. However, the extant text of the Avesta, especially of the Gāthās, is nothing but the Padapāṭha of a lost Avesta "Saṃhitā" text; and there are a few more similarities in Iranian tradition which seem to indicate an old Indo-Iranian tradition of dealing with texts.

Similarly, William MALANDRA, after a detailed comparison of the Ṛgvedic padapāṭha and padapāṭha-like features of the Avesta, observed (2002: 223): "To a

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[11]  Only if the pada-text is the work of human authors, unlike the saṃhitā which is ascribed to ancient seers, the question can be asked whether it is these creators of a pada-text who have more authority, or another group of human authors, the grammarians. The grammarians' answer is predictable: *na lakṣaṇena padakārā anuvartyāḥ / padakārair nāma lakṣaṇam anuvartyam* (MBh 2:85.4-5 on AA 3.1.109 ; also MBh 3:117.18-19 on AA 6.1.207; MBh 3:397-398 on AA 8.2.16).

[12]  HOFFMANN & NARTEN 1989.

certain extent the received text or Vulgate is analogous to the Padapāṭha of the ṚgVeda rather than to the Saṁhitā." Recently, Hartmut SCHARFE (2009: 80-83) had a closer look at the evidence and asked: How do the Vedic pada-version and the Avestan manuscripts compare in detail? First of all, the Ṛg-veda padapāṭha consistently gives words in their non-sandhi form, but the Avesta is quite inconsistent. Nominal compounds are separated in the Veda with only one separation in case of compounds with multiple members; in the Avesta a compound may be separated twice resulting into a division into three members. The Ṛg-veda padapāṭha consistently separates certain nominal endings such as -*bhis*, but the Avesta sometimes does this and often not. The ṚV padapāṭha never separates verbal endings, but the Avesta does it a few times. On the basis of these observations SCHARFE went one step further than WITZEL and MALANDRA and inferred that a sophisticated Indian tradition has given rise to an imperfect application in Iran.

It is to be noted, however, that even if we may perceive padapātha-like features in the Avesta text as transmitted, there is no indication that a pada-plus-saṁhitā mode of transmission was ever developed for the Avesta. An alternative and contextually more likely explanation is possible for what *seem* to be traces of a pada-pāṭha version of the Avesta: they must be traces of earlier attempts to write down the Avesta in a syllabic or near-alphabetic script before the supposed Sassanid archetype that is at the basis of currently available texts was created at ca. 400 CE. This would suit the awareness of very early and subsequently lost written versions of the Avesta in the early Zoroastrian tradition (R.P. KARANJIA, present volume).

2.6 As for the Vedic tradition, it is safe to assume there was a considerable period in which Vedic hymns, formulas and chants were transmitted without making use of the innovative device of the pada-plus-saṁhitā transmission. In this earlier, pre-padapāṭha period, the medium of ritual was of major or even exclusive importance.[13] When the new technique of employing a padapāṭha in the study and

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[13]   It is natural to ask : how were Vedic texts taught and learned before the padapāṭha was introduced? Indications given in Dharmaśāstras (FALK 2001) are important but have limited

drill of the Vedic texts was gradually adopted, perhaps after a few trials and perhaps first for the Ṛg-veda (by Śākalya or an unknown predecessor) and later (after Pāṇini?) for other Vedas, it must have been adopted precisely for purposes of the ritual. Moreover, when the pada-plus-saṃhitā transmission became gradually deeply rooted in Vedic culture, and when students, after having learned first their own family-Veda, could continue with more general disciplines such as grammar or astronomy, and even more when again a new medium, writing, was employed for sacred, philosophical and scientific texts, even then the medium of ritual continued to play a role. As a medium, however, it was gradually losing some of its former exclusive importance in life in favour of the media which appeared later, the padapāṭha and writing. Even in the face of these newer media, ritual did not become obsolete as it remained unbeatable in some respects, for instance because it addresses normally not one of the senses of perception (hearing or seeing) but all senses in a coordinated way and was thus able to have a more profound impact, as a total medium, than its competitors in the domain of textual transmission. In order to understand the earliest transmission of the Vedic texts when ritual had little competition, but also in order to understand their later transmission when other media had gradually been accepted, it is important to understand the characteristics and qualities of ritual as a medium, in general and as applied to the early and later Vedic tradition.


3. Millennia of early Vedic text transmission: the role of ritual as medium


3.1 Three major periods in the role of ritual as medium in the transmission of Vedic texts can be distinguished for pre-colonial South Asia on the basis of the preceding considerations. There is the period when the transmission through Vedic ritual, in a tradition that had by that time become relatively weakened, went

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value as source of information on the situation before the creation of a padapāṭha. The Vedic texts themselves give some hints which in any case confirm the absence of a padapāṭha: the text is turned into (-ī + kṛ) units of pronounciation, *akkhala*, i.e., *akṣara* 'syllables': ṚV 7.102.3 (in "frog hymn"); important sections of the ṚV are both recited and chanted, etc.

parallel with a transmission of these texts through manuscripts (in addition to a pada-plus-saṁhitā transmission). We can call this period C and we may let it start, tentatively, at around 1000 CE on the basis of the testimony of AL-BĪRŪNĪ according to whom someone within the Vedic tradition had recently written its central texts. Earlier manuscripts concern at the most only peripheral Vedic texts. Before this there was a period B in which the transmission through Vedic ritual went parallel with a pada-plus-saṁhitā transmission without making use of writing. Still earlier, there was a period A, of indeterminate length, in which the medium of transmission of Vedic texts was only ritual. This period ends at the time of the introduction and development of the pada-plus-saṁhitā transmission. Here, the context of the transmission and employment of the Vedic texts is Vedic ritual.

In order to understand the later periods of Vedic textual transmission and of Vedic ritual it would obviously be of great interest to have a better understanding of period A in which ritual is the only medium without either help or competition or distortion from other media. Unfortunately, this is the period about which we have neither written historical sources, nor attestable monuments connected with the Vedic people. On the other hand, the situation in which ritual is the only medium has a reasonable chance to be to some extent parallel with other situations of isolated communities which are not familiar with writing and where ritual is the sole or largely dominant medium. Such communities have been ethnographically studied over the last hundred and fifty years or so, and the extensive reports and observations on these communities have been at the basis of various attempts to formulate comprehensive theories. It would hardly seem feasible to confront selected ethnographic case studies in Africa or Papua New Guinea in this or the preceding century directly with whatever information we can have about the Vedic people of period A.[14] What would be possible, however, is

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[14]  Bruce LINCOLN's comparison (1981) of the religion and ecological context of Indo-Iranian pastoralists (about whom we are informed on the basis of texts) with the religionn and ecological context of pastoralist tribes in East Africa (about whom we are informed on the basis of ethnographic studies). For an evaluation of LINCOLN's comparison from an Indo-Iranian perspective, see GIGNOUX 1984.

the confrontation of one of the proposed "comprehensive" theories, itself based on a broad range of ethnographic research, with the available information on Vedic ritual where we try to filter out features of the later periods B and C. It will not be an easy enterprise, but the prospects of a better understanding of especially period A make it worth the effort.

Since rituals never occur in a vacuum but imply an interaction with the environment, there is no reason to think that it was different with rituals of the Vedic people of period A. Through the ritual associated with the Vedic texts transmitted in period A, we should then be able to link the Vedic people, and hence the Vedic texts, with the environment, that is, with tangible traces that can be localized in time and space.

Even without taking the ritual into account, the ritual Vedic texts contain occasional references to external realities such as rivers, or to events such as a war between kings. A systematic study and analysis of such references has already led to well-argued proposals for rough datations and localizations regarding ancient Vedic people. The major relevant data have been collected and critically analyzed by Michael WITZEL (1995a, 1995b, 1997). His discussion is here presupposed and forms the starting point from where we try to go forward on the basis of new, and newly analyzed, data and comparisons. With regard to WITZEL's proposals, the difficulty of deciding on chronological ranges and geographic localizations in the first and second millennium BCE on the basis of texts that started to be written down only in the second millennium CE remains. The identification of additional traces would be very welcome.


3.2 Till now, however, attempts to identify concrete traces of Vedic people during the Indus civilization (3500-1900 BCE) or after it, till the first datable references to brahmins in the edicts of Aśoka, 3rd cent. BCE, have failed. We start therefore here with (ritual) theory based on textual evidence (referring to ritual structure) in order to derive the type of traces that can be searched for. For this purpose, a suitable theory should have comprehensive or universal capacities, and it should in particular be able to do justice to peculiarities of Vedic ritual.

It is only natural to think here first of the theory of ritual proposed by Frits STAAL (1979, 1989), since his theory, which was meant to have general validity, was from the beginning based on an extensive study of Vedic ritual. In STAAL's approach, ritual is a formal, basically meaningless, structure representing competence rather than performance. With STAAL it can be said that in ritual it is the "meaninglessness of ritual" that "explains the variety of meanings attached to it" (STAAL 1989: 135) – to which it should be added that even if the relation between signifier and meaning is relatively arbitrary, it is, as in the case of language, rather tenacious (HOUBEN forthc. a).

A comprehensive theory of ritual propounded by Roy A. RAPPAPORT (1999) emphasizes, just like STAAL's theory, the formal nature of ritual activity in its basic definition. However, when the definition is elaborated, RAPPAPORT's theory does not abstract from the semantic dimension but develops an extended concept of meaning. RAPPAPORT defines "ritual" as

> the performance of more or less invariant sequences of formal acts and utterances not entirely encoded by the performers.

In remaining chapters of his work, RAPPAPORT argues that this definition "logically entails the establishment of convention, the sealing of social contract, the construction of . . . integrated conventional orders . . ., the investment of whatever it encodes with morality" as well as "the construction of time and eternity . . ." (RAPPAPORT 1999: 27).

In RAPPAPORT's theory, ritual is a medium, but a special one which is "perhaps . . . uniquely, suited to the transmission of certain messages and certain sorts of information" (RAPPAPORT 1999: 52). Ritual has the capacity to transmit messages. Two basic types are to be distinguished which can be referred to as (cf. also HOUBEN forthc. a):

(a) canonical messages, and
(b) performative messages.

In more general terms we can also speak of two major dimensions of the ritual,

(a) a canonical, and
(b) a performative dimension.

In RAPPAPORT's theory, canonical messages contribute to what in the definition was referred to as the invariant aspect of what is encoded by others than the performers. Performative messages, on the other hand, are transmitted by the performers of the ritual, both to the performers themselves and to others, to provide information on the performers' own current physical, mental, economic, and/or social status.

It is the former, the canonical messages, which represent, or point to, universal orders transcending concrete time and space. The fact that the ritual actor is taken out of his daily routine and is linked up with transcendental orders, with divine beings or distant forefathers etc., is crucial for the ritual process. Objects from daily life, a grass-seat or a bread etc., do play a role, but are used with reference to a transcendental order, for instance when a seat is prepared for the gods, or when the bread is prepared in order to be offered to a deity. The impressiveness of the transcendental orders has the capacity to inspire potential performers to invest their time and wealth, and to invest these more and more, in a ritual or in a ritual system. In classical and ancient Indian rituals, it is the dimension of canonical messages in the form of references to gods and myths inserted in prayers and formulas that has been the object of the almost exclusive interest, and the subject of continued research and analysis, of philologists, classical scholars and indologists.

But it is through their necessary capacity to transmit performative messages that rituals are interwoven in the social and political history of a country or area. Generations of kings would not have invested extensively in a ritual system if this would have transmitted canonical messages exclusively – if doing such a ritual would amount merely to a repetition of statements regarding some universal order. It becomes interesting even for a manager of issues of government and politics to invest in a ritual that transmits canonical messages, if

and only if this ritual at the same time transmits a message about the performer or participant. Indeed, the king (or priest or any other participant) in a ritual automatically and inevitably transmits messages about himself by engaging in a ritual. The simple fact of performing or not performing, or of ordering or not ordering a ritual with the help of trained priests, is a statement in itself regarding the king's relationship with religious and ritual specialists and their communities. Once the decision is made to perform or order a ritual, the king can chose to join in a modest way or with his favourite symbols of power and wealth. This will thus become a statement to himself, to his neighbouring kings and to his subjects, and that too a statement which he could never have expressed otherwise than through the medium of that ritual. The "power", "wealth", "moral and social status" of the epic hero Yudhiṣṭhira remained entirely abstract both to his own people and to his enemies until he started to express it in the form of a Vedic ritual, the Rājasūya.

It is the dimension of performative messages that links up best with a performative approach to ritual (TAMBIAH 1979, SCHECHNER 1993) but also with historical studies and with an approach to ritual as social practice (BOURDIEU 1977, BELL 1992, 1997: 76-83). Ritual studies specialists such as Richard SCHECHNER have been mainly interested in the performance dimension of ritual – as SCHECHNER wrote (1986: 360) "Ritual is performance" – and attribute only marginal significance to the canonical dimension.[15] For Vedic ritual we start to have evidence from outside the ritual texts themselves on performative messages through inscriptions from the beginning of the first millennium onwards. For period A no such source is available, although a few aspects can be derived and inferred from the hymns.

3.3 Extensive rituals are presupposed throughout the Ṛg-veda. Hence, we have to infer that even at the time of the early Ṛgveda there was a very developed

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[15] The discussion which emerged in the 1980s on the occasion of the publication of STAAL's *Agni* in 1983 (SCHECHNER 1986, 1987, STAAL 1987, 1989: 250-251) remained, not unexpectedly, undecided. The scholar who succeeded in giving due recognition both to STAAL's and to SCHECHNER's dimension within a comprehensive theory of ritual is Roy A. RAPPAPORT (1999).

canonical dimension. Apart from being a favorite object of study for indologists, what was the function of this canonical dimension from a ritual point of view? We will start with some general considerations.

The simple fact that ritual actors leave their secular or mundane life and enter into a ritual, next engage in that ritual and experience, through the force of the canonical dimension of the ritual, a "time out of time", and finally come back to their mundane life, is central to the working of a ritual. In different fashions and terms, this has been brought out by several specialists in ritual studies such as Arnold van GENNEP (1909), Maurice BLOCH (1992) and RAPPAPORT (1999).

Activities in mundane time, according to RAPPAPORT, "are guided by rational discursive thought. . . . When people are engaged in farming, trading, cooking, arranging marriages, hunting, fighting, prosecuting court cases and composing quarrels it is 'normal' for them to 'act rationally' . . ." (1999: 218). Mundane activities thus form a continuing flow of narrativity and historicity (HOUBEN 2002), and "the events which they form or to which they respond are continuously lost to an irretrievable past" (1999: 234)..

The situation is quite different in the case of ritual acts: "That which occurs in ritual's intervals is not historical but . . . timeless, and to participate in a canon is to escape from time's flow into 'what is, in fact, often regarded as the unbounded, the infinite, the limitless', the absolutely true and the immortally vital" (1999: 234). Experiencing and participating in this "time out of time" contributes to the special bonding between ritual actors which RAPPAPORT calls, following Victor TURNER, "communitas". Those involved in the ritual action of a liturgical order "do not simply communicate to each other about that order but commune with each other within it" (RAPPAPORT 1999: 220). The distinction between time within ritual and mundane time outside ritual is thus not merely a distinction in subjective experience. On account of its canonical dimension and in interaction with its performative dimension, ritual has the capacity to create nothing less than eternity as an experiential and communal reality, in contrast with the narrativity and historicity inherent in mundane life.

Parallel to the analysis of RAPPAPORT, Maurice BLOCH (1992) proposed an account of (various types of) rituals which accepts, like

RAPPAPORT, that a shift in "times" is important, from mundane to transcendent and back, but which emphasizes that this shift involves a double "violence": first a form of "violence" against the vital aspect of the participant who leaves mundane time, next, in the form of a "rebounding violence" that comes with the participants who return to the world after they have, in the central (liminal) part in the ritual, appropriated knowledge and acquired a non-mundane, spiritual status. In one of its milder forms, the "rebounding violence" consists in the consumption of food after the ritual or in the latter part of the ritual.[16] This appropriation of a new vitality after the central part of the ritual may under certain circumstances extend into aggression to neighbours and even to expansionist wars, hence Bloch's claim that this theory can explain also political violence. In these types of rituals, self-referentiality of the performer or performers is crucial. The performer concerned in this self-referentiality, however, does not remain the same throughout the ritual, but is transformed, either in a (more or less) reversible or in an irreversible way, with regard to basically two variables, (a) vitality and (b) transcendence (spirituality, knowledge). In this analysis, therefore, we can speak of a virtual causality caused by the interplay of the performance dimension and the canonical dimension of the ritual, a virtual causality that may manifest itself in the form of an increased consumptive behaviour, a changed or transformed identity, or even in the form of an expansionist war.

3.4 To what extent do these considerations apply to the Vedic ritual system? In the classical system the eligible brahmin is required to have a daily routine of a simple fire ritual, the Agnihotra, which is expanded to a new- and fullmoon sacrifice twice per month. The classical Agnihotra as currently known on the basis of texts that may not be older than period B, is to be regarded as a post-Ṛgvedic development. On the part of early Ṛgvedic priests we should nevertheless expect regular and probably daily engagements with a fire ritual. When possible, the ritualist will also perform a yearly Soma sacrifice. In its basic form this may have been similar to the classical Agniṣṭoma and related Soma

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[16] A mild form of causality is also implied in a concept which has been proposed from within the Vedic tradition itself, that of *loka-paktí*: cf. MALAMOUD 1989, 1996.

sacrifices. Although the details of the rituals of pre-classical times are not known with certainty, this much is clear, that the Vedic ritual system, even an early Ṛgvedic one, imposed on mundane or secular activities a schedule, a clear and emphatic cyclicity in connection with daily and yearly cosmic rythms of sun and moon.

In the work that is to be done by Vedic rituals, i.e., in the creation of "time out of time" and of virtual causality, the canonical dimension has a central role to play. The textual "ingredients" of Vedic rituals – the hymns and formulae to be recited, the chants to be sung – consist to a large extent of poetic praises of abstract powers or personalities, with only sporadic references to mythic "narratives", and still less to possible tangible circumstances and events. The authors of the hymns of, for instance, the ninth or Soma-book of the Ṛg-veda are usually engaged in giving a poetical description of the physical process of the preparation of the soma-drink. These hymns were intended as accompaniments to the pressing and purification of the soma-juice in the Soma-sacrifice. On account of their repeated descriptions of the same process and on account of the grammatical categories used, these hymns are largely devoid of anything that could trigger the reciter's or listener's imagination in the direction of worldly narrativity and historicity.[17]

When the participant transits from mundane to ritually created time and back to mundane time, the virtual causality generated for him depends on the

[17]  This is perfectly illustrated by the observations of Louis RENOU (1961: 3): "Au Livre IX la référence au cosmos est conditionnée par la situation rituelle; elle en est la projection; c'est dire qu'il n'y a place que pour les grands événements, non pour le détail des combats ou pour l'itihāsa légendaire. Soma y est bien appelé *vṛtrahan* en quelques passages, mais l'épithète ne déclanche aucun rappel d'exploits précis."; id. p. 7: "Au peu d'attrait pour la narration mythique et pour la spéculation s'associe, sur le plan du langage, la dominance des phrases indépendantes, la rareté relative des subordonnées, même celles de type participial; les auteurs procèdent par petites touches, multipliant l'asyndète, les qualifiants et appositions. En matière de morphologie de morphologie, le parfait est relativement rare; l'aoriste, en revanche, plus fréquente qu'ailleurs." id. p. 13: "Combien de versets du Livre IX voyons-nous commencer par décrire l'opération matérielle, ébaucher le geste de l'officiant, puis s'élancer brusquement au domaine céleste? Soit que ce domaine se conçoive hors du temps actuel ... Soit ... qu'il n'y ait auchun intervalle de temps, que le passage d'un domaine à l'autre soit insensible ... "

interplay of the performative and the canonical dimension. It depends, naturally, on the intensity of the participant's moral and substantial engagement (of his *śraddhā́*, 'putting one's heart' or 'trust') in the ritual, in other words, on the intensity of his investment in the performance dimension of the ritual. It also depends on the efficiency and force with which the canonical dimension is able to create "time out of time" or "eternity" and how it is able to impress these on the participants. Encouragements to engage fully in a ritual and to pay large sacrificial fees to the employed priests we find as early as in the Ṛgveda (where *śraddhā́*, 'putting one's heart' or 'trust', is addressed as a deity in hymn ṚV 10.151). The fee which a Vedic poet can expect depends not only on his own skill but also on the patron of the ritual in which he is engaged. The brief "praises of generosity" (*dānastuti*) which are found at the end of around forty hymns in the Ṛg-veda (GONDA 1975: 170f) have therefore a direct bearing on the performative dimension.

Apart from these references which have become part of the central canonical texts fo Vedic ritual, we have no access to the performative dimension in the oldest period, period A. For later periods we do have additional historical sources such as royal inscriptions, literary texts and documents, etc.

3.5 In addition to the intensity of personal engagement which refers to the performative dimension, the canonical dimension has its own, important contribution to make to the creation of virtual causality for the performer or participant in a Vedic ritual. In some ritual systems the canonical dimension may be minimal, but in Vedic ritual it was, as it seems, from the earliest times impressive and quite developed, so impressive that king Sudās, in the Battle of Ten Kings against a confederation of powerful enemies, was most eager to enlist the help of Vasiṣṭha, who is praised as priest (*brahman*, voc., ṚV 7.33.11) whose prayer (*bráhman*, ṚV 7.33.3) overrules those of other priests, whose functioning as appointed priest (*puróhiti*, ṚV 7.83.4) had proven to be reliable (*satyá*), who together with his people, in white cloths and with their hair in a braid (*śvítyañco ... kapardíno*), engaged himself in ritual worship (*ásapanta*, ṚV 7.83.8) at the very moment (*yátra*) that king Sudās is encircled by enemies during the Battle of

Ten Kings (*dāśarājñé*), from which he next emerges victoriously against all odds, as a ram winning from a lioness (ṚV 7.18.17).

Although rare action-oriented accounts like this one of the Battle of Ten Kings, which no doubt goes back to some historical event, do not emphasize the canonical dimension, it is visible even there. The structure of this canonical dimension is accessible in more details through a later genre of texts, the Śrauta-sūtras, that give descriptions of rituals that were in many, though not all, details similar to the one presupposed in the Ṛg-veda. It is open to formal analysis, and it is important to distinguish different organizational levels. Just as in language we distinguish, in one and the same string of (tenaciously meaningful) linguistic units, the distinct organizational levels of (a) phonemes, (b) morphemes, (c) words and (d) sentences, similarly in Vedic ritual we have to distinguish, in one and the same string of (tenaciously meaningful) ritual episodes, distinct organizational levels. Now, with regard to its possible interaction with the environment, what further distinctions need to be made within this canonical dimension of Vedic ritual?

First of all, at one extreme, there are forms of circularity, which implies that there is no interaction at all with the environment. This applies to ritual acts which refer to themselves or to ritual episodes that include themselves, cases where ritual acts are concerned with their own transmission, cases where the ritual deals not with any external aim but with the instruments that have to execute that ritual. Even in the Vedic poetry that is to be employed in the ritual, self-referentiality – that is, poetry that is occupied with the process of its own creation – is not uncommon. These circular ritual forms may be problematic from a logical point of view, but they were regarded as efficacious and were apparently much appreciated as such by the ancient authors of Vedic ritual.

There are, next to this, episodes which concern intra-ritual events such as the production, libation and consumption of the Soma-drink, and the restricted meals of the fasting sacrificer. Also the dramatic but unrealistic "buying" of the soma (CALAND & HENRY 1906) can be placed in this category. Although there is no direct interaction with the environment, these episodes often mirror, or else obliquely refer to, real events or situations of daily life.

Finally, there are ritual episodes that refer to extra-ritual events or that contain prayers for (real-life) success and well-being, for rain, cows, etc. The reference may be verbally through hymns and formulae, but also through substances and actions that belong to the extra-ritual world, for instance the offering of milk or the making of fire through a fire-drill. The collection of funds for the ritual (*sanihāra*) and the giving of sacrificial fees (*dakṣiṇā*) to the priests are also instances of a material interaction with the environment and the surrounding economy.

References to and interactions with the environment are possible within the last two of the above mentioned three components of canonical ritual. Scholars (such as J.C. HEESTERMAN 1993, Bruce LINCOLN 1981, Shereen RATNAGAR 2006, Michael WITZEL 1997) did or still do refer to the environment of the Vedic Aryans, and they are also well aware that they follow a particular mode life that suits that environment. However, the environment appears everywhere as a passive backdrop, as the inert stage where the drama of Vedic pastoral, political and ritual life unfolds. The *interaction* between the Vedic man's pastoral and ritual activities and his environment, first of all physical and economical, but also social and political, has been largely neglected.


4. Vedic ritual as medium, and ecology


4.1 The exploration of the *interaction* between the Vedic man's ritual activities and the environment, should start from an observation that is quite obvious but still sometimes overlooked: the Vedic ritual system, and texts such as the Ṛg-veda which have a central place in it, point to a non-sedentary, agro-pastoral way of life for those who established and transmitted them. This is in contrast with Hindu ritual that centres around geographically fixed places such as temples, mountains, etc. Vedic ritual, however, both in its ancient and in its classical form, presupposes, requires and promotes – is full of useful routines for – a mobile, agro-pastoral mode of life. By the same token, Vedic ritual is not suited to a heavily urbanized and agriculturally fully cultivated area.

Although it follows naturally from the preceding observations, the next question has hardly ever been asked systematically: to what type of environment would Vedic ritual in its basic structure be suitable and entirely appropriate, in what environment would it prosper? In view of its non-sedentary agro-pastoral character, a preliminary answer to this question is: Vedic ritual would suit a not yet cultivated, lightly or densely forested area. To this should be added that Vedic ritual – and those engaged in Vedic ritual – will in the course of a shorter or longer period unavoidably transform the environment which it needs to have as its starting point. If the Vedic people are able to succesfully stay – to roam, temporarily settle, and roam again – in a not yet cultivated, lightly or densely forested area, this area can be expected to gradually become either savanna and shrubland or agricultural area.

This leads to two further crucial questions: when and where was not yet cultivated, lightly or densely forested area available in the northern part of the Indian subcontinent? This question should specifically be asked for the period between ca. 1750 BCE and 250 BCE, the period after the disappearance of the Indus civilization and before the references to brahmins in Aśokan inscriptions. And: when and where was this not yet cultivated, lightly or densely forested area replaced by savanna, shrubland or agricultural land?

4.2 In the absence of detailed palaeoecological data for the relevant chronological and geographical ranges, we will make a start here with exploring a few textual sources and with examining a scenario that has been proposed earlier by GADGIL & GUHA. Let us, to begin with, have a look at a passage from Patañjali's Mahābhāṣya, the first and main commentary on the grammar of Pāṇini. Patañjali, who composed his commentary around 150 BCE gave the following description of Āryāvarta, "the land of the Āryas"[18]:

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[18]    MBh 1:475.3 and 3:174.7-8: *kaḥ punar āryāvartaḥ / prāg ādarśāt pratyak kālakavanād dakṣiṇena himavantam uttareṇa pāriyātram.* Tr. BRONKHORST 2007: 1, who discusses the passage from a slightly different perspective. The passage corresponds with BauDhS 1.2.12, cf. OLIVELLE 2000.

Which is the land of the Āryas ? It is the region to the east of where the Sarasvatī disappears (*ādarśa*), west of the Kālaka forest, south of the Himalayas, and north of the Pāriyātra mountains.

The next passage is from Manu's lawbook or the Mānava-Dharma-Śāstra. According to the editor Patrick OLIVELLE, who edited this text for the first time critically making use of over one hundred manuscripts, it can be dated to the second or third century CE (OLIVELLE 2005: 18ff), so it would represent a situation around 500 years later than the Mahābhāṣya passage. In this text we find a different, much wider characterization of Āryāvarta, namely as follows[19]:

The land between the same mountain ranges [i.e., Himalaya and Vindhya] extending from the eastern to the western sea is what the wise call "Āryāvarta" – the land of the Āryas.

The same text is also familiar with a description of a narrower area similar to the one indicated in Patañjali's Mahābhāṣya, but designates it not as Āryāvarta but as *madhyadeśa* or "Middle Region"[20]:

The land between the Himalaya and the Vindhya ranges, to the east of Vinaśana and west of Prayāga, is known as the "Middle Region."

According to Johannes BRONKHORST (2007: 2) there are reasons to believe that "Patañjali's Kālaka forest was near Manu's Prayāga" which corresponds to the city nowadays called Allahabad, "situated at the confluence of the two rivers Gaṅgā and Yamunā." These texts therefore suggest that "the land of the Āryas"

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[19]     Manu 2.22 *ā samudrāt tu vai pūrvād ā samudrāt tu paścimāt / tayor evāntaraṁ giryor āryāvartaṁ vidur budhāḥ //* Tr. BRONKHORST 2007: 2.

[20]     Manu 2.21 *himavadvindhyayor madhyaṁ yat prāg vinaśanād api / pratyag eva prayāgāc ca madhyadeśaḥ prakīrtitaḥ //* Tr. OLIVELLE.

considerably expanded in the centuries between Patañjali and the Mānava-dharma-śāstra, and that the old "land of the Āryas" is in later ages regarded as the heartland of the expanded Āryāvarta.

From these passages we can infer, with BRONKHORST, that there was a spread of brahmins and Brahmanism eastward, starting from the north-west of the Indian subcontinent (BRONKHORST 2007 : 2). This eastward spread of Brahmanism is also clear from a famous passage from another Vedic text, Śatapatha-Brāhmaṇa 1.4.1.14-17[21] :

> 14. Māthava, the Videgha, was at that time on the (river) Sarasvatī. He (Agni) thence went burning along this earth towards the east ; and Gotama Rāhūgaṇa and the Videgha Māthava followed after him as he was burning along. He burnt over (dried up) all these rivers. Now that (river), which is called Sadānīrā, flows from the northern (Himālaya) mountain : that one he did not burn over. That one the brahmins did not cross in former times, thinking, "it has not been burnt over by Agni Vaiśvānara."

> 15. Nowadays, however, there are many brahmins to the east of it. At that time it (the land east of the Sadānīra) was very uncultivated, very marshy, because it had not been tasted by Agni Vaiśvānara.

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[21]     ŚB 1.4.1.14-17 : *tárhi videghó* (\*acc) *māthavá āsa / sárasvatyāṁ sá táta evá prā́ṅ dáhan abhīyāyemām pr̥thivī́ṁ (/) táṁ gótamaś ca rāhugaṇó videgháś ca māthaváḥ paścád dáhantam ánv īyatuḥ / sá imāḥ sárvā nadī́r átidadāha / sadānīréty úttarād girér nírddhāvati táṁ haivá nátidadāha / táṁ ha sma táṁ purá brāhmaṇá ná taranty ánatidagdhāgnínā vaiśvānaréṇéti // 14 // táta etárhi / prā́cīnam bahávo brāhmaṇás tád dhā́kṣetrataram ivāsa srāvítaram ivásvaditam agnínā vaiśvānaréṇéti // 15 //*
*tád u haitárhi / kṣétrataram iva brāhmaṇá u hí nūnám enad yajñáir ásiṣvadant sápi jaghánye naidāghé sám ivaivá kopayati tāvac chūtánatidagdhā hy agnínā vaiśvānaréṇa // 16 //*
*sá hovāca / videghó* (\*accent) *māthaváḥ kvàhám bhavānī́ty úta evá te prā́cīnam bhúvanam íti hovācá sáiṣápy etárhi k osala-videhā́nāṁ maryádā te hí māthaváḥ // 17 //*

16. Nowadays, however, it is very cultivated, for the Brāhmans have caused (Agni) to taste it through sacrifices. Even in late summer that (river), as it were, rages along : so cold is it, not having been burnt over by Agni Vaiśvānara.

Māthava, the Videgha, then said (to Agni), "Where am I to abide ?" "To the east of this (river) be thy abode !" said he. Even now this (river) forms the boundary of the Kosalas and Videhas ; for these (Videhas, inhabitants of Videha) are the Māthavas (or descendants of Videgha Māthava).

On this passage, KULKE & ROTHERMUND 1998: 48f observe: "The movement east was certainly the most important one. ... There is ... a highly instructive text in the Śatapatha Brāhmaṇa ... which throws light on the extension of the late Vedic civilisation into the eastern Gangetic plains. This text reports the founding of a realm called Videha to the northeast of Patnaby a prince, Videgha-Mathava. This prince is said to have started from the river Sarasvatī in the company of the fire god, Agni-Vaiśvānara ... The events reported here are of great significance. At the time when this text was composed there was obviously still a clear recollection that the land to the east of the river Sadanira (Gandak) was originally unclean ... "

It is important to note, however, that this and the preceding passages not only point to an eastward expansion of Brahmanism, *they also point to a transformation of the land from marshy and uncultivated to cultivated*: in the earlier passage, the one from the Mahābhāṣya of the second century BCE, the Kālaka forest is an important landmark indicating the easternmost limit of "the land of the Āryas" at the confluence of the Yamunā and Gaṅgā river. The later passages point to a situation in which not only "the land of the Āryas" has significantly expanded, we also see that the Kālaka-forest as landmark is replaced by another landmark, the city Prayāga, equally situated at the confluence of the Yamunā and Gaṅgā.

4.3 I am aware of only one work offering reflections on the interaction between Vedic people and ecology, backed up by at least some textual references and some archeological research. This work was published almost twenty years ago but it has been forgotten or neglected not only by indologists but, it seems, also by the two authors themselves, who never have tried to elaborate their proposal. In 1992, Madhav GADGIL and Ramachandra GUHA proposed their scenario for the interaction between Vedic people and ecology in the first part of their book *This Fissured Land: an Ecological History of India*. Although it is an important proposal, several points in GADGIL & GUHA's 1992 scenario remain open for modification, amendment, testing and elaboration. In broad outlines their scenario can be summarized and, where it is too sketchy, interpreted as follows:

(I) After the collapse of urbanized centers (the Harappan or Indus-civilization) and their long-distance trade networks in the north-west of the Indian subcontinent, when the northern half of the Indian subcontinent from west to east was still largely forested, clans or tribes adopting "[a]n ethic of exhaustive resource use, with the [Yajña] as its cornerstone" (GADGIL & GUHA 1992: 83) found here extensive exploitable niches. The Vedic ritual system must have been in an early stage of creative development and it catalyzed the transformation of forested areas into cultivated land suitable for pastoralism and agriculture. The Vedic people's ritual and religion system had a progress-oriented character, to which GADGIL & GUHA refer with a term from population ecology: *r*-strategist character.

This refers specifically to the well-known equation of population dynamics proposed by Pierre François VERHULST in 1838. In this equation r = growth rate and K = capacity of the environment to support a population. In the light of this equation, three types of biological organisms (and, by extension, three types of sociological "organisms") can be distinguished:

(a) *r*-strategist: who strive for fast and massive reproduction (limit defined by *r*);

(b) *K*-strategist: niche-exploitation (limit defined by *K*);

(c) those having a continuous spectrum of *r*-traits and *K*-traits.

(II) Precisely thanks to the broad overall success of pastoralism and agriculture [or rather semi-nomadic agro-pastoralism, J.H.] in the transformed areas, the

population grows rapidly and the earlier favourable land-to-man and livestock-to-man ratios decrease significantly. The society and its environmental context leave little scope for expansionist *r*-strategists. Instead, society enters a phase suitable for niche-exploiting *K*-strategists. The numerically strong components of the population engaged in [by now settled, J.H.] agricultural pastoralism are in need of a new belief system that stresses careful and sustainable patterns of resource use. Buddhism and Jainism prove to be able to cater to this broadly-felt need. Brahmins as inheritors of the old *r*-strategist belief system oppose the new religions.

(III) In spite of the ethic of careful resource use of Buddhism and Jainism, the population increases and the resource crunch continuous. *Endogamous tribes become endogamous casts*.[22]

The proposed scenario is promising, but the following points are problematic.

(A) In the context of India's prehistory and early history, GADGIL & GUHA treat nomadic pastoralism and settled cultivation (the peasant mode of resource use) not as separate modes but as a single one, as they consider the former to be integrated in the latter (from society's point of view, not from the clan or tribe point of view).[23] As has been made clear in recent publications by S. RATNAGAR (e.g., 2006), the Vedic people neither represent just any form of nomadic pastoralism, nor settled agriculture, but a specific mode of semi-nomadic agro-pastoralism which is particularly expansionary and consequential for the environment. Moreover, in the northwest, the area of the ancient Harappa-civilisation, the agro-pastoralists were in an area where forest-coverage was probably already weak.

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[22]    In the present context it is not possible to explore this important point.

[23]    This is clear from several earlier passages in their work, and it is stated by them explicitly at GADGIL & GUHA 1992 : 64 : "in the Indian context nomadic pastoralism is best treated not as a separate mode but as being integrated with the peasant mode of resource use, within whose ecological zone it occupied a special niche." This could perhaps be applicable to the situation from South Asia's "second urbanization" in the Gangetic plains (from the 6th century BCE) onwards, but does not seem appropriate for the preceding millennium.

(B) The chronology of the main moments in the environmental developments in the northern part of the subcontinent remains undetermined. Textual sources (the epics) employed by GADGIL & GUHA for what is supposed to be an earlier stage in their scenario are in their present form not older, rather younger, than those representing GADGIL & GUHA's later stage (Buddhist texts). Both groups of texts refer, moreover, to areas more than thousand km apart (the Mahābhārata in the northwest, Buddhism in the east). There are, to be sure, also textual sources regarding the earlier stage which must indeed be textually older (Vedas, Brāhmaṇas, Āraṇyakas).

(C) Another problematic point in GADGIL & GUHA's account: it is too simplistic to oppose brahmins and Buddhism and Jainism as entirely distinct and separate groups, as the former are often depicted (in Buddhist and Jain texts) as converting to Buddhism and Jainism and becoming their most influential protagonists. Those who were brahminical, semi-nomadic agro-pastoralist *gṛhapati*s in earlier days, became the agriculturalist *gahapati*s of buddhist texts when the environment could no longer support extensive agro-pastoralism.

(D) In GADGIL & GUHA's account the people who live in the pastoral and unsettled agricultural mode (rather, in our understanding, those living in the agro-pastoralist mode) are basically also the ones who shift to settled agriculture, with pastoralism integrated in it and with urbanized centers for trade, etc. The language (with words such as *grā́ma*, *mahānasa*) does indeed point to a continuity of the dominant communities and their shift from (semi-) nomadism to a settled existence. However, other communities, such as those of food gatherers whose forest-habitat was slowly destroyed, must have joined in the momentum of the formation of a new population. Moreover, according to BRONKHORST's recent study of Greater Māgadha (2007) the available evidence of early religious and philosophical texts points to some form of an encounter between Brahminical groups and a population already present in the eastern Gangetic plains. The old idea of a massive, "complete" Vedic population, with priests, rulers and settlers, shoulder to shoulder, invading India from the north-west remains in any case entirely unconfirmed from our present perspective. Instead, we have tribes or clans adhering to an agro-pastoral ritual system and finding ample scope for

expansion, starting from the north-west, both ecological expansion (in the still largely forested plains of north India) and politically, as current rulers were apparently happy to invite their moral and ritual support.

4.4 In spite of these and other debatable points, the main importance of GADGIL & GUHA's account derives from the fact that, with all its uncertainties, it is open to verification from paleoecological and historical ecological research against the background of textual data and ritual practice reconstructed on the basis of these textual data. An important illustration of GADGIL & GUHA's argument derives from their analysis of a specific episode in the Mahābhārata, the burning of the Khāṇḍava forest.[24] GADGIL & GUHA seem here to be inspired by analyses proposed by Irawati KARVE (1974[25]). The famous episode of the burning of the Khāṇḍava forest can be briefly summarized as follows.

> Kṛṣṇa and Arjuna are at a picnic in the great Khāṇḍava forest
> which lies on the banks of the Yamunā, approximately where
> the city of Delhi stands today. A brahmin with a reddish beard
> approaches them and begs for alms. When he is being granted
> his desire, the brahmin reveals himself as Agni, the fire god.
> He then asks that his hunger be satiated by the burning of the
> Khāṇḍava forest, along with every creature within it. Kṛṣṇa and
> Arjuna agree to this, whereupon Agni gives them a fine chariot,
> and bows and arrows, to perform the task. The forest is set on
> fire, and Kṛṣṇa and Arjuna patrol its perimeter, driving back all
> the creatures who attempt escape. They also fight against Indra
> who, in vain, tries to extinguish the fire with his rain for the
> sake of his friend, Takṣaka, the mighty king of the snakes. With

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[24] Their account of the episode does not remain close to the Sanskrit original.

[25] GADGIL & GUHA refer to Irawati KARVE elsewhere in their book but not at this place. Nevertheless, I suspect that they are here too influenced by the original analysis of Mahābhārata characters of Irawati Karve's *Yuganta*, which appeared first in Marathi in a publication which I have not been able to obtain, and later in English (KARVE 1974).

a few exceptions, all living beings of the Khāṇḍava forest die in

the fire.

We are surprised to see here that Arjuna is directly engaged in killing living creatures, and that too apparently without any qualms – as it was his duty as Kṣatriya to comply with the request of the brahmin. Do these living creatures of the forest also include humans? While the Mahābhārata narrator mostly speaks of living creatures (e.g., *śarīriṇaḥ, prāṇinaḥ*: which could refer mainly to animals but also to human beings) that try to flee the burning forest and are driven back into it by Arjuna and Kṛṣṇa, he makes nevertheless the gods, shocked by what they are seeing in the Khāṇḍava forest, ask Indra in heaven: "Why are all these people (*mānavāḥ* !) being burned by the Fire?"[26] Moreover, the handful of creatures that in spite of everything survive the burning forest, includes the snake Aśvasena, the son of Takṣaka, and four birds, and moreover one personality with most humane characteristics, namely the architect Asura Maya, who will later on help the Pāṇḍavas by building their palace in Indraprastha. Also Takṣaka survives the event because he is not in the Khāṇḍava forest but in Kurukṣetra.[27]

Arjuna's actions here contrast remarkably with his character as it appears elsewhere in the Mahābhārata. In book six of the Mahābhārata at the beginning of the Bhagavad-gītā, Arjuna is famously depicted as being overwhelmed by emotions at the beginning of the great battle in which he foresees life-and-death fights with relatives and teachers whom he does not want to kill. After he has explained his doubts to Kṛṣṇa, the latter addresses Arjuna "who was overcome

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[26] MBh 1.217.16 *kiṁ nv ime mānavāḥ sarve dahyante kṛṣṇavartmanā*.

[27] GADGIL & GUHA (and KARVE 1974) take the term *nāga* here not in its lexical meaning of 'snake' or 'cobra' but as "food-gathering tribe"; this is clearly motivated by their theory on ecological conflict but not, as far as I know, by usage in the Mahābhārata (MW: 532-533 does mention that *nāga* are regarded as human creatures with Buddhists).

with compassion, despairing, his troubled eyes filled with tears,"[28] and starts his actual discourse known as the Lord's Song or Bhagavad-gītā.[29]

GADGIL & GUHA point to a solution, though their solution remains rather undeveloped, when they remark that (1992: 79) "Arjuna evidently wants to clear the Khāṇḍava forest to provide the land for his agricultural / pastoral clan, and to build their capital city, Indraprastha." Also in van Buitenen's interpretation and translation the episode of the burning of the Khāṇḍava forest is explained or justified as follows: "In order to found their own kingdom, the Pāṇḍavas need to clear the forest, which is done by fire in the form of the God of Fire" (van Buitenen 1973: 13). The appalling violence against numerous innocent creatures, including humans and near-humans, remains here unaddressed.

It may be impossible to make the two sections, on the burning of the Khāṇḍava forest and the Bhagavad-gītā, harmoniously fit with a consistent character-structure of Arjuna, at least not with what would be a consistent character-structure from our modern readers' point of view. However, the public for which the stories were initially intended, may not have perceived an unsurmountable contrast or conflict. It is indeed likely that for this public it was not only the immediate justification of the acts in terms of Kṛṣṇa's and Arjuna's duty to fulfil the wish of a deserving brahmin that was entirely acceptable. They must have felt that an additional justification of their deeds derived from the useful results expected from occasional forest fires caused by humans. An underlying conflict between communities with different principal modes of resource use would go a long way to explaining the acceptability of other aspects of the narration to this public, that is, to semi-nomadic pastoralists who are mostly

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[28] BhagG 2.1 *taṁ tathā kṛpayāviṣṭam   aśrupūrṇākulekṣaṇam / viṣīdantam idaṁ vākyam   uvāca madhusūdanaḥ //*

[29] In another famous passage, Mahābhārata 3.244, Arjuna's elder brother Yudhiṣṭhira is depicted as feeling "very sorry" (*suduḥkhārtaḥ*) when deer surviving the regular hunts by the brothers staying in the forest appear in his dream and ask him to move away so that the few surviving deer are left as "seed of the future" (*bījabhūtāḥ*). After waking up next dawn Yudhiṣṭhira is "filled with compassion" (*dayāpannaḥ*) towards the deer and tels his brothers to prepare to leave this forest and go to another area (cp. van Buitenen 1975: 698-699).

in indirect but sometimes also in direct competition with hunting and gathering men and animals.[30]

One more important point: if such conflicts were there on a large scale, we should expect that traces of the events hinted at in this story – tangible traces of anthropogenic fires and of sudden transitions from forested area to agricultural area – can be found in paleoecological investigations.


4.5 GADGIL & GUHA depict Vedic ritual first as ecologically causal and consequential in the period in which Vedic people (Vedic tribes and clans) were expansive *r*-strategists, and next as ecologically "outdated" in the period in which Buddhism and Jainism emerged and became dominant. For the purpose of their ecological history of India, the two authors completely lose their interest in Vedic ritual at this point.

But we do not. A detailed examination would make this article too long and is hence to be postponed to a future occasion. However, a few brief remarks can be made already now. After a period of apparent decline and restriction for Vedic ritualists under the Mauryan rulers, there is a very remarkable comeback of Vedic ritual at the state level when the brahmin general Puṣyamitra becomes king in an empire till then for several generations ruled by kings with strong Buddhist sympathies. Echos of this apparently most impressive event are found in the famous line in Patañjali's Vyākaraṇa-Mahābhāṣya (MBh 2:123.3-4): *iha puṣyamitraṁ yājayāmaḥ* "Here we are conducting a sacrifice for Puṣyamitra"; in Kālidāsa's drama Mālavikāgimitra (where Puṣyamitra's son Agnimitra is a major character); and, finally, in Buddhist sources such as the Aśokāvadhāna.

Even if the Vedic ritualists had, before the decline started, an extensive ecological niche at their disposal – probably from the area around Kurukṣetra to

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[30] Several recent examples could be cited of fast changes in perception and evaluation. Two should here suffice: in 1931 G.P.R. Hergé published the comic "Les Aventures de Tintin ... au Congo" which was redrawn in 1946. A call for a ban of the book (English version "Tintin in the Congo") on account of "racist" representations was formulated by the Commission for Racial Equality (CRE) in the U.K. in 2007 (The Telegraph, article by Martin Backford, 12 July 2007; accessed through www.telegraph.co.uk). The comic has also been criticized for its scenes of animal abuse.

the former forests of the Gangetic plains – where they could expand progressively, they had also from very early times another niche, which was not so much ecological but political. An example was given above: the help of the priest Vasiṣṭha was sought for by king Sudās. By the time of the Mauryas, the ecological niche for Vedic ritualists was already exhausted. For the political niche, however, time was not yet over, as became clear under Puṣyamitra Śuṅga. His royal horse sacrifice is the Ur-revival of Vedic ritual which gave a new lease of life to a ritual system that was ecologically already outdated but which had nevertheless still several strong points through which on the one hand individual Vedic ritualists and their families could survive; and, on the other hand, political centers could employ to their advantage the features of Vedic ritual as a unique medium. It is the Ur-revival on which future revivals depend as they take as starting point a ritual system that is already ecologically dislocated.

With the revival of Vedic ritual under Puṣyamitra in Māgadha, a long period of renewed contact, interaction, overlap and competition of Brahmanism with Buddhism and Jainism starts, in which Brahmanism goes back and forth between reverting to *r*-strategist elements and adopting characteristics of *K*-strategists. In some respects, for instance with regard to the avoidance of killing animals, Brahmanism will ultimately outdo Buddhism by adopting the strictest rules of vegetarianism and by giving not only a protected but even a sacred status to the cow. The ancient aptness of Vedic ritual to help its exponents to thrive on not yet cultivated soils had become defunct, but the equally ancient attraction which this ritual system exercised on the political elite remained or perhaps it even increased. The real creative period of Vedic texts and rituals, however, was since long over. Vaidikas, whose number had dwindled, are now engaged in conserving and transmitting their tradition and in searching and exploiting suitable niches for their survival. While earlier Vedic ritualists were semi-settled agro-pastoralists, the post-Puṣyamitra ones are to a much greater extent agricultural settlers (unless they get a function in a court or temple). The nomadic character of Vedic ritual had gradually become inappropriate to the changing circumstances, but there were other components to the by then technically quite well established system of causal Vedic ritual. The availability
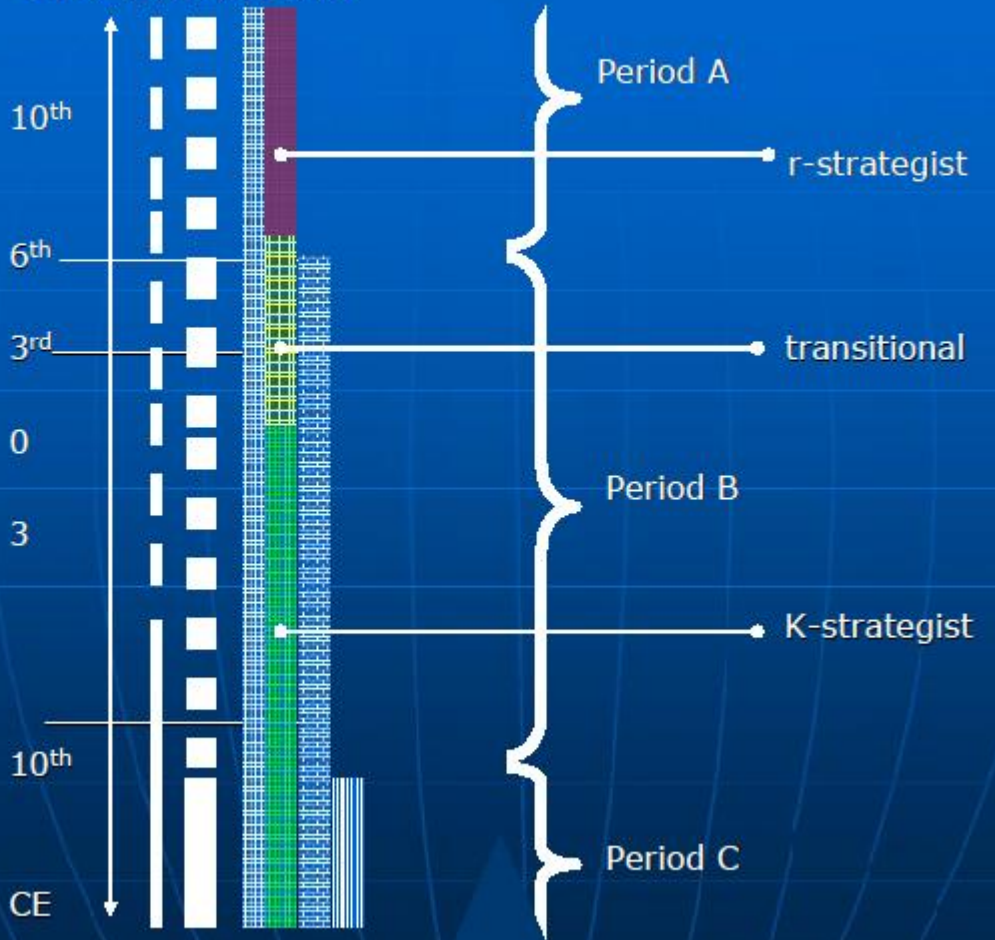
of the pada-plus-saṃhitā mode of transmission of Vedic texts made possible the revival under Puṣyamitra of an already archaic set of texts and an ecologically outdated set of solemn rituals. On the other hand, the availability of the pada-plus-saṃhitā mode increased the burden of texts – all family collections (maṇḍalas), sometimes a second, and third, and even a fourth Veda – to be learned by heart by the students, leaving at the same time no scope for the creation of new hymns according to ancient techniques.

In this post-Puṣyamitra period, Vedic ritual continues its interaction with the pada-plus-saṃhitā mode of text transmission but it also starts to interact and also to compete with new media. These include royal inscriptions and coins that commemorate an Aśvamedha, later on written versions of first secondary and next central Vedic texts.

The main parameters which we have distinguished in the preceding paragraphs regarding Vedic ritual as medium, its dynamic "*r*-strategist" or "*K*-strategist" relation with the environment (and a transitional period between the two), Vedic texts, central ones and marginal ones (thick and thin line), which are first transmitted orally (dotted line) and next in written form (solid line), the association or non-association of Vedic ritual with pada-plus-saṃhitā transmission and later with writing: these parameters and their mutual relation are can be represented as follows in a Diagram.

Diagram

## 5. Conclusion and prospects

Now around 15-20 years back, Michael WITZEL proposed a strategy and a methodology to localize Vedic civilization geographically and chronologically and get a better grip on the authors and transmitters of Vedic texts and the exponents of Vedic culture (esp. WITZEL 1987, 1989, 1995a, 1995b, 1997). Unlike WITZEL, however, we are at present not searching for traces of "the movement of Indo-Aryan spearkers into South Asia and their rise to dominance once there" (1995a: 87). At the beginning of the period in which we are interested the Indo-Aryan speakers are already in the northwest of the Indian subcontinent. In the course of subsequent centuries, Indo-Aryan speakers and Vedic ritualists spread throughout the Indian subcontinent. The processes through which this expansion took place were probably more "memetic" than "genetic" but further details of these processes are still largely unclear and require further research. WITZEL's individual judgements are therefore occasionally to be revised or updated, but the methodology is basically sound as it leads to verifiable or falsifiable statements regarding the Vedic people and their culture.

WITZEL explains this methodology in two articles (WITZEL 1995a and 1995b) that focus, respectively, on the linguistic and textual parameters of the entire body of Vedic literature and on parameters and variablies in the study of the Ṛg-veda. With regard to the Ṛg-veda, WITZEL asks attention for the following key parameters (1995b: 307-308): (a) the structure of the Ṛg-veda with its relative order of hymns divided into books; (b) relationships of various tribes and clans to the books of the Ṛg-veda; (c) the authors of the hymns as determined from internal references and from later texts (Anukramaṇī); (d) geographical features: rivers and mountains; (e) a combination of these data in a grid of places, poets and tribes; (f) a combination of this grid with a chronological grid on the basis of a few pedigrees of chiefs and poets available from the hymns. This information is again to be combined with data from linguistic investigations, cultural data on religion, ritual, material culture, local customs, etc.

The main parameters in the grids which WITZEL proposes to set up for the Ṛg-veda deal with linguistic and textual regularities, and with textual references to rivers and mountains and those to chiefs and poets. A broad chronology derives from the "collapse" of the Indus civilization (1900 BCE) and the beginning of the use of iron (1200 BCE), and a rough geography derives from the references to rivers and mountains, which points to the area of the "Greater Punjab" (currently in Pakistan and northwestern India). Everything else remains speculative as it is based on textual references which have no chance to be verified or falsified.

WITZEL's grids are therefore to be expanded or supplemented by a grid that takes other relationships into account. First of all, the texts presuppose rituals in several ways, through explicit references and otherwise, so that texts and chapters of texts can be linked with a ritual. Next, it is important to determine how the available text relates to modes of transmission such as the pada-plus-saṁhitā transmission and manuscripts, and whether the ritual presupposed in the text appears in an expansive *r*-strategist mode or in a defensive and niche-exploiting *K*-strategist mode. The ritual can then be linked up with ecological conditions. Finally, the ecological conditions presupposed in the rituals are to be matched with conditions as actually found in paleoecological investigations.

On the basis of currently available data we expect to find from such studies some movement from the Ṛg-vedic Panjab to Kurukṣetra and next towards, initially, the west and the middle of the Gangetic plain. Such movement may or may not match with other archeological data, for instance regarding the distribution of Painted Gray Ware and of Northern Black Polished Ware. It is also possible that other movements, from east to west, are perceived, for instance in connection with the spread of paddy-culture. Much research is of course already done that can be re-employed and that will be of direct or indirect and partial use with regard to this new perspective on a causal and ecologically consequential ritual presupposed in Vedic texts.

In addition, textual references may point to specific areas where paleoecological investigations may be useful. For instance, in connection with the story of the burning of the Khāṇḍava forest (south of Kurukṣetra, TĀ 5.1.1),

whether we take it as a semi-historical, as a legendary or as a mythical account, the search for traces of anthropogenic fires or of a remarkable transition from forest to cultivated soil would be called for. Similarly, more research data are needed regarding deforestation and the emergence of urbanism in the area around Allahabad (Prayag).

A better grasp of Vedic ritual as medium is thus crucial for translating the textual data into rituals and into possible tangible traces in the period for which no other historical data are at our disposal. The expansive period of Vedic ritual was precisely in the time before historical data become available. When other historical data are at our disposal, from the time of the Aśokan inscriptions onwards, and in fact a few centuries earlier, Vedic ritual has already entered into a difficult period as the environment has been transformed as a consequence of its own success. Moreover, when other historical data are available, there is an interaction, to some extent distortive, between various newer media and Vedic ritual. However, for these later periods too, the study of Vedic ritual as medium can explain and clarify remarkable features of Vedic ritual, its survival through the first one and a half millennium CE, and its marginal survival to the present day – where some aspects of its capacity as medium can still be appreciated by modern spectators and participants, who feel to be transported to a distant age when, for instance, the creation and maintenance of fire were at once crucial and awe-inspiring enterprises, when water was a lively, divine and purifying substance, when simple grass could create a comfortable seat, etc.

As it was observed by the poet of ṚV 10.130.6cd:

*páśyan manye mánasā cákṣasā tā́n   yá imáṁ yajñám áyajanta pū́rve.*

"I feel I'm seeing with my mental eye those ancients who engaged in

this ritual worship formerly."

## ABBREVIATIONS

AA[31] = Pāṇini's Aṣṭādhyāyī; (a) ed. and german translation, O. Böhtlingk 1887; (b) translation, analysis and extracts from commentaries, Ram Nath Sharma 1987-2003; (c) translation and analysis, S.D. Joshi and J.A.F. Roodbergen 1992 - ...

BauDhS = Baudhāyana-dharmasūtra. See OLIVELLE 2000.

Manu = Manu-smṛti or Mānava-dharmaśāstra. Ed. and tr. P. OLIVELLE 2005.

MBh = (Vyākaraṇa-) Mahābhāṣya of Patañjali, ed. by F. Kielhorn (vols. I-III), Bombay. 1880-85 ; Third revised edition K.V. Abhyankar, Poona, 1962-1972.  Ref. to vol. no.: page.line.

ṚV = Ṛg-veda, ed.: F.M. MÜLLER, (a) samhitā and pada texts (2 vols), 3rd reprint, Varanasi 1965.

TĀ = Taittirīya-Āraṇyaka. Ed., with commentary of Sāyaṇa, by Abhyankarshastri and G. A. Joshishastri. Poona, 1897; book 5, transl.: HOUBEN 1991.

## REFERENCES

AL-BĪRŪNĪ. See SACHAU 1888.

BELL, Catherine. 1992. *Ritual Theory, Ritual Practice.* New York: Oxford University Press.
------------. 1997. *Ritual: Perspectives and Dimensions.* New York: Oxford University Press.

BLOCH, Maurice.  1992.  *Prey into Hunter: The Politics of Religious Experience.* Cambridge: Cambridge University Press.

BLOOMFIELD, Leonard. 1933. *Language.* New York: Holt and Company.

BOURDIEU, Pierre. 1977. *Outline of a Theory of Practice.* (Transl. by Richard Nice.) Cambridge: Cambridge Univ. Press.

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[31] Current abbreviations for Pāṇini's work, P and A, are inconsistent, confusing and unsatisfactory; hence this abbreviation that evokes the derivation of Aṣṭādhyāyī as *aṣṭan+adhyāya+ṄīP*  and that is parallel to generally accepted abbreviations such as VP for the Vākyapadīya.

BRONKHORST, Johannes. 1982. "Some observations on the Padapāṭha of the Ṛgveda." *Indo-Iranian Journal* 24: 181-189.

------------. 2002. "Literacy and Rationality." *Asiatische Studien / Études Asiatiques* 56.1: 797-831.

------------. 2007. *Greater Māgadha*. Leiden: E.J. Brill.

CALAND, Willem, and Victor HENRY. 1906. *L'Agniṣṭoma : description complète de la forme normale du sacrifice de Soma dans le culte védique,* Tome premier. Paris, Ernest Leroux.

DANIELS, Peter and William BRIGHT. 1996. *The World's Writing Systems*. New York: Oxford Univ. Press.

FALK, Harry. 1990. "Goodies for India – Literacy, Orality, and Vedic Culture." In: *Erscheinungsformen kultureller Prozesse* (ed. by W. Raible): 103-120. Tübingen: Gunter Narr Verlag.

------------. 1993. *Schrift im alten Indien. Ein Forschungsbericht mit Anmerkungen.* Tübingen: Gunter Narr Verlag.

------------. 2001. "The Galitas in the Ṛgveda Padapāṭha: on the origin of the Saṁhitāpāṭha and the Padapāṭha." In: *The Pandit: Traditional Scholarship in India* (ed. Axel Michaels): 181-202. New Delhi: Manohar.

GADGIL, Madhav, and Ramachandra GUHA. 1992. *This Fissured Land : An Ecological History of India.* Delhi : Oxford University Press.

GENNEP, Arnold van. 1909. *Les Rites de passage : étude systématique des rites de la porte et du seuil, de l'hospitalité, de l'adoption, de la grossesse et de l'accouchement, de la naissance, de l'enfance, de la puberté, de l'initiation, de l'ordination, du couronnement, des fiançailles et du mariage, des funérailles, des saisons, etc.* Paris: Librairie critique Émile Nourry.

GIGNOUX, Ph. 1984. Review of LINCOLN 1981. *Revue de l'histoire des religions*, tome 201.2 : 186-188.

GONDA, Jan. 1975. *Vedic Literature.* Wiesbaden: Harrassowitz.

GOODY, Jack. 1987. *The Interface Between the Written and the Oral.* Cambridge: Cambridge University Press.

------------. 2000. *The Power of the Written Tradition.* Washington and London: Smithsonian Institution Press.

GOODY, Jack and Ian WATT. 1963. "The Consequences of Literacy." *Comparative Studies in Society and History* 5.3: 304-345.

HALÉVY, Joseph. 1884. Contribution in "sur les inscriptions du roi indien Açoka et l'origine de l'alphabet indien," N. Cust, *Sixth International Conference of Orientalists, Proceedings / Sixième Congrès International des Orientalistes, Actes / Sechster Internationaler Orientalistenkongreß, Akten*, Band I, 113-119. [Referred to after FALK 1993.]

HAVELOCK, Eric A. 1957. *The Liberal Temper in Greek Politics.* New Haven: Yale University.
------------. 1963. *Preface to Plato.* Cambridge, Mass. : Harvard University.
------------. 1986. *The Muse Learns to Write : Reflections on Orality and Literacy from Antiquity to the Present.* New Haven: Yale University Press.

HEESTERMAN, J.C. 1993. *The Broken World of Sacrifice: An Essay in Ancient Indian Ritual.* Chicago: Chicago University Press.

HOFFMANN, Karl, and Johanna NARTEN. 1989. *Der Sassanidische Archetypus: Untersuchungen zu Schreibung und Lautgestalt des Avestischen.* Wiesbaden: Dr. Ludwig Reichert Verlag.

HOUBEN, J.E.M. 1991. *The Pravargya Brāhmaṇa of the Taittirīya Āraṇyaka: An ancient commentary on the Pravargya ritual.* Delhi: Motilal Banarsidass.
------------. 2002. "The Brahmin Intellectual : History, Ritual and 'Time Out of Time'." *Journal of Indian Philosophy* 30.5: 463-479.
------------. 2009. "Transmission Sans Ecriture dans l'Inde Ancienne: Enigme et Structure Rituelle." *Ecrire et Transmettre en Inde Classique* (ed. Colas, Gérard, and Gerdi Gerschheimer): 81-105. Paris: Ecole Française d'Extrême Orient.
forthc. a. "Formal Structure and Self-referential Loops in Vedic Ritual." In: *Ritual Dynamcis and the Science of Ritual, Section I: Grammar and Morphology of Ritual* (ed. by Axel Michaels and Anand Mishra). Heidelberg.
forthc. b. "Grammaire et Transmission des Textes Indo-Iraniens entre Oralité et Ecriture."

HOUBEN, Jan E.M., and Saraju RATH. forthc. "Manuscript Culture and its impact in 'India': Contours and Parameters." In: Saraju RATH (ed.), *Aspects of Manuscript Culture in South India.* Leiden: E.J. Brill.

KARVE, Irawati. 1974. *Yuganta: the end of an epoch.* 2ⁿᵈ, rev. edition. New Delhi: Sangam Books. [1ˢᵗ ed. Poona: Deshmukh Prakashan, 1969.]

KULKE, Hermann, and Dietmar ROTHERMUND. 1998. *A History of India.* 3ʳᵈ Edition. London: Routledge.

LINCOLN, Bruce. 1981. *Priests, warriors, and cattle : a study in the ecology of religions.* Berkeley: University of California Press.

MALAMOUD, Charles. 1989. *Cuire le Monde : Rite et Pensée dans l'Inde ancienne*. Paris : Editions La Decouverte.
------------. 1996. *Cooking the World: Ritual and Thought in Ancient India.* (Transl. from the French by David White). Delhi: Oxford University Press.

MALANDRA, William. 2002. "Notes on the Avestan Grammatical Tradition." *Indian Linguistic Studies: Festschrift in Honor of George Cardona* (Madhav M. Deshpande and Peter E. Hook): 223-233. Delhi: Motilal Banarsidass.

OLIVELLE, Patrick. 2000. *Dharmasūtras: The Law Codes of Āpastamba, Gautama, Baudhāyana and Vasiṣṭha. Annotated Text and Translation*. Delhi: Motilal Banarsidass.
------------. 2005. *Manu's Code of Law. A critical edition and translation of the Mānava-Dharmasūtra.* New York: Oxford University Press.

ONG, Walter J. 1982.   *Orality and Literacy: The Technologizing of the Word.* London: Methuen.

PINCHARD, Alexis. 2009. *Les langues de sagesse dans la Grèce et l'Inde anciennes.* (Ecole Pratique des Hautes ƒEtudes, Sciences historiques et philologiques - III. Hautes Etudes du monde gréco-romain, 43.) Genève-Paris: Droz.

RAPPAPORT, Roy A. 1999. *Ritual and Religion in the Making of Humanity.* Cambridge: Cambridge University Press.

RATNAGAR, Shereen. 2006. "Agro-pastoralism and the Migrations of the Indo-Iranians." *India: Historical Beginnings and the Concept of the Aryan: Essays by Romila Thapar, Jonathan Mark Kenoyer, Madhav M. Deshpande, Shereen Ratnagar.* New Delhi: National Book Trust.

RENOU, Louis. 1961. *Etudes Védiques et Pāṇinéennes*, Tome IX. Paris: Collège de France, Institut de Civilisation Indienne.

SACHAU, Edward C. 1888. *Alberuni's India*, 2 vol., London, Trübner [Reprint of the 1914 edition: Delhi, S. Chand & Co., 1964].

SALOMON, Richard. 1995. "On the Origin of the Indian Scripts (review article)." Journal of the American Oriental Society, 115.2: 271-279.
------------. 1998. Indian Epigraphy: A Guide to the Study of Inscriptions in Sanskrit, Prakrit, and the other Indo-Aryan Languages. New York: Oxford University.

SCHARFE, Hartmut. 2009. *A New Perspective on Pāṇini*. (Reprinted from *Indologica Taurinensia*, vol. XXXV (2009).) Torino: Comitato AIT.

SCHECHNER, Richard. 1986. "Wrestling against time: the performance aspect of Agni." *Journal of Asian Studies* 45: 359-363.
———. 1987. "A 'Vedic Ritual' in Quotation Marks." *Journal of Asian Studies* 46: 108-110.
———. 1993. *The Future of Ritual: writings on culture and performance.* London: Routledge.

STAAL, Frits. 1979. "The meaninglessness of ritual." *Numen* 26.1: 1-22.
------------. 1983. *Agni: The Vedic Ritual of the Fire Altar.* Vols. I and II. Berkeley: Univ. of California Press.
------------. 1989. *Rules without Meaning: Ritual, Mantras and the Human Sciences.* New York: Peter Lang.

TAMBIAH, S.J. 1979. "A Performative Approach to Ritual." *Proceedings of the British Academy* 65: 113-169.

THIEME, Paul. 1935. *Pāṇini and the Veda: Studies in the early history of Linguistic Science in India.* Allahabad: Globe Press.

WITZEL, Michael. 1987. "On the localisation of Vedic texts and schools (Materials on Vedic śākhās, 7)." In: *India and the ancient world. History, Trade and Culture before A.D. 650. P.H.L. Eggermont Jubilee Volume* (ed. G. Pollet): 173-213. Leuven: Departement Orientalistiek.
------------. 1989. Tracing the Vedic dialects." In: *Dialectes dans les littératures indo-aryennes* (ed. by C. Caillat): 97-265. Paris: Institut de Civilisation Indienne.
------------. 1992. "Meaningful ritual: Vedic, medieval and contemporary concepts in the Nepalese Agnihotra ritual." *Ritual, State and History in South Asia. Essays in honour of J.C.*

*Heesterman* (ed. A.W. van den Hoek, D.H.A. Kolff and M.S. Oort): 774-827. Leiden: E.J. Brill.

------------. 1995a. "Early Indian history: Linguistic and textual parameters." *The Indo-Aryans of Ancient South-Asia* (ed. by G. Erdosy): 85-125. Berlin: de Gruyter.

------------. 1995b. "Ṛgvedic history: poets, chieftains and polities." *The Indo-Aryans of Ancient South-Asia* (ed. by G. Erdosy): 307-354. Berlin: de Gruyter.

------------. 1997. "The Development of the Vedic Canon and its Schools: The Social and Political Milieu." *Inside the Texts, Beyond the Texts: New Approaches to the Study of te Vedas* (ed. by M. WITZEL): v-xix. Cambridge, Mass.: Dep. of Sanskrit and Indian Studies, Harvard University.

ABSTRACT

The earliest more or less datable events in South Asia's cultural history, the death of the Buddha and the composition of Pāṇini's grammar – respectively five and four centuries before the beginning of the common era – antedate with one to two centuries the start of a slow and hesitant shift from orality to the written transmission of sacred and literary texts in South Asia. With regard to Vedic texts we have, moreover, clear indications that their transmittors avoided and  evaded their transferral to a written form for a very long time, whereas Buddhist scriptures, for instance, were transferred from purely oral to mainly written transmission much earlier. We are therefore confronted with a tradition of Vedic texts stretching over at least two to three millennia, out of which only the last few centuries show a tangible text transmission in written form, usually parallel with a gradually weakening oral and ritual tradition that to varying degrees takes occasional or even systematic support from by that time available written sources.

Since directly datable written sources are not available before kings start to record their opposition to or support of Vedic ritual in inscriptions (from king Aśoka in the third century B.C.E. onwards) and since an oral tradition that is not embedded in a very strong ritual context is extremely fluid, we have to study the properties of another medium, next to oral sources and written sources in the form of inscriptions and manuscripts, if we would like to trace the Vedic Aryans in the Indian subcontinent. This other medium is ritual.

In the present paper the focus is not so much on the messages transmitted through Vedic ritual but rather on its intrinsic properties and chronological and geographical parameters. Just as the television appeared at a certain point in the history of humanity, had to compete first with other media like print and the radio, and after a period of expansion again with other media such as the computer that restrict its niche in the domains where it had initially expanded, like that Vedic ritual appeared at a certain point in South Asian cultural history, it may have had to compete with other media and especially with other ritual systems of which we know very little, and it later on saw its niche severely restricted in domains where it had initially expanded when new media, such as the transmission of ideas through written and later printed texts, became important.

Key words:
South Asia's cultural history
datable events
the death of the Buddha
the composition of Pāṇini's grammar
ritual
orality
writing
written transmission
Vedic texts
Buddhist scriptures
king Aśoka
third century B.C.E.
Veda
Mahābhāṣya
Mahābhārata
Kurukṣetra
Khāṇḍava
Prayāga
Sarasvatī
agro-pastoralism
paleoecology
environmental changes
antropogenic fires

RESUME
Les premiers événements plus ou moins datables dans l'histoire culturelle en Asie du Sud, la mort du Bouddha et la composition de la grammaire de Panini - respectivement cinq et quatre siècles avant le début de l'ère commune - précède avec un ou deux siècles le début d'un passage lent et hésitant de l'oralité à la transmission écrite des textes sacrés et de la littérature de dans l'Asie du Sud. Quant aux textes védiques nous avons, en outre, des indications claires que leurs transmetteurs ont évité et éludé leur transfert à forme écrite pour très longtemps, alors que les écritures bouddhistes, par exemple, ont été transférés d'une forme entièrement orale à la transmission principalement écrite beaucoup plus tôt. Nous sommes donc confrontés à une tradition de textes védiques qui s'étend sur au moins deux à trois millénaires, à partir de laquelle seuls les quelques derniers siècles montrent une transmission du texte tangible sous forme écrite, le plus souvent en parallèle avec une tradition orale et avec un rituel progressivement affaibli qui prend appui occasionnellement ou même systématiquement des sources écrites disponibles.

Etant donné que des sources écrites et directement datables ne sont pas disponibles avant que des rois commencent à enregistrer leur opposition ou soutien du rituel védique dans les inscriptions (à partir du roi Aśoka, troisième

siècle avant notre ère) et étant donné qu'une tradition orale qui n'est pas intégrée dans un contexte rituel reste extrêmement fluide, nous avons à étudier les propriétés d'un autre moyen, à côté des sources orales et sources écrites sous la forme d'inscriptions et des manuscrits, si nous tenons à retracer les Aryens védiques dans le sous-continent indien. Cet autre moyen est un le rituel.

Dans le présent document l'accent n'est pas mis sur les messages transmis à travers le rituel védique, mais plutôt sur ses propriétés intrinsèques et les paramètres chronologiques et géographiques. Tout comme la télévision est apparue à un moment donné dans l'histoire de l'humanité, a dû rivaliser d'abord avec d'autres médias comme l'imprimerie et la radio, et, après une période d'expansion, à nouveau avec d'autres médias tels que l'ordinateur qui restreignent sa niche dans des domaines où elle s'avait initialement étendu, comme ça le rituel védique est apparu à un certain point dans l'histoire culturelle de l'Asie du Sud, il a sans doute dû rivaliser avec d'autres médias et en particulier avec d'autres systèmes rituels dont nous ne connaissons que très peu, et il a vu plus tard sa niche sévèrement limitée dans des domaines où il s'avait initialement étendu quand des nouveaux médias, tels que la transmission des idées à travers des textes écrits et, plus tard, imprimés, sont devenus importants.

Mots clés
histoire culturelle de l'Asie du Sud
événements datables
la mort du Bouddha
composition de la grammaire de Panini
rituel
l'oralité
écriture
transmission écrite
textes védiques
écritures bouddhistes
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feux anthropiques