



HAL
open science

The Rock Art of Upper Tibet and Ladakh: Inner Asian cultural adaptation, regional differentiation and the Western Tibetan Plateau Style

Laurianne Bruneau, John Vincent Bellezza

► **To cite this version:**

Laurianne Bruneau, John Vincent Bellezza. The Rock Art of Upper Tibet and Ladakh: Inner Asian cultural adaptation, regional differentiation and the Western Tibetan Plateau Style. *Revue d'Etudes Tibétaines*, 28 (décembre 2013), pp.5-161, 2013. halshs-00947955

HAL Id: halshs-00947955

<https://shs.hal.science/halshs-00947955>

Submitted on 18 Feb 2014

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

Revue d'Etudes Tibétaines



numéro vingt-huit— Décembre 2013

Revue d'Etudes Tibétaines

numéro vingt-huit — Décembre 2013

ISSN 1768-2959

Directeur : Jean-Luc Achard

Comité de rédaction : Anne Chayet, Jean-Luc Achard.

Comité de lecture : Ester Bianchi (Università degli Studi di Perugia), Anne Chayet (CNRS), Fabienne Jagou (EFEO), Rob Mayer (Oriental Institute, University of Oxford), Fernand Meyer (CNRS-EPHE), Françoise Pommaret (CNRS), Ramon Prats (Universitat Pompeu Fabra, Barcelona), Charles Ramble (EPHE, CNRS) Françoise Robin (INALCO), Brigitte Steinman (Université de Lille) Jean-Luc Achard (CNRS).

Périodicité

La périodicité de la *Revue d'Etudes Tibétaines* est généralement bi-annuelle, les mois de parution étant, sauf indication contraire, Octobre et Avril. Les contributions doivent parvenir au moins six (5) mois à l'avance. Les dates de proposition d'articles au comité de lecture sont Novembre pour une parution en Avril, et Mai pour une parution en Octobre.

Participation

La participation est ouverte aux membres statutaires des équipes CNRS, à leurs membres associés, aux doctorants et aux chercheurs non-affiliés.

Les articles et autres contributions sont proposées aux membres du comité de lecture et sont soumis à l'approbation des membres du comité de rédaction. Les articles et autres contributions doivent être inédits ou leur ré-édition doit être justifiée et soumise à l'approbation des membres du comité de lecture.

Les documents doivent parvenir sous la forme de fichiers Word, envoyés à l'adresse du directeur (jeanluc.achard@sfr.fr).

Comptes-rendus

Les livres proposés pour compte-rendu doivent être envoyés à la *Revue d'Etudes Tibétaines*, 22, avenue du Président Wilson, 75016 Paris.

Langues

Les langues acceptées dans la revue sont le français (en priorité), l'anglais, l'allemand, l'italien, l'espagnol, le tibétain et le chinois.

La *Revue d'Etudes Tibétaines* est publiée par l'UMR 8155 du CNRS, Paris, dirigée par Annick Horiuchi.





Revue d'Etudes Tibétaines

numéro vingt-huit — Décembre 2013

— Special issue —

The Rock Art of Upper Tibet and Ladakh

Laurianne Bruneau & John Vincent Bellezza

The Rock Art of Upper Tibet and Ladakh — Inner Asian cultural adaptation, regional differentiation and the 'Western Tibetan Plateau Style'

pp. 5-161



The Rock Art of Upper Tibet and Ladakh

Inner Asian cultural adaptation, regional differentiation and the 'Western Tibetan Plateau Style'

Laurianne Bruneau & John Vincent Bellezza

I. An introduction to the rock art of Upper Tibet and Ladakh

his paper examines common thematic and esthetic features discernable in the rock art of the western portion of the Tibetan plateau.¹ This rock art is international in scope; it includes Ladakh (La-dwags, under Indian jurisdiction), Tö (Stod) and the Changthang (Byang-thang, under Chinese administration) hereinafter called Upper Tibet. This highland rock art tradition extends between 77° and 88° east longitude, north of the Himalayan range and south of the Kunlun and Karakorum mountains. [Fig.I.1] This work sets out the relationship of this art to other regions of Inner Asia and defines what we call the 'Western Tibetan Plateau Style'.

The primary materials for this paper are petroglyphs (rock carvings) and pictographs (rock paintings). They comprise one of the most prolific archaeological resources on the Western Tibetan Plateau. Although pictographs are quite well distributed in Upper

¹ Bellezza would like to heartily thank Joseph Optiker (Burglen), the sole sponsor of the UTRAE I (2010) and 2012 rock art missions, as well as being the principal sponsor of the UTRAE II (2011) expedition. He would also like to thank David Pritzker (Oxford) and Lishu Shengyal Tenzin Gyaltzen (Gyalrong Trokyab Tshoteng Göñ) for their generous help in completing the UTRAE II. Sponsors of earlier Bellezza expeditions to survey rock art in Upper Tibet include the Shelley & Donald Rubin Foundation (New York) and the Asian Cultural Council (New York). These organizations command his deep appreciation as well. Bruneau would like to thank the École Française d'Extrême Orient (Paris), which has supported fieldwork conducted in 2006, 2007 and 2011 through grants. She would also like to thank the UMR 9993 of the CNRS, the Association Française des Femmes Diplômées d'Université (Paris) and the Project for Indian Cultural Studies (Mumbai) for their support of the 2011 survey and documentation of rock art in Ladakh. Bruneau would like to heartily thank her colleagues Martin Vernier and Quentin Devers for their hard-work and friendship during the campaigns of 2006, 2007 and 2011. Bruneau also sincerely thanks Martin Vernier for providing the Wylie of most Ladakhi place names and Olivier Venture for checking Chinese bibliographic references.

Tibet, they are relatively rare in Ladakh. Rock inscriptions are beyond the purview of this study focusing on images.

The chronology of rock art in Ladakh and Upper Tibet employed in this paper has been devised using non-chronometric methodologies. Worldwide, such methodologies are based on informed opinion and have not yet been standardized to a satisfactory degree of scientific rigor. Their selection and application varies considerably between teams of researchers. The absence of a widely agreed upon protocol for dating in rock art studies has contributed to a well-known rift among specialists, pitting those who would prefer to rely exclusively on chronometric techniques against a school that believes non-quantitative approaches are reliable for ascertaining the time period in which a particular petroglyph or pictograph was created. As the work of the latter school remains unverified using the tools of the physical sciences, its judgments concerning age must be held in question.² Nevertheless, direct methods for dating rock art, the object of research and development for the last 30 years, are still not entirely sound.³ To date, those who work in rock art are bereft of a safe, cost effective scientific arsenal, which can address questions pertaining to chronology.

The physical characteristics of carvings and paintings play an important role in estimating the age of rock art. Gauging the patination, hue and weathering states may be indicative of relative age for petroglyphs on a particular surface.⁴ Understanding the various techniques and tools used in carving is also fundamental. However, such studies are rare and there is a lack of a technical methodology for car-

² For a critical assessment of 'traditional' methods of rock art dating based on iconography, style, technique, excavation, proximity, patination, weathering, and superimposition, see Bednarik 2007, p. 116-124; Chippendale and Nash 2004, p. 3-7.

³ Among the chronometric techniques developed and tested since the 1980s are radiocarbon analysis of mineral accretions, radiocarbon analysis of inclusions in accretions, lichenometry, luminescence dating, colorimetry of 'patinae', varnish microlamination (VML), determination of cation leaching, and cosmogenic radiation nuclides testing. However, none of these techniques have proven fully reliable; for a critical assessment of them, see Bednarik 2007, 2010; Dorn 2001.

⁴ Rock varnish varies considerably over a single boulder and over a single slope. For more information, see Dorn 2007, p. 24-50, Fig. 8.2. Dorn (2001, p. 175) adds "[...] trying to assign ages to petroglyphs by the general appearance is hazardous: too many factors (other than time) influence its appearance, including the growth of different types of rock coatings that develop at different rates; varying chemistry of the same type of rock coating; underlying lithology; underlying weathering rind; water flow and water ponding; interdigitation of the different rock coatings, epilithic organisms; corrosion; surface roughness; and soil proximity."

rying them out. Physical data are most effective in assembling a chronology when combined with evidence associated with palimpsests.

Subject matter, including technologies and species of animals depicted, as well as the cultural, social, religious, and environmental nature of images may furnish important chronological information. The existence of cognate motifs, themes and styles in rock art from territories adjoining Tibet and Ladakh and further abroad can aid in chronological placement. Also, the comparison of rock art with securely dated archaeological materials is a vital instrument in arranging a chronological scheme. Potentially, the single best tool for the non-direct dating of rock art is collateral archaeological study. Unfortunately, systematic excavation in Upper Tibet and Ladakh is still in its infancy, and we have to look further afield for excavational data.

In the comparative study of rock art there are five main pictorial components that must be accounted for:

1. Motif: the identity of a figure; e.g., a yak, a swastika.
2. Composition: multiple motifs tied to one another in a coherent relationship; e.g., yak and bowman. The motifs comprising a composition are usually but not necessarily contemporaneous with one another.
3. Theme: recurring compositions that are topically or narratively interrelated; e.g., hunting scene.
4. Formal element: a distinctive and repeating trait or aspect of a motif; e.g., ball-tail, a volute.
5. Style: a combination of several formal elements of a motif or composition to produce a standard esthetic; e.g., ball-tail and triangular snout.

Employing the criteria outlined above, it is possible to assemble a relative chronology of rock art in Upper Tibet and Ladakh. Non-direct dating methodologies are best employed in broadly sketching when a particular piece of rock art may have been made.⁵ Open to amend-

⁵ For a discussion of rock art chronology in the Upper Tibetan context based on non-direct means, see Bellezza 2008, p. 162-163. On informed dating in the Central and North Asian setting, see Francfort and Jacobson 2004, p. 66-67. Francfort and Jacobson (*ibid.*) rely on eight criteria for formulating their chronology, judiciously reminding the reader that more effort is required to refine it. It is somewhat curious, then, that in the same discussion these authors hold that, "there is general agreement regarding the main chronological stages" of rock art. In principle, we cannot accept this or any other categorical endorsement of the age of rock art, not because it is necessarily inaccurate but because it remains unknowa-

ment as new sources of data become available, the attribution of dates in this paper must not be seen as prescriptive but rather as suggestive and provisional.

In cognizance with what is known about the cultural and historical development of Upper Tibet and Ladakh, the authors put forward the following broad chronological categories:

I. Neolithic (circa pre-1500 BCE). In the montane, game-rich environment of Ladakh, and especially of Upper Tibet it appears that Stone Age technologies persisted unusually late.⁶

II. Bronze Age (circa 1500-900 BCE). This period corresponds to the middle and late Bronze Age of Central Asia and the Indian Subcontinent. The *terminus a quo* given here and even the existence of a discrete Bronze Age is theoretical, as most evidence for it is derived from thematic and stylistic links with Central Asian rock art sites attributed to the Bronze Age. In geographically more extreme Upper Tibet a Bronze Age may have dawned considerably later than in Ladakh.⁷

III. Iron Age (circa 900-100 BCE). This period corresponds to the Early and developed Iron Age of Central Asia, the Indian Subcontinent, China, Persia, etc. For the Iron Age in Upper Tibet there are a number of excavated sites, however, none have yet been securely dated in Ladakh.⁸

IV. Early historic period (Ladakh) and protohistoric period (Upper Tibet) (circa 100 BCE-650 CE). In Ladakh this corresponds with the early epigraphic record (*kharosthī* and *brāhmī* rock inscriptions),⁹ and in Tibet with the pre-imperial line of Purgyal (Spu-rgyal) kings (*btsan-po*) known to us through lat-

ble in a chronometric sense. In this paper we adhere to a *modus operandi* that suggests but does not stipulate dates.

⁶ For an analysis of the introduction and usage of Metal Age technologies in Upper Tibet, see Bellezza 2008, p. 92-115. Also see Aldenderfer and Zhang Yinong 2004; Chayet 1994. On Neolithic sites in Ladakh: Ota 1993; Ganjoo and Ota 2012; Bellezza 2013g.

⁷ Tang Huisheng and Zhang Wenhua (2001, p. 258) hold that 'Bronze culture' was introduced to the Tibetan plateau circa 1000 BCE. According to others it is difficult to distinguish between Bronze and Iron Ages for the central and western parts of the Tibetan plateau. Some specialists prefer to use the term Metal Age for the period extending from the 2nd millennium BCE to the 7th century CE (cf. Chayet 1994, p. 55-56).

⁸ For excavations of Iron Age sites in western Tibet, see for example: Chinese Institute of Tibetology Sichuan University 2001a, 2001b; Li Yongxian 2011.

⁹ On these inscriptions from Ladakh: Bruneau 2011 and bibliography for primary sources.

er mythological and quasi-historical Tibetan sources. For the period 100 BCE-650 CE it is not appropriate to use the label 'early historic' for Upper Tibet, as there are no texts or inscriptions known from that period, thus the divergence in chronological terminology between the two regions used here. The cultural character of this period in Upper Tibet appears to have constituted an anachronistic extension of the Iron Age.

V. Imperial and post-imperial period (circa 650-1000 CE): the Tibetan imperial period (circa 650-850 CE) and its troubled aftermath (circa 850-1000 CE). Inscriptions and documents written in Old Tibetan appear in this period.

VI. Buddhist florescence period (circa 1000-1300 CE): the second diffusion of Buddhism (*bstan-pa phyi-dar*), the Sakya (Sakya), Kadampa (bKa'-gdams-pa) and Kagyüpa (bKa'-brgyud-pa) ascendancy periods.

II. Salient locational, thematic and stylistic features of rock art in Upper Tibet

Geographical setting

Upper Tibet is a vast expanse of some 700,000 km² that stretches from Lake Nam Tsho (Gnam-mtsho) and Nakchu (Nag-chu) in the east to the Great Western Himalaya and Karakorum in the west. This region is circumscribed by the Transhimalayan and Himalayan ranges in the south and by the Kunlun and Tangula mountains in the north. The Changthang is a tableland averaging more than 4600 m above sea level, which is partitioned into a number of major basins by a series of meridian (north-south running) ranges 6000 to 7000 m in height. Traditionally, the subsistence economy of this extremely high elevation land was mainly based on stock raising and hunting.

Distribution of rock art sites

Rock art has been documented in most districts (now counties and townships of the Tibetan Autonomous Region) of the Changthang west of Lake Nam Tsho. On its western fringe, the Changthang joins the valley systems of Tö or far western Tibet, lower elevation physiographic provinces in which agriculture has been traditionally practiced. The major districts of western Tibet are Ruthok (Ru-thog), Gar (Sgar), Guge (Gu-ge), and Purang (Spu-rang). Ruthok, in northwest-

ern Tibet, rises gradually to meet the Changthang, the divide between them being somewhat arbitrary geographically speaking. On the other hand, Guge, a badlands of deeply dissected valleys, is cut off from the Changthang by the Gar valley and two Transhimalayan ranges. The southwestern region of Tibet known as Purang is not covered in this study, as no rock art has been documented there. Likewise, rock art has not yet been discovered in Gar.

Previous studies

Over the last 25 years, the rock art of Upper Tibet has been the object of a number of studies.¹⁰ Rock art, both petroglyphs and pictographs, have been recorded at no less than 70 different sites in Upper Tibet [a site is defined as a discrete geographic unit separated by a significant distance (> 1 km) from other places with rock art]. **[Fig.II.1]**

In his landmark work, Suolang Wangdui (1994) identifies 22 rock art sites in uppermost Tibet, 11 of which are located in a single county: Ruthok. One of the authors of the present study (Bellezza) has surveyed 61 sites with rock art to date,¹¹ plus four ancient monumental sites with significant arrays of pictographs and petroglyphs in Upper Tibet.¹² Eighteen of these rock art sites were also documented

¹⁰ These include: Archaeological Team Tibet Autonomous Region CPAM 1994; Bellezza 1997a, 1997b, 1999, 2000a, 2000b, 2001, 2002a, 2002b, 2004, 2008, 2011a, 2011b; Chayet 1994; Chen Zhao Fu 1988, 1996, 2006b; Francfort *et al.* 1990, 1992; Li Yongxian 2004; Lü Hongliang 2010; Suolang Wangdui (Bsod-nams dbang-'dus) 1994; Tang Huisheng 2006; Tang Huisheng and Gao Zhiwei 2004; Tang Huisheng and Zhang Wenhua 2001; Wu Junkui and Zhang Jianlin 1987; Zhang Jianlin 1987.

¹¹ For the names and locations of 52 of these sites, see Bellezza 2008, p. 683-686 and 2011b. Subsequent to the compilation of this list, petroglyphs have been documented by Bellezza at Duruchen (Du-ru-can), Gyamrak (Gyam-rag), Gyam khampa (Gyam kham-pa) and Dzong Chung (Rdzong chung), and pictographs at Tamchok Ngangpado (Rta-mchog ngang-pa do) and Lukdo (Lug-do).

¹² Pictographs in substantial numbers are found at the ruined summit installation of Dzong Phipi (Rdzong phi-pi), the caves of Semo Do (Se-mo do) island and the rock shelters of Tara Marding (Rta-ra dmar-lding). For further details, see Bellezza 2011a. Petroglyphs dating to the imperial (650-850 CE) or post-imperial (850-1000 CE) periods are found on a rock outcrop on the south side of Ruthok Dzong Ri (Ru-thog rdzong-ri): see Bellezza 2001, p. 104. Petroglyphs have also been detected on ancient funerary pillars at Sertshok Doring (Ser-tshogs rdo-ring; Bellezza 2001, p. 160-161; 2012a); Nakhung Doring (Nag-khung rdo-ring), Yanglung Doring (G.yang-lung rdo-ring), Ngonpa Lhe Doring (Smyon-pa lhas rdo-ring), and Gyatengbur Doring West (Rgya-steng 'bur rdo-ring West): see Bellezza: 2011b. Additionally, in dozens of other caves of Upper Tibet there are painted and engraved swastikas dating to various periods.

by Suolang Wangdui (*ibid.*) and Li Yongxian (2004).¹³ The other 43 sites were first documented by Bellezza between 1995 and 2012. An estimate for the number of petroglyphs in Upper Tibet easily exceeds 10,000.

Chinese and Tibetan researchers first began studying the rock art of Upper Tibet in the 1980s. Early studies were primarily concerned with the rock art of Ruthok (a place name often Sinicized as Ritu).¹⁴ According to Chayet, the rock art of Ruthok reflects the handiwork of both native and foreign populations.¹⁵ To this preliminary assessment it is important to add that some rock art of apparently exogenous origins may have been produced by the hand of indigenous populations influenced by various cultural and social contacts. The most comprehensive exposition of Upper Tibetan rock art made by individuals of the People's Republic of China is Suolang Wangdui's book, *Art of Tibetan Rock Paintings* (1994). In addition to 236 color plates, this work contains an introduction to the chronology, esthetic characteristics

¹³ Rock art sites visited by both Suolang Wangdui and Bellezza include Thakhampa Ri (Mtha' kham-pa ri; Suolang Wangdui (SW) refers to this site as Mtha' kham-pa / Takangpa), Nawolung (Gna'-bo lung, SW: Nabulung), Chukargyam Drubphuk (Chu-dkar gyam sgrub-phug, SW: Chos-dkar byang / Qugarqiang), Rimodong (Ris-mo g'dong, SW: Ri-mo dong / Rumudong), Luring Nakha (Lu-ring sna-kha, SW: Lu-ring la-kha / Lurulangka), Dogyur Tsho (Rdo-sgyur mtsho), Tapo Yak-gong (Rta-po g.yag-gong, SW Rdo-dmar / Duoma), Kyildrum (Dkyil-sgrum, SW: Tshwa-kha'i brag / Yanhu Lake), Shaktshang (Bshag-bsangs, SW: Shar-tshang / Xiachang), Gyaling (Rgya-gling, SW: Rgya-gling ri-bo / Jialin Mountain), Namyang Phuk (Gnam-g.yang phug, SW: Lu-ma yangs / Lamuyang), Lhari Drubphuk (Lha-ri sgrub-phug, SW: Lha-mtsho lung-pa / Lachuolongba), Chedo (Lce-do, SW: Lci-do / Qiduo Hill), and Tashi Dochung and Tashi Dochen (Bkra-shis do-chung and Bkra-shis do-chen, SW: Bkra-shis gling / Tashi Islet). The four Ruthok sites surveyed by Suolang Wangdui not yet visited by Bellezza are Nganglung Lungshar (Ngang-lung lung-shar), Tsaphuk (Rtsa-phug), Lokpa Tsho (Glog-pa mtsho), and Chu-lung (Chu-lung). Sites outside Ruthok surveyed only by Suolang Wangdui include Shenchen (Shan-chan),* Ngotrari (Sngo khra-ri) and Horbuk Lung (Hor-sbug lung).

* This is the name of a township in Gertse (Sger-rtse), not a site name. Rock art sites in Guge visited by both Li Yongxian and Bellezza include Serdzong (Ser-rdzong), Sanying (Sa-snying) and Drimo Powa ('Bri-mo spo-ba).

¹⁴ These inquiries have been reviewed in Chayet's pioneering 1994 work, p. 65-69. She discusses the sites of Renmudong (Rimodong), Lurilangka (Luring Nakha) and Duoma and their contents about which she makes preliminary comments. Chayet notes that some animals represented are indigenous to the Western Tibetan Plateau whereas others might indicate the passage of foreign human groups. According to her, the outfit of some figures recalls the traditional Tibetan costume which is also that of Central Asia, north China and Yunnan. She provides a list of symbols encountered in the rock art of Ruthok. Finally Chayet comments on the chronology as proposed by Zhang Jianlin (1987), which is divided into three phases (Ruthok I, II and III) but without any precise dating.

¹⁵ *Ibid.*, p. 68.

and subject content of rock art written in three languages (Tibetan, Chinese and English) by Li Yongxian and Huo Wei. In addition to Upper Tibetan sites, Suolang Wangdui presents four rock art sites situated in other areas of the Tibet Autonomous Region (TAR).¹⁶ Nevertheless, the bulk of rock art in the TAR has been discovered in Upper Tibet.

Location of rock art sites

Of course, Upper Tibetan rock art appeared where there were boulders and other rock faces suitable for carving and painting. Many of these locations are situated near streams and lakes and appear to have served as camps and way stations. [Fig.II.2] The caves and ledges at rock art sites provided much needed shelter from the fierce climate of highland Tibet. Most lakeside rock art is situated within a few tens of meters of the water. It would appear that these narrow shorelines served as ancient thoroughfares, although some of them see little contemporary traffic. While streams run past many rock art sites, the banks of major rivers were not selected for this type of anthropogenic modification. In Upper Tibet, large river valleys tend to be particularly dry, sandy and windblown. These environmental factors may have acted to dissuade long term occupation and the esthetic manipulation of rock surfaces in the big river valleys.

In Ruthok, rock art is sometimes found on or in close proximity to funerary structures and other ancient monumental remains.¹⁷ For ex-

¹⁶ Suolang Wangdui 1994, p. 158-170. A petroglyphic site was documented by one of the present authors (Bellezza) in the Mechu (Smad-chu) of the erstwhile Tsang (Gtsang) province in 1995. Petroglyphs have also been documented in Central Tibet (Gyama / Rgya-ma) by the Tibetologist Guntram Hazod (2010). We thank Guntram Hazod for kindly making available to us a copy of his unpublished report. At the International Conference on the Prehistory of the Tibetan Plateau, Sichuan University (August 21-24, 2011), Li Yongxian announced that in recent years four petroglyphic and 20 pictographic sites have been discovered in the Jinsha river valley of southeastern Tibet, at an elevation of 1500-2900 m. A recent compilation of Tibetan rock art can be found in volume 3 of a five volume set dedicated to Chinese rock art edited by Chen Zhao Fu: Chen Zhao Fu 2006b.

¹⁷ That rock art is located in conjunction with tombs is noted by Li Yongxian and Huo Wei (in Suolang Wangdui 1994), p. 33; Chen Zhao Fu 1996, p. 130. These authors (*ibid.*) claim that the funerary structures of Upper Tibet categorically belong to the 'Early Metal Age'. Li and Huo (in Suolang Wangdui 1994) base their supposition on the resemblance of Upper Tibetan tombs to those of Mongolia, the Altai and Baikal. However, it is prudent to entertain a much broader chronological context. A typological comparison indicates that these extremely diverse funerary structures (some of these had non-burial ritual purposes) vary greatly in

ample, above the escarpment and petroglyphs of Ratrok Trang (Rwa-'brog 'phrang) there are the ruins of an all stone corbelled fortress known as Lokphuk Khar (Glog-phug mkhar).¹⁸ Some caves graced with pictographs and petroglyphs clearly functioned as residences and ritual sanctuaries. At Lake Nam Tsho and Garsol Drakphuk (Sgar-grol brag-phug) permanent occupation is evidenced in façades and other masonry structures that belong to the assemblage of archaic monuments. The presence of tombs, residences and rock art in the same locales, inasmuch as they are contemporaneous, represent interrelated aspects of the lifecycle of the ancient Upper Tibetans (specific ethno-linguistic connotations for the term 'Tibetan' are not intended for the epoch before 650 CE).

Whether it is hunters on horseback bearing down on their quarry, sword wielding duelers or majestic wild ungulates depicted in isolation, vibrancy and boldness marks out the rock art of the region. Ancient rock art was largely the province of hunters, warriors, the religiously inspired, and others who saw fit to unabashedly chronicle special cultural, social and ritual activities in stone. There are relatively few prosaic scenes in this rock art that deal with child rearing, food production, seasonal migrations, or herding. Thus rock art appears to have served a well-defined but somewhat narrow range of functions for its makers and users.

Content of rock art

The rock art of Upper Tibet can be grouped into two major divisions: figurative (representing objects and beings) and non-figurative (signs, symbols, decorative). Figurative rock art is divided into four major categories: zoomorphic, anthropomorphic, material objects, and unidentified.

function and age. Those of the steppes and Upper Tibet cannot be lumped together so readily, as if they belonged to identical cultural formations, which they do not. For a comparative typological analysis of Upper Tibetan and north Inner Asian funerary structures, see Bellezza 2008, p. 69-141. For petroglyphs on or in close proximity to tombs, see Tsame Gösa Mondur (Rtswa-med god-sa mon-dur) in Bellezza 2011b; Ratrok Tranggo Mondur (Rwa-'brog 'phrang mon-dur) and Keltra Mon dur (Skal-khra mon-dur) in Bellezza 2001, p. 154; 2008, p. 161 (Fig. 271). Likewise, in northwest Mongolia rock art is found near different types of mortuary and ritual structures (Jacobson *et al.* 2010, p. 7-8).

¹⁸ Bellezza 2001, p. 105-106.

Zoomorphs

Human occupation of Upper Tibet would have been very difficult without the yak in both its wild and domestic forms. Given the almost ubiquitous presence of the wild yak (*drong / 'brong*), it is the animal most emblematic of Upper Tibetan rock art. **[Fig.II.3]** Wild yaks make up around 40% of all zoomorphic rock art in Upper Tibet and are found at around 90% of rock art sites, reflecting its endemic status. Commonly, one or more wild yaks are depicted in magnificent isolation. Around half of wild yaks occur as part of hunting scenes, pursued either on foot or on horseback. **[Fig.II.4]** Sometimes the hunted yaks are depicted disproportionately large.¹⁹ In addition to more mundane concerns, social values are also likely to be reflected in the rock art hunting theme, with perhaps the prowess and bravery of hunters being showcased. The hunting of wild yaks is very hazardous business and could only have been carried out by the most physically fit members of society. That wild yak hunting carried many risks is demonstrated in an imperial period Dunhuang document.²⁰ It refers to the very same type of hunting (on horseback using longbows) as depicted in earlier rock art. There are very few demonstrable domestic yaks (i.e., no cargo, human riders, herders, or other domestic animals depicted) in the rock art record before the imperial period.²¹ According to current scientific opinion, yaks were first do-

¹⁹ Prey of an exaggeratedly large size is also a trait of rock art hunting compositions in north Inner Asia (Francfort 2011, p. 60), as well as various other regions around the globe.

²⁰ See Pt 1071 in Richardson 1998, p. 150-158. Tibetan textual and ethnographic traditions are applicable to the interpretation of rock art, in so much as temporal continuities with an earlier age can be proposed or established. Such methodological benchmarks do not often exist in other archaeological contexts. The Tibetan literary tradition is an extremely rich source of lore about prehistoric cultural and religious traditions. It was created in the 7th century CE and has continued unbroken to the present day. The most valuable texts for plumbing ancient culture are those written in the Old Tibetan language and composed before the 11th century CE. The literary genre characterized as non-Buddhist ritual texts (such as those discovered in Dunhuang) purports to furnish much information on prehistoric and 'primal' customs and traditions. These texts however are mythological or legendary in nature, thus it is very difficult to assess the historical veracity of what is presented. Nonetheless, Old Tibetan language texts do tell us in great detail how Tibetans of a millennium or more ago perceived their prehistoric heritage. Quasi-historical and religious tracts written in Classical Tibetan also supply many accounts about prehistoric peoples and events but these are more obscured by the dross of later exigencies and beliefs. For a comprehensive examination of Old Tibetan funerary traditions, see Bellezza 2008, 2013b.

²¹ It is reported that yak herding rock art in the Mongolian Altai dates back to the middle and late Bronze Age (Jacobson *et al.* 2006; Jacobson and Meacham 2009). However, some of the animals identified as domestic yaks being led and ridden

mesticated on the Tibetan plateau roughly 5000 years ago.²² As it does not appear that the rearing of yaks in Upper Tibet was retarded (although there is a plentiful supply of wild varieties in that region), it raises the question of why yak rearing is not a common theme there. It may be that there was no cultural proclivity among the ancient inhabitants of the Tibetan plateau to depict domestic yaks and other aspects of pastoralism in their rock art.

Deer (*shawwa* / *sha-ba*) are portrayed in rock art right across Upper Tibet. Most examples are depicted in isolation. [Fig.II.5] The two deer species native to Upper Tibet are the white-lipped (*Cervus albirostris*) and the Tibetan red deer (*Cervus elaphus wallicci*), both of which are now highly endangered in the region. Nevertheless, their prolific representation in pre-imperial era rock art suggests that the deer was once a common species. Similarly, antelope (*tsö* / *gtsod*), blue sheep (*na* / *gna'*) and argali sheep (*nyen* / *gnyan*) are well represented in the rock art of Upper Tibet. The total number of these three wild ungulates is somewhat less than the incidence of deer in petroglyphs and pictographs.

Another important wild ungulate of highland Tibet is the *kyang* (*rkyang*), the largest species of wild ass. An accurate assessment of the number of *kyang* in Upper Tibetan rock art is not very feasible because in some cases it is difficult to differentiate this animal from horses. Unlike other regions of north Inner Asia, equids are rarely depicted as the quarry of hunters.²³

Around 20 Bactrian camels are found in the rock art of Ruthok and Lake Nam Tsho.²⁴ At least some of the depicted Bactrian camels appear to be the wild variety, because they are presented as the prey of hunters. [Fig.II.6] Despite the lack of paleozoological evidence, the portrayal of Bactrian camels being shot upon by hunters with bows may indicate that this animal once lived in Upper Tibet.

Along with yaks, cervids, caprids, antelope and camels are shown in rock art as the prey of archers on foot or on horseback sometime

by anthropomorphic figures may represent other species of bovines. Other examples may represent mythological or epic scenes.

²² Rhode *et al.* 2007. Further genetic and archaeozoological study is required to confidently establish the precise period of yak domestication.

²³ The hunting of horses was a practice of steppe cultures during the Neolithic and Eneolithic. For petroglyphs depicting the horse hunt in Mongolia and Kazakhstan: Francfort 2011, p. 55-56. In Tibet to this day, there is a cultural proscription in place against eating equids, and if the Bon textual tradition is historically accurate in this regard, this proscription has been in effect since no later than the Iron Age.

²⁴ For a preliminary study of Upper Tibetan Bactrian camel rock art, see Bellezza 2012c.

accompanied by hounds.²⁵ [Fig.II.4 and 6] The sheer number of hunting scenes in upland Tibet indicates that the venatic way of life was a critical component of its culture and economy in pre-imperial times and parietal sites may have served as shelters for bands of hunters. In extremely high elevation Upper Tibet there can be no question that hunting was depicted as a central subsistence activity at least until the advent of pastoralism. With very few exceptions (none of which have rock art), the Changthang is not an agricultural region. In the historic era, hunting remained a vital economic prop that supplemented the pastoral and agrarian economy, particularly in the northern Changthang.

Aside from their vital economic functions, the yak and other animals, play a significant role in the folklore and religion of the region.²⁶ Textual and ethnographic data suggest that these traditions have profound chronological roots. For instance many of the yaks shown in Upper Tibetan rock art have belly fringes, a trait most prominent in bull yaks. [Fig.II.3] In Tibetan ritual literature and oral tradition, male yaks known as shampo (*sham-po*) and shöpo (*zhol-po*) have this distinguishing feature. It is often in these forms that divinities such as mountain gods and members of their retinue manifest.²⁷ Also, some animals in rock art may be examples of theriomorphism, but this cannot be confirmed in any objective sense.

The last category of quadrupeds of significance in the rock art record of Upper Tibet are felines. Identified by their long curling tails they seem to include tigers (identified through their stripes) and

²⁵ As regards hunting, the most common animal is the wild yak followed in frequency by the deer and then other wild ungulates such as the antelope and wild sheep. A tally of individual compositions and the various elements that make them up are still not available for Upper Tibet. The development of a computerized database for this rock art is a project pending. Thus far, 20,000 photographs of Upper Tibetan rock art from 61 sites have been collected.

²⁶ In the Central and North Asian context, hunting scenes have been most often described in terms of their economic utility. That they also may also have been invested with a ceremonial dimension has been touched upon by Francfort and Jacobson 2004, p. 68. Fiore (2007) rightfully observes that the ideological aspects of rock art cannot be separated from economic considerations, for even the production and management of pigments and carving tools, etc. may have had ideological value.

²⁷ On the religious functions of yaks in Upper Tibet, see Bellezza 2005, 2008. In Tibetan literature, deer are a crucial constituent of archaic sacrificial and funerary rites. Similarly, antelope, blue sheep and argali sheep are not just game animals, they were and still are participants in the religious life and mythology of highland Tibet. See Bellezza 2005, 2008, 2013b.

much more rarely snow leopards (identified through their spots).²⁸ [Fig.V.18 and 20] The lion is found in rock art but it is not a common motif. The other main carnivore is the wolf, with some examples being hard to differentiate from felines. Most felines and wolves are shown pursuing wild ungulates, graphic examples of the predator-prey cycle. There also appear to be several foxes in the rock art of the region (identified by its short legs and bushy tail). Finally, several bulky animals that may be brown bears are found in the rock art record.

Of great importance in the rock art of Upper Tibet are birds, especially birds of prey. They are often seen soaring, wings open, at more than half of the total rock art sites.²⁹ The birds of prey represented seem to include eagles, hawks, falcons, vultures and the mythical horned eagle (*khyung*). [Fig.V.26] Aquatic birds such as ducks and geese are also found in the rock art of the region but less commonly than birds of prey.³⁰

The animal rock art of Upper Tibet amounts to a bestiary, a common group of creatures with economic, cultural and religious value. This rock art, however, does not attempt to reproduce the region's entire faunal record.³¹

Anthropomorphic figures

In the rock art of Upper Tibet a variety of anthropomorphic figures were created. Many of these represent human beings in sundry guises but some may also depict mythological characters and divinities. However, it is extremely difficult to positively distinguish the mundane from the numinous.³²

²⁸ As with camels, despite the lack of palaeozoological evidence, the naturalistic depiction of striped felines, the adaptation of tigers to a wide range of Inner Asian biogeographical regions, and their long-term presence in Himalayan tracts situated above 4000 m strongly suggests that this species may have been endemic to western Tibet. See Bellezza 2012e.

²⁹ For treatment of birds in the cultural history of Upper Tibet, see Bellezza 1997a, p. 77-79 (n. 61); 2005, 2013b.

³⁰ Bon texts devoted to prehistoric and early historic religious events speak of adepts transforming themselves into birds to consort among the gods or into wolves to capture errant souls. On the possible cultural functions of solitary animal depictions in Upper Tibet, see Bellezza 2008, p. 171-175.

³¹ These types of observations have been made for rock art in general. See Bahn 2010, p. 42.

³² Even among hunting scenes, it is possible that certain participants represent divine ancestors or other types of heroic figures and gods, as part of narrative enunciations. For instance, a divine persona may look upon a hunting expedition

At least half of all anthropomorphs in Upper Tibet are hunters. [Fig.II.4 & 6] The weapon of choice for both hunting on foot and horseback is the bow and arrow. Other armaments are also depicted such as swords, daggers, spears, and lassos. Horsemen are sometimes portrayed holding the reins with one hand; however, details of the bridle, saddles and stirrups are not usually visible. This does not mean that this equipment was not used but rather underlines the elementary nature of much rock art. In some compositions riders are firing their bows at prey. [Fig.II.4]

In the rock art of highland Tibet, bestiovestism may also be in evidence. In some circumstances, portrayals may be of human figures wearing animal masks or other types of mythical creatures rather than examples of magical transformation. How widespread this ritual and mythic theme really was remains to be determined. In any case, bestiovestism as an ancient religious expression is well attested in Tibetan literature.³³ A winged anthropomorph painted with a black pigment (manganese oxide?) is found in Drolma Phuk (Sgrolma phug) at Tashi Dochung.³⁴ This figure has outstretched wings, a round head and a human-like body and legs. There are also what appear to be two ornitho-anthropomorphic figures in red ochre at Drakkar (Brag-dkar) and Tashi Do.³⁵ They exhibit disproportionately small heads, long thin necks, rectangular wings, and elongated bodies and legs, a style possibly reflective of considerable antiquity. Similarly, at Khyigen Gakpado (Khyi-rgan gag-pa do), on the north shore of Lake Nam Tsho, there is a bevy of gracefully executed red ochre bird-men with hourglass bodies and triangular wings.³⁶ [Fig.II.7] Figures combining avian and human characteristics are also found among the petroglyphs of Ratroktrang and Thakhampa.³⁷ A standing archer with what may be an animal head or mask can be seen at Shaksang.³⁸

at Lake Nam Tsho: Bellezza 2008, p. 177 (Fig. 316). For other rock art depictions of what might be priests, heroic figures or deities, see Bellezza 1999 (Fig. 9, 10); 2000a, p. 48 (Fig. 21, 22); 2001, p. 356 (Fig. 10.74), p. 358 (Fig. 10.78, 10.79); 2002b, p. 364 (Fig. 7), p. 394 (Fig. 59); 2008, p. 175 (Fig. 310), p. 213 (Fig. 368); Suolang Wangdui 1994, p. 54 (Fig. 12, 13), p. 83 (Fig. 62), p. 92 (Fig. 76), p. 114 (Fig. 117).

³³ See Bellezza 2001, 2005, 2008.

³⁴ Bellezza 2000a, p. 44-45.

³⁵ *Ibid.*, p. 50.

³⁶ *Ibid.* In Ladakh by contrast there are only two or three ostensible bird-men, all of which are part of one composition.

³⁷ Ratroktrang: Bellezza 2001, p. 358 (Fig. 10.78, 10.79); 2008, p. 175 (Fig. 310). Thakhampa: Suolang Wangdui 1994, p. 83 (Fig. 63).

³⁸ *Ibid.*: p. 115 (Fig. 119).

Another seminal theme manifested in Upper Tibetan rock art is anthropomorphic figures riding wild ungulates. These are particularly prominent at Kyildrum and include figures astride wild yaks, wild sheep and possibly other ungulates.³⁹ [Fig.II.8] Tibetan literature is replete with accounts of deities and pre-imperial period masters mounted on wild ungulates and other animals.⁴⁰ Furthermore, in the early historic period, portraits of Buddhist adepts and deities begin to appear in the rock art of highland Tibet, but these are uncommon, bas-relief carvings on stone slabs notwithstanding.⁴¹

Material objects

Houses, encampments, sanctums and other architectural forms are depicted in Upper Tibetan rock art, but they are not especially common. The most widely distributed architectural motif is shrines of three to five graduated platforms, which are often surmounted by a bulbous construction. Some of these shrines appear to date to the protohistoric period. In the Bon religion they are called *tenkhar* (*rten-mkhar*) or *sekhar* (*gsas-mkhar*), an architectural precursor of the well-known Buddhist *chorten* (*mchod-rten*) that appeared in the imperial period. [Fig.II.9]

Non-figurative

In this category are a variety of symbols, emblems, signs, and decorative motifs, some of which were endowed with what might be referred to as compressed or connotative meaning. The most common non-figurative compositions in Upper Tibetan rock art are swastikas, conjoined sun and moon, spoked discs, five-pointed stars, and rectilinear forms. Motifs such as the sun, crescent moon and tree can also be interpreted as symbols because it is likely that they were invested with semantic worth apart from their mere physical status. [Fig.II.10] Symbols in particular encapsulate valuable information, as a kind of shorthand for *a priori* intellectual transmissions and affective venting. The signification of symbols, as best as we can understand them, was determined by the cultural, social, political, economic and natural worlds of their makers and users. What may be painted sets of ci-

³⁹ Some of these are illustrated in Bellezza 2012d; Suolang Wangdui 1994, p. 104-106 (Fig. 98, 100, 101).

⁴⁰ See, for example, Bellezza 1997a, 2005, 2008; Nebesky-Wojkowitz 1993.

⁴¹ For Lamaist deities in rock art, see Bellezza 2001, p. 364 (Fig. 10.90); 2002a, p. 197 (Fig. XI-1a), p. 198 (Fig. XI-2a, XI-3a); 2000b (Fig. 17, 18); 2004 (Fig. 29, 35).

phers or mystic ideographs are known from several locations at Lake Nam Tsho.⁴² In the imperial period religious symbols from Bon and Buddhism make their debut in the rock art of Upper Tibet, they include thunderbolts (*dorje / rdo-rje*), flaming jewels (*norbu member / nor-bu me-'bar*), daggers (*phurpa / phur-pa*), eight auspicious symbols (*tashi dargye / bkra-shis rtags-brgyad*), vases (*bumpa / bum-pa*), etc.

By far, the most widely distributed sign in the rock art of upland Tibet is the swastika (*zungdrung / g.yung-drung*). [Fig.II.10] It is carved or painted at the overwhelming majority of sites in the region. The swastika has come to stand for a welter of disparate cultural and religious themes in Tibet. It is a cosmogonic, solar, good fortune, long-life, magic, doctrinal, and ritualistic representation. Tibetan textual sources aver that the swastika is of great antiquity.⁴³ In prehistoric and protohistoric rock art swastikas are oriented in both directions. From the imperial period onwards, the counterclockwise swastika became emblematic of Bon and the clockwise variety a Buddhist symbol.

III. Salient locational, thematic and stylistic features of rock art in Ladakh

Geographical setting

Ladakh is the largest tract (approximately 60 000 km²) in the state of Jammu and Kashmir (Republic of India). It stretches from the Zoji pass (3528 m) in the west to Pangong lake (Spang-gong mtsho) in the east (4350 m). The region is circumscribed by the Great Western Himalayan range in the south and the Saser subrange of the eastern Karakoram in the north. Originating north of Mount Kailash (Ti-se), the Indus river runs west through a corridor between the Zaskar (Zangs-dkar) and Ladakh ranges and onto the northern areas of Pakistan (Gilgit-Baltistan province). Several tributaries flow into the upper Indus, the most important being the Zaskar river which gives its name to the southernmost portion of Ladakh. The northern area of Ladakh is comprised of the Nubra (Ldum-ra) and Shyok (Wylie unknown) valleys whose rivers join the Indus further downstream in Baltistan (Sbal-ti). The average altitude of the valleys of Ladakh is

⁴² Bellezza 1997b.

⁴³ For a synopsis of the cultural value of the swastika in Tibet, see Bellezza 1997a, p. 228-230 (n. 54, 55).

3500 m, except for the eastern area around Pangong lake, which marks the western limit of the Changthang.

Distribution of rock art sites

Rock art has been documented all over Ladakh. To date about 150 sites have been systematically documented or surveyed totaling almost 20 000 petroglyphs. [Fig.III.1] The highest density of rock art is found along the Indus where sites stretch from Dah (Mda') in the west (2700 m) to Kidmang (Skyid-mang) in the east (4000 m). Many others are found along the Nubra and Shyok as well as beside the Zaskar river and its tributaries (Tsarap, Tserab and Doda, Stod). The size of sites varies from a single isolated rock to a concentration of a thousand engraved boulders.

Previous studies

The existence of petroglyphs in Ladakh has been known since the 1880s. The earliest mention of carvings in the region was made by the Austro-Hungarian researcher and linguist Károly Jenő Ujfalvy de Mezőkövesd who reports anthropomorphic and zoomorphic representations as well as hunting scenes along the Suru.⁴⁴ The first publication dedicated to the topic was authored by the Moravian missionary August Hermann Francke in 1902 who, in the following two decades, published a series of articles on the topic.⁴⁵ He reported 37 rock art locations mainly along the Indus, in between Leh (Gle) and Khaltse (Kha-la-rtse), as well as a few others in Zaskar and around Dah. Although Francke was more interested in rock inscriptions than in images, his data (descriptions, hand drawings and rare photographs) are invaluable, since major sites such as Alchi (A-lci) and Khaltse have been greatly damaged in the last century. The important site of Tangtse (Btang-rtse / Thang-rtse), famous for its Tocharian, Sogdian and *śāradā* inscriptions, was also reported in the early 20th century.⁴⁶ In the 1930s, the German geologist Helmut de Terra and the Italian tibetologist Giuseppe Tucci published some photo-

⁴⁴ Ujfalvy 1884, p. 248.

⁴⁵ Francke 1902, 1903, 1905a, 1905b, 1905-1907, 1906a, 1906b, 1907a, 1907b, 1914a, 1914b; Francke and Jina 2003.

⁴⁶ Francke 1925; Sander 1994; Sims-Williams 1993.

graphs of petroglyphs taken during their expeditions in Ladakh.⁴⁷ The former proposed a chronology of carvings in four phases based on stylistic groups.⁴⁸ Due to the subsequent closing of the region to foreigners (1949-1974) no mention was made of the rock art of Ladakh for nearly 30 years. In their 'Cultural Heritage of Ladakh' (1977), Snellgrove and Skorupski briefly refer to the existence of rock-carvings some of which they regard as indigenous.⁴⁹ In the second volume of their landmark publication, a chapter deals with carvings at Alchi but mainly focuses on Tibetan inscriptions.⁵⁰ At the beginning of the 1980s several photographs of Alchi as well as from a site in Zanskar were published by French travelers.⁵¹ In 1990, Francfort carried out a preliminary study of rock images for which he draws parallels with Central Asian petroglyphs from the Bronze Age and Iron Age.⁵² Although only ten or so engraved scenes were considered, the comparative analysis enabled him to link them "...to the

⁴⁷ De Terra 1931, p. 47-48 (Pl. 6b, 7). Tucci took a series of photographs but published only one (Tucci 1958, p. 294, Fig.8) showing a boulder with a *kharosthī* inscription from the site of Khaltse. Tucci's photographs are now in the archives of the Museo Nazionale d'Arte Orientale in Rome and most were published by Orofino (1990).

⁴⁸ De Terra 1940, p. 48: Phase I: before 1000 BCE (prehistoric magical art with isolated stylized men and animals and early ibex hunters.); Phase II: 200 BCE and later (early Buddhist sculptures with *kharosthī*, *brāhmī* and *sāradā* inscriptions, swastika); Phase III: 4th and 5th centuries CE (Dardic ibexes and other hunting scenes, conventional human figures); Phase IV: 15th century till present ('lamaist' subjects, chorten, naturalistic animals and human images). Apart from style, De Terra also takes into account the weathering of the images and the technique of engraving. However, his criteria are rather vague and there are obvious gaps in the chronology. He proposes a sub-phase (a) dated from 800 CE (in which he places Nestorian inscriptions and crosses as well as the Tocharian inscription from Tangtse along with, strangely, *kharosthī* inscriptions), showing that the chronology he proposes is insecure.

⁴⁹ Snellgrove and Skorupski 1977, p. 15: "With the possible exception of simple rock-carvings of animal forms [...] there is nothing within the purview of this volume that can be regarded as wholly indigenous to Ladakh."

⁵⁰ Denwood 1980. Apart from Francke's publications, the other articles dealing with Tibetan rock inscriptions in Ladakh are: Denwood 2007; Denwood and Howard 1990; Orofino 1990. For a list of Tibetan rock inscriptions in Ladakh and bibliographical references: Iwao *et al.* 2009, p. 88-93.

⁵¹ Klodzinski and Gouzé 1982; Peissel 1984. The site in Zanskar is referred to as Cha (*Bca / Bya*), from which photographs were subsequently published by Francfort (Francfort *et al.* 1990; 1992); it corresponds to the site labeled Zamthang (*Zam-thang*) in our documentation.

⁵² This article was first published in French (1990), an English version appeared in 1992: Francfort *et al.* 1990, 1992. A summary of this article is found in Chayet 1994, p. 69-70. The same images of petroglyphs from Ladakh were used by Francfort in subsequent articles: Francfort 1992, Fig. 12.2; 1994, Fig. 6, 8.

wide territory of the steppic peoples in the second millennium and first half of the first millennium BCE.”⁵³ In addition to proposing a chronological and cultural background for the carvings considered, a first (rough) map of distribution of rock art in Ladakh is provided.⁵⁴ Twenty-two sites are mapped, most of them along the Indus and taken from Francke’s publications.

Alongside these publications, general surveys of archaeological sites of Ladakh were carried out in the late 1970s and early 1980s by members of the Frontier and North-Western Circles of the Archaeological Survey of India.⁵⁵ In 1988-1989 the Srinagar Circle, under the direction of Fonia, conducted exploration along the banks of the rivers Zaskar and Suru and engravings were noticed, among other remains, at Phe (Phye) and Tonde (Stong-sde) (Zaskar).⁵⁶ Another survey was conducted by the Srinagar Circle in the Nubra valley and Changthang area in 1992-1993, where eight previously unknown rock art sites were reported.⁵⁷ Although their exact location is provided there is no precise description of the carvings. In 1998-1999 two surveys with the objective to locate and document rock engravings and carvings were conducted along the Indus and its tributaries.⁵⁸ Petro-

⁵³ Francfort *et al.* 1992, p. 181. A paper in Chinese by Lü Hongliang (2010), referring to Francfort’s publications and the work of other Western scholars, concludes that the western Tibetan Plateau had a close relationship with the artistic tradition of the Eurasian steppe.

⁵⁴ *Ibid.*, Fig. 30.

⁵⁵ According to the annual reports of the ASI published in *Indian Archaeology: A Review*, preliminary surveys were conducted in Ladakh in 1975-1976, 1978-1979 and 1981-1982 by members of the Frontier and North-Western Circles: Anonymous 1979, 1981, 1984. The existence of petroglyphs is first reported in 1984-1985 at the site of Saspola (Sa spola / Sa-spo la): Anonymous 1987, p. 147. In 1994-1995, the Srinagar Circle reported rock carvings depicting various hunting scenes and animal figures from Trangste (Tangtse): Anonymous 2000, p. 28.

⁵⁶ Anonymous 1993, p. 27-29. A short description of the content of the sites and their GPS location is given.

⁵⁷ Anonymous 1997, p. 36-38. The sites are: Deskit (Bde-skyid), Khalsar (Khal-gsar), Murgi (Mur-gi), Tirisa (Wylie unknown), Tirath / Tirit (Wylie unknown), Kiari (Skya-reng), Litche (Wylie unknown), Niormis (Nyor-mis). Again a short description of the contents of the sites and their GPS locations are given.

⁵⁸ According to the report, two separate surveys were made that year (1998-1999): Anonymous 2004. One was conducted along the Indus, between Leh and Batalik as well as along the Suru, Doda and Zaskar rivers under the direction of B. R. Mani from the Srinagar Circle (p. 49-58). In addition to a list of subjects represented, a map with 19 locations (including petroglyphs and Buddhist reliefs alike; p. 55, Fig. 16) and two photographs were published (Pl. 23, 24). A more detailed version of the report was published in *Pragdhara*: Mani 1998. Another survey was conducted by the Excavation Branch V of Vadodara under the direction of R. S. Fonia (p. 59) along the Indus, including its upper course, and along the Shyok and Nubra rivers.

glyphs were noticed all along the Indus from Leh in the east to Batalik in the west, including several previously unreported sites below Khaltse. Dr. Mani describes some images and provides possible interpretations regarding their significance.⁵⁹ He also proposes a tentative chronological and cultural sequence of the rock art of Ladakh in four phases.⁶⁰ To our knowledge no detailed publication of the data collected by the ASI was ever published.

Since the early 1990s rock art has been also published in the form of articles by Vohra, but the quality of documentation is rudimentary and the location of petroglyphs is, more often than not, erroneous.⁶¹ Other initiatives for the documentation and preservation of rock art in Ladakh were and are still being taken by Jamwal and Thangspa since the mid-1990s but their data is seldom published.⁶²

The most systematic documentation of rock art in Ladakh was undertaken in 1996 by Vernier, an independent Swiss scholar, who recorded about 10,000 petroglyphs (all registered in a digital database) in Central Ladakh as well as in the Markha (Mar-kha) valley and Zanskar. A résumé of his decade of investigations was published in 2007 in a catalogue, in which one finds for the first time a list of rock art locations (106 in total) as well as a thematic classification of petroglyphs.⁶³ Since 2006, Vernier and one of the present authors (Bruneau) have been conducting a joint project dedicated to rock art that has doubled the number of petroglyphs to about 20,000, which are scattered over 158 sites (91 sites systematically documented and 67 surveyed only).⁶⁴ The most remarkable achievement of the project is the completion, in 2011, of the systematic documentation of the site of Murgi Tokpo in the Nubra valley, the largest known to date in Ladakh consisting of about 3000 petroglyphs.⁶⁵ Bruneau has conducted a comprehensive study of the rock art of Ladakh, including a de-

⁵⁹ Mani 2000-2001, p. 99: for example he links ibex images to a fertility cult.

⁶⁰ *Ibid.*, p. 107. The chronological sequence, including Buddhist reliefs, is as follows: A) primitive phase (Neolithic and early historical period) representing human and animal figures, including hunting scenes, war scenes, dance scenes, symbols, ibex, sheep and goat and other animals; B) Kushan inscriptions in *kharosthi* and *brahmi* and continued traits of earlier phase; C) scratchings with Tibetan influence depicted through inscriptions of 8th-9th century CE, figures of stūpas and a few human and animal figures. Contemporaneous gigantic rock carvings with mixed styles having influence from Tibet and Kashmir as well as Central Asia; D) Low relief carvings datable from c. 11th to 17th century CE.

⁶¹ Vohra 1993, 1994, 1995, 1999, 2005a, 2005b.

⁶² Jamwal 2007, 2006; Tshangpa 2007, 2008, forthcoming.

⁶³ Vernier 2000, p. 29-30; 2007, p. 63-66.

⁶⁴ They were joined for fieldwork in 2007 and 2011 by Quentin Devers, a Ph.D. candidate in archaeology at the École Pratique des Hautes Études, Paris.

⁶⁵ Bruneau *et al.* 2011.

tailed classification and typological analysis, now awaiting publication.⁶⁶

Location of rock art sites

There are three regional divisions of rock art sites in Ladakh: the main one, along the Indus, follows an east-west distributional pattern while the second and third groups have a north-south pattern respectively along the Nubra, and Tsarap and Doda rivers (Zanskar).

Seventy-five percent of the sites are found in proximity to water, either a river or a stream.⁶⁷ [Fig.III.2] In large valleys the sites are typically located on flat, high alluvial terraces, whereas in narrower ones they are located on the slopes. However, the largest sites are located in alluvial fans favorable to human occupation, such as the sites of Murgi Tokpo and Stagmo (Stag-mo).⁶⁸ Very few sites are situated in the heads of valleys or on passes. It appears that altitude and climate limited access and use of such places.

The location and accessibility of most rock art sites show that they mark ancient routes. For example, 33 sites are located on the right bank of the Indus and only three on the left bank demonstrating that the former was consistently in use as a transportation conduit.⁶⁹ At some sites the old track, occasionally with a cobble bed, still winds in between the engraved boulders. Along the track, at specific places, the terrain was cleared and flattened to form small platforms, sometimes sheltered by a hanging boulder or rock face, providing suitable halting places. The role of the sites as resting places is reinforced by the fact that most of them (except those on high alluvial terraces) provide direct access to water.

Ten sites or so are located where the Indus river is the narrowest and can be spanned, as the remains of ancient bridges and sometimes contemporary ones testify. [Fig.III.2] The strategic location of these sites is in some instances reinforced by fortified ruins and other mate-

⁶⁶ Bruneau 2010.

⁶⁷ This percentage and all numbers given below are based on the analysis of the 91 rock art sites systematically documented by Vernier and Bruneau.

⁶⁸ Most sites are formed of erratic granite boulders of various sizes covered by an orange-brown varnish scattered over a flat or sloped surface. Sometimes they also consist of dark reddish volcanic slabs. Exceptionally, we find petroglyphs on sandstone rock faces.

⁶⁹ As in any archaeological map, the spatial distribution of rock art sites reflects the state of research at a given time. Other sites may be discovered on the left bank of the Indus in the future but the great difference in numbers is significant.

rial remains such as pottery shards.⁷⁰ *Lhatho* (*lha-tho*), *chorten* and *mani* (*ma-ni*) walls are also frequently encountered at these crossing places as well as along the ancient tracks, acting as guidance and protection for the traveler.⁷¹ Unlike Upper Tibet, no funerary structures can indubitably be associated with rock art sites in Ladakh.⁷²

Content of rock art

The rock art of Ladakh can be classified as either figurative or non-figurative. In total 74 motifs have been identified in the rock art of Ladakh, the main ones are discussed below.⁷³ Figurative petroglyphs are, in order of decreasing importance: zoomorphic, anthropomorphic and unidentified.

Zoomorphs

Zoomorphic images constitute about half of the petroglyphs documented in Ladakh. The species and genera represented are, in decreasing order of importance: ibex, wild sheep, yak, canine, caprid, feline, equids, birds, deer, markhor, argali, camel and antelope.⁷⁴

The ibex, usually recognizable by long backwards-curving horns, accounts for almost half of the zoomorphic images (47%). It is one of the most common wild ungulates found north of the Himalayan ranges (Himachal Pradesh, Kashmir) and in Central Asia (the Pamirs,

⁷⁰ The dating of fortified remains and pottery in Ladakh is beyond the scope of this paper; whatever their antiquity they are testimonies to the strategic importance of the sites. A comprehensive study of the fortified remains of Ladakh is currently undertaken by Quentin Devers. The only substantial publications on the subject to date are: Howard 1989, 1995. Regarding pottery as the basis of archaeological study, no systematic analysis was ever conducted for Ladakh. Only a preliminary article on the subject is available, see Howard 1999.

⁷¹ *Lhatho* are tiered ritual structures (sometimes topped by juniper branches arranged in a bundle) enshrining protective deities.

⁷² One exception might exist at the rock art site of Murgi Tokpo in the Nubra where a rectangular dry-stone structure, possibly a tomb, was documented within the precincts of the rock art site but excavations would be necessary to confirm its identity.

⁷³ This classification was devised by Bruneau on the basis of that elaborated by Vernier (2007, p. 63-66). The figures given below are based on the statistical analysis of 13,597 petroglyphs systematically documented in Ladakh at 91 sites.

⁷⁴ Out of 13,597 images 7270 are zoomorphic images (53%). For about a quarter of zoomorphic images the species is unidentified.

Tien Shan and Altai).⁷⁵ In Ladakh, the ibex currently extends east to the environs of Leh and north to the Nubra valley. In engravings, it is represented all over the region and is found at almost every rock art site.⁷⁶ Although solitary images occur, it is most commonly represented in a herd, containing typically from five to ten individuals. **[Fig.III.3]** In some cases the masculinity of the animal, already indicated by the length of the horns, is reinforced by the depiction of ridges along them as well as by a beard. In rare instances a male sexual organ is clearly carved. Seasonal behavior can be recognized: in some compositions there are scenes of aggression showing two males locking horns or else with an upright tail indicative of the rut.

Apart from the ibex, wild sheep are also common in the rock art of Ladakh (8.4%). By this term we refer to images of blue sheep (bharal) and urial: both species have massive short horns sweeping up and out, but their representation in the petroglyphs is not distinctive enough to discern between them. Such images are found all over Ladakh. Nowadays the bharal occurs in the whole region whereas the urial only in the Indus valley and the Shyok. As for the ibex, there are solitary carvings of wild sheep but they most often appear in herds. **[Fig.III.4]**

The yak, easily identifiable by curved long horns, conspicuous hump and short tail terminating in a large bushy tuft is third in occurrence in the rock art of Ladakh (7%). Yaks are, more often than not, represented in isolation. When they are part of compositions, they occur along with other individuals of their species or with ibexes. **[Figs.V.2, 4, 5, 8, 9, 12 and 13]** Representations are that of wild yaks: we do not know of any irrefutable representations of domestic yaks (loaded or on a lead for example).

Wild canidae (accounting for 4.5% of zoomorphic images) recognizable by fairly short legs, short upright pointed ears and long tails are difficult to identify with accuracy. Straight tails might be indicative of foxes or wolves as both species inhabit Ladakh whereas curved tails might point to dogs. Some petroglyphs depict packs of canidae attacking herbivores.

Other carnivores, and more particularly the snow leopard (1.8%), easily identified by a long thin tail curled at the tip and a spotted body, are depicted in the rock art of Ladakh. Images were only documented in the Indus valley where the snow leopard is still found. **[Fig.III.5]** These are most often represented in leaps and only in two

⁷⁵ Schaller 1977, p. 55. For a possible interpretation of the significance of ibex (or mountain goat) images in the rock art of Ladakh: Aas 2009, p. 62-75.

⁷⁶ Images of ibexes are found at 83 out of 91 sites.

instances is the snow leopard shown attacking an ibex or a deer. There are also images of striped carnivores that may represent tigers. [Fig.V.21 and 22] Also two, almost identical, carvings of lions were documented in the vicinity of each other at Khaltse.⁷⁷

The last animals of importance in the rock art of Ladakh belong to the equidae family (4.8% of zoomorphic images). Seventy-five percent of these images display a rider thus identifying the animals as horses. [Fig.III.6] Harnesses are only exceptionally depicted and there are also rare representations of horses on a lead. However, anatomical details are not sufficient to identify the type(s) of horse mounts. Unmounted animals with a long neck, long legs and tail may be horses or *kyang*. [Fig.V.25] This Tibetan wild ass inhabits the entire Changthang. Although it is now rare, this species was still common in eastern Ladakh at the beginning of the 20th century.⁷⁸ Images of the *kyang* are recognizable by their large head and robust body but most of all by their short and bristly upright mane.

Other animals (birds, deer, markhor, argali, camel and antelope) account for less than 1% (each) of zoomorphic engravings. Among birds we can distinguish birds of prey from partridges, quails and affiliated birds. The former are represented with outstretched wings and a hooked beak among other animals (wild sheeps, ibexes). Most images of birds of prey are located in the gorges of Zanskar, at the sites of Yaru (Yar-ru) and Yaru Zampa (Yar-ru zam-pa). [Fig.IV.25] It is at these sites that the ten or so examples of horned eagles (*khyung*) known in Ladakh were documented. [Fig.V.27 and 28] Other birds are always represented in profile standing on short feet with a rounded belly. [Fig.IV.13]

Of interest also are images of deer and Tibetan antelope. [Fig.V.15] Both species currently inhabit some areas of the Changthang and their images suggest a wider distribution in the past, as do those of markhor in the west of Ladakh. This wild goat is now found further west in the Gilgit-Baltistan province of Pakistan and in the Indian Himalaya. Finally, of great significance are representations of double-hump Bactrian camels. Most camel representations (sometimes

⁷⁷ Francke published hand drawings of these carvings, see Francke 1902, Pl. II; 1903, Pl. VII.I. Documented *in situ* in 2006, they were subsequently cut down and moved to the garden of a guesthouse (2008). Preservation of rock art is a worrying issue in Ladakh, and a large-scale project is currently being put into place by Bruneau and Vernier together with local organizations.

⁷⁸ Schaller 1998, p. 163-166.

mounted or on a lead) were documented in the Nubra valley where wild and domestic camels are still found.⁷⁹ [Fig.III.7]

From the above description of zoomorphic images, we note that the species depicted reflect a local fauna dominated by ibexes and wild sheep. These ungulates are still widespread in the region whereas other species such as wild yak, deer and antelope are now found only in eastern Ladakh, in the Changthang. Their representation in rock art might reflect a narrowing of their habitat induced by a change of climate and / or by human pressure. At the Neolithic site of Kiari (circa 900 BCE) in eastern Ladakh remains of goral were found suggesting a modification in game and vegetation conditions since this bovid lives in wooded environments.⁸⁰ All the wild ungulates in the rock art of Ladakh are represented hunted. They are in decreasing order of importance: ibex, yak, wild sheep, deer and antelope. However, hunted animals account for a small percentage of zoomorphic representations. For example the yak is hunted only in a quarter of all images. In hunting scenes the prey is often chased or savaged by one or several dogs. Along with the horse and camel, dogs are the only domestic species definitely represented in the rock art of Ladakh. All the other species appear to be wild.

Because of the local fauna depicted we suggest that the rock art of Ladakh was largely created by indigenous peoples. Nevertheless, petroglyphs are not an inclusive natural history inventory: large animals such as the bear or small mammals like the marmot and pika, which are common in nature, do not occur in rock art.

Anthropomorphic figures

Anthropomorphic images form 15% of the carvings. They are rarely depicted in isolation, and most often occur in pairs or groups. Anthropomorphic figures with outstretched or raised arms are common. The latter can be found in front of an ibex or standing on its back. There are also examples of loop-headed anthropomorphic figures standing on horses and that of bowmen standing on yaks. Such scenes occur mostly in lower Ladakh, along the Indus, in the surroundings of Dah. There only we find rows of anthropomorphic figures (3 to 25 in number) joined by the arms or shoulders in front of which a presiding figure with raised arms is often depicted. Squares

⁷⁹ In contrast to Upper Tibet none of the camels documented in the rock art of Ladakh is represented being hunted.

⁸⁰ Ota 1993, p. 103-105. On the vegetation and game conditions in relation to Neolithic sites in Ladakh: Ganjoo and Ota 2012, p. 34.

or dots may be carved above their heads. [Fig.III.8] In this area we also find a wide range of anthropomorphic figures with dots or strokes around their heads or with a beak-like face. It is difficult to understand the narrative intention of such images, particularly as there are few ethnographic or textual benchmarks.

More common are representations of bowmen: they account for nearly 50% of anthropomorphic figures. They are found engraved all over Ladakh and typically show a human figure on foot holding a bow and sometimes carrying a quiver or bow case at the waist or on the back. Most bowmen are hunters and are depicted chasing or facing their prey (ibex, yak, wild sheep, deer or antelope) and seconded by hounds. [Fig.III.9] The bow clearly appears as the favorite hunting device.⁸¹ In some instances it is also used as a fighting weapon but maces, swords and battle-axes are predominant in duel or battle scenes.

Bowmen are rarely mounted but when it is the case they are always hunting yaks. The predominance of hunting on foot could be explained by the rugged terrain, which is not favorable to mounted hunters. In fact only 13% of anthropomorphic figures are riders, and horses seem to have been used mainly as a means of transport. This is supported by frequent representations of groups of riders in a pacific aspect and the rare occurrence of scenes of riders fighting. As with the rock images of Upper Tibet, harnesses are usually not depicted but in rare instances the saddle or reins are shown.

Finally, at some sites in Ladakh we find foot and hand prints. They are rarely isolated and in several cases there is a small (child?) print (hand or foot) engraved next to a large (adult?) one. These representations of body parts probably have a symbolic meaning that we do not yet grasp.

Material objects

The last category of engraved representations is that of architectural structures. About a thousand images represent *chortens*. They are in some instances accompanied by dedicatory inscriptions in *śāradā* or Tibetan, like at the well-known sites of Tangtse and Alchi.⁸² Typically, *chortens* display a tiered base with a staircase topped by a bulbous

⁸¹ Likewise in Upper Tibet and north Inner Asia.

⁸² For the *śāradā* inscriptions of Tangtse: Sander 1994. For the Tibetan inscriptions of Alchi: Francke 1906; Francke and Jina 2003; Denwood 1980, 2007; Denwood and Howard 1990; Orofino 1990. See these references and Bruneau 2011 for images of *chortens*.

structure and belong to the 'descent from heaven' (*lhabab, lha-babs*) type. In rare instances we find images of plain tiered structures that could represent shrines related to the contemporary *lhatho*.

Non-figurative

Non-figurative motifs form 12% of the rock art documented in Ladakh. They are found at most sites all over the region, but half of them cannot be described satisfactorily and their identity remains undetermined. Twenty-eight motifs have been identified, the main ones are, in decreasing order of importance: lines, swastikas, quadrilateral signs, circles, crosses, groups of dots, sun, floral signs, S-figure and dots. [Figs.V.47, 50, 52, 54 and 55] These signs are rarely found in isolation and are usually engraved in proximity to zoomorphic and anthropomorphic images. However, there are no irrefutable representations of the physical (mountains, sky, etc.) or cultural environment (camps, plots of land, etc.). Buddhist motifs that are surprisingly rare in the carvings, such as endless knots (*pata*), thunderbolts, vases and conjoined sun and moon can be qualified with certainty because they are still in use and their meaning is known from other cultural contexts. Other signs such as the figure 8 and volute along with 'signs in shape of glasses', find their possible origin in Central Asia where they are known in rock art and on objects (but their significance is not clear).⁸³ Various unidentified signs and especially those engraved at Tangtse are classified as *tamgas* by some authors because they share traits with signs found on medieval coins that are emblematic of a clan or a person.⁸⁴ [Fig.III.10] However, a systematic contextual and comparative study is needed to confirm this interpretation. In Ladakh, swastikas (mostly clockwise) are found at 23 sites, less than one-quarter of the total rock art sites recorded.

⁸³ S motifs are discussed in the Section IV of the paper. Regarding 'signs in form of glasses' this terminology is that of Central Asian rock art experts to refer to two circles linked by a straight line. This sign is typical of the rock art sites of Tamgaly and Saimaly-tach (Kazakhstan), where it occurs among zoomorphic and anthropomorphic figures attributed to the Bronze Age. See Mar'jasev *et al.* 1998, Pl. 6.15; Martynov *et al.* 1992, photo 8, 24; drawing 20, 38, 44; p. 34-35.

⁸⁴ Vohra 1999.

IV. Cross-cultural interplay: The relationships between Upper Tibetan and Ladakh rock art and that of north Inner Asia

Now that the individualized traits of rock art in Upper Tibet and Ladakh have been explicated, we turn to what they share in common as mediated through the wider Inner Asian cultural world. There are a number of rock art motifs, compositions and styles on the Western Tibetan Plateau that strongly resonates with those of north Inner Asia attributed to the Bronze Age and Iron Age.⁸⁵ We will examine these closely in an attempt to better understand their chronology and the kinds of cultural interactivity they seem to reflect.

Chariots

Of tremendous cultural and historical significance are petroglyphs of chariots (two-wheeled vehicles drawn by horses). These have been documented at five different rock art sites spread over two-thirds the breadth of Upper Tibet: Shaktshang (Bshags-bsang), Gyaling (Rgya-gling), Rigyal (Ri-rgyal), Duruchen (Du-ru-can), and Gyamrak (Gyam-rag). Lone chariots at Shaktshang and Gyaling were first documented by the art historian Lobzang Tashi.⁸⁶ An initial appraisal of his work concluded that while the presence of chariot rock art in Upper Tibet was extremely noteworthy, given its apparent rarity, it may have been idiosyncratic or exotic in nature.⁸⁷ However, with the discovery of two dozen chariots at three more rock art sites in 2010 and 2011, it became clear that these were in fact an integral part of the Upper Tibetan rock art tableau.⁸⁸

Since the carving of the Duruchen chariot pictured in **Fig.IV.1**, the rock on which it was made has cleaved in half. This is a technically refined depiction of this mode of transport. It boasts all the major components of a chariot: box, wheels and axle. The wheels each have

⁸⁵ For earlier studies of commonalities in the rock art of Upper Tibet and north Inner Asia, see Bellezza 2002a, p. 136-139; 2008, p. 189-199. For an initial comparative study of Ladakh and north Inner Asian rock art, see Bruneau and Vernier 2010; Bruneau *et al.* 2011; Bruneau 2013 and forthcoming. Also see the pioneering study made by Francfort *et al.* 1990, 1992; and reference to his work in Lü Hongliang 2010.

⁸⁶ Blo-bzang bkra-shis 2002.

⁸⁷ Bellezza 2008, p. 195-196.

⁸⁸ For a preliminary report and images of these discoveries see Bellezza 2010b, Bellezza 2011c.

more than 20 spokes.⁸⁹ The pole is represented by a single line. The chariot is pulled by two draught horses portrayed in the split perspective. Like some other chariot carvings at Duruchen the harness is intricately presented: its various parts including the yoke and breast collar are discernable. As for the horses little can be said about their breed or other physical characteristics. The square chariot box or car seems only large enough for the driver; this is clearly a personnel carrier, not a cart for cargo. The charioteer holds a long object in his right hand, which may represent the reins (or a whip) and appears to have three protuberances on top of his head. This ostensible accoutrement of the headdress or helmet may have consisted of feathers, horns or rays.

The carving in front of the pair of horses exhibits similar wear and repatination characteristics, thus it appears to be an integral part of the chariot composition. It appears to represent an anthropomorphic figure with its arm raised and so holding the horses; his or her feet are turned to the right. The figure (perhaps a groom) seems to be depicted wearing boots and trousers.

The one and only chariot documented in Ladakh, at the site of Trishul, is of the same type but it has fewer depicted elements. [Fig.IV.2] The mode of depiction, in split perspective, is identical to Upper Tibetan chariots; they also share other pictorial elements although the wheels contain only eight spokes and plain hubs. The charioteer holds a long straight object (a whip?) in his left hand and exhibits a large flattened headdress (a possible helmet?). The square chariot box or car is visible, and there is a tripartite pole (it could also represent reins on the side of a single pole) and yoke. The animals, portrayed with two legs and a long tail, are probably horses but we cannot entirely rule out the possibility of bovine.⁹⁰

In the Upper Tibetan context, Lobsang Tashi compares the chariots of Shaksang and Gyaling with those from the Qinghai sites of Lushan and Yeniugou (located in the northeastern Tibetan plateau), and dates the Upper Tibetan specimens rather imprecisely to 1000 BCE to 600 CE.⁹¹ [Fig.IV.3] Tang Huisheng and Zhang Wenhua suggest that chariots with wheels of four-spokes carved at Yeniugou and Shebuqi date between the Shang and Warring States periods, basing their attribution on similar depictions ornamenting bronze, bone and

⁸⁹ This is seemingly the greatest number depicted in any chariot petroglyph recorded in Inner Asia. This number of spokes recalls the chariots of Shang China, which had wheels with 18 to 26 spokes: Shaughnessy 1988, p. 205.

⁹⁰ For a description and drawing of the chariot from Trishul, see also Bruneau forthcoming, Fig. 19.

⁹¹ Blo-bzang bkra-shis 2002.

shell objects and on chariots excavated in China.⁹² The same authors date similar chariot petroglyphs of the Heishan site, in Gansu, to circa 1000 BCE, derived from comparisons with bronze vessels.⁹³ Although the comparisons drawn here are valid, in that key structural elements are similar in both the carved and cast chariots, we cannot accept this stylistic evidence uncritically as a lucid signal of the age of the Heishan petroglyphs. The wheels, axle, box, pole, and draught animals as depicted in the stone and bronze media were fundamental elements of chariots throughout Inner Asia and China. These features, while revealing the artisans' sound knowledge of a highly notable elite technology, appear to be conventional in nature, potentially repeated over a long period by generations of rock art makers.

Tang Huisheng and Zhang Wenhua believe that the petroglyphs of chariots at Lushan (one of which has three draught horses) should be dated to the last third of the first millennium BCE, as they were engraved using a side view / profile and have a more refined appearance, as well as because of their similarity to chariots rendered on Qin and Han tablets.⁹⁴ In the interests of formulating a relative benchmark of age, it might be argued that the technically more proficient examples of Upper Tibetan chariots were carved later than simpler and more abstract types, but we remain unconvinced.⁹⁵

The Lushan type of chariot rock art with more than two horses and with horses carved in parallel (so that they appear to stand on top of one another) have not been recorded in Upper Tibet. On the other hand, the chariots of Yeniugou and Shebuqi are directly comparable. Yeniugou specimens with horses rendered in a split perspec-

⁹² Tang Huisheng and Zhang Wenhua 2001, p. 259 (colour photograph 16); Tang Huisheng and Gao Zhiwei 2004, p. 163 (Fig. 2). Arguments found in Tang Huisheng and Zhang Wenhua 2001 are summarized in: Tang Huisheng and Gao Zhiwei 2004; Tang Huisheng 2006.

⁹³ Tang Huisheng and Zhang Wenhua 2001, p. 92 (Fig. 222).

⁹⁴ Chen Zhao Fu 2006a, p. 252, 272; Tang Huisheng and Gao Zhiwei 2004, p. 166 (Fig. 11); Tang Huisheng and Zhang Wenhua 2001, p. 261 (colour photographs 10, 11). According to these authors, the chariot images in the northern steppes can be categorized into two styles: the early-period style based on the principle of symmetry (split perspective) and the late-period style characterized by a side view. However, the evolution of the mode of representation of chariots in the steppes is more complex as demonstrated by Francfort 2002a.

⁹⁵ What might be the most elementary depiction of chariots in Upper Tibet consists of two circles joined by a single line. An analogous subject is found in the rock art of Yeniugou in Qinghai (Tang Huisheng and Zhang Wenhua 2001, p. 22, Fig. 35). The authors (*ibid.*) refer to it as an 'unfinished chariot', but it could also be a highly stylized representation of this conveyance (this formulation is more cautious). The same view is expressed in Tang Huisheng and Gao Zhiwei 2004, p. 163.

tive are strongly reminiscent of Upper Tibetan examples.⁹⁶ Thus, we have a style of chariot rock art that straddles opposite ends of the Tibetan plateau.

The Yeniugou chariots occupy a place at the threshold of the steppes.⁹⁷ [Fig.IV.3] Petroglyphs of comparable chariots are known throughout the rock art of Inner Asia (Siberia, the Altai, Mongolia, Kazakhstan, Kirghizstan, Tajikistan, Xinjiang) where they form a coherent stylistic group.⁹⁸ Most images of chariots are represented as seen from above.⁹⁹ They are characterized by large circular wheels (plain or spoked) depicted as if lying on the ground and a pair of harnessed animals (bovine, horses and more rarely camels) represented back to back. A charioteer is sometimes portrayed. Therefore stylistically (i.e. split perspective) and technically (rectangular box, multi-spoked wheels and centrally placed axle) the Western Tibetan chariots belong to the realm of steppic chariots. For instance the chariot of Trishul finds a close parallel in the rock art of Tsagaan Gol in the Mongolian Altai.¹⁰⁰ [Fig.IV.4] The appearance of chariots in re-

⁹⁶ Tang Huisheng and Zhang Wenhua 2001, colour photograph 16. There is another chariot at Yeniugou in split perspective (*ibid.*, Fig. 46); also in Tang Huisheng and Gao Zhiwei 2004, Fig. 2.

⁹⁷ As regards other links between Qinghai rock art and the art of the steppes, see Tang Huisheng and Gao Zhiwei 2004, p. 163, p. 166; Tang Huisheng and Zhang Wenhua 2001, p. 259, p. 261. The authors discuss images of eagles in the 'parallel style' and that of cervids with beak-like muzzles in comparison with images from the steppes. On rock art in Qinghai, also see Chayet (1994, p. 64-65) who deals with the sites of Halonggou and Bahamaoligou; Chen Zhao Fu 2006a; Tang Huisheng 1989.

⁹⁸ Kuzmina 2007, p. 109-111 (Fig. 34, 93). The depiction of wheeled-vehicles in the rock art of the steppes, and more particularly those of Central Asia and South Siberia, is the object of an extensive literature. For a discussion of these images and main bibliographical references see Cheremisin 2006. For illustrations of chariot petroglyphs from a broad sweep of Central Asia, see Kuzmina 2008, Fig. 20, 21; Shaughnessy 1988, p. 202-203 (the most comparable specimens are p. 203 [Figs, l, m]). See also Francfort 1992, p. 98-100 (Fig. 12.3). For recently discovered chariots in the Altai, see Matochkin 2007, Fig. 3, 4 (site of Komdosh-Bom).

⁹⁹ Francfort 2002a, p. 80-81.

¹⁰⁰ Jacobson-Tepfer *et al.* 2006, Fig. 919. Cultural interchanges between Mongolia and Upper Tibet appear to be reflected in funerary monuments that may possibly be of Bronze Age and Early Iron Age antiquity, which are marked by stone slab and block superstructures, many of which are aligned in the cardinal directions. These morphological affinities seem to be predicated on lines of communication passing into Upper Tibet from the north and west, not from the east. This is demonstrated by the geographic distribution of the slab graves and other quadrate funerary enclosures of Upper Tibet, which do not extend to areas east of the 89th meridian. For a comparative study of these monuments, see Bellezza 2008, p. 123-126. On what appears to be types of quadrate funerary ritual enclosures in

gions north of the Western Tibetan plateau in the second millennium BCE provides a potential vector of transmission into that territory. Particularly important for the chariots of Western Tibet are those of Xinjiang and the Pamirs, the two regions directly adjacent to the north.¹⁰¹ In Inner Asia rock art experts traditionally date such engravings of chariots to the Bronze Age (second millennium BCE), although some may date to the Iron Age (first millennium CE).¹⁰²

Looking west, the closest geographical evidence for chariots is found in the rock art of northern Pakistan. At the site of Thor, in the surroundings of Chilas (Gilgit-Baltistan province), there is a well-known engraved chariot with spoked-wheels and a pair of draught animals seemingly standing on top of each other driven by a standing charioteer.¹⁰³ This image has been compared to those of Gogdara I (Swat valley), where three horse-drawn chariots are carved on a same rock surface.¹⁰⁴ [Fig. IV.5] According to the chronological rock art sequence of Swat established by Olivieri, the chariots can be placed in late Protohistory (middle / end of the first millennium BCE).¹⁰⁵ The chariots of Thor and Gogdara have been compared to those of Saimaly-tash (Ferghana, Kyrgyzstan).¹⁰⁶ Regarding the representation of Thor, Jettmar notes that “certainly, there existed connections with the South, as well” and that a systematic comparison with rock paintings in India was needed.¹⁰⁷

Leaving aside literary references, horse-drawn chariots are not very common in the rock art of the Indian subcontinent.¹⁰⁸ The best known examples are painted at Morhānā Pahār (Mirzāpūr district,

the Mongolian Altai, which are referred to as ‘dwellings’, see Jacobson and Meacham 2009; Jacobson-Tepfer *et al.* 2010, p. 25.

¹⁰¹ For rock art chariots from Xinjiang, and in particular the Chinese Altai, see Bao Xingjun Mohui 2006, p. 124, p. 135, p. 150; Chen Zhao Fu 2006b, p. 54-55; Kuzmina 2007, p. 256 (Fig. 93 11-13). Please note that *ibid.*, Fig. 93.10, is indicated as being from Xinjiang but is in fact from Qinghai (Lushan rock art site). For the rock art chariots of the Pamirs (Tajikistan): Kuzmina 2007, p. 111, Fig. 34.7 (from Tekke-tash) and 34.14 (from Akjilga).

¹⁰² The attribution of such chariots to the Bronze Age is well-accepted among scholars, see Cheremisin 2006; Francfort 2002a; Kuzmina 2007, p. 107-131 For chariots attributed to the Iron Age, see Jacobson-Tepfer *et al.* 2006, p. 38, Pl. 224, 540.

¹⁰³ Jettmar 1985, p. 755-757 (Fig. 6).

¹⁰⁴ Brentjes 1977; Olivieri 1998, p. 73-74 (Fig. 15). A fourth image was discovered at the site of Lekha-gata in the Kandak valley: Olivieri 2004, Fig. 29.

¹⁰⁵ Olivieri 2005, p. 215-216 (Fig. 12).

¹⁰⁶ Brentjes 1977; Jettmar 1985, p. 757.

¹⁰⁷ *Ibid.*

¹⁰⁸ For a discussion of archaeological data regarding chariots in the light of textual sources, see Francfort 1998b, p. 308-311; Kuzmina 2007, p. 112-113. For a plate with various types of chariots from the painted shelters of India, see Wakankar 2005, p. 384.

Uttar Pradesh).¹⁰⁹ The two specimens are represented partly in profile (animals, box and charioteer) and partly in plan, as seen from above (wheels, yoke and crossbar).¹¹⁰ One of the chariots is drawn by two horses whereas the other by four. The specimen pulled by two-horses may have two or four-wheels.¹¹¹ The dating of these painted chariots is much debated, but in any case their mode of representation has little in common with the Western Tibetan Plateau petroglyphs.¹¹²

Finally turning east, the famous chariot burials at Anyang (and other locations in central China) demonstrate that this technology had moved to the center of Shang China by circa 1200 BCE.¹¹³ It is generally believed that the chariot reached China from Inner Asia because of their typological affinities and because there is no solid archaeological evidence for wheeled vehicles in China before the chariot.¹¹⁴

Although rock images represent the main source of information about chariots in Inner Asia their chronology can only be inferred through the application of complementary archaeological data. Excavated objects in the form of pottery with engraved chariots, clay models and chariots parts in burials provide comparative datable

¹⁰⁹ Allchin 1958, Pl. M, a and b. Olivieri proposed to compare the chariot from Morhānā Pahār (referred to as coming from Mirzāpūr) drawn by two horses (plate M, a in Allchin) to that engraved at Thor: Olivieri 1998, p. 74.

¹¹⁰ In this respect, we disagree with Kuzmina (2007, p. 114) who refers to one of the painted chariots of Morhānā Pahār with others from Central India, in comparison with those of North and Central Asia: "These images are not executed in the Near Eastern manner, in profile, but they are made in plan, in the style characteristic of northern Eurasia, Kazakhstan and Central Asia. This important stylistic feature reflects the Andronovo influence on the development of wheeled transport in India in the second half of the 2nd millennium BC." The painted chariots from India are not made in plan (or split perspective) but in a combined profile and plan manner.

¹¹¹ Kuzmina 2007, p. 114: four-wheeled; Wakankar 2005, p. 385: two-wheeled. Sparreboom (1995, p. 85) proposes the following interpretation: "The two circles shown on each side near the front may represent wheels, but more likely, they represent the sides, shown in plan. Similarly, the hoop in the front may represent the chariot-front."

¹¹² Wakankar (2005, p. 284-285, p. 384) assigns them to Period 2, that is to say, to the Chalcolithic (2000-500 BCE). Kosambi (1965, Fig. 8c) proposes to date the two horses chariot from circa 800 BCE because he identifies the charioteer holding a disc as Krishna. Allchin (1958, p. 154) places the chariots in the first centuries BCE.

¹¹³ Shaughnessy 1988, p. 188-191.

¹¹⁴ *Ibid.*, p. 192, p. 207-208. For a dissenting view on the establishment of the chariot in China, see Barbieri-Low 2000. Yet, this author acknowledges that the use of chariots in burials in the central plains of China began circa 1200 BCE, substantially later than in Europe, Egypt, the Near East, and Central Asia: *ibid.*, p. 11.

material.¹¹⁵ The earliest known chariots discovered in burials are those of the Sintashta culture in the Ural basin, and dated to 2100-1800 BCE.¹¹⁶ However, it still remains to be proven whether the Ural basin was the ultimate geographic source for the spread of chariots to Inner Asia, as documented by its wide dispersal in rock art of the region. In eastern Xinjiang, traces of a wheeled vehicle with wooden disc wheels and hubs dated 1350-1000 BCE were found in a tomb of the cemetery of Qizilchoqa (Kezierqueqia).¹¹⁷

The historical and archaeological picture sketched above shows that by the end of the second millennium BCE at the latest, the Tibetan plateau was circumscribed by peoples who knew chariots. Although the chariot's date of penetration into Western Tibet cannot be gauged with any surety, its circulation in surrounding regions suggests that it reached Upper Tibet and Ladakh in the same timeframe; that is, circa the second half of the second millennium / first half of the first millennium BCE. In any case, the introduction of chariot petroglyphs in Upper Tibet and Ladakh can be assigned to a period predating the 4th century BCE, the time when the chariot ceased to be a prime technology with strategic value in Eurasia.¹¹⁸ There would hardly seem any cause for its absorption into the Western Tibetan Plateau after this time.

The existence of analogous carved chariots in Ladakh and Qinghai suggest two possible routes along which the chariot may have entered Upper Tibet, one from the west and one from the east. In both cases, transmission along these geographic lines would have been facilitated by the topography, a series of interconnected basins and valleys lacing the tableland. Nevertheless, the rock art evidence taken as a whole indicates that the channel through Ladakh was the better tread one, rather than the route coming across the 2500 km breadth of the high plateau from Minyak (Mi-nyag) in the northeast to Ruthok in the northwest.

¹¹⁵ For examples see Kuzmina 2007, p. 111-112.

¹¹⁶ This chronological assignment is supported in Anthony 2009.

¹¹⁷ Mallory and Mair 2000, p. 142-143, p. 325 (Fig. 64). A date of 1600 BCE is reported for the wheels: Barbieri-Low 2000, p. 13. According to Kuzmina (1998, p. 79-80), bronze technology and chariots reached Eastern Turkestan (Xinjiang) with the southward and eastward movements of the Andronovo tribes, beginning circa 15th to 13th centuries BCE. Kuzmina's attributions in this regard however are still difficult to substantiate and must be viewed as tentative.

¹¹⁸ In China, after the Warring States period, chariots fell out of favor as an instrument of war, but were employed by dignitaries of the Han dynasty as a prestige object and mobile command platform: Shaughnessy 1988, p. 227-228.

The precise function of the chariots depicted in the rock art of the Western Tibetan plateau is difficult to ascertain.¹¹⁹ A major unresolved question is did the elite of Upper Tibet and Ladakh use actual chariots as wheeled vehicles like those recorded in local rock art, or were they merely symbolic representations? Chariot petroglyphs in Inner Asia are often found in terrain where they could not be used with any ease and thus they may be mythic in nature.¹²⁰ In contrast, the deployment of chariots in the wide plains of Upper Tibet is theoretically feasible. It is also possible that chariots were built solely for ritual purposes (such as burial rites) that required little movement, rather than functioning as utilitarian vehicles. Excavations are required to further address these matters of usage.

None of the chariots depicted in the rock art of the Western Tibetan plateau is clearly part of a hunting or battle scene. Sometimes the charioteers hold an object in their hands but its proper identification is not possible: it could be a whip, a hunting device, a weapon, or simply the reins. The chariots are located on rock panels with other petroglyphs characteristic of the region. They occur in close association with common figures (e.g., native wild ungulates) and signs (e.g., swastikas, suns), indicating that they were not a marginal or alien feature, but rather intrinsic to the ancient esthetic and narrative legacies of the region. In Duruchen, hunting scenes and carnivores devouring ungulates in close proximity to some chariot petroglyphs appear to be made in the same timeframe, as indicated by the degree of patination and carving technique. These associated subjects might allude to the heroic qualities and martial spirit with which chariots were imbued. Hence the chariots may be perceived as declarations of social prestige as expressed by the ruling classes.¹²¹ As part of the political, economic and social forces of their time, chariots are likely to have carved out a significant place in the mytho-ritual universe of the makers.

While the chariots of the Western Tibetan plateau reflect the region's participation in the cultural life of ancient Eurasia, they are

¹¹⁹ Chariots are traditionally held to serve as civilian, cynegetic or military transport and also for public exhibitions of high social status social events. They could also have been used as a platform to present and transport the dead physically or in a symbolic manner to the afterlife.

¹²⁰ Bahn 2010, p. 34-35 (after Devlet and Devlet 1995); Cheremisin 2006, p. 91. Bahn (*ibid.*) appropriately comments that this lays bare a basic dilemma in rock art studies: figures may be taken literally or symbolically / ritually. As in many other places, the rock art of the Western Tibetan Plateau encapsulates this fundamental ambiguity.

¹²¹ This hypothesis is in agreement with the one formulated by Francfort for the engraved chariots of North Asia: 2002a, p. 84; 2011, p. 57.

best seen as a local cultural manifestation created by inhabitants of the Tibetan plateau.¹²² As we will see, the same remark can be made regarding another distinctive class of rock art subjects, that of so-called mascoïds.

Mascoïds

In Central Asian archaeology the term 'mascoïd' refers to painted or engraved images of what appear to be faces or masks.¹²³ A closely related motif has been documented in Ladakh and Upper Tibet.

Two so-called mascoïds at the site of Zamthang (Zanskar) were reported by Francfort in 1990.¹²⁴ Since then about 100 specimens have been documented in the whole of Ladakh. However, except for two possible carvings in the Indus valley, all are from the site of Murgi Tokpo in the Nubra valley, making it one of the most important rock art sites in Inner Asia for this motif.¹²⁵ Four types of mascoïds were identified in the rock art of Ladakh.¹²⁶

Apart from a differing contour line (oval, bell, rectangular or diamond-shaped) they share the following traits: two dots or circles stand for the eyes and inward-pointing triangles (one to four, fully pecked or in contour only) mark the forehead, cheeks and / or chin. The nose and mouth are never featured. In some cases only triangles decorate the face / mask. **[Fig.IV.6]** No two of the hundred or so mascoïds documented in Ladakh are identical. This holds true for rock images of mascoïds or masked anthropomorphic figures documented in the whole of Inner Asia.

¹²² The ethno-linguistic make up of these inhabitants is still unclear but continuities with more recent periods in which a distinctive Bodic identity is manifested seem indicated. See Conclusion for further discussion. As has been pointed out by some experts, the expansion of horse riding and chariotry cannot be equated with the spread of a homogeneous ethno-linguistic group in Eurasia (cf. Francfort 1998b, p. 308-310; 2003, p. 191-195; 2005, p. 272-276; 2011, p. 55).

¹²³ We will not discuss the semantics of these images, still unagreed by experts. For an interpretative attempt based on ethnological comparativism, see Devlet 1980, p. 244-260.

¹²⁴ Francfort *et al.* 1990, p. 8 (Fig. 5); 1992, p. 149-150 (Fig. 5). Those petroglyphs were published under the site name Char (Bca / Bya) corresponding to the site of Zamthang in our documentation. This site was partially destroyed in 2009 by the building of a learning centre and both mascoïds were destroyed. See Vernier and Bruneau 2013; Vernier and Sharma 2011.

¹²⁵ For a preliminary analysis of Murgi Tokpo, see Bruneau *et al.* 2011. For a detailed analysis of mascoïds from this site, see Bruneau forthcoming.

¹²⁶ For the typology, *ibid.*, Fig. 2.

Geographically, the closest examples (discussed in details in Section V of the paper) are found in Ruthok and northern Pakistan (Gilgit-Baltistan province). Those from northern Pakistan, and more particularly from the surroundings of Chilas, are close to type 1 (oval-shaped) identified in Ladakh. **[Fig.IV.7]** At the time of discovery in the early 1980s, the mascoids of Pakistan were linked to those of the Okunevo culture.¹²⁷ This affinity is accepted by a number of experts and Francfort similarly associated the mascoids of Zanskar.¹²⁸ By their oval contour and inner triangles the mascoids of Ladakh and northern Pakistan closely resemble those of Mugur-Sargol (Tuva). **[Fig.IV.8]** This rock art site, counting about 300 mascoids, is one of the richest in Inner Asia for this motif. As in Ladakh, no two images in Mugur-Sargol are identical, M. A. Devlet has identified nine types.¹²⁹ This rock art specialist published a comparative typology of mascoids including images from Inner Mongolia, lower-Amur, Ieniseï and northern Pakistan to which we can now add those of Ladakh.¹³⁰ In Central Asia engraved mascoids are related to images carved on slabs and stela of the Okunevo culture (last quarter of the third / beginning of the second millennium BCE, South Siberia).¹³¹ As for the petroglyphic images on the stela, they display a great diversity of elements. However, there is no strict analogy between images found on the stela and in rock art.¹³²

¹²⁷ This comparison was made for the first time by Jettmar in 1982 (p. 300-302) who reiterated his hypothesis in subsequent publications: Jettmar 1985, p. 755; 2002, p. 92-95. For photographs and drawings of the mascoids, see Bandini-König 2011, carving n° 114:7 (Pl. 27, Ziyarat); 109: 1 (Pl. 53 and XXIVa, Thakot); 21:3 (Pl. 87, Dardarbatî Das); Hauptmann *et al.* 1997, p. 52 (1-3); Jettmar and Thewalt 1985, p. 12 (Pl. 2).

¹²⁸ For example, see Francfort 1991, p. 127; 1992, p. 100-101; Francfort *et al.* 1990, p. 8; 1992, p. 149-150; Leont'ev and Kapel'ko 2002, p. 4; Savinov and Podol'skij 1997, p. 247 (Tab. II).

¹²⁹ Devlet 1980, p. 226 (ill. 10). On the mascoids of Mugur-Sargol, also see Devlet and Devlet 2005, p. 255-256, p. 267, p. 287-288, p. 300-302.

¹³⁰ Devlet in Savinov and Podol'skij 1997, p. 247 (Tab. II). The mascoids of Inner Mongolia have been extensively treated; see Devlet and Devlet 2005, p. 185; Ge Shanlin 1998; Jiang Zhenming 1991, p. 72-73, p. 83, p. 85-86, p.97, p. 100; Liang Zhenhua 1998; Qiao Hua 2007, *passim*; Sher 1997, p. 26 (Fig. 1); Tang Huisheng 2006, p. 224 (Fig. 15, 16); Tian Guanglin 2004.

¹³¹ Blednova *et al.* 1995, p. iv; Devlet 1980, p. 227. The dates are those of C14 calibrated tests obtained for kurgans 1 and 4 in Ujbat and those from the site of Cebaki (Khakassia), see Parzinger 2006, p. 306.

¹³² Blednova *et al.* 1995, p. iv : "L'hétérogénéité des monuments d'Okunevo a déjà été plusieurs fois mentionnée. Ce n'est qu'à première vue que les masques peints et les idoles de pierre paraissent similaires ; si on les étudie en détail, on découvre qu'ils n'ont pas beaucoup de ressemblances." See also Sher 1980, p. 216-17; Sher *et al.* 1994, p. xiii-xiv.

If mascoids are characteristic of the Okunevo culture they are not exclusive to it. Further north, along the Ob river, the pottery of the Samus culture displays similar masks.¹³³ In the Altai, funerary slabs of the Karakol culture are engraved and painted with anthropomorphic figures close to the Okunevo ones.¹³⁴ Thus mascoids and masked anthropomorphic figures are common to Early Bronze Age cultures of northern Asia whose contemporaneity is attested.¹³⁵ Consequently we should speak of an Okunev tradition in reference to related cultures (Samus and Karakol). Finally, it is not impossible that some stele from the Minusinsk basin, Tuva and the Altaï date back to the Chalcolithic because at the end of the fourth / first part of the third millennium BCE those areas were already occupied by related Afanasievo population groups.¹³⁶

If the mascoids of Ladakh share some traits with those of Inner Asia they also display peculiarities. The bell-, rectangular- and diamond-shaped specimens are indigenous to Ladakh as is the horizontal line often engraved at the eye level of the mask. [Fig.IV.9] Other elements are shared with mascoids of Upper Tibet.¹³⁷ To date, around 50 mascoids from five different sites in Rñthok have been documented. These sites are Rimodong (Ri-mo gdong), Gokra (Sgog-ra), Ratroktrang (Rwa-'brog 'phrang), Drakdong (Brag-gdong), and Gyamrak (Gyam-rag). The traits common to mascoids of Ladakh and Upper Tibet are the presence of feet and a bow or other weapon, as well as horizontal lines engraved in the lower part of the mask (the mascoids of Upper Tibet and Ladakh are more closely analyzed in Section V of the paper).¹³⁸ It should be noted that the mascoids of Upper Tibet do not share commonalities with those of north Inner Asia (neither general shape nor secondary elements). Therefore these petroglyphs of the Western Tibetan Plateau form a coherent and

¹³³ Parzinger 2006, p. 292-294 (Abb. 97.8-15). Sculpted objects in stone with zoomorphic or anthropomorphic heads from the Samus culture are comparable to those of the Okunevo culture.

¹³⁴ Kubarev 1988; Parzinger 2006, p. 299.

¹³⁵ *Ibid.*, p. 311.

¹³⁶ The dates are derived from C14 tests for Afanasievo sites in the Altai and Minusinsk basin, see Parzinger 2006, p. 192. On the links between the Okunevo and Afanasievo cultures in the Minusinsk basin, see Blednova *et al.* 1995, p. iv-v; Jacobson-Tepfer *et al.* 2006, p. 34; Sher *et al.* 1994, p. x-xiv.

¹³⁷ Mascoids from Upper Tibet were first published in Bellezza 2002a but without any acknowledgement of the identity of this motif. With the discovery of more examples in 2011, this author published a preliminary report on mascoids, see Bellezza 2011c.

¹³⁸ For a discussion of the possible significance of these elements, see Bruneau forthcoming.

unique group amidst the mascoid tradition of Inner Asia as is discussed below.

We can see from this comparative exercise that stylistically speaking the mascoids of Ladakh are intermediate to those of north Inner Asia and Upper Tibet. This intermediate typological position appears to reflect an intermediate geographic position in the diffusion of mascoids to Upper Tibet. Mascoids are found in all eastern regions of north Inner Asia; these lie north of the eastern portion of the Tibetan Plateau. However, mascoids have only been found east of Ladakh in northwestern Tibet. This isolated areal allocation indicates that they did not enter Upper Tibet from the northeastern reaches of the Tibetan Plateau. Had they, this motif should be found in the rock art of the central and eastern Changthang, but there is no demonstrable movement of mascoids south and westwards from the Qinghai plateau to Upper Tibet.

The areal distribution of mascoids reinforces Francfort's hypothesis, based on the rock art material available in the late 1980s, that the Afanasievo-Okunevo artistic tradition reached northern Pakistan probably via Xinjiang.¹³⁹ This hypothesis is further supported by the absence of masks in the rock art of western Inner Asia (Kazakhstan, Kirghizstan, Tadjikistan),¹⁴⁰ and the existence of funerary sites showing affinities with the Afanasievo and Okunevo cultures respectively in the Lopnor region (site of Gumugou)¹⁴¹ and the Dzungar basin (cemeteries of Qiemu'erqieke).¹⁴² The very presence of mascoids at the eastern and western edges of Xinjiang (not in between) seems to point two different paths of transmission through Xinjiang. If Xinjiang did indeed act as a transference zone for the arrival of mascoids into Ladakh and Upper Tibet, Francfort's assertion that mascoids are likely to have entered this region via its eastern extremity is less certain. A more western geographic conduit through Xinjiang for translocation to Ladakh and Upper Tibet seems better indicated. Finally, in the absence of being able to pinpoint which mascoids of Inner Asia are the oldest, we must consider the prospect that mascoid art ebbed

¹³⁹ Francfort 1991, p. 131-134. We do not agree with Francfort who includes Qinghai in the list of provinces, along with Inner Mongolia and Ningxia. Masks do not appear to be found in the rock art of Qinghai nor in Gansu. For mascoids from Ningxia, see Chen Zhao Fu 2006a, p. 35-38, p. 43, p. 45-59, p. 82, p.99, p. 119, p. 123, p. 125, p. 135.

¹⁴⁰ Francfort 1991, p. 129.

¹⁴¹ Debaine-Francfort 1988, p. 16; Kuzmina 2008, p. 95; Kwang-tzuu and Hiebert 1995, p. 253.

¹⁴² Jia and Betts 2010; Kwang-tzuu and Hiebert 1995, p. 269-271.

and flow in multiple directions with various geographic cradles of inspiration.

If one accepts the comparisons drawn above it constitutes, in addition to chariot images, a prime piece of evidence for tracing Bronze Age steppic currents running through Ladakh and Upper Tibet. However, the precise manner and time period in which the mascoids appeared in Ladakh and Upper Tibet still cannot be established with any certainty. Firstly, the presence of horse riders exhibiting the same stylistic and physical characteristics as adjacent mascoids at Gokra,¹⁴³ suggests that in certain instances, this motif significantly postdates the Afanasievo-Okunevo artistic tradition. Secondly, the mascoid motif of Upper Tibet is so different from its Afanasievo-Okunevo counterparts that a great deal of esthetic innovation and cultural adaptation is suggested.

Rather than a culture of the remote northern steppes directly impacting the Western Tibetan Plateau, mechanisms of asymmetric transmission and cultural transformation over time and space may well be indicated.¹⁴⁴ Diffusion involving culture A directly impacting a culture B through trade, pilgrimage, intellectual exchanges, tribute payment, war, diplomacy or a host of other types of contacts has traditionally been used in archaeology to account for the adoption of cognate material goods in far-flung areas. In addition to this linear model of diffusion, more organic models of cultural transmission are now being widely considered. These newer models do not necessarily render older ones outmoded but supplement them with more refined tools for analyses of how cultural materials may have been propagated over wide areas.¹⁴⁵ The intermediate position of Ladakh

¹⁴³ Bellezza 2011c.

¹⁴⁴ For a comment on 'long distance' archaeological relations in relation to the mascoids: Francfort 1992, p. 101.

¹⁴⁵ One of the best articulated of these new models for Eurasia is proposed by Frachetti (2008). He holds as regards Bronze Age social interaction, pastoralist strategies continually redefined local landscapes and promoted wider fluctuating regional networks that on occasion led to flashes of rapid connectivity and diffusion. In his thinking, Frachetti sees the steppes not so much as a highway of grass but as a mosaic of eco-social spheres embedded in the long-term continuity of places. Frachetti uses these globalizing factors (as connected to the Andronovo cultural community defined through an interrelated body of material culture) in the middle Bronze Age to account for the rise of the so-called Eurasian Metallurgical Province, which encompassed much of the Eurasian steppe zone. As regards chariot rock art in the Koksu valley, the Altai and the Pamirs, Frachetti also sees this as mirroring highly transferable semiotic currencies that easily passed through localized and shifting pastoralist territories to embrace much larger regions. Frachetti's work provides us with a powerful departure point for gauging cultural interactions between the steppes and the Western Tibetan Plateau.

is strengthened by the presence there, and not in Upper Tibet, of distinctive motifs (such as giants, 'mushroom' head anthropomorphic figures some with ball-tails at the waist, maces, signs in form of glasses, hunting scenes with the path of the arrows engraved) that have Central Asian affinities and are attributed through non-direct means to the Bronze Age.¹⁴⁶ Thus, Ladakh appears more closely connected to the steppic world than Upper Tibet during the second millennium BCE.

As we shall see next, that Ladakh acted as an intermediary between Central Asia and the Tibetan plateau also holds true for petroglyphs related to the 'art of the steppes', which are attributed to the first millennium BCE.

Art of the steppes or animal style

As its name conveys, in the art of the steppes or animal style,¹⁴⁷ zoomorphic representations, and more specifically the deer, ibex, feline and bird of prey, predominate whatever the artistic medium (e.g., gold, stone, bronze, wood, bone, felt). These animals are either represented in isolation, in series, or in 'predation scenes' referring to a carnivore attacking an ungulate.¹⁴⁸ Finally, animals are depicted in four distinctive poses: on the tip of the hooves, coiled, recumbent and with twisted hindquarters. We may add to this list the volute ornamentation of animal bodies. Although the origin, diffusion and dating of the animal style still raises serious issues, we should consider motifs, themes and traits characteristic of it found in the rock art of Ladakh and Upper Tibet.

Rather than relying on theories of the long-distance movements of peoples and goods, globalized networks of interaction syncopating throughout Inner Asia can be postulated. As such, the Western Tibetan Plateau was not so much a passive recipient of esthetic and ideological patterns coming from the north, as a modulator in their Inner Asian pan-cultural propagation.

¹⁴⁶ For a systematic comparative analysis of these motifs in the rock art of Ladakh and Central Asia see Bruneau forthcoming. See also Bruneau *et al.* 2011 for a preliminary study.

¹⁴⁷ As Jettmar (1972, p. 258) duly remarks there is no general animal style: "There is a variety of decorative systems using theriomorphic motifs, some closely related."

¹⁴⁸ This summary is adapted from Lebedynsky 2006, p. 209-210. Other motifs such as wild boar, camel, bear, wolf and fish are less common as are fantastic animals (winged felines and griffon), *ibid.*, p. 208-209.

Animals on tip of the hooves

One of the distinctive poses in zoomorphic images of the art of the steppes is that of animals on the tips of their hooves, a pose attested as early as the 8th century BCE.¹⁴⁹ In Ladakh the finest examples are found at Domkhar (Rdo-mkhar).¹⁵⁰ This site shelters half the carvings relevant to the animal style of the steppes documented in Ladakh.¹⁵¹ There, on a single slab, one finds eleven finely executed carvings forming a single composition: the deer, yak, feline, bird, ibex and equids are characteristics of the repertoire of the animal style of the steppes.¹⁵² All animals on this Ladakh panel have a standardized rounded body and head (narrow muzzle, rounded eye, elongated and pointed ear). They are distinguished primarily by their tail and horns or antlers; this observation holds true for the animal style as a whole. All are represented on tips of the hooves and have two or four flexed legs. In a specimen with four appendages one of the forelegs is folded as seen in **Fig.IV.10**.

Examples of deer standing on tips of the hooves are also known from Ruthok (but not other parts of Upper Tibet). The deer from Rimodong in **Fig.IV.11** (identified by its branching antlers) stands on the tips of the hooves, as do a good many cervid carvings in Mongolia and south Siberia for example. The anterior of this deer has been retouched, as divulged by the deeply incised lines made with a harder and sharper tool than originally employed, but this does not seem to have much altered the basic form of the composition. The deer's wave-like horns, long snout and two flexed legs are typical of north Inner Asian rock art and decorative objects.¹⁵³

¹⁴⁹ Francfort *et al.* 1990, p. 13; 1992, p. 152.

¹⁵⁰ For animals standing on tip of the hooves in Ladakh, see Bruneau 2013; Bruneau and Vernier 2010; Francfort *et al.* 1990, 1992, Fig. 7, 17, 18. For wild ungulates in Upper Tibet on the tip of the hooves, see Bellezza 2008, p. 192.

¹⁵¹ For a presentation of rock art sites in Ladakh with petroglyphs relevant to the animal style of the steppes, see Bruneau and Vernier 2010. For the location of Domkhar in Ladakh, *ibid.*, Fig. 2. Already in 1902 Francke wrote that the finest carvings known to him were to be found in Domkhar: Francke 1902, p. 401.

¹⁵² For a photograph and drawing of the slab, see Bruneau and Vernier 2010, Fig. 3 and 4. For a photograph of the feline, one of the deer, the ibex, the equid and yak, respectively, *ibid.*, Fig. 6, 8, 10, 11, 12.

¹⁵³ Another carved deer with horizontally aligned wave-like horns and similarly shaped muzzle is found at the Ruthok site of Khampa Racho (Kham-pa rwa-co). See Bellezza 2002a, p. 252 (Fig. XI-3h), Chen Zhao Fu 2006b, p. 139 bottom; Sulong Wangdui 1994, p. 76 (Fig. 49), p. 77 (Fig. 50). This particular specimen has a complex scroll.

The animals carved at Domkhar and Rimodong display a wide range of body ornamentation owing their inspiration to a cultural dynamism encompassing much of Inner Asia in the Iron Age.

Body ornamentation: volutes, scroll and S

Here we consider three interrelated elements we term volutes (curled lines forming a hook or spiral on one end), scroll (two connected volutes, usually placed horizontally) and S design (having the form of the letter S, usually placed horizontally).

Animals at Domkhar display volutes on their hindquarters.¹⁵⁴ A combination of curls marks the body of the yak at the same site.¹⁵⁵ [Fig.IV.12] They spring from a volute marking its forward flank. Volutes embellishing the forelegs and / or hindquarters of animals are frequent in steppic art.¹⁵⁶ These volutes are also found on deer and tigers from Tangtse (Ladakh) and Ruthok discussed in detail below.

On some animals volutes marking the fore and back legs are connected forming a scroll, as on the deer in Fig.IV.11. With ends that are curled this image most resembles the steppic esthetic configuration.¹⁵⁷ An ibex carved at Domkhar, in proximity to the slab described above, also displays a scroll marking the fore and back legs.¹⁵⁸ [Fig.IV.13] This animal is carved above a bird and the composition is reminiscent of one from Zanskar already published.¹⁵⁹ The bird is seen from the side with its eye and beak clearly carved. The two wings are represented, and above the head there is a threefold crest. As duly noted by Francfort, such birds are unknown in the steppic world and he proposes a comparison with birds on Chinese narrative bronzes from the first half of the 5th century BCE.¹⁶⁰

The deer and ibex of Rimodong and Domkhar are fairly close to images of north Inner Asia with scrolls marking the fore and back

¹⁵⁴ Bruneau and Vernier 2010, Fig. 6, 9 and 10.

¹⁵⁵ *Ibid.*, Fig. 12.

¹⁵⁶ For examples: Francfort *et al.* 1990, 1992, Fig. 13-15.

¹⁵⁷ For a comparative study of the scroll, also see Bellezza 2002a, p. 136-138; 2008, p. 190-195.

¹⁵⁸ For an example of a deer with scroll from Ladakh: Francfort *et al.* 1990, 1992, Fig. 7.

¹⁵⁹ For a drawing of the bird from Domkhar: Bruneau and Vernier 2010, Fig. 13; Francfort *et al.* 1990, p. 16; 1992, p. 154-155, Fig. 22.

¹⁶⁰ Francfort *et al.* 1990, p. 16; 1992, p. 154. Francfort offers several possible explanations to account for these similarities. For a study of birds in Central Asian rock art: Kubarev 2006.

legs. For example, in **Fig.IV.14** two stags and a yak are pictured.¹⁶¹ Another deer with barbed antlers stands above them (not visible in the image). These wild ungulates with their scroll ornamentation, widely spread antlers and two legs betray stylistic influences also associated with north Inner Asian animal style. However, these influences are more attenuated than in **Fig.IV.11 and IV.13**. The stags and yak in **Fig.IV.14** have the more solid and naïve form characteristic of indigenous Upper Tibetan rock art. Also, the humped withers of one deer and the yak is an element in wide circulation in upland Tibet.

If on Inner Asian images the scroll forms the outline of the bellies and / or backs of wild ungulates, in most cases it does not in Western Tibet. On most rock images from the Western Tibetan Plateau the scroll anticipates the curvilinear schemata upon which animals were conceived.¹⁶² In some instances, it appears to have been the first thing to be carved, forming the nucleus of the petroglyph. Also many animals depicted in the rock art of Western Tibet display an element in the shape of the S on their bodies. A significant number of wild ungulates ornamented in this manner have been documented in Ladakh, but they are much more common in Ruthok (in this district there are hundreds of animal carvings with scroll or S).¹⁶³ The use of scroll and S has not been documented in the rock art of other areas of Upper Tibet. Therefore, this art very much belongs to northwestern Tibet. Their special functions or symbolism cannot be known. One possible interpretation is that these curvilinear designs symbolized the life-force of animals. In **Fig.IV.15** we see the S design in its most basic form as the central feature of a yak in a Ruthok composition. The same incised strokes are repeated for the bodies and tails of the two yaks depicted, in conformance with the geometry of the S.¹⁶⁴ One finds a wild sheep with outwards horns engraved in an identical manner at Domkhar.¹⁶⁵ [**Fig.IV.16**]

¹⁶¹ These carvings are also shown in Chen Zhao Fu 2006b, p. 123 and p. 132 top; Francfort *et al.* 1990, 1992, Fig. 12; Jettmar 1991, Fig. 8b; Suolang Wangdui 1994, p. 70 (Fig. 36); Wu Junki and Zhang Jianlin 1987, Fig. 12.

¹⁶² For this motif in the wild ungulates of Ruthok, see Bellezza 2001, p. 345 (Fig. 10.52, 10.53), p. 346 (Fig. 10.54, 10.55), p. 347 (Fig. 10.56, 10.57), p. 348 (Fig. 10.58, 10.59); p. 349 (Fig. 10.61), p. 350 (Fig. 10.62), p. 359 (Fig. 10.80); 2002a, p. 226 (Fig. XI-9d, 10d), p. 228 (Fig. XI-13d), p. 252 (Fig. XI-3h), p. 253 (Fig. XI-1i, 2i); 2008, p. 169 (Fig. 293-296), p. 174 (Fig. 308), p. 176 (Fig. 313), p. 192 (Fig. 358, 359); 2000b (Fig. 6, 24); 2004 (Fig. 5, 6); Chen Zhao Fu 2006b, p. 133 top, p. 134 bottom, p. 135, p. 138, p. 140 bottom; Suolang Wangdui 1994, p. 49 (Fig. 6), p. 50 (Fig. 7), p. 54 (Fig. 12), p. 58 (Fig. 20), p. 70 (Fig. 35), p. 80 (Fig. 59), p. 81 (Fig. 60).

¹⁶³ For an example from Ladakh, see Francfort *et al.* 1990, 1992, Fig. 7.

¹⁶⁴ For this image, also see Bellezza 2008, p. 176 (Fig. 313).

¹⁶⁵ Also, for example, on the body of a yak, see Francfort *et al.* 1990, 1992, Fig. 23.

Of particular interest at Rimodong, as part of a well-known composition, is a carnivore chasing an ungulate with volutes marking its fore and back legs superimposed on an ungulate marked by a S.¹⁶⁶ This superimposition demonstrates that in Upper Tibet the S is not necessarily later than volutes. For the Western Tibetan Plateau, the evidence points to the prospect of the S design having developed independently. This is indicated by the sheer diversity in styles, carving techniques and wear qualities found in conjunction with it. That the use of this ornamentation is widely represented in Ruthok appears to be the result of a long and productive period of endogenous development. As for its ultimate origins, the same cultural forces that inspired the creation of the S element in north Inner Asia may also have been at play on the Western Tibetan Plateau, but in an attenuated or buffered configuration.

Turning now to chronology, in rock art from Mongolia, southern Siberia, Central Asia, and China, the ornamentation discussed above (volutes, scroll and S) is dated to the Iron Age.¹⁶⁷ An analogous date for its origins can be proposed for images of the Western Tibetan Plateau.¹⁶⁸ Its over-emphasis in the rock art of Ruthok¹⁶⁹ is well-exemplified by zoomorphic representations at Rimodong adorned

¹⁶⁶ This composition consisting of three striped carnivores in pursuit of three horned deer and a raptor has been published a number of times; for example, see Chayet 1994, p. 67 (sequence 12); Chen Zhao Fu 2006b, p. 124 bottom; Francfort *et al.* 1990, 1992 Fig. 12; Hongliang 2010, p. 80; Suolang Wangdui 1994, p. 67 (Fig. 30); Tang Huisheng and Gao Zhiwei 2004, Fig. 9; Tang Huisheng and Zhang Wenhua 2001, p. 98 (Fig. 227); Wu Junki and Zhang Jianlin 1987, Fig. 13. The figures in this attack scene are very competently rendered but alas they are not ancient (something that has escaped many of those who rely on stylistic methods to date rock art). The carvings in fact betray only a limited degree of wear and repatination. A raptor with outstretched wings and a counterclockwise swastika of an earlier period are in close proximity to this composite scene.

¹⁶⁷ Francfort *et al.* 1990, p. 13-15; 1992, p. 150-153.

¹⁶⁸ In earlier works on the rock art of the region different perspectives on the S and scroll elements arose among scholars. For some specialists (Wu Junki and Zhang Jianlin 1987) they characterize the middle period of rock art in Ruthok, that is to say they antedate the Tufan period (6th-9th centuries CE), but no precise date is given. A chronology in three phases for the rock art of Ruthok was proposed by Wu Junki and Zhang Jianlin 1987, for a summary see Chayet 1994, p. 69-70; Francfort *et al.* 1990, p. 13; 1992, p. 152. For other scholars the S and scroll elements coincide with the explosion of the 'art of the steppes': Chayet 1994, p. 70. Various, it was considered an indication of a late date because it is not used according to the grammar of 'the great period': Jettmar 1991, p. 7. For images see also Suolang Wangdui 1994, p. 50 (Fig. 10), p. 51 (Fig. 8), p. 56 (Fig. 16).

¹⁶⁹ *Ibid.*

with a small S element applied at random.¹⁷⁰ For instance, **Fig.IV.17 and 18** show a stag with three small S (two on its body, one on its neck) and curving lines.¹⁷¹ Examples of animals with such S elements are not very common in Inner Asia but we may mention the recumbent bronze yak found on the north side of the Issyk-kul bearing a 'S' on its shoulder and a volute on its thigh.¹⁷² It would appear that even in north Inner Asia the volute and S developed in parallel.

Of special note on the panel from Rimodong is a fish (engraved below the deer with three S), whose anatomical features are very much like the scaleless lake carp native to the great lakes of Upper Tibet.¹⁷³ **[Fig.IV.19]** Fishes are rather unfrequent in steppic art but a well-known example is the one tattooed on the shin of the man from Pazyryk II (south Siberia, circa 490-410 BCE), echoing felt or golden fish elements of horse saddle decoration found at various Scythic sites.¹⁷⁴

Another mode of execution with almost ubiquitous distribution in Inner Asian rock art is the wild ungulate figure with its head swung back towards its body engraved in between the fish and deer with three S.¹⁷⁵ **[Fig.IV.17]** Deer on tip of the hooves and heads regardant, with antlers represented as seen from the front from Ladakh have been commented upon by Francfort and compared to Western Zhou jade plaques, and more specifically those of the Rujiazhuang tomb (Shaanxi, 9th century BCE).¹⁷⁶ The combination of motifs on the Rimodong panel and comparative elements demonstrate that the S design is by no means always indicative of a late date. On the basis of their erosion, repatination and execution qualities, ancient subjects on the Rimodong panel discussed above can probably be attributed to a period corresponding to North Asian animal style images adorned with double volutes. Thus we propose a provisional date of the first half of

¹⁷⁰ Examples are also known from Ladakh, for example see Francfort *et al.* 1990, 1992, Fig. 19.

¹⁷¹ For this image, also see Suolang Wangdui 1994, p. 69 (Fig. 34).

¹⁷² Bernshtam 1952, p. 42 (Fig. 19). This bronze was an element of a table that was a chance discovery and there is no proposed dating.

¹⁷³ For what may be another scaleless lake carp in the rock art of Upper Tibet, see Bellezza 2004 (Fig. 39); 2002b, p. 393 (Fig. 53); 2000b (Fig. 39); also see Bellezza 2012g, Fig. 8, 9.

¹⁷⁴ Parzinger 2006, p. 593, p. 599 (Abb.194.3). For golden fishes from Arzan 2 (Tuva, end of the 7th century BCE): Chugunov *et al.* 2004, Fig. 11. Golden fishes were also found at Chilikta (Kazakhstan) and felt ones at Ak-Alakha 1 (south Siberia) for examples: *ibid.*, p. 10.

¹⁷⁵ For these depictions, see Bellezza 2008, p. 168 (Fig. 287), p. 169 (Fig. 296), p. 192 (Fig. 352); 2001, p. 345 (10.53); 2000b (Fig. 6); Suolang Wangdui 1994, p. 51 (Fig. 8), p. 56 (Fig. 16), p. 80 (Fig. 59), p. 81 (Fig. 60), p. 89 (Fig. 71).

¹⁷⁶ Francfort *et al.* 1990, p. 11-13; 1992, p. 151 (Fig. 7, 10, 11).

the 1st millennium BCE. In Ruthok there are many other such specimens of animal style art with the S or scroll that appear to be just as ancient (perhaps some are even older). Other examples according to style and physical condition, however, seem more recent, perhaps dating as late as the dawn of the historic period. It is important to note that, more generally, a major obstacle to dating rock art on the Western Tibetan Plateau using stylistic methodologies is that older cultural traits appear to have been retained en masse in the protohistoric cum early historic period (100 BCE to 650 CE), as an anachronistic extension of the Iron Age.¹⁷⁷ Returning to images of deer with their head turned backwards, both in Ladakh and Upper Tibet, some are represented chased by a carnivore forming a 'predation scene'.

Predation scenes

Fig.IV.20 and IV.21 portray striped carnivores chasing wild ungulates in a manner which parallels the art of the steppes.¹⁷⁸ That these compositions from Rimodong (Ruthok) and Tangtse (Ladakh) are closely allied is understandable in that they stand less than 150 km from one another. Moreover, the geographic aspect and rich rock art and epigraphic status of Tangtse seems to indicate that it has long been an important way station between central Ladakh and Ruthok.¹⁷⁹ Unfortunately, the Upper Tibetan composition was subject to defacement when carved over by Buddhist devotees. It is common to find Buddhist mantras superimposed on older figurative rock art

¹⁷⁷ Jettmar (1991, p. 9-10) observes that some animal style rock art in northern Pakistan may represent an anachronism made by those following ancient artistic conventions, in an attempt to capture the 'national symbols' of their nomadic warrior ancestors, with the aim of proclaiming their social and ethnic identity in a region that was the meeting place of many religions and peoples. Jettmar (*ibid.*) adds that the animal style may have been heraldic in nature as distinguishing signs of certain families, lineages, tribal segments or politically important minorities, but not of larger constitutions of peoples due to the rarity of these images in northern Pakistan. Some of Jettmar's observations seem applicable to the animal style influenced images of Ruthok. Their perdurability in the rock art record likewise suggests that they may have been made to propagate ancient traditions martial or otherwise. If they are indeed heraldic in function, these symbols of ancient achievement and prowess may have been clan-based, a fundamental building block of Upper Tibetan society since ancient times.

¹⁷⁸ Francfort commented upon the felines chasing deers from Rimodong in comparison with scenes from Chinese narrative bronzes and engraved motifs from northern Pakistan: Francfort *et al.* 1990, p. 19; 1992, p. 156 (Fig. 13.a, 13.b).

¹⁷⁹ About rock art of the historic period from Tangtse: Sander 1994; Sims-Williams 1993; Vohra 1995, 1999.

and this practice appears to have a sectarian or ideological motive. The deep and crisp lines of the carnivore attack scene indicate that it was made with ferrous tools.¹⁸⁰ The carnivore in **Fig.IV.20** is visible in the upper left hand side of the image.¹⁸¹ To the right of this animal are three wild ungulates, the uppermost of which has been nearly obliterated. The middle one is a deer, its branched antlers barely still visible. Below the striped carnivore is a yak, but like the cervine animal with volutes on its haunches to the right, it is part of a separate composition. This figure was partly carved on top of the inferior wild ungulate with a scroll element in the body. Both the yak and wild ungulate with the scroll were carved using tools that produced hazier and shallower lines typical of earlier rock art.

The composition from Tangtse in upper Ladakh also shows a striped carnivore closing in on a wild ungulate (deer).¹⁸² [**Fig.IV.21**] Close by on the same surface are two deer executed in an analogous manner and a number of unfinished carvings. Both the carnivore and deer have their bodies ornamented with curvilinear strokes. Although the same ornamentation on the feline and deer demonstrates that in some instances stripes are a stylistic trait, there are a variety of styles of striped carnivores that along with other anatomical traits can probably be identified as tigers in the rock art of Western Tibet.¹⁸³ Tigers of Western Tibet are discussed in detail in Section V of the paper. A great variety of tigers is known from the rock art of Inner Asia,

¹⁸⁰ At Thalpan Bridge (Pakistan) the scene of a stag followed by a beast of prey with two tails (a peculiarity occurring in the decor of narrative bronzes in China) was also made with a metal implement: Jettmar 1991, Pl. 6.

¹⁸¹ This scene has been published as a drawing in Chayet 1994, Fig. 36 b; Francfort *et al.* 1990, 1992, Fig. 12; Wu Junki and Zhang Jianlin 1987, Fig. 15. Also see Bellezza 2012e, Fig. 3.

¹⁸² This scene was first published in Bruneau and Vernier 2010, Fig. 7.

¹⁸³ The appearance of what can probably be identified as tigers raises questions as to this animal's ancient habitat. For a discussion of this matter and 'tiger' types in Upper Tibet, see Bellezza 2012e. For striped carnivores in the rock art of Upper Tibet, also see Bellezza 2000a, p. 51 (Fig. 28); 2001, p. 350 (Fig. 10.62); 2008, p. 169 (Fig. 296), p. 190 (Fig. 357); 2000b (Fig. 6); Suolang Wangdui 1994, p. 56 (Fig. 17), p. 66 (Fig. 29), p. 67 (Fig. 30), p. 71 (Fig. 38). Carnivores with scrollwork and linear ornamentation in northeastern Tibet are more reminiscent of steppic art; see Tang Huisheng and Zhang Wenhua 2001, p. 35 (Fig. 69), p. 39 (Fig. 91), p. 40 (Fig. 94), p. 54 (Fig. 159), p. 60 (Fig. 191). In Inner Asia deers with striped bodies from the Early Iron Age ostensibly are known in petroglyphs and on deer stones; for example, at the site of Sarmish-say (Uzbekistan) (fieldwork by Bruneau - along with H. P. Francfort and M. Khuzhanazarov- in 2006 and 2007) or in the Altai: Kubarev 2007, Fig. 7.5. See also Bellezza 2002b, p. 382 (Fig. 31, 32).

and more particularly from Mongolia, Inner Mongolia and Ningxia, but there is no exact parallel for those of Western Tibet.¹⁸⁴

In the predation scenes discussed above we see the convergence of Ladakh and Ruthok rock art, which owes its origins to the cosmopolitan style of Iron Age Inner Asia. The most noticeable difference between them is that the Ruthok carnivore is shown with two legs while the Ladakh example has four legs. Both deer however were carved with four flexed legs. The makers of predation scenes, apart from registering a fact of the natural world, may have invested this rock art with narrative or mythic value reflecting sanguinary aspects of their cultures. We are inclined to read these attack compositions as evidence for a martial exuberance or militarism, as part of a social contagion that spread extensively in the Iron Age.

Discussion on animal style related images

As noted, some rock images of Western Tibet share thematic and stylistic traits with the 'art of the steppes' raising the issues of their origin(s), chronology and mode(s) of transmission.

All the features enumerated above (tip of the hooves, volutes, scroll, S, predation scenes, etc.) find parallels in the arts of Inner Asia. However it is difficult to identify the exact origin of Western Tibetan Plateau motifs because studies dedicated to the animal style are geographically limited (e.g., the Altai, Tuva) and no systematic interregional comparative analysis is available. This is reinforced by the fact that examples for comparison are geographically distant and are not exact models.¹⁸⁵ For instance, images of deer with four legs and a foreleg folded such as the ones found at Domkhar (Ladakh) are rare

¹⁸⁴ Francfort compared the striped felines of Rimodong to carvings from Alchi (Ladakh): Francfort *et al.* 1990, p. 18-20; 1992, p. 155-156 (Fig. 12, 21, 23, 24, 25). According to him the tigers of Alchi find close counterparts with felines represented on Chinese narrative bronzes (end of the 6th-first half of the 5th century BCE). Let us note that the circles or dots marking the legs of felines on some Ladakhi images are unknown in Ruthok. For tigers on deer stones of Mongolia: Francfort *et al.* 1990; 1992, Fig. 26 (after Novogorodova). Also see "The Tiger in Chinese Rock Art" (http://www.bradshawfoundation.com/china_tiger/index.php). For closely related tiger rock art from Ningxia: Chen Zhao Fu 2006a, p. 12 bottom, p. 24, p. 25, p. 26, p. 41, p. 91, p. 104, p. 113, p. 134, p. 138 top; Qiao Hua 2007, p. 66, p. 89-92, p. 131. Tigers are rare in the art of Qinghai and Xinjiang: Chen Zhao Fu 2006a, p. 264; 2006b, p. 73 bottom (site of Hutubi, but no tigers in the Altai reported).

¹⁸⁵ Deer with a foreleg folded is known on plaques from Garchinovo (Bulgaria) and Zholdhalompusztá (Hungary) but their head is turned backwards, see Tchlenova 1963, p. 49 (tab. III 27, 30); these pieces are dated to the 6th-5th century BCE.

in the art of the steppes, thus indigenous sources of inspiration must also be considered. Furthermore, stylistic elements such as tip of the hooves and scrolls ornamenting the body appear to be persistent in the animal style throughout much of the first millennium BCE and into the first millennium CE and are not sufficient in themselves to propose a reliable chronology. In order to better understand the relationship of the art of the steppes with that of the Western Tibetan Plateau a variety of rock art images and other artistic media from north Inner Asia will be considered below.

Looking west, as noted, animal style related carvings are found in northern Pakistan. [Fig.IV.22] There one finds horned animals on tip-toes and predations scenes such as the well-known composition from Chilas I depicting a leopard chasing an ibex.¹⁸⁶ Some animals exhibit volutes on their haunches.¹⁸⁷ At the time of their discovery in the early 1980s, these rock images were thought to be of extraneous inspiration. In fact, they account for a small percentage of the thousands of rock images documented in the Gilgit-Baltistan province and more particularly in the surroundings of Chilas.¹⁸⁸ The same is true for the rock art of Ladakh and Upper Tibet where such images are in the minority.¹⁸⁹

In northern Pakistan the animal style is also attested by metal objects. Unfortunately all pieces are stray finds. The first of these pieces to be reported was a bronze plaque from the Kandia valley representing a crouching ibex with a bird's head attached to its horn. Noticeably the body of the ibex is S shaped. This piece was compared by Jettmar to similar bronzes from the Pamirs and dated to the 5th-3rd century BCE.¹⁹⁰ Worth mentioning is a bronze plaque from Pa-

¹⁸⁶ Francfort 1994, Fig. 5; Jettmar 1991, Pl. 4; Jettmar and Thewalt 1985, p. 15.

¹⁸⁷ Jettmar 1991, Pl. 4.

¹⁸⁸ This small proportion has already been noted by Neelis (2007, p. 68). For a list of petroglyphs from northern Pakistan '[...] which can definitely be classified as examples of animal style [...]' see notes 55 to 60 (*ibid.*). We can add to this list the carvings published in the subsequent volumes of *Materialen zur Archäologie der nordgebiete Pakistans (MANP)*: MANP 8, Thalpan: 444:25; MANP 9, Thalpan: 499:1, 502:26; MANP 10, Khomar Das: 54:1 (Pl. 66 and XXXb), 58:17 (Pl. 64 and XXXIa); Gichoi Das: 4:1 (Pl. 73 and XXXIIb), 12:11 (Pl. 73 and XXXIVa), Gruppe 6:A (Pl. 77); Dardarbat Das: 39:1 (Pl. 83), 39:2 (Pl. 83).

¹⁸⁹ In Ladakh rock images related to the animal style of the steppes account for 0.5% of the images (about 100 carvings out of 20 000 documented): for distribution and numbers: Bruneau and Vernier 2010. In Upper Tibet they are more numerous and account for about 2% of all zoomorphs and are concentrated in the district of Ruthok (about 500 out of 5000 carvings).

¹⁹⁰ Jettmar 1982; Parzinger 2001, p. 323. On the relations between Gilgit and the Pamirs: Litvinsky 1993.

mirskaja I (southern Tajikistan) in the form of a S.¹⁹¹ Other bronzes from northern Pakistan were published by Dani but unfortunately their exact provenance is unknown.¹⁹² Among these, the bronze of a crouching horse with rounded paws and tail curled over its back with a bird head finial is comparable to a piece from Tegermansu I (kurgan 7, south Tajikistan) dated from the 6th-3rd century BCE.¹⁹³ The most astonishing find from northern Pakistan is without a doubt the golden necklace from Pattan (Kohistan).¹⁹⁴ This 16 kilogram-ornament made of 12 pieces (which unfortunately disappeared since its chance discovery in the late 1980s) displays a wide range of motifs (stag, horse, ram, ibex, deer, goat, rabbit, tiger, 'eagle', monkey, gazelle, camel, dog, bull, wolf, humans fully dressed in thick garments with boots and caps, and floral patterns). A comparative study of golden ornaments from the steppes led Jettmar to propose a 3rd-2nd century BCE date.¹⁹⁵ Since then the discovery of the golden necklace of Arzan 2 (Tuva) provided a stronger comparison and an earlier date (mid-7th century BCE) might be proposed for the Pattan piece.¹⁹⁶ Jettmar tried to explain the roots of the abundant use of curves, spirals, inverted spirals, spiral hooks and volutes as structuring elements in the art of northern Pakistan and the Pamirs. He noted that in the entire eastern areas of the steppes there was a general trend towards spirals and volutes and according to him the missing links might have existed somewhere in Xinjiang.¹⁹⁷ Discoveries made in Xinjiang since the mid-1990s confirm his hypothesis.

Wooden vessels from Djumbulak-kum and Satma Mazar (Keriya delta), Zaghunluk (near Qiemo) and Yanghai (Shan Shan county) in Xinjiang, are engraved with animals motifs and more specifically deer exhibiting spiral forms on their front and hind legs sometimes linked by a line on their body.¹⁹⁸ Deer and caprids with identical

¹⁹¹ Jettmar 1982, Abb. 3.

¹⁹² Dani 2001, Pl. 55.3, 55.4, 56.3, 58.4.

¹⁹³ Parzinger 2001, p. 322-324, Abb. 1.

¹⁹⁴ Jettmar 1991; Parzinger 2001; Rahaman 1990.

¹⁹⁵ Jettmar 1991, p. 11-17.

¹⁹⁶ Chugunov *et al.* 2006, n. 12 and n. 13; Parzinger 2008, p. 12.

¹⁹⁷ Jettmar 1994, p. 6-7.

¹⁹⁸ For Djumoulak-kum: Debaine-Francfort and Abdouessul 2001, Cat. 59 (detail p. 135); Francfort 2002b, Fig. 3. For Satma Mazar: Baumer 2011, Fig. 10. For Zaghunluk and Yanghai: Han Jianye 2007, p. 61, p. 86, p. 91. For Zaghunluk: Francfort 1998a, Fig. 17. Francfort notes that the site is dated from the middle of 1st millennium BCE and not early 1st millennium BCE as earlier Chinese researchers have written (*ibid.*, p. 45). For Yanghai: XICRA and Turpan Prefectural Bureau of Cultural Relics 2004.

body ornamentation are known from the Chinese Altai.¹⁹⁹ From these sites wooden boxes and bushels exhibiting scrolls or S as decorative motifs were also discovered.²⁰⁰ [Fig.IV.23] The S as an independent motif is attested in the rock art of Xinjiang and Mongolia.²⁰¹ However, it is more common in the rock art of Ruthok (but not in other parts of Upper Tibet) and Ladakh.

The S-shaped motif reposes above a yak hunting scene at Drakdong (it occurs at other sites in Ruthok as well).²⁰² The S of Drakdong exhibits the same or a very similar degree of wear and repatination as the horse riders and wild yaks below it. The three yaks and two hunters in Fig. IV.24 are of the type often found in Upper Tibet. The S motif in Fig. IV.25 from Yaru Zampa is associated with an avian representation typically met with in the region. The S as an independent motif presupposes more vibrant cultural ties between Western Tibet and Xinjiang than if it was merely one embellishment among many others.

The S motif of the Tarim Basin is esthetically and geographically intermediate between the steppes and the Western Tibetan Plateau. As with analogous chariot depictions, this suggests that Xinjiang was a kind of cultural bridge between the art of the steppes and the Western Tibetan Plateau. That the S motif and other features comparable to steppic imagery are not discovered east of Ruthok supports this notion of a northern vector of dissemination. This seems to indicate that at the debut of the Iron Age cosmopolitan influences in zoomorphic depiction penetrated Upper Tibet from the north and west and did not travel across the vast expanses of the Tibet plateau. The art of the Keriya sites argue for a connection from there south to Ruthok, over Karakoram passes, Ladakh acting as an intermediary, or directly over the Kunlun mountains. This argument is reinforced by the fact that engraved animal art images were documented in extreme northwestern Tibet as well as in northeastern Tibet, a region that also abuts Xinjiang. For instance, a yak with volutes ornamenting its haunches is engraved at Lushan, on the northeastern Tibetan plateau.²⁰³

¹⁹⁹ Chen Zhao Fu 2006b, p. 106-107.

²⁰⁰ On the spiral decoration on such objects from Xinjiang: Francfort 1998a, p. 46. For wooden boxes from Djumbulak-kum: Debaine-Francfort and Abduressul 2001, Cat. 101, 102. For wooden boxes and bushels from Zaghunluk: Francfort 1998a, Fig. 1, 2, 3, 16. See also Han Jianye 2007, p. 92.

²⁰¹ Francfort *et al.* 1990, p. 18; 1992, p. 155.

²⁰² Bellezza 2001a, p. 249 (Fig. XI-12g).

²⁰³ Tang Huisheng and Zhang Wenhua 2001, color photograph 14.

The links between the rock art of Qinghai and the northern steppes are also exemplified by what Tang Huisheng calls 'parallel-style eagles', echoing avian representations on bronze objects such as knives from Mongolia and deer with beak-shaped muzzles recalling Early Iron Age representations from the steppes.²⁰⁴ Similar deer are attested in the rock art of northern Xinjiang (where they are coherent with the distribution of deer stones) and Gansu.²⁰⁵ A little further east animals ornamented with volutes have been documented in the rock art of Ningxia.²⁰⁶ This new evidence might help position geographically the animal style comparisons drawn by Francfort with Western Zhou China and with 7th-5th century BCE China that according to him were "[...] fairly difficult to expound historically beyond a mere connection in form."²⁰⁷

We can view the interrelated artistic idioms of Upper Tibet and Ladakh echoed in the art of the steppes as by-products of ideas and preferences transmitted through trade, war, or intellectual association. These interregional transactions may have involved cultural assimilation or major ethnical changes associated with demic diffusion or long-range colonization.²⁰⁸ Conversely, less intrusive processes stemming from economic, social or religious contacts, direct and indirect, may also be implicated.²⁰⁹

Of all the groups that may have carried (directly or remotely through intermediaries) the animal style emblematic of Iron Age In-

²⁰⁴ Tang Huisheng and Gao Zhiwei 2004, p. 163-164; p. 166-167.

²⁰⁵ In the rock art of Xinjiang: Chen Zhao Fu 2006b, p. 13, p. 17, p. 18, p. 21. In the rock art of Gansu: Chen Zhao Fu 2006a, p. 177. For the distribution of deer stones in Xinjiang: Wang Bo 2001.

²⁰⁶ Chen Zhao Fu 2006a, p. 20-21, p. 24-25, p. 30, p. 41, p. 55.

²⁰⁷ Francfort *et al.* 1990, p. 23 ; 1992, p. 180.

²⁰⁸ According to Tenzin Gayden *et al.* (2007), in a recent genetic study, while the genetic makeup of Tibetans is predominantly related to that of speakers of Tibeto-Burman languages, they also carry central and North Asian genes. These genes are not part of a recent genetic admixture. Thus there is the prospect that this genomic legacy may point to demic infiltrations from the steppes into the Western Tibetan Plateau. Such a genetic amalgamation could possibly account for some of the rock art affinities we are studying, in that they may have been inspired or executed by people of extraneous origins. For a review of genomic studies pertaining to the phylogeny of the Tibetan population, see Bellezza 2013d.

²⁰⁹ That the Sakas may well have had a deep influence on the rock art of northern Pakistan through a diverse set of factors is commonly accepted. According to Neelis (2007, p. 67-69), Saka cultural impacts had a long term effect on animal style rock art of that region. Neelis (*ibid.*) by reviewing the rock art, literary and artifactual evidences, concludes that Saka migrations to northern Pakistan in the last centuries BCE and first centuries CE were very likely. If these migrations did indeed take place, they provide a geographic launching pad for the possible advance of the Sakas east onto the Western Tibetan Plateau.

ner Asian peoples to the Western Tibetan Plateau, the Sakas seem historically best situated.²¹⁰ Nevertheless, if we hypothesize the presence of Saka related tribe(s) in Western Tibet we face the problem not only of their ethno-linguistic identity but also of their mode of living. Pastoralist associations notwithstanding, in Xinjiang, objects with images pertaining to the animal style were found at sedentary sites.²¹¹ In any case, the physical presence of Saka tribesmen in western Tibet need not be postulated. The pan-cultural artistic trend they appear to have propagated flourished in a number of media including bronze implements, which could have been easily transported between individual regions to serve as creative inspiration for rock art.²¹²

As duly noted above, the rock images of the Western Tibetan Plateau are not replicas or models found in adjacent regions or further afield, rather some individual traits are original, as are certain combinations of these traits. This uniqueness is reinforced by the absence of significant motifs such as animals with twisted hindquarters or coiled predators. The Western Tibetan Plateau images clearly form a distinctive artistic tradition. Not only do the Western Tibetan Plateau images differentiate themselves from representations of surroundings areas, they are distinctive from one another. For example, images of recumbent deer, typical of the early animal style are known in Ruthok but are absent from the Ladakhi repertoire.²¹³

While the rock art of the Western Tibetan Plateau incorporated a range of esthetic traits associated with north Inner Asia in the Iron Age, it did so on its own terms. Whatever inspiration was drawn from the north it was used to enhance not supplant pre-existing traditions of figuration. Thus it is not prudent to brand the rock art of

²¹⁰ Bellezza 2008, p. 196-197; Bruneau and Vernier 2010 ; Francfort 1992, p. 98. The term Saka is used here in a broad archaeological sense referring to the material culture of horse riders and pastoralists characterized by the 'Scythic Triad', comprised of weaponry, horse gear and art in the animal style.

²¹¹ On the Sakas of Xinjiang and criteria for their identification: Debaine-Francfort 1990.

²¹² In Ladakh a piece in the shape of a bird of prey comparable to pieces from the steppes was acquired in Leh in the early 1980s but its provenance is unknown: Koenig 1984. Bronze and gold pieces of steppic origins have reportedly been found in Upper Tibet and traded by antiquities dealers, but this information is difficult to corroborate. According to Kwang-tzuu and Hiebert (1995, p. 283), the oases of the southern margin of the Tarim basin enjoyed long-term cultural continuity involving agriculturalists and pastoralists, marked by shared stylistic and technological elements as well as similarities in burial patterns and economic structures, all of which are distinct from neighboring regions. This wide-ranging cultural complex abutting the Tibetan Plateau appears to have funneled artistic elements from the steppes southward.

²¹³ Bellezza 2002a, Fig. XI-3g, Xi-5g; 2008, Fig. 360.

the Western Tibetan as belonging to the 'art of the steppes', not least of all because this implies analogous features in the rock art of north Inner Asia and the Western Tibetan Plateau perforce originated in the former. In order that the field of inquiry is sufficiently wide, we must consider the possibility that the generation of certain artistic styles and motifs associated with the animal style may reveal a south to north bias.

The adroit carving of the later historic period composition at Rimodong (see footnote 166) was certainly spurred on by ancient rock art at this and other sites on the Western Tibetan Plateau. Its style however is somewhat contrived, the historic successor to that shown in **Fig.IV.17**. These carnivore attack scenes of different ages are an excellent indicator of how cultural traditions persisted on the Western Tibetan Plateau. That is not to say that changes of considerable dynamism did not take place over time but that certain formative artistic (as well as underlying abstract) traditions remained among the peoples of the region.²¹⁴ In fact, Iron Age cultural features as revealed in the archaeological and literary records appear to have been preserved en masse in Upper Tibet until the early historic period (see footnote 177). Thus, some petroglyphs are part of a pervasive anachronism rather than actually dating to the Iron Age. In the workmanship of Tibetan silversmiths and coppersmiths, the depicting of wild ungulates in the animal style continues to the present day.

V. Defining the 'Western Tibetan Plateau Style' of rock art

Rock art of Upper Tibet and Ladakh fits the esthetic pattern of two regional traditions largely independent of one another. However they share underlying commonalities that form what we call the Western Tibetan Plateau Style (WTPS). This section of the paper focuses on this interrelated tradition.

As explained in the introduction, the pictorial elements of this artistic tradition can be divided into five main components: motif, composition, theme, formal elements and style. There are eight broad categories of rock art in the comparative regimen that defines the WTPS. They are: yaks and yak hunting; deer and caprids; felines;

²¹⁴ A striped carnivore chasing a deer composition is also found at Ratroktrang in Ruthok, see Bellezza 2008, p. 169 (Fig. 296); 2000b, Fig. 6; 2012e. This scene, while perhaps being inspired by the carnivore attack scenes of cosmopolitan flavor, was executed in a fully indigenous style. It depicts a striped carnivore with gaping jaws and tail curled over its body running down a deer ornamented with a scroll of typical Ruthok style.

equids; khyung; horse riders; extraordinary anthropomorphs; non-figurative.

In devising the graphic criteria for the WTPS, isolated or idiosyncratic similarities in rock art compositions from Upper Tibet and Ladakh have been largely ignored. The focus is on recurring structures that are readily identifiable, in order that the comparisons made have wide relevance and applicability. This comparative study of rock art is predicated on the assumption that analogous thematic and stylistic features, when widely based and taken in aggregate, pinpoint a cultural common ground undergirding ancient Upper Tibet and Ladakh. The cultures of these regions; i.e., their languages, ideas, social structures, customs and traditions, may have varied significantly, but they still enjoyed certain affinities that gave rise to rock art of the same subject matter and esthetic arrangement. That is to say, the peoples of ancient Upper Tibet and Ladakh were no strangers to each other, at least in specific situations and understandings.

1. Yaks and yak hunting

The wild yak is a motif common to the rock art of Upper Tibet and Ladakh. In the former it dominates zoomorphic representations (approximately 40%) whereas in the latter it occurs in the third place only and represents a small percentage (7%) of the animals depicted. This appears to reflect an environmental reality since wild yaks occupy or once occupied treeless uplands, including plains, basins, and mountainsides, from as low as 3200 m in elevation up to the limit of vegetation at 5300 m-5400 m, and therefore are more common in western Tibet than in Ladakh.²¹⁵ In the images, yaks are easily identifiable by their massive curved horns, conspicuous hump and short tail terminating in a bushy tuft. In both Upper Tibet and Ladakh the yak is depicted in isolation, in groups, or hunted by bowmen either on foot or mounted. Yak hunting scenes are a salient theme of the WTPS.²¹⁶

The engraved yaks of **Fig.V.1 and V.2** form a distinctive style of the WTPS. They have an abbreviated body and two short legs forming a concave belly, massive hump and short neck, long pointed snout, fully rounded horns and, short ball-tail. The ball tail is fre-

²¹⁵ Schaller 1998, p. 129. According to the observations of one of the authors (Bellezza), this upwards limit for vegetation can in certain locations be extended to 5400 m-5600 m.

²¹⁶ In Ladakh, less than a quarter of yak images are represented hunted whereas about half of the engraved yaks of Upper Tibet are.

quent on yak images from Ladakh and Upper Tibet.²¹⁷ In Central Asian rock art the ball tail is considered a stylistic trait of the Bronze Age.

Another type of wild yak with ball-tails and forming a distinctive style of the WTPS is illustrated by **Fig.V.3 and V.4**.²¹⁸ These yaks are characterized by an oversize body and small triangular head. The belly is straight and the back is marked by a massive angular hump behind the head. There are four stick legs and long upright inward curved horns. These images are drawn with open lines at the head and leg level. Both yaks are engraved among other animals (caprid and camel for the Ladakh image and various wild ungulates in the Ruthok image). It is noticeable that this type of yak is never hunted. Below the yak in **Fig.V.3** there is a deer with branched antlers (one of which overarches its back) that is considerably more patinated.

Other yaks share similar traits (massive body and small triangular head, straight belly and four short stick legs) with the above style but distinguish themselves by the following traits: angular rump, massive hump (no neck) and wedge-shaped tail hanging down. [**Fig.V.5**] Wedge-tail yaks are peculiar to the WTPS. Such yaks are rare in Ladakh - where they are interestingly found in the eastern part of the region, whereas they are common in Upper Tibet. In **Fig.V.5** such a yak documented at the site of Changa (Ladakh) displays long intertwined horns. It is found among other motifs, zoomorphic and anthropomorphic, some being later as proved by the horns of a caprid overlaying its belly. We also note a damaged Bowman with flexed legs and an engraved arrow on the top right of the yak. Wedge-tail yaks are usually represented hunted. The Changa yak featured here is remarkably similar to one found at Kabren Pung Ri (Skabs-ren spung-ri), in Ruthok.²¹⁹ [**Fig.V.6**] This stylistic interplay epitomizes cultural affinities between Upper Tibet and Ladakh explicated above.

Prominent withers and fairly short horns are other common traits of upland wild yak compositions. Perhaps in some cases relatively

²¹⁷ For a discussion of ball-tail yaks in the rock art of Ladakh: Bruneau 2013, forthcoming. For this feature in the rock art of Upper Tibet, see Bellezza 2008, p. 193. For yaks with ball-tail in the rock art of Upper Tibet: Bellezza 2002a, Fig. XI-2h, XI-2f, XI-4f, XI-5f; 2008, p. 195 (Fig. 362, 365); Chen Zhao Fu 2006b, p. 155 bottom, p. 157 bottom; Suolang Wangdui 1994, p. 48 (Fig. 4), p. 49 (Fig. 6), p. 20 (Fig. 58), p. 69 (Fig. 33), p. 118 (Fig. 126), p. 120 (fig. 131), p. 126 (Fig. 145). This feature is also found in the rock art of Ningxia, Gansu and Qinghai: see Chen Zhao Fu 2006a: p. 26, p. 202, p. 245, p. 246, p. 248, p. 256, p. 265 top.

²¹⁸ Another example of this sort of yak with an upright ball tail and an almost entirely worked body is found at Kabren Pung Ri: Bellezza 2002a, p. 225 (XI-7d).

²¹⁹ *Ibid.*, p. 224 (XI-6d). For another example of a wedge-tail yak: Chen Zhao Fu 2006b, p. 55 top.

short horns designate females. The wild yak in **Fig.V.7** is being hunted by a standing archer who seems to approach his prey squarely from the side, which gives the impression that he had been lying in wait in a blind (it is unlikely that a hunter on foot would have been able to get so close to a yak otherwise). Nevertheless, the spatial relationship between the hunter and yak may just be a stylistic trait. A similar wild yak is hunted in a scene from Zamthang (Zanskar). [**Fig.V.8**] It depicts an animal with a small humped withers and a hint of a belly fringe. The belly fringe is a very common stylistic element in Upper Tibet, but much less so in Ladakh.²²⁰ [**Fig.II.3**] Only two other examples of yaks with long belly fringes have been documented at Yaru and Khaltse. On yak images from Ladakh the tail is often sticking straight up as on this particular one but this position is somewhat less frequent in Upper Tibet. This seems to reflect an actual behavior since during aggressive encounters the animal raises its tail vertically.²²¹ The hunter in **Fig.V.8** is stalking the wild yak from behind.

The hunters in both **Fig.V.7** and **V.8** are depicted as they are about to shoot their long bow at prey.²²² The bows and arrows are exaggeratedly large, as if to underline their power and efficacy. In the two images, both arms of the hunters are shown; presumably one is grasping the bow and the other one is pulling the bow string. The arrowhead is represented in an exaggerated manner. **Fig.V.7** and **V.8** depict the basic components of wild yak hunting (archery and coursing of prey) in Upper Tibet and Ladakh. In **Fig.V.7** these two primary subjects are found adjacent to other archers hunting yaks on horseback, carvings which exhibit the same repatination and erosional characteristics. Wild yaks chased by mounted bowmen are a frequent theme in the rock art of Upper Tibet and Ladakh. However hunting on horseback is much more common in the rock art of Upper Tibet than it is in Ladakh. The more open quality of the terrain in Upper Tibet is probably a major factor in accounting for this difference in hunting styles.

²²⁰ For example, see Bellezza 2008, p. 167 (Fig. 284); 2002b, p. 363-365; Chen Zhao Fu 2006b, p. 140 bottom, p. 150 bottom, p. 163 bottom (pictographs); Suolang Wangdui 1994, p. 69 (Fig. 33), 79 (Fig. 57), p. 89 (Fig. 71), p. 90 (Fig. 72), p. 99 (Fig. 93), 100 (Fig. 92), p. 101 (Fig. 90), 104 (Fig. 97, 98), 105 (Fig. 100), 106 (Fig. 102), 107 (Fig. 103), 108 (Fig. 104), 140 (Fig. 171, 172).

²²¹ Schaller 1998, p. 128.

²²² The composite long bow was the weapon of choice for yak hunting throughout the Western Tibetan Plateau. For the identification of the composite bow in Upper Tibetan rock art and a cross-cultural analysis of this implement, see Bellezza 2013c.

The mounted archer from Ladakh taking aim in **Fig.V.9** is of a general type found in Upper Tibet as well. The wild yak on **Fig.V.9** is also comparable to the specimen in **Fig.V.10** (figure on the right) from Ruthok. The silhouetted figure in **Fig.V.10** (created by removing the entire rock surface from the petroglyph) was quite deeply cut. The yaks of **Fig. V.9 and V.10** have convex bellies, a stylistic trait common in the yak rock art of Ruthok and the western Changthang.²²³ They likewise exhibit ball tails, slightly rounded feet, thin snouts, and deeply curved horns. Also visible on the rock panel from Ruthok is a yak with a wedge-shaped tail. Physical evidence pertaining to wear and technique indicates that the subjects on this rock panel may have been engraved at different times.

In many of the hunting scenes of Upper Tibet more than one hunter and yak are shown. These scenes are a whirlwind of intense activity as hunters close in on wild yaks from various directions. The optimal tactical positioning of hunters working in unison marks their deployment.²²⁴ In **Fig.V.11**, two archers on horseback take aim at two yaks as part of the culmination of the hunt. In **Fig.V.12**, a non-hunting scene, a group of four yaks share some of the same stylistic features (most pronounced in the second specimen from the left) as the yaks in **Fig.V.11**. The most distinctive common traits of these yaks are the long neck and head projecting forward. Other common elements include upright ball tail, rounded horns that almost join, rounded withers, straight belly, and two pointed legs.²²⁵

On the Western Tibetan Plateau the relative abundance of wild yaks and what appears to have been a cultural penchant for this type of meat (still the case today), helps to explain why yak hunting compositions are strongly represented. The same type of wild yak hunting once extended to all the upland tracts of the Tibetan Plateau.²²⁶ The style of wild yak carvings indicates that the Western Tibetan Plateau was joined by common economic and artistic traditions, which may have begun in the Bronze Age, if bovines with parallel stylistic features attributed to this period in north Inner Asia are in-

²²³ See, for example, Bellezza 2002a, p. 236 (Fig. XI-4f), p. 242 (Fig. XI-1g).

²²⁴ For the imperial period, sophisticated Tibetan hunting techniques are attested in a hunting scene with mounted archers, a wild yak and other wild ungulates painted on a wooden coffin unearthed in Dulan. See Stoddard 2009, p. 13-14; Tong Tao and Wertmann 2010.

²²⁵ For other examples of yaks in this general style, see Bellezza 2002a, p. 246 (Fig. XI-6g).

²²⁶ On yak hunting rock art in northeastern Tibet, see Tang Huisheng and Zhang Wenhua 2001, *passim*; on wild yak hunting in Upper Tibet and Ladakh, see Sections II and III of the paper.

deed that ancient. As noted earlier, ritualized behaviors and social factors may possibly also be implicated in the hunt.

The triad of animals from Ladakh in **Fig.V.13** includes a yak and elephant and what may be a blue sheep above them. The sharply incised lines of this composition appear to have been made with a sharp iron or steel tool such as a knife or chisel. These engravings recall basic elements of Tibetan imperial period and post-imperial period rock art in Upper Tibet and Ladakh. This historic era art frequently evinces a high degree of anatomical realism but it is also often stiff, lacking the fluidity and vigor of the earlier tradition. The three animals appear to be part of a narrative or mythic scene. That they have a special function is borne out by the ornamentation around the neck of the elephant. Both the yak and elephant are ancient Upper Tibetan clan emblems and this is one possible explanation of the signification of the composition.²²⁷ Alternatively, they may have functioned as rituals offerings for deities or served a variety of other purposes, all of which remain hypothetical, but nevertheless, well attested in early Tibetan ritual literature. In the middle of the body of the yak are two curvilinear flourishes. We can view this as a vestige of volutes of the earlier epoch. A petroglyph of a deer accompanied by a short inscription made using the same carving technique and in roughly the same style and which probably dates to the Buddhist florescence period is located in Ratrokrang.²²⁸

2. Deer and caprids

As seen in Sections II and III of the paper, deer representations exist both in the rock art of Upper Tibet and Ladakh although in different proportions.²²⁹ In addition to deer linked to the animal style (see Section IV), cervids in artistic modes that closely match one another are located in Duruchen (Ruthok) and Trishul (Ladakh). [**Fig.V.14 and V.15**] This style is marked by U-shaped inwardly branching antlers, triangular snout, long rectangular body and V-shaped legs. This style of deer is peculiar to the WTPS.

Another point of convergence between the zoomorphic rock art of western Tibet and Ladakh is the caprine petroglyph. **Fig.V.16 and V.17** show comparable carvings with spiraling horns strongly sug-

²²⁷ For these clan emblems of Zhang Zhung and Sumpa (Sum-pa), see Bellezza 2005, p. 201-205; Vitali 2003, p. 44-47.

²²⁸ See Bellezza 2001, p. 349 (Fig. 10.60).

²²⁹ The deer accounts for less than 1% of zoomorphic images in Ladakh (75 deer in 25 sites) and approximately 10% in Upper Tibet.

gestive of the argali. This wild sheep was common on the Tibetan plateau and its current western limit is the Rupshu (Ru-bzhu) and Changchenmo (Byang chen-mo) areas in upper Ladakh.²³⁰ Both images from Duruchen (Upper Tibet) and Sanjak (Ladakh, Wylie unknown) display a stick figure with an elongated body, two legs and short tail. The tail of the Duruchen image points upwards while that of the Sanjak specimen is turned downwards. Both have a tiny head taking the form of a line.

3. *Felines*

Another type of zoomorphic image that strongly resonates between Upper Tibet and Ladakh is that of the spiral-tailed carnivore. If the pecks in the bodies, of two of the three examples in **Fig.V.18 and V.19**, are indeed representative of spots, these are depictions of snow leopards. This is supported by the spiraling tail that fits a feline identification better than a canine one. The snow leopard still inhabits the high mountain ranges of the Changthang and Ladakh. The felines from Ruthok and Ladakh have a rectangular body formed by opened parallel lines, four stick legs, and two of the three appear to have prominent stick ears. The tail is curved above the back in a large spiral. Each of them exhibits a male sexual organ and open jaws.

There are a variety of carnivores in the rock art of Upper Tibet and Ladakh, some of which appear to be tigers. Specimens from Guge (Tsamda county) and Ladakh are primarily identified on the basis of the depicted stripes. [**Fig.V.20 and V.21**] The upper figure from Guge and the one from Ladakh display many identical traits: they each have around seven parallel but diagonal stripes, prominent pointed ears, gaping jaws, big round eyes, legs projecting forward with downward pointed claws, and tails above their back with a tight curl at the end. The lower carnivore from Duruchen displays similar traits but has a speckled body. As mentioned earlier (see footnote 184) similar 'tigers' are found in the rock art of the Yinshans, Inner Mongolia and Mongolia and Ningxia as well as on Chinese narrative bronzes from the 1st millennium BCE.²³¹ However, the tigers of Western Tibet-

²³⁰ Schaller 1998, p. 86. The argali also inhabits the Pamir, Tian Shan and other mountains of Russia, Kazakhstan, Tajikistan, Afghanistan and western China, so it is found in rock art in these places. Wild sheep with tightly spiraling horns are known from the Kabren Pung Ri site in Ruthok; see Bellezza 2002a, p. 226-227 (Fig. XI-10d, XI-11d); 2000b (Fig. 1).

²³¹ For tigers from Upper Tibet, see Bellezza 2012e; 2008, p. 169 (Fig. 296); 2000a, p. 51 (Fig. 28); Chen Zhao Fu 2006b, p. 130 bottom, p. 131 up, p. 135.

an Plateau do not find exact parallels and form a distinctive group within the rock art of Inner Asia.

The stylistic parallels in the tiger rock art of the WTPS are strengthened by a petroglyph from Zamthang (Zanskar), which is remarkably similar in form to a well-known group of Tibetan copper alloy tiger talismans (*thog-lcags*).²³² [Fig.V.22 and V.23] Both the carved and metallic varieties have backs with a dip in the middle, parallel V-shaped stripes forming a chevron-like pattern, tails curved over the body, and two upright ears. Even the shape and angle of the rear legs are very similar.

4. Equids

We provisionally identify the two equids illustrated in Fig.V.24 and V.25 as wild asses on the basis of the bristly mane, compact body and broad head. The wild ass (*kyang*) is native to Upper Tibet and Ladakh, a defining subject of the WTPS. Both carry scrolls in their body; the Laidoh Zampa (Wylie unknown) example executed in a standard fashion takes the shape of an elaborated S while the Ruthok example curves back on itself. Additionally, there are other carved lines in the body of the Ruthok *kyang*. Other strong points of comparison are the bend in the legs and the straight downward pointing tail, elongated nose and downward pointing chin.

5. Horned eagles

In thematic terms, the WTPS is significantly enhanced by the existence of horned eagles in its two constituent regions. We present two raptors from Rigyal and Yaru Zampa. [Fig.V.26 and V.27] Both appear to represent horned or crested eagles (*khyung*).²³³ The most distinctive analogous stylistic features are seen in the wings and tails, which were rendered respectively as lozenges and triangles. Apart

²³² For other examples, see Bellezza 2004, Fig. 15; John 2006, p. 132, Fig. R-311, R-313.

²³³ The Rigyal specimen was first published in Bellezza 2002a, p. 221 (Fig. XI-26c) where it is described as an 'unidentified composition'. A more thorough survey of the site in 2010, when other raptor carvings were discovered, showed that in actuality it is an avian petroglyph. For a preliminary survey of the horned eagle rock art of Upper Tibet, see Bellezza 2012a, 2013a. Also Section II of the paper, *supra*.

from these traits, the two petroglyphs are quite different in form and in the technique used to produce them.

Horned eagle rock art appears to date as far back as the Iron Age and the *khyung* remains an important religious and secular symbol down to the present day.²³⁴ While the significance of the rock art variety remains conjectural, its copper alloy counterpart clearly had a talismanic function (other historic era functions notwithstanding).²³⁵ Like the Ladakh carving in **Fig.V.28**, there are Tibetan copper alloy bird talismans with downward facing wings but these are not common. In Ladakh all *khyung* have wings facing downwards. [**Fig.V.29**] Given its unique quality, the *khyung* underscores cultural interconnections between Upper Tibet and Ladakh more intently than most other classes of zoomorphic rock art.

6. Horse riders

One of the most ubiquitous themes in the rock art of Upper Tibet and Ladakh, from the Iron Age onwards, is the horse rider. In **Fig.V.30 and V.31** is a style of horse mount fairly common to both regions, which may belong to the same general timeframe, although this cannot be established with any certainty at this juncture. This style is characterized by a long stick body, long tail, stick legs (two or four in number), and a fairly well defined head and long tail. The Ruthok composition is of a lone mounted archer hunting a wild yak and is rather deeply carved. The Ladakh example depicts two horse riders and is lightly engraved.

In another pair of images (**Fig.V.32 and V.33**) we see two adeptly executed horsemen, one from each of the two regions that make up the WTPS. The left arm of the western Changthang rider is pointed downwards while the left arm of the Ladakh rider is held up. The

²³⁴ In the wide open skies of Upper Tibet, birds assumed much cultural value and came to infiltrate many religious and sectarian traditions, from being clan progenitors to the helping deities of spirit-mediums. According to the Bon religion, the *khyung* was the primary political emblem and genealogical symbol of Zhang Zhung, a prehistoric kingdom and culture based in Upper Tibet. For some of the major cultural functions of the horned eagle, consult indexes in Bellezza 2008, 2005, 1997a; Nebesky-Wojkowitz 1993; Norbu 1995. For images of the *khyung* in the rock art of Upper Tibet, see Bellezza 2008, p. 175 (Fig. 310); 2001, p. 358 (Fig. 10.78); 2002a, p. 216 (Fig. XI-17c), p. 217 (Fig. XI-17c and 18c), p. 234, (Fig. XI-4e, XI-5e); 1999 (Fig. 9); 2000b (Fig. 7); 2004 (Fig. 33, 35, 36); 2012a; Suolang Wangdui 2004, p. 113 (Fig. 113).

²³⁵ For images of *khyung* talismans, see Bellezza 1998, p. 54 (Pl. 27, 28), p. 59 (Pl. 51-54); John 2006, p. 139, p. 147-149.

right arm of each of human figure seems to be in contact with the mane of their horse. Unfortunately the head of the Upper Tibetan horse rider has been damaged. The two mounts share a certain overall similarity (short pointed ears, long neck, four bent legs, round hump, long tail), which is more recognizable here than in many other horse rider compositions from Upper Tibet and Ladakh.

7. *Extraordinary anthropomorphs*

In **Fig.V.34 and V.35** anthropomorphic figures squat with legs spread widely apart and hands held upwards.²³⁶ Each has rays or other protuberances on the top of its round head. The right eye is visible in the Ruthok specimen and both eyes in the Tangtse example. The Upper Tibetan figure was carved in limestone, a fairly usual medium for petroglyphic art in that region. What appears to be an equid is visible to the left of this anthropomorph. The figure from Ladakh was more skillfully engraved and more of its costume and anatomy is open to scrutiny. The six pyramidal points or diadems in the middle of its head are flanked by what resemble long antennae. This anthropomorph is also shown with long fingers and toes. Whatever the identity and purpose of these two anthropomorphs, the intricacy and aspect of the compositions suggest that they conveyed significant cultural meaning. That these two figures share similar poses and attributes is no accident. They are located in places separated by less than 200 km and can only have belonged to closely allied mythological or cultic traditions. If they are human rather than numinous depictions, they could share the same vocation as priests, mystics, mediums or birth-givers.

As discussed in Section IV of the paper, throughout Inner Asia there is a genre of rock art often referred to as 'mascoïds'. It is commonly presupposed that these are anthropomorphic visages, some of which might represent masks. As already shown, the so-called mascoïds of Upper Tibet and Ladakh share some traits with those of north Inner Asia but also present peculiar characteristics and form subgroups.

In a pair of images from Murgi Tokpo (Ladakh) we see traits common to Inner Asian mascoïds, e.g., inner triangles and rounded eyes. [**Fig.V.36 and V.37**] However, as stated above the bell-shape is

²³⁶ A similar style anthropomorph is situated on a rock panel with many other subjects in Luring Lakha, Ruthok; see Suolang Wangdui 1994, p. 54 (Fig. 12). This rock art was recently destroyed through road construction.

specific to Ladakh and so are some other traits. Below the mask or face contour one can see legs, and on the left side of each there is a semi-circular engraving with a line in the middle identifiable as a bow and arrow. The mascoïd of **Fig.V.36** has its lower part divided by lines, giving the impression that this is a complete anthropomorphic figure with raised arms.

Mascoïds with feet are also known in Ruthok (mascoïds are only found in this district of Upper Tibet). The Ruthok mascoïd in **Fig.V.38** displays eyes and feet as does a Ladakh specimen. [**Fig.V.36**] However, it has the form of a pinched circle, as do some other examples from Ruthok. It also appears to have an hourglass-shaped motif between the eyes that may represent a nose. The lower half of this mascoïd is covered in a finely pecked linear array. Also noticeable is the circular (antenna or horn-like) element on top of it. The lines extending beyond the visage on the upper right side may possibly represent a spear with a flag (*mdung-dar*). The other mascoïd from Ruthok is bi-circular in form. It displays similar feet and legs, an almost full circle element on top and what appears to be a recurve bow held by two arms. [**Fig.V.39**] A horizontal line separates the two halves of the mascoïd. The upper half contains two circles and the lower half a triangle and circle. Bi-circular mascoïds are typical in Ruthok as two more examples, carved on top of one another, show. [**Fig.V.40**] Only two such mascoïds were documented in Ladakh at the site of Kawathang (Ka-ba thang). [**Fig.V.41 and 42**] Interestingly they are found in eastern Ladakh along the upper course of the Indus and are engraved on nearby boulders.

The Kawathang and Ruthok mascoïds each consist of an elongated circle pinched in the middle, which encloses a similar suite of motifs. The bottom halves of the four mascoïds are replete with parallel horizontal lines that form a chevron pattern (the lines of the upper Rimodong specimen are straighter). In the upper half of the Ladakh mascoïds are circles. In **Fig.V.41** five circles were cut inside a central teardrop-shaped enclosure. Two other two circles flank the perimeter of the teardrop. If indeed these elements represent a face it may possibly be ornithomorphic in character. The upper half of the two Rimodong specimens also has a variety of elements but these are highly worn and not very visible.²³⁷ These appear to include circles and a central design or outline. The mascoïds of Ruthok and Ladakh under discussion are striking examples of a shared ideological

²³⁷ For the mascoïds of Upper Tibet, also see Bellezza 2000b (Fig. 16); 2002a, p. 241 (Fig. XI-13f, 14f), p. 242 (Fig. XI-15f, 16f), p. 243 (Fig. XI-17f); 2011c. For the mascoïds of Ladakh see Bruneau forthcoming, Bruneau *et al.* 2011.

(mytho-ritual and / or cultic) foundation. The two mascoids from Kawathang are unusually large (more than a meter in height) and constitute the largest pieces of rock art from Ladakh. The Ruthok specimens are considerably smaller.

As discussed in Section IV of the paper, mascoids probably appeared in both regions as part of a Bronze Age cultural diffusion. Nevertheless, the particular sets of stylistic features in the mascoids of each region are the imprint of significant geographic and cultural variations. As for the date of the mascoids of the WTPS, it is prudent to be broadly inclusive to account for their possible production over a length of time. While this type of rock seems to have arisen on the western fringes of the Tibetan plateau in the Bronze Age, we cannot discount the possibility that some of it was created anachronistically as well. In fact, there is a genre of 'imitation' mascoids in Ruthok and Ladakh which are more crudely carved and less patinated. Nevertheless, the highly eroded and re-patinated condition of most mascoids in Ruthok and Ladakh, suggests that they are of advanced antiquity. This may well support a Bronze Age or Early Iron Age attribution for them.

Since some mascoid carvings from Ruthok and Ladakh have the appearance of complete anthropomorphic figures they should be more accurately classed as 'anthropomorphs in emblematic form'. [Fig.V.43 to V.46] The Ruthok specimens are bi-circular in shape and the Ladakh examples consist more or less of a single rounded form.

Fig.V.43 has a small round head and relatively long legs. The oval body is partitioned by a cruciform design and diagonal lines. The barbed lines extending from the outline of the body have the appearance of rays. The figure may well be holding a bow on the right side. The pair of mascoids in **Fig.V.44** are joined by a single line between the lowermost circles. This connection seems to signify that the two figures are paired, perhaps in a genealogical or gender sense. As per technique and the degree of repatination, it is possible that the left figure was carved somewhat later and the horizontal connecting line added to link it to the original figure. The specimen on the left is segmented into 11 or 12 ovoid and quadrate segments and it has a pair of long legs. The specimen on the right has two large eyes in the middle circle surmounted by a round head ornament or finial. The lower circle is dominated by two rows of triangular lozenges. A yak in typical Western Tibetan Plateau Style is found to the right of the pair of mascoids. Wild yaks of the same general age (as indicated by patination, execution and stylistic details) often accompany the mascoids of Ruthok.

'Anthropomorphs in emblematic form' from Ladakh are not common and are restricted to the site of Murgi Tokpo (see **Fig.V.36**

and V.37) and the lower Indus valley, in the surroundings of Domkhar. **Fig.V.45 and V.46** show an anthropomorphic figure with a circular head, a circular, quadrangular or bell shape body, and two legs. This type of figure never has arms. The 'body' is filled by a combination of dots and short lines, either vertical or horizontal or dots only. Contrary to Upper Tibet, these figures are not associated with yaks but with other anthropomorphs typically represented with large and / or raised hands.

The 'anthropomorph in emblematic form' is a distinctive motif of the WTPS and undoubtedly reflects indigenous cultural beliefs in conterminous regions. However, it is still not clear how Tibetan ethnological and textual materials can be applied to comprehend their significance.

8. *Non-figurative*

The affinities between the rock art of Ladakh and Upper Tibet is buttressed by shared non-figurative motifs.

Spoked and open circles are found both in Upper Tibet and Ladakh. [**Fig.V.47 and V.48**] At Duruchen a variety of spoked circles (many of which are in pairs) in conjunction with chariots are found on the jumble of boulders at that site. Therefore we might suppose that they denote chariot wheels.²³⁸ In that case, these are of course examples of figurative art, whatever symbolism they may have also carried. It must also be noted that as spoked circles are found all over north Inner Asia, this rock art may be more indicative of extraneous cultural influences rather than examples of the WTPS. Nonetheless, we include them here to offer the widest possible range of allied art.

Cognate signs in the rock art of Upper Tibet and Ladakh are that of sun and moon.²³⁹ The two examples in **Fig.V.49 and V.50** feature the crescent moon and a companion sun with rays. The sun and moon theme is decidedly more common in Upper Tibetan rock art

²³⁸ These spoked circles might also denote the sun. In the Rig Veda, chariots are solar symbols, according well with this hypothesis. On some possible Indo-Iranian influences in the ancient pantheon of Upper Tibet, see Bellezza 2008, p. 308 (n. 312). It appears however that such cultural influences may not have exerted more than a tangential role on the cultural development of Upper Tibet. In reference to chariot carvings of north Inner Asia, Francfort (1998b, p. 305-310) is skeptical of Indo-Iranian theory, which holds that chariots are depictions of Avestan and Rig Vedic narratives and rituals and the vehicles of its gods and warrior aristocracy. Due to its native artistic context, Francfort's argument appears relevant to the chariot art of the Western Tibetan Plateau.

²³⁹ For such signs at the site of Qiakesang, see Chayet 1994, Fig. 37.

than it is in Ladakh (only eight are known). In later Bon and Buddhist iconography, a rayless sun is tightly cradled by the crescent moon. The conjoined sun and moon has powerful symbolic overtones in these religions. By analogy we might expect the earlier variants were also invested with significant abstract meaning.²⁴⁰

A sun with rays presiding over a rock art scene that includes one or more wild ungulates is also quite common in Upper Tibet but less so in Ladakh (only ten or so are known).²⁴¹ In **Fig.V.51**, two mounted hunters chase a wild ungulate (deer?), the sun directly overhead. Another animal and non-descript figures are also part of the same rock panel. These upper figures as well as the sun are more deeply and boldly carved and appear to belong to another hand and period than the two hunters and their quarry. In **Fig.V.52** from Ladakh, the sun is set off to one side of the boulder and does not seem to possess a central role in the rock art composition. Two yaks, a counterclockwise swastika and other figures, both ancient and more modern, are etched on the same boulder. The sun is endowed with sundry meaning in Tibetan culture and beyond its obvious life-giving powers, one can speculate in a variety of ways on why it was chosen to be portrayed in association with animals.²⁴²

On the three boulders illustrated in **Fig.V.53**, **V.54** and **V.55** a range of subject matter is found. For delineating the WTPS the most important of these figures are the branched motif (**Fig.V.53** and **V.54**) and bird-like swastikas (**Fig.V.53** and **V.55**). The branched motif appears to represent a tree and to have been imbued with symbolic or mythological meaning.²⁴³ On the right and left sides of the boulder

²⁴⁰ It may have symbolized the male and female cosmic principles, one of many meanings accorded the sun and moon in Tibetan literature, but this remains unverifiable. In the Bon religion, the sun and moon represent two major orders of ritual tradition and sacerdotal activity.

²⁴¹ For these kinds of compositions in Upper Tibet, see Bellezza 2002a, p. 211 (Fig. XI-7c), p. 212 (Fig. XI-8c), p. 214 (XI-13c); 2000b (Fig. 15); Suolang Wangdui 1994, p. 103 (Fig. 95), p. 108 (Fig. 104), p. 113 (Fig. 113).

²⁴² To our knowledge the earliest example of a sun presiding over animals comes from a slab found at Burzahom, Kashmir. It shows a deer hunted by a bowman facing it and what appears to be a woman holding a spear behind. They are accompanied by a dog and an additional sun presides over the scene. For the possible significance of the sun, see Pande 1973, p. 136-137. The stone slab was part of a rectangular structure made of stone members and rubble belonging to the second phase of the Neolithic culture (2000-1850 BCE - C14 calibrated dates): Sharma 2000, p. 50, p. 86, p. 157.

²⁴³ In any event, the abstract value of trees is an important theme in Tibetan literature from the early historic period until contemporary times. Trees function as cosmological symbols, signs of good fortune, and as bridging devices in archaic funerary rituals.

from Rigyal there is a crescent moon and sun.²⁴⁴ [Fig.V.53] This manner of depiction, of placing the sun and moon on opposite sides of a canvas or other medium persists in the religious art of Tibet to the present day. There are also two branched motifs on this boulder, a conventional clockwise swastika, and a swastika with reversed arms (in addition to two much more recent compositions). The swastika with its opposite arms turned to match each other has a bird-like appearance.²⁴⁵ Indeed, at Lake Nam Tsho (eastern Changthang) a red pictograph has built upon this basic form to create a distinguishable raptor.²⁴⁶ This same general form is found in the petroglyphs from Ladakh, and one boulder also has a branched motif.²⁴⁷ [Fig.V.54] The presence of these analogous representational and / or symbolic figures in Upper Tibet and Ladakh helps to securely weld the rock art of these regions together. The two boulders from Ladakh (Fig.V.54 and V.55) also boast conventional swastikas, wild ungulates, horsemen, and other anthropomorphs in scenes that must have been rich in narrative import. The configuration of subjects on the Ladakh boulders is not unlike that encountered in composite scenes from Upper Tibet.

In the analysis of the eight rock art categories of the WTPS above, we saw that this was a tradition with a wide chronological compass. Petroglyphs attributed to the Bronze Age, Iron Age, protohistoric / early historic period and imperial period are all included. This extensive chronological purview indicates that cultural intercourse between Upper Tibet and Ladakh was deeply ingrained and ongoing.²⁴⁸

²⁴⁴ This boulder has also been published in: Bellezza 2008, p. 165 (Fig. 278); Suolang Wangdui 1994, p. 128 (Fig. 149).

²⁴⁵ For another example of a bird-like swastika; this one carved in conjunction with an anthropomorph, see Suolang Wangdui 1994, p. 114 (Fig. 117).

²⁴⁶ Bellezza 2000a, p. 47 (Fig. 18).

²⁴⁷ For sun and tree motifs in Upper Tibet rock art, see Bellezza 1997a, p. 196 (Fig. 9), p. 200 (Fig. 15), p. 244 (Fig. 8); 2001, p. 334 (Fig. 10.30), p. 358 (Fig. 10.78); 2002a, p. 209 (Fig. XI-3c), p. 211 (XI-7c), p. 212 (Fig. XI-8c), p. 214 (Fig. XI-13c), p. 219 (Fig. XI-22c, 23c), p. 254 (Fig. XI-1j); 2000b (Fig. 15, 33, 53); Chen Zhao Fu 2006b, p. 126 bottom, p. 142 bottom, p. 144 bottom, p. 153, p. 154, p. 156 top; Chayet 1994, p. 68; Suolang Wangdui 1994, p. 90, 91 (Fig. 73, 74), p. 94 (Fig. 79), p. 103 (Fig. 95), p. 108 (Fig. 104), p. 113 (Fig. 113), p. 148 (Fig. 188, 189), p. 150 (Fig. 191).

²⁴⁸ The existence of what appears to have been a stable cultural system over a long period of time in Upper Tibet, would have furnished a secure basis for these interregional exchanges, and may point to the center of gravity regarding some of these flows of people and information. The Iron Age and protohistoric monument assemblages of Upper Tibet exhibit a remarkable degree of coherency, with the same basic residential and ceremonial structures being represented in both periods. That Upper Tibet was not radically altered in any cultural or demic sense in the protohistoric period is relayed by an absence of inscriptions in foreign languages. How different the situation is in Ladakh and Indus Kohistan,

The hosts of etiologic factors that may have accounted for this shared cultural sphere remain largely hypothetical. The major scenarios that may have acted to pull the WTPS territory into an interrelated cultural orbit include:

- 1) Common indigenous / local cultural traits and peoples.
- 2) The dissemination of north Inner Asian cultural traits and technologies and possibly peoples during prehistory and protohistory.
- 3) The political consolidation of the Tibetan empire period.

VI. Concluding remarks

For the first time, this work set out in detail the commonalities between the petroglyphs of Ladakh and Upper Tibet, based on exclusive data gathered by the two authors during extensive fieldwork. The Western Tibetan Plateau Style (WTPS) constitutes an important genre of rock art on the westernmost portion of the Tibetan plateau. The various themes and stylistic traits shared by the rock art of Upper Tibet and Ladakh provide insights into the mundane and momentous aspects of cultural life shared by peoples of the Western Tibetan Plateau. This paper has also addressed the complex issue of rock art chronology for the Western Tibetan Plateau.

In assessing the beginnings of rock art in Upper Tibet and Ladakh, the authors of this work hold out the prospect that it may lie in the second millennium BCE.²⁴⁹ In making our determination we have

where inscriptions in various languages from the first century BCE onwards have been discovered. Moreover, imperial and post-imperial period texts composed in Old Tibetan suggest that archaic mytho-ritual materials continued to play an essential role in the culture of Upper Tibet and Central Tibet until the collapse of the Tibetan imperium. These textual related topics are discussed in Bellezza 2008, 2010a, 2013b.

²⁴⁹ We do not exclude the possibility that some petroglyphs in Ladakh and Upper Tibet may be earlier than the 2nd millennium BCE but for the time being their dating cannot be ascertained confidently. According to Li Yongxian and Huo Wei in their introduction to Suolang Wangdui (1994, p. 33), rock art in Tibet began around 3000 years ago, because "on-the-spot investigation" shows that it was carved with metal and not stone implements. No evidence supporting this supposition is provided, thus it must be called into question. There appears to be no empirical reasons why some of the petroglyphs created through the pecking, grinding or cutting of rock surfaces could not have been made using hard and sharp stone tools. Be that as it may, in the vicinity of rock art sites in Ruthok microlithic cores and blades have been found by one of the authors (Bellezza). Similarly, Tang Huisheng and Zhang Wenhua, in their informative book (2001, p. 258-259), maintain that rock art on the Tibetan plateau began between 1000 and 500 BCE. They underpin this claim on stylistic parallels between images in the rock art of the northeastern Tibetan plateau (in Qinghai and Gansu provinces) and on

been influenced not least of all by the findings of various groups of researchers working in Central and North Asia over the last half century, which identify a large stratum of rock art as of the Bronze Age.²⁵⁰ The discovery of chariots and mascoids comparable to those of Inner Asia enable us to link the rock art of the western Tibetan plateau to this wider pan-cultural realm during what appears to be the Bronze Age.

Although motifs such as chariots and mascoids, as well as some of their stylistic traits, are analogous with images found in north Inner Asia, they nevertheless show peculiarities indigenous to the Western Tibetan Plateau. Let us recall the presence of feet and arms on some mascoids. These motifs were not simply adopted *in toto* but they were subject to a process of adaptation in which new elements and combinations of elements came into being. This general observation holds true as well for carved images related to the art of the steppes. While the repertoire and stylistic features of this style are emblematic of the 1st millennium BCE throughout Inner Asia, examples found in Ladakh and Upper Tibet are certainly not identical to those of the steppes.

The rock art of Ladakh and Upper Tibet present distinguishable traits. In reference to mascoids, those of Ladakh have a particular bell-shaped contour and those of Upper Tibet a bi-circular one. Their sets of internal features also vary considerably. In this particular case, we have demonstrated that Ladakh shared more affinities with the rock art of north Inner Asia. This holds true for the Iron Age as well: the animal style is far more attenuated in Ruthok than in Ladakh.

dated bronze goods and earthenware (*ibid.*). Nevertheless, their comparative regimen is limited in scope and is not very well articulated, thus it cannot in itself be used to positively establish when the tradition of carving rocks on the Tibetan plateau began as a whole. Tang Huisheng and Zhang Wenhua (*ibid.*, p. 264-268) also supply microerosion data supporting their date of origins for Tibetan rock art. Yet, this direct method of dating has not withstood subsequent scientific scrutiny, thus their findings must be considered dubious. For a critical assessment of microerosion analysis, see Dorn 2001, p. 171. Dorn's objections are discussed by Bednarik (2007, p. 132) who, although he thinks that the limitations of microerosion analysis are outweighed by the benefits of the method, lists the valid arguments against it. This is not to say that the Chinese researchers quoted above are wrong in their assessment of the age of the Tibetan rock art tradition, they could be proven correct, but that remains to be conclusively shown. A more painstaking analyses based on quantitative methodologies must be undertaken in north Inner Asia and the Tibetan plateau alike, if the dates being bandied about are to be discredited or corroborated.

²⁵⁰ Sorting through these various claims of Bronze Age antiquity in the north Inner Asian context is beyond the scope of this paper.

Thus we are encouraged to perceive Ladakh as a buffer or vanguard between Inner Asia and Upper Tibet.

There however appears to have been another important geographic link between north Inner Asia and the Western Tibetan Plateau. The presence of two dozen chariots in Upper Tibet, contrasting with one only in Ladakh, points to another possible vector of cultural transmission extending directly south from the Tarim Basin over the Kunlun mountains to Upper Tibet. Thus, whatever demic and diffusive forces were at play in the Bronze Age and Iron Age, we can formulate the hypothesis that Ladakh was connected to north Inner Asia via the Karakoram and Pamirs while Upper Tibet was linked to the north via the Kunlun.²⁵¹

It does not appear that cultural flows from plateau regions north-east of Upper Tibet played a large or direct role in the formation of the rock art of the western Tibetan plateau. If they had there should be clear lines of rock art motifs extending across the Qinghai plateau (Amdo) and over the Tangula Range to Nagchu and further westward to Naktshang (Nag-tshang) and Gertse (Sger-rtse). These diffusive routes however have not been discerned in the archaeological record. There is even less archaeological evidence for cultural traditions from the Indian Subcontinent having permeated the Himalaya to affect the repertoire of the western Tibetan plateau.

It is hoped that the links between the Western Tibetan Plateau and north Inner Asia will come to be better understood through excavational data. Thus far the ceramics record of Guge and the Tarim basin, circa 500 BCE to 300 CE, only show the most remote of typological similarities.²⁵² The inventory of excavated metallic objects, wooden items and textiles from western Tibet remains very small and while north Inner Asian influences seem indicated, a larger body of

²⁵¹ Tracing the movement of artistic traditions to and from the Western Tibetan Plateau is impeded by a lack of rock art in the Kunlun mountains. This lack of rock art, or at least the lack of documentation / publication was already noticed by Francfort 2002b, p. 63, p. 66. The Liushul funerary site in the upper Keriya at the foot of the Kunlun (2850 m) marking the Bronze-Iron Age transition (10th-8th century BCE) shows cultural affinities with the Kamennyj Log-culture of the middle Yenisei and that of the Bol'saja Recka culture of upper Ob. Therefore we might not rule out the possibility of a direct route from the Tarim basin southwards to the Western Tibetan Plateau for the transmission of Inner Asian cultural traits. See Wu Xinhua *et al.* 2006. In the final analysis such broad tranregional connections may prove key to understanding the dispersal of cognate rock art motifs and elements throughout Inner Asia.

²⁵² For the excavated ceramics of Guge, see Bellezza 2010c; Chinese Institute of Tibetology Sichuan University 2001. For the ceramics of eastern Turkestan, see Jianjun Mei and Shell 2002; Kwang-tzue and Hiebert 1995.

material goods is needed for comparison. Of course many of the fundamental parallels in rock art styles scrutinized in this paper appear to predate most of the objects excavated in Guge in the last decade, so this line of inquiry may not prove particularly fruitful. Clearly, to better understand Bronze Age and Iron Age cultural connections between the Western Tibetan Plateau and north Inner Asia, more remote periods of time must undergo archaeological scrutiny.

Aside from the motifs, themes and styles shared with the rest of Inner Asia, there is a wide range of rock art indigenous to Ladakh and Upper Tibet we call the Western Tibetan Plateau Style. The integrity of the WTPS is substantially strengthened by the fact that it embraces both figurative and non-figurative genres of rock art. Among the most distinctive examples of shared motifs are the wild yak, mascoids and the *khyung*. The occurrence of closely matching signs of significant complexity in Upper Tibet and Ladakh is among the most cogent evidence for an intellectual plane underpinning the WTPS. The level of abstraction presumably associated with these motifs and compositions can only be accounted for by positing common ideological links.

The affinities shared by the ancient cultures of Upper Tibet and Ladakh were informed by a similar physical environment, in which high elevation alpine and steppe biomes predominate. This environment supported venatic systems based on the hunting of wild ungulates, pastoral systems based on the rearing of yaks, sheep and goats, and agrarian systems founded on the cultivation of irrigated barley.²⁵³ This economic foundation by providing for the sustenance of rock art carvers and painters, served as a backdrop to the creation and development of the WTPS. Economic conditions may also have acted as a prime inspiration and motivation for the production of rock art. In economic (and political) terms, the adoption of riding horses (probably in the Early Iron Age) acted as a major agent of communications between Upper Tibet and Ladakh, regions with no insuperable topographic obstacles between them. Trade, conflict and a large spectrum of cultural exchanges potentially transpired unconstrained on the Western Tibetan Plateau, a land with a familiar geography all along the Changthang expanse.

²⁵³ The study of ancient agriculture on the Western Tibetan Plateau is in its infancy. One of the present authors (Bellezza) has reconnoitered dozens of defunct agricultural enclaves in Guge, Gar and Ruthok, some of which are associated with archaic monuments (ceremonial and residential). See Bellezza 2011a, 2008, 2002a, 2001. Also see D'alpoim Guedes forthcoming. The surveying of ancient agricultural remains in Ladakh is now being carried out by Quentin Devers. For general comments on agriculture and nomadism in Ladakh: Dollfus 2007.

In this explication of the WTPS the focus is of course on intercultural features, the dissemination of structured ways of thinking and acting that straddled the Upper Tibet-Ladakh divide. In this regard, a shared mythology, ritualism and social factors are liable to have had a formative impact on the creation of a common tradition of rock art. The identification of the cultural orbit of the WTPS is problematic because relatively little is known about the prehistoric peoples of Upper Tibet and Ladakh. However it is here instructive to cite correspondences in the residential monument assemblages of Ladakh and Upper Tibet. The most important analogous constructional trait was the raising of large all stone corbelled edifices, which first appeared no later than circa 500-100 BCE in Upper Tibet (none of these structures in Ladakh yet have undergone chronometric testing).²⁵⁴ Parallels in building techniques aside, these types of residences share many situational and functional elements.²⁵⁵ This elite residential architectural tradition of Upper Tibet and Ladakh, in so much as they are contemporaneous, can be correlated with the WTPS of the rock art tableaux. Here we have both monumental and esthetic components of a cultural complex that straddled the western margins of the Tibetan plateau. Thus we are left with a partial 'archaeological culture', one defined by a common body of fixed art and structural resources, but largely lacking material objects for comparison. It can be presupposed that this archaeological culture shared a common ideological ground; otherwise there would hardly be any means for propagating a joint artistic tradition.

The demonstrable commonalities in style and ostensibly semantics (the underlying meaning or purport of rock art) reflects the material and abstract cultural affinities prevalent on the Western Tibetan Plateau of ancient times. It is difficult if not impossible to know what causative factors were actually involved, when parallels in artistic style are shorn from collateral historical or archaeological evidences. The nature of the cultural and technological intercourse that gave rise to the WTPS is largely predicated on whether or not it was associated with the mass movements of people to or from the Western Tibetan Plateau and the attendant displacement or merging of cultural and linguistic systems. It is important to remember that art and more generally material culture follows its own development, which may

²⁵⁴ For the dating of early residential remains in Upper Tibet, see Aldenderfer 2002; 2011; Bellezza 2008, 2011a; Li Yongxian 2011.

²⁵⁵ For a comparative study of the all-stone corbelled installation known as Stok Mon Khar (Stog mon-mkhar) in Ladakh, see Vernier 2012; Bellezza 2012f. For other comparative studies of this type of architecture, consult Bellezza 2013f; Devers 2013.

be independent of language or ethnic affiliation.²⁵⁶ In some instances incursions from the steppes may have been an important force in

²⁵⁶ Although paleo-linguistic evidence defining longstanding cultural continuities remains conjectural, we may now comment on the possible ethno-linguistic traits of the WTPS cultural orbit. The relationship of modern Tibetic languages to the extinct language of Zhang Zhung and the pronominalized languages of the Western Himalaya remains to be fully gauged. Van Driem (2001, p. 39) argues that Zhang Zhung and the Western Himalayan languages of Bunan, Manchad (both spoken in Lahoul) and Kinnauri probably reached western Tibet in the middle of the third millennium BCE. To this list can be added Kanasha, probably the oldest of the pronominalized languages of the Western Himalaya. It should be noted that this hypothetical Neolithic horizon long predates the rise of the great castles, temples and necropolises associated with archaic civilization in western Tibet. A Neolithic beginning for the Zhang Zhung language, if accurate, indicates that a deeply buried cultural bedrock underpinned the establishment of Bronze Age and Iron Age rock art and monuments in Upper Tibet. Both Hummel (2000) and van Driem (*ibid.*) believe that the Zhang Zhung language originated in the northeast corner of the Tibetan plateau before migrating west. This accords with van Driem's (2011, p. 18) theory that the spread of Bodic languages on the Tibetan plateau occurred during the expansion of the so-called Majiayao culture beyond Gansu and Qinghai, in the early or middle third millennium BCE, and was accompanied by widespread deforestation. On this possible Neolithic expansion to the Tibetan plateau, see Bellezza 2013d. This theory of linguistic diffusion can possibly be correlated to the domestication of the wild yak. The analysis of mtDNA evidence for various domestic yak populations in Tibet and north Inner Asia, suggests that this bovine species was first domesticated in the northeastern Plateau, circa 5000 BCE, before dispersing west across the entire plateau (Xuebin *et al.* 2008). However, Jacques (2009) militates against a parent relationship between the Zhang Zhung and the Chiang family of languages of the Sino-Tibetan marches. He instead posits a direct link to the old Western Himalayan languages as part of an *in situ* linguistic substrate. Jacques' view of Zhang Zhung linguistic affinities has the benefit of dovetailing with the geographic nexus of Zhang Zhung expounded in Tibetan literature of the Bon religion. The traditional ethnohistories of Upper Tibet and Ladakh paint a complicated picture of the ethnogenesis of the Western Tibetan Plateau. According to Tibetan literary sources, the Western Tibetan Plateau was peopled by various tribes and genealogical lines in prehistoric times. These are thought to have included the Mon (tribes often seen as having southern or Indic origins), Hor (a tribe of Central Asian origins), Mu (Dmu, a founding lineage of the Bon religion), Cha (Phya, a founding lineage of Bon), Khyung (a major tribe or clan of Zhang Zhung), and Ma (Smra, a major tribe of Zhang Zhung). Given this evidence, we might speculate that it was speakers of a Zhang Zhung language that were responsible for the creation of the WTPS, in addition to a variety of other languages, peoples and sociocultural orders noted in Tibetan literature. Francke weaves a more compelling but less verifiable historical scenario (1977, p. 19): "the tribe or lineage known as Zhang Zhung Smra / Rma moved en masse from their original homeland in Central Asia or in the Yangtse or Yellow River headwaters to the upper Indus and upper Sutlej to found a state that came to be known as Zhang Zhung". If indeed it is proven that the cultural complexion of the WTPS was related to peoples of Tibetic linguistic and ethnical affiliation, it follows from the proposed rock art chronology that strains of these peoples were present in Ladakh from no later than

molding a rock art style that is syncretistic in constitution, the unique articulation of native and cosmopolitan elements combined to produce motifs with a strong regional stamp. Nevertheless, it appears that the transmission of themes and styles may have been more often than not the result of the alinear transformation of artistic traditions as they circulated around various localized eco-cultural spheres to eventually wash up on and be absorbed by the Western Tibetan Plateau. In this type of diffusion changes in styles are not so much evidence of exogenous impacts from specific sources but of a process of organic adaptation to particular cultural, social and ecological conditions. Yet, we must also consider the possibility that the relative frequencies of some motifs on a site-by-site basis may be the result of happenstance rather than a definite reflection of ecological and cultural patterns. It is very hard to know either way in specific instances, but taken in total, the rock art of the Western Tibetan Plateau, given its abundance, does appear to provide statistically relevant points of comparison. That is to say, the sheer frequencies of motifs and themes do seem to be more a matter of design than accident.

By no means does the WTPS embrace the entire artistic repertoire of the region. There is much rock art particular to both Ladakh and Upper Tibet which clearly set these regions apart from one another. This is epitomized by the dominant wild ungulate in each region: the wild yak in Upper Tibet and the ibex in Ladakh. This state of affairs seems to reflect an environmental reality: ibex are not found on the high Tibetan plateau and Ladakh has few wide open grassy basins that wild yaks favor. The ibex is also the most common animal depicted in Central Asian rock art, another indication that this region and Ladakh were more closely allied economically (if not culturally) than Upper Tibet was to Central Asia.²⁵⁷

the Bronze Age. If so, Tibetan peoples are likely to have shared Ladakh with a variety of peoples who originated from other geographic, cultural and ethnic sources. The areal characteristics of certain rock art belonging to the WTPS (and more particularly birds, swastikas, trees, sun and moon) persuades us to consider that these Tibetan communities may have lived in remote or otherwise discrete locations, somewhat removed from the cultural maelstrom of Central Ladakh. On the historical and archaeological signification of the term 'Zhang Zhung' and its application to Upper Tibet and Ladakh territories, see Bellezza 2013e.

²⁵⁷ On the folk significance of the ibex in Ladakh: Dollfus 1988. The ibex is present in oral traditions and rituals of several peoples in the Pamirs, Hindukush, Iranian plateau and Caucasus but is absent from other areas of Tibetan culture. According to Dollfus, the ibex highlights cultural exchanges between Ladakh and Central Asia (*ibid.*, p. 136). On the interpretation of the significance of the 'mountain goat' in the rock art of Ladakh: Aas 2009.

Regional differentiation perceived through rock art is confirmed by other archaeological materials. The monumental record of Upper Tibet includes *sui generis* funerary monuments found nowhere in Ladakh (with the possible exception of the still unsurveyed border areas). Most notable of these are walled-in pillars, arrays of pillars appended to temple-tombs, large quadrate enclosures, and mountaintop cubic tombs.²⁵⁸ Preliminary chronometric and cross-cultural investigation suggests that this ensemble of monuments originated circa 1000-500 BCE and continued in sundry configurations until the imperial period. In chronological terms, therefore, it underscores the variable rock art record of Upper Tibet and Ladakh. The disparate rock art and monument assemblages (especially when examined together) speak reams about the largely independent cultural evolution of these regions.

From the rock art of Upper Tibet and Ladakh, we know that both of these regions culturally fluoresced in different ways. The valley systems and basins of western Tibet (Sutlej, Gar, Purang, Ruthok, etc.) and Ladakh (Indus, Zaskar, Shyok, Nubra, etc.) harbored varied cultural traditions, some probably related to overarching cultural processes, some uniquely provincial. The existence of specific types of rock art in specific places supports this observation. As shown in Section IV of this paper, when looked at through the lens of rock art, Ladakh was more intensively influenced by the steppes and other regions of north Inner Asia than was Upper Tibet. This appears to have had a profound impact on the cultural development of the western fringe of the Tibetan plateau. While Upper Tibet was also subject to cultural forces emanating from north Inner Asia, as we have shown, it was more insulated from this hothouse of human activity.

In what we have termed the early historic period in Ladakh and the protohistoric period in Upper Tibet, the epigraphic record or the lack thereof also highlights major cultural differences. Inscriptions in *kharoṣṭhī* and *brāhmī* first appear in central Ladakh circa 100 BCE. This historical record suggests that this region had some acquaintance with the northwest of the Indian subcontinent.²⁵⁹ Clear lines of communication extend north to the Tarim Basin, where archaeological

²⁵⁸ For the comprehensive survey and study of ancient archaeological monuments in Upper Tibet, see Bellezza 1997a, 2001, 2002a, 2008, 2011a, 2011b. For a synoptic account of some monument types, see Huo Wei 2005; Wangdu 2005. For information on the early monumental assemblage of Ladakh, we are indebted to Quentin Devers who has unstintingly shared his many remarkable findings with us. Most of these are still pending publication.

²⁵⁹ For a review of this historical record: Bruneau 2011.

evidence associated with the northwest Indian subcontinent is well documented. This early historic period link between Ladakh and north Inner Asia mirrors the antecedent one postulated in this paper based on the WTPS. On the other hand, no inscriptions in any language predating the 7th century CE have been discovered anywhere in Upper Tibet. Furthermore, the epigraphy of this region is absolutely dominated by the Tibetan language, with no other script being represented until circa the 13th century CE. This epigraphic evidence indicates that Upper Tibet during its protohistoric period was closed off from extraneous cultural influences of great magnitude. This supports evidence gleaned from the WTPS, which shows that highland Tibet was more sequestered from extraneous cultural forces than was Ladakh.

The many thousands of rock art compositions already documented and ones still to be discovered are liable to reveal more art that can be attributed to the WTPS. It is crucial that archaeological research of all kinds picks up momentum, if the early cultural history of Upper Tibet and Ladakh is to be better elucidated. This kind of research is invaluable for more clearly delineating the character and chronology of the WTPS and Tibetan plateau civilization more generally.



Bibliography

AAS Lars R., 2009: *The Rock Carvings of Taru Thang-The Mountain Goat: a religious and social symbol of the Dardic speaking people of the Trans-Himalayas*, Sarrebruck, VDM Verlag Dr. Muller Aktiengesellschaft & Co. KG.

ALDENDERFER Mark, 2003: "A New Class of Standing Stone from the Tibetan Plateau", *The Tibet Journal* [Dharamsala] 28 (1 and 2), p. 3-20.

---, 2011: "The Material Correlates of Religious Practice in Far Western Tibet", in: H. BLEZER (ed.), *Emerging Bon: The Formation of Bon Traditions in Tibet at the Turn of the First Millennium AD. PIATS 2006: Proceedings of the Eleventh Seminar of the International Association for Tibetan Studies, Königswinter 2006*, Halle, International Institute for Tibetan and Buddhist Studies GmbH, p. 13-33.

ALDENDERFER Mark / ZHANG Yinong, 2004: "The Prehistory of the Tibetan Plateau to the Seventh Century A.D.: Perspectives and Research from China and the West since 1950", *Journal of World Prehistory* [New York] 18 (1), p. 1-55.

ALLCHIN Bridget, 1958: "Morhana Pahar: A Rediscovery", *Man* [London] 58, p. 153-155.

ANONYMOUS, 1979: "33. Exploration in District Ladakh", in: Director General Archaeological Survey of India (ed.), *Indian Archaeology: a review 1975-1976*, Delhi, Archaeological Survey of India, p. 19.

---, 1981: "32. Buddhist Clay Tablets, District Leh", in: B. K. THAPAR (ed.), *Indian Archaeology: a review 1978-1979*, Delhi, Archaeological Survey of India, p. 96.

---, 1984: "12. Wall-paintings, Saspol, District Leh", in: D. MITRA (ed.), *Indian Archaeology: a review 1981-1982*, Delhi, Archaeological Survey of India, p. 92.

---, 1987: "15. Rock Carvings, Saspola, District Leh", in: R. C. TRIPATHI (ed.), *Indian Archaeology: a review 1984-1985*, Delhi, Archaeological Survey of India, p. 147.

---, 1993: "34. Exploration in Zanskar, district Kargil; 35. Exploration in district Leh; 36. Scientific Clearance, Tisseru stupa, District Leh", in: M. C. JOSHI (ed.), *Indian Archaeology: a review 1988-1989*, Delhi, Archaeological Survey of India, p. 27-29.

---, 1997: "31. Exploration in Upper Indus Valley, Disctrit Leh", in: A. SHANKAR (ed.), *Indian Archaeology: a review 1992-1993*, Delhi, Archaeological Survey of India, p. 36-38.

---, 2000: "17. Exploration in Ladakh region", in: H. MANJIHI / C. DORJI / A. BANERJI (eds.), *Indian Archaeology: a review 1994-1995*, Delhi, Archaeological Survey of India, p. 28.

---, 2004: "17. Exploration in Ladakh; 18. Exploration in District Ladakh", in: Director General Archaeological Survey of India (ed.), *Indian Archaeology: a review 1998-1999*, Delhi, Archaeological Survey of India, p. 49-59.

ANTHONY David W., 2009: "The Sintashta Genesis: The Roles of Climate Change, Warfare, and Long-Distance Trade", in B. HANKS / K. LINDUFF (eds.), *Social Complexity in Prehistoric Eurasia: Monuments, Metals, and Mobility*, Cambridge: Cambridge University Press. pp. 47-73.

ARCHAEOLOGICAL TEAM TIBET AUTONOMOUS REGION CPAM, 1994: "Xizang Namucuo Zhaxidao dongxue yanhua diaocha jianbao" ("Surveys of Cave Pictographs on Zhaxi Peninsula of Nam Co Lake in Tibet"), *Kaogu* [Beijing] 7, p. 607-618.

BAHN Paul G., 2010: *Prehistoric Rock Art: Polemics and Progress*, Cambridge, Cambridge University Press.

BANDINI-KÖNIG Ditte, 2007: *Die Felsbildstation Thalpan III Katalog Thalpan (Steine 196-450)*, Materialien zur Archäologie der nordgebiete Pakistans, vol. 8, Mainz, Philipp von Zabern.

---, 2009: *Die Felsbildstation Thalpan IV Katalog Thalpan (Steine 451-811)*, Materialien zur Archäologie der nordgebiete Pakistans, vol. 9, Mainz, Philipp von Zabern.

---, 2011: *Die Felsbildstation Thalpan V Kataloge Ziyarat, Thakot, Khomar Das, Gichoi Das, Dardarbat Das*, Materialien zur Archäologie der nordgebiete Pakistans, vol. 10, Mainz, Philipp von Zabern.

BAO XINGJUN MOHUI, 2006: *A'ertai shan yanhua tulu (The catalog of petroglyphs in Altai Mountains)*, Wulumuqi, Xinjiang renmin chubanshe.

BARBIERI-LOW Anthony J., 2000: "Wheeled Vehicles in the Chinese Bronze Age (c. 2000–741 B.C.)", *Sino-Platonic Papers* [Philadelphia] 99, p. 1-98.

BAUMER Christoph, 2011: "The Ayala Mazar – Xiaohe Culture: Results from an Archaeological Exploration of the Ancient Keriya Delta, China, in 2009", *Asian Affairs* [London] 42 (1), p. 49-69.

BEDNARIK Robert G., 2007: *Rock Art Science. The Scientific Study of Palaeoart*, New Delhi, Aryan Books International.

---, 2010: "Developments in Petroglyph Dating", *Rock Art Research* [Melbourne] 27 (2), p. 217-222.

BELLEZZA John V., 1997a: *Divine Dyads: Ancient Civilization in Tibet*, Dharamsala, Library of Tibetan Works and Archives.

---, 1997b: "Notes on Three Series of Unusual Symbols Discovered on the Byang thang", *East and West* [Rome] 47 (1-4), p. 395-405.

---, 1998: "Thogchags: Talismans of Tibet", *Arts of Asia (The Asian Arts & Antiques Magazine)* [Hong Kong] 28 (3), p. 44-64.

---, 1999: "Northern Tibet Exploration: Archaeological Discoveries of the Changthang Circuit Expedition", *Asian Art Online Journal*, <http://www.asianart.com/articles/tibarcheo/index.html>

---, 2000a: "Bon Rock Paintings at gNam mtsho: Glimpses of the Ancient Religion of Northern Tibet", *Rock Art Research* [Melbourne] 17 (1), p. 35-55.

---, 2000b: "Images of Lost Civilization: The Ancient Rock Art of Upper Tibet", *Asian Art Online Journal*, <http://www.asianart.com/articles/rockart/index.html>

---, 2001: *Antiquities of Northern Tibet: Pre-Buddhist Archaeological Discoveries on the High Plateau*, Delhi, Adroit Publishers.

---, 2002a: *Antiquities of Upper Tibet: An Inventory of Pre-Buddhist Archaeological Sites on the High Plateau*, Delhi, Adroit Publishers.

---, 2002b: "Gods, Hunting and Society: Animals in the Ancient Cave Paintings of Celestial Lake in Northern Tibet", *East and West* [Rome] 52 (1-4), p. 347-396.

---, 2004: "Metal and Stone Vestiges: Religion, Magic and Protection in the Art of Ancient Tibet", *Asian Art Online Journal*, <http://www.asianart.com/articles/vestiges/index.html>

---, 2005: *Calling down the gods: Spirit-Mediums, Sacred Mountains, and Related Bon Textual Traditions in Upper Tibet*, Leiden, Brill (Brill's Tibetan Studies Library).

---, 2008: *Zhang Zhung: Foundations of Civilization in Tibet. A Historical and Ethnoarchaeological Study of the Monuments, Rock Art, Texts, and Oral Tradition of the Ancient Tibetan Upland*, Vienna, Verlag der österreichischen Akademie der Wissenschaften.

---, 2010a: "gShen-rab Myi-bo: His life and times according to Tibet's earliest literary sources", *Revue d'Études Tibétaines* [Paris] 19, p. 31-118, http://himalaya.socanth.cam.ac.uk/collections/journals/ret/pdf/ret_19_03.pdf

---, 2010b: "Riding high: The chariots of ancient Upper Tibet", *Flight of the Khyung*, August 2010, <http://www.tibetarchaeology.com/august-2010/>

---, 2010c: "The Mon burials of Montsher: a preliminary report", *Flight of the Khyung*, October 2010, <http://www.tibetarchaeology.com/october-2010/>

---, 2011a: *Antiquities of Zhang Zhung: A Comprehensive Inventory of Pre-Buddhist Sites on the Tibetan Upland, Archaic Residential Monuments, volume I*, Tibetan & Himalayan Library, <http://thlib.org/bellezza>

---, 2011b: *Antiquities of Zhang Zhung: A Comprehensive Inventory of Pre-Buddhist Sites on the Tibetan Upland, Archaic Ceremonial Monuments, volume II*, Tibetan & Himalayan Library, <http://thlib.org/bellezza>

---, 2011c: "The individual or group in emblematic form: the mascoids of Upper Tibet", *Flight of the Khyung*, December 2011, <http://www.tibetarchaeology.com/december-2011/>

---, 2012a: "The horned eagle: Tibet's greatest ancestral and religious symbol across the ages", *Flight of the Khyung*, January 2012, <http://www.tibetarchaeology.com/january-2012/>

---, 2012b: "Pillars marking the ages", *Flight of the Khyung*, February 2012, <http://www.tibetarchaeology.com/february-2012/>

---, 2012c: "Bactrian camels up on high", *Flight of the Khyung*, March 2012, <http://www.tibetarchaeology.com/march-2012/>

---, 2012d: "It may or may not be god" and "Divine riders of the unfettered", *Flight of the Khyung*, July 2012, <http://www.tibetarchaeology.com/july-2012/>

---, 2012e: "A brief introduction to the tiger in Tibetan culture: Ancient tigers in Upper Tibet" and "Tigers in the rock art of Upper Tibet", *Flight of the Khyung*, August 2012, <http://www.tibetarchaeology.com/august-2012/>

---, 2012f: "My (Bellezza's) visit to Stok Mon Khar", *Flight of the Khyung*, September 2012, <http://www.tibetarchaeology.com/september-2012/>

---, 2012g: "Ancient piscine rock art", *Flight of the Khyung*, December 2012, <http://www.tibetarchaeology.com/december-2012/>

---, 2013a: "High on the *khyung*", *Flight of the Khyung*, January 2013, <http://www.tibetarchaeology.com/january-2013/>

---, 2013b: *Death and Beyond in Ancient Tibet: Archaic Concepts and Practices in a Thousand-Year-Old Illuminated Funerary Manuscript and Old Tibetan Funerary Documents of Gathang Bumpa and Dunhuang*, Vienna, Verlag der österreichischen Akademie der Wissenschaften.

---, 2013c: "Curves of history: The composite bow in Upper Tibet", *Flight of the Khyung*, March 2013, <http://www.tibetarchaeology.com/march-2013/>

---, 2013d: "The origins of the Tibetan people: A review of "Modeling the Neolithic on the Tibetan Plateau", *Flight of the Khyung*, May 2013, <http://www.tibetarchaeology.com/may-2013/>

---, 2013e: "Gyapa Jo Khar and the historical signification of the term Zhang Zhung", *Flight of the Khyung*, June 2013, <http://www.tibetarchaeology.com/june-2013/>

---, 2013f: "Gyapa Jo Khar of Nyarma", *Flight of the Khyung*, June 2013, <http://www.tibetarchaeology.com/june-2013/>

---, 2013g: "The Stone Age in Ladakh", *Flight of the Khyung*, July 2013, <http://www.tibetarchaeology.com/july-2013/>

BERNSHTAM Aleksandr N., 1952: *Istoriko-arkheologicheskkiye ocherki Tsentralnogo Tyan-Shanya i Pamiro-Alaya*, Materialy i issledovaniya po arkheologii SSSR, vol. 26, Moscow, Izd-vo Akademii nauk SSSR.

BLEDNOVA Natalia / FRANCFORT Henri-Paul / LEGTCHILO Natalia, et al., 1995: *Répertoire des pétroglyphes d'Asie centrale. Fascicule n° 2 : Sibérie du Sud 2: Tepsej I-III, Ust'-Tuba I-IV (Russie, Khakassie)*, Mémoires de la Mission Archéologique Française en Asie Centrale, Tome V.2, Paris, Diffusion De Boccard.

BLO-BZANG BKRA-SHIS, 2002: "Naqu Nima xian Xiasang Jialinshan yanhua diaocha jianbao" ("A brief report on the rock paintings in Shasang and Jialin mountain in Nyima county, Nagqu prefecture"), *Xizang Yanjiu* [Lhasa] 84 (3), p. 61-64.

BRENTJES Burchard, 1977: "On the Petroglyphs of Gogdara I in Swat", *East and West* [Rome] 27 (1-4), p. 92-93.

BRUNEAU Laurianne, 2010: *Le Ladakh (état de Jammu et Cachemire, Inde) de l'Âge du Bronze à l'introduction du Bouddhisme : une étude de l'art rupestre*, 4 volumes, Paris, Université de Paris I / Panthéon-Sorbonne (Unpublished PhD thesis).

---, 2011: "Influence of the Indian cultural area in Ladakh in the 1st millennium AD: the rock inscriptions evidence", *Puratattova (Bulletin of the Indian Archaeological Society)* [New Delhi] 40, p. 179-190.

---, 2013: "L'art rupestre du Ladakh et ses liens avec l'Asie centrale protohistorique", in: J. BENDEZU SARMIENTO (ed.), *Cahiers d'Asie*

Centrale: Archéologie française en Asie centrale post-soviétique. Un enjeu sociopolitique et culturel, vol. 21-22, Tachkent, IFEAC.

---, forthcoming: " Étude thématique et stylistique des pétroglyphes du Ladakh (Jammu et Cachemire, Inde): une nouvelle contribution à l'art rupestre d'Asie centrale pour l'Âge du Bronze", *Eurasia Antiqua* [Mainz] 18.

BRUNEAU Laurianne / DEVERS Quentin / VERNIER Martin, 2011: "Rock art researches in Murgi Tokpo, Nubra Valley, Ladakh", *Purakala (The Journal of the Rock Art Society of India)* [Agra] 20, p. 91-97.

BRUNEAU Laurianne / VERNIER Martin, 2010: "Animal style of the steppes in Ladakh: a presentation of newly discovered petroglyphs", in: L. M. OLIVIERI / L. BRUNEAU / M. FERRANDI (eds.), *Pictures in Transformation: Rock art Researches between Central Asia and the Subcontinent*, Oxford, ArchaeoPress (BAR International Series 2167), p. 27-36.

CHAYET Anne, 1994: *Art et archéologie du Tibet*, Manuels d'archéologie d'Extrême-Orient, Civilisations de l'Himalaya, Paris, Picard.

CHEN ZHAO FU, 1988: *Découverte de l'art préhistorique en Chine*, Paris, Albin Michel.

---, 1996: "Rock Art Studies in the Far East During the Past Five Years", in: P. G. BAHN / A. FOSSATI (eds.), *Rock Art Studies: News of the World I. Recent Developments in Rock Art Research (Acts of Symposium 14D at the NEWS 95 World Rock Art Congress, Turin and Pinerolo, Italy)*, Oxford, Oxbow Books (Oxbow Monograph 72), p. 127-131.

---, 2006a: *Zhongguo yanhua quanji - Xibu yanhua (1) (The Complete Works of Chinese Rock Art - Western Rock Art Volume 1)*, vol. 2, Shenyang, Liaoning meishu chubanshe.

---, 2006b: *Zhongguo yanhua quanji - Xibu yanhua (2) (The Complete Works of Chinese Rock Art - Western Rock Art Volume 2)*, vol. 3, Shenyang, Liaoning meishu chubanshe.

CHEREMISIN D. V., 2006: "Toward a Discussion on the Information Content of Petroglyphs and the Methods of their Study", *Archaeology, Ethnology & Anthropology of Eurasia* [Novosibirsk] 27 (3), p. 89-100.

CHINESE INSTITUTE OF TIBETOLOGY SICHUAN UNIVERSITY, 2001: "Xixang zhada xian gebusailu mudi diaocha" ("Survey of Gebusaily Cemetery in Zhada county"), *Kaogu* [Beijing] 6, p. 32-36.

---, 2001a: "Xizang zhada xian Piyang Dongga yizhi gumuqun shijue jianbao" ("Trial Excavation of Ancient Tombs on the Piyang-Donggar Site in Zanda County, Tibet"), *Kaogu* [Beijing] 6, p. 14-31.

CHIPPINDALE Christopher / NASH George, 2004: "Pictures in Place: approaches to the figured landscapes of rock-art", in: C. CHIPPINDALE / G. NASH (eds.), *The figured landscapes of rock-art*, Cambridge, Cambridge University Press, p. 1-36.

CHUGUNOV Konstantin V. / PARZINGER Hermann / NAGLER Anatoli, 2004: "Arzhan 2 : la tombe d'un prince scythe en Sibérie du Sud. Rapport préliminaire des fouilles russo-allemandes de 2000-2002", *Arts Asiatiques* [Paris] 59, p. 5-29.

CHUGUNOV Konstantin V. / NAGLER Anatoli / PARZINGER Hermann / TEREHENIN Vladimir, 2006: *Der Goldschatz von Arzan : ein Fürstengrab der Skythenzeit in der südsibirischen Steppe*, München, Schirmer / Mosel.

D'ALPOIM GUEDES Jade, forthcoming: "Early agriculture on the Tibetan plateau: a review of the archaeobotanical evidence", paper delivered at the International Conference on the Prehistory of the Tibetan Plateau (Chengdu, 21st-24th of August 2011), Center for Tibetan Studies of Sichuan University.

DANI Ahmad H., 2001: *History of northern areas of Pakistan: up to 2000 A.D.*, Lahore, Sang-e-Meel Publications.

DE TERRA Helmut, 1931: "Prehistoric Caves North of the Himalaya", *American Anthropologist* [Arlington] 33, p. 42-50.

---, 1940: "Felsbilder sprechen", in: H. DE TERRA, *Durch Urwelten am Indus Erlebnisse und Forschungen in Ladak, Kashmir und im Pandschab*, Leipzig, Brodhaus, p. 41-48.

DEBAINE-FRANCFORT Corinne, 1988: "Archéologie du Xinjiang des origines aux Han. Première partie", *Paléorient* [Paris] 14 (1), p. 5-29.

---, 1990: "Les Saka du Xinjiang avant les Han (206 av.-200 ap. J.-C.): Critères d'identification", in: H. P. FRANCFORT (ed.), *Nomades et sédentaires en Asie Centrale : apports de l'archéologie et de l'ethnologie : actes du colloque franco-soviétique Alma Ata (Kazakhstan) 17-26 octobre 1987*, Paris, Éditions du CNRS, p. 81-95.

DEBAINE-FRANCFORT Corinne / ABDURESSUL Idriss, 2001: *Keriya: mémoire d'un fleuve: archéologie et civilisation des oasis du Taklamakan [exposition présentée à l'Espace Electra du 14 février au 27 mai 2001]*, Patrimoines d'Orient, Paris, Fondation EDF, Éditions Findakly.

DENWOOD Philip, 1980: "Rock Inscriptions", in: T. SKORUPSKI / D. L. SNELGROVE (eds.), *The cultural heritage of Ladakh: Zangskar and the cave temples of Ladakh*, vol. 2, Warminster, Aris & Phillips, p. 155-163.

---, 2007: "The Tibetans in the Western Himalayas and Karakoram, Seventh-Eleventh Centuries: Rock Art and Inscriptions", *Journal of Inner Asian Art and Archaeology* [Turnhout] 2, p. 49-58.

DENWOOD Philip / HOWARD Neil F., 1990: "Inscriptions at Balukhar and Char Zampa and Archaeological Observations on the Fort of Balukhar and its Environs", in: T. SKORUPSKI (ed.), *Indo-Tibetan Studies: papers in honour and appreciation of Professor David L. Snellgrove's contribution to Indo-Tibetan studies*, Tring, Institute of Buddhist Studies, p. 81-88.

DEVERS Quentin, 2013: "The stone-roofed structures of Ladakh", *Flight of the Khyung*, June 2013, <http://www.tibetarchaeology.com/june-2013/>

DEVLET Marianna A., 1980: *Petroglify Mugur-Sargola*, Moscow, Nauka.

DEVLET Ekaterina G. / DEVLET Marianna A., 2005: *Mify v kamne: mir naskalnogo iskusstva v Rossii*, Moscow, Aleteya.

DOLLFUS Pascale, 1988: "La représentation du bouquetin au Ladakh, région de culture tibétaine de l'Inde du Nord", in: H. UEBACH / J. L. PANGLUNG (eds.), *Tibetan Studies, Proceedings of the 4th seminar of the*

International Association of Tibetan Studies-Münich 1985, vol. 2, München, Bayerische Akademie der Wissenschaften (Kommission für Zentralasiatische Studien), p. 125-138.

---, 2007: *Peopling and migrations: some remarks based on research in Ladakh (India's western Himalayas)*, Colloquium 'Migrations', organized by Lacito (held in Porquerolles, Var, 5-7 sept. 2007), <http://lacito.vjf.cnrs.fr/colloque/migrations/contributions.htm>

DORN Ronald I., 2001: "Chronometric Techniques: Engravings", in: D. S. WHITLEY (ed.), *Handbook of rock art research*, Walnut Creek, AltaMira Press, p. 167-189.

---, 2007: "Rock Varnish", in: D. J. NASH / S. J. MCLAREN (eds.), *Geochemical Sediments and Landscapes*, Malden, Blackwell, p. 246-297.

DUNCAN Jane E., 1906: *A summer ride through Western Tibet*, London, Collin.

FIORE Dánae, 2007: "The Economic Side of Rock Art: Concepts on the Production of Visual Images", *Rock Art Research* [Melbourne] 24 (2), p. 149-160.

FRACHETTI Michael D., 2008: *Pastoralist Landscapes and Social Interaction in Bronze Age Eurasia*, Berkeley, University of California Press.

FRANCFORT Henri-Paul, 1991: "Note on some Bronze Age petroglyphs of Upper Indus and Central Asia", *Pakistan Archaeology* [Karachi] 26, p. 125-135.

---, 1992: "New Data Illustrating the Early Contacts Between Central Asia and the North-West of the Subcontinent", in: C. JARRIGE / J. P. GERRY / R. H. MEADOW (eds.), *South Asian Archaeology 1989: proceedings from the tenth International Conference of South Asian Archaeologists in Western Europe (3-7 July 1989, Paris)*, Madison, Prehistory Press, p. 97-102.

---, 1994: "Les pétroglyphes d'Asie Centrale et la Route de la Soie", in: Unesco (ed.), *Les routes de la soie, Patrimoine Commun, identités plurielles*, Paris, Éditions Unesco, p. 35-52.

---, 1998a: "De l'art des steppes au sud du Taklamakan", *Bulletin of the Asia Institute* [Detroit] 12, p. 45-58.

---, 1998b: "Central Asian Petroglyphs: between Indo-Iranian and shamanistic interpretations", in: C. CHIPPINDALE / P. S. C. TAÇON (eds.), *The archaeology of rock art*, Cambridge / New York, Cambridge University Press, p. 302-318.

---, 2002a: "Les images du char en Eurasie occidentale", in: V. V. BOBROV (ed.), *Pervobytnaya arkheologiya. Chelovek i iskusstvo. Sbornik nauchnykh trudov, posvyashchennykh 70-letiyu so dnya rozhdeniya Ya. A. Shera*, Novosibirsk, p. 80-89.

---, 2002b: "Rock Art on the Rocks; Rock Art off the Rocks: Iron Age Petroglyphic Images and Agricultural Societies in Xinjiang and Bactria", *Archaeology, Ethnology & Anthropology of Eurasia* [Novosibirsk] 4 (12), p. 61-73.

---, 2003: "Les pétroglyphes d'Asie Centrale: limites des interprétations indo-iraniennes et chamaniques", in: J. GUILAINE (ed.), *Arts et symboles du Néolithique à la Protohistoire*, Paris, Errance, p. 189-214.

---, 2005: "La civilisation de l'Oxus et les Indo-Iraniens et Indo-Aryens en Asie centrale", in: G. FUSSMAN / J. KELLENS / H.-P. FRANCFORT / X. TREMBLAY (eds.), *Aryas, Aryens et Iraniens en Asie Centrale*, Paris, Diffusion De Boccard (Collège de France - Publications de l'Institut de Civilisation Indienne, fasc. 72), p. 253-328.

---, 2011: "Some aspects of horse representation in the petroglyphs of Inner Asia from earliest periods to the 1st millennium BCE", in: L. N. EMOLENKO / V. V. BOBROV (eds.), *Arkheologiya Yuzhnoy Sibiri 25 (Sbornik nauchnykh trudov, posvyashchennykh 70-letiyu so dnya rozhdeniya Ya. A. Shera)*, Kemerovo, RIO KemGU, p. 54-64.

FRANCFORT Henri-Paul / JACOBSON Esther, 2004: "Approaches to the study of petroglyphs of North and Central Asia", *Archaeology, Ethnology & Anthropology of Eurasia* [Novosibirsk] 2 (18), p. 53-78.

FRANCFORT Henri-Paul / KLODZINSKI Daniel / MASCLE George, 1990: "Pétroglyphes archaïques du Ladakh et du Zanskar", *Arts Asiatiques* [Paris] 45, p. 5-27.

---, 1992: "Archaic Petroglyphs of Ladakh and Zanskar", in: M. LORBLANCHET (ed.), *Rock Art in the Old World: papers presented in Symposium A of the AURA Congress, Darwin (Australia), 1988*, New Delhi, IGNCA, p. 147-192.

FRANCKE August H., 1902: "Notes on rock-carvings from Lower Ladakh", *Indian Antiquary* [Bombay] 31, p. 398-401.

---, 1903: "Some more rock-carvings from Lower Ladakh", *Indian Antiquary* [Bombay] 32, p. 361-362.

---, 1905a: "Archaeological notes on *Balu-mkhar* in Western Tibet", *Indian Antiquary* [Bombay] 34, p. 203-210.

---, 1905b: "The rock inscriptions at Mulbe", *Indian Antiquary* [Bombay] 34, p. 72-81.

---, 1905-07: "The Dards at Khalatse in Western Tibet", *Memoirs of the Asiatic Society of Bengal* [Calcutta] 1, p. 413-419.

---, 1906a: "Archaeology in Western Tibet. Khalatse: I-Inscriptions at Khalatse; II-Inscriptions at Saspola", *Indian Antiquary* [Bombay] 35, p. 237-241; p. 325-333.

---, 1906b: "Kleine Erträger einer Missionsreise nach Zanskar", *Zeitschrift der Deutschen Morgenländischen Gesellschaft* [Wiesbaden] 60, p. 645-661.

---, 1907a: "Archaeology in Western Tibet: III-Inscriptions at Basgo and Nyemo, IV-Inscriptions at Daru, V-The Rock inscriptions at Sheh", *Indian Antiquary* [Bombay] 36, p. 85-98.

---, 1907b: "Historische Dokumente von Khalatse in West-Tibet (Ladakh)", *Zeitschrift der Deutschen Morgenländischen Gesellschaft* [Wiesbaden] 61, p. 583-614.

---, 1907c: *A history of western Tibet, one of the unknown empires*, London, Partridge.

---, 1914a: *Antiquities of Indian Tibet. Vol.I. Personal narrative, Archaeological survey of India*, Calcutta, Superintendent Government Printing (New imperial series 38).

---, 1914b: "Historical Documents from the Borders of Tibet", in: J. P. VOGEL (ed.), *Archaeological Survey of India Annual Report 1909-10*, Calcutta, Superintendent government printing, p. 104-112.

---, 1925: "Felseninschriften in Ladakh", *Sitzungsberichte der Preussischen Akademie der Wissenschaften* [Berlin] 31, p. 366-370.

---, 1977: *A History of Ladakh with a critical introduction and annotations by S. S. Gergan and F. M. Hassain*, New Delhi, Sterling Publishers.

FRANCKE August H. / JINA Prem S., 2003: *First collection of Tibetan historical inscriptions on rock and stone from Ladakh Himalaya*, Delhi, Sri Satguru Publications.

GANJOO R. K. / OTA S. B., 2012: "Mountain environment and early human adaptation in NW Himalaya, India: A case study of Siwalik Hill Range and Leh valley", *Quaternary International* [Oxford] 269, p. 31-37.

GE SHANLIN, 1998: *Badanlin yanhua (The rock paintings in Badanjinlin desert)*, Beijing, Beijing tushuguan chubanshe

HAN JIANYE, 2007: *Xinjiang de qingtong shidai he zaoqi tieqi shidai wenhua (Cultures in Xinjiang from the Bronze Age to the Early Iron Age)*, Beijing, Wenwu chubanshe.

HAUPTMANN Harald / BANDINI-KÖNIG Ditte / BEMMANN Martin, 1997: "Rock Art in the Upper Indus Valley", in: H. HAUPTMANN (ed.), *The Indus, Cradle and Crossroads of Civilizations, Pakistan-German Archaeological Research, An Exhibition to mark the Golden Jubilee of the founding of Pakistan*, Islamabad, Embassy of the Federal Republic of Germany, p. 31-70.

HAZOD Guntram, 2010: *The Petroglyphs of Tsi-tsi-rong un Rgya-ma, Central Tibet*, unpublished report.

HOWARD Neil F., 1989: "The development of the fortresses of Ladakh, c.950 to c.1650 AD", *East and West* [Rome] 39 (1-4), p. 217-288.

---, 1995: "The fortified places of Zanskar", in: P. DENWOOD / H. OSMASTON (eds.), *Recent Research on Ladakh 4 & 5: proceedings of the*

fourth and fifth international colloquia on Ladakh, Delhi, Motilal Banarsidass, p. 79-95.

---, 1999: "Ancient Painted Pottery from Ladakh", in: M. VAN BEEK / K. B. BERTELSEN / P. PEDERSEN (eds.), *Ladakh : culture, history, and development between Himalaya and Karakoram, Recent Research on Ladakh 8: proceedings of the eighth Colloquium of the International Association for Ladakh Studies held at Moesgaard, Aarhus University, 5-8 June 1997*, Oakville, Aarhus University Press, p. 226-236.

HUMMEL Siegbert, 2000: *On Zhang-zhung (edited and translated by Guido Vogliotti)*, Dharamsala, Library of Tibetan Works and Archives.

HUO WEI, 2005: "Xizang xibu zaoqi wenming de kaoguxue tansuo" ("A Study on the Archaeology of the Early Civilization of Western Tibet"), *Bod rig pa dus deb / Zangxue xuekan / Journal of Tibetan Studies* [Lhasa] 94, no. 1, p. 43-50.

IWAO Kazushi / HILL Nathan W. / TAKEUCHI Tsuguhito, 2009: *Old Tibetan Inscriptions*. Old Tibetan Documents Online Monograph Series, vol. 2, Tokyo, Research Institute for Languages and Cultures of Asia and Africa.

JACOBSON-TEPFER Esther / MEACHAM James E., 2009: *Archaeology and Landscape in the Altai mountains of Mongolia*, <http://mongolianaltai.uoregon.edu/theproject.php>

JACOBSON-TEPFER Esther / MEACHAM James E. / TEPFER Gary, 2010: *Archaeology and Landscape in the Mongolian Altai: an Atlas*, Redlands, California, ESRI Press.

JACOBSON-TEPFER Esther / KUBAREV Vladimir D. / TSEEVENDORJ Damdensurenjin, 2006: *Répertoire des pétroglyphes d'Asie centrale. Fascicule n° 7: Mongolie du Nord-Ouest, Haut Tsagaan Gol*, Mémoires de la Mission Archéologique Française en Asie Centrale, Tome V.7, Paris, Diffusion De Boccard.

JACQUES Guillaume, 2009: "Zhangzhung and Qiangic Languages", in: Y. NAGANO (ed.), *Issues in Tibeto-Burman Historical Linguistics*, Osaka, National Museum of Ethnology (Senri Ethnological Series 75), p. 131-150.

JAMWAL S. D., 200?: "A cop and his monumental work in Ladakh", <http://www.himalayanaffairs.org/interviewdetails.asp?id=43>

---, 2006: "Rock Carvings of Ladakh Himalayas", http://www.highasialadakh.com/index.php?option=com_content&task=view&id=48&Itemid=9

JETTMAR Karl, 1972: "Review of: 'Animal Style. Art from East to West' by Emma C. Bunker; C. Bruce Chatwin; Ann R. Farkas", *Artibus Asiae* [Zurich] 34 (2-3), p. 256-258.

---, 1994: "Body-painting and the Roots of the Scytho-Siberian Animal Style", in: B. GENITO (ed.), *The Archaeology of the Steppes: Methods and Strategies. Papers from the International Symposium held in Naples 9-12 November 1992*, Rome, Istituto Universitario Orientale Dipartimento di Studi Asiatici (Series Minor XLIV), p. 3-13.

JETTMAR Karl, 1982: "Eine Tierstillbronze, erworben in Indus-Kohistan", *Afghanistan journal* [Graz] 9 (3), p. 86-87.

---, 1985: "Non-buddhist traditions in the petroglyphs of the Indus valley", in: J. SCHOTSMANS-WOLFERS / M. TADDEI (eds.), *South Asian Archaeology 1983 : proceedings of the seventh International Conference of the Association of South Asian Archaeologists in Western Europe (Bruxelles)*, Naples, Istituto Universitario Orientale, p. 751-777.

---, 1991: "The Art of the Northern Nomads in the Upper Indus Valley", *South Asian Studies* [London] 7, p. 1-20.

---, 2002: "Rock Art in Northern Pakistan. Researches between 1979-1989", in: E. KATTNER (ed.), *Beyond the Gorges of the Indus. Archaeology before Excavation*, Karachi, Oxford University Press, p. 80-109.

JETTMAR Karl / THEWALT Volker, 1985: *Zwischen Gandhara und den Seidenstrassen : Felsbilder am Karakorum Highway : Entdeckungen deutsch-pakistanischer Expeditionen, 1979-1984*, Mainz, Philipp von Zabern.

JIA Peter / BETTS Alison, 2010: "A re-analysis of the Qiemu'erqieke (Shamirshak) cemeteries, Xinjiang, China", *Journal of Indo-European studies* [Washington] 38 (3-4), p. 275-317.

JIANG ZHENMING, 1991: *Timeless History: the rock art of China*, Beijing: New World Press.

JIANJUN MEI / SHELL Colin, 2002: "The Iron Age Cultures in Xinjiang and their Steppe Connections", in: B. KATIE / R. COLIN / L. MARSHA (eds.), *Ancient interactions: East and West in Eurasia*, Cambridge, McDonald Institute for archaeological research, p. 213-234.

JOHN Gudrun, 2006: *Tibetische Amulette aus Himmels-Eisen*, Rahden, Verlag Marie Leidorf.

KLODZINSKI Daniel / GOUAZÉ Yves, 1982: "Des gravures rupestres en Himalaya (Zanskar, province du Ladakh)", *Bulletin de la Société des études littéraires, scientifiques et artistiques du Lot* [Cahors] 103 (2), p. 129-134

KOENIG Gerd G., 1984: "Skythen in Tibet?", in: C. MÜLLER / W. RAUNIG (eds.), *Der Weg zum Dach der Welt*, Innsbruck, Pinguin-Verlag, p. 318-320.

KOSAMBI Damodar D., 1965: *The culture and civilization of ancient India in historical outline*, London, Routledge and K. Paul.

KUBAREV Vladimir D., 1988: *Drevniye rospisi Karakola*, Novosibirsk, Nauka.

---, 2006: "Myths and rituals impressed in petroglyphs of the Altai", *Archaeology Ethnology & Anthropology of Eurasia* [Novosibirsk] 27 (3), p. 41-54.

---, 2007: "Biluut-Tolgoi: a new rock art site in Mongolia", *Archaeology Ethnology & Anthropology of Eurasia* [Novosibirsk] 31 (3), p. 63-68.

KUBAREV Vladimir D. / ZABELIN V. I., 2006: "Avian Fauna in Central Asian Rock Art: Archaeological and Ethnological Evidence", *Archaeology Ethnology & Anthropology of Eurasia* [Novosibirsk] 26 (2), p. 87-103.

KUZMINA Elena E., 1998: "Cultural Connections of the Tarim Basin People and the Pastoralists of the Asian Steppes in the Bronze Age", in: V. H. MAIR (ed.), *The Bronze Age and Early Iron Age Peoples of*

Eastern Central Asia, Washington D.C., The Institute for the Study of Man, p. 63-93.

---, 2007: *The Origin of the Indo-Iranians*, Leiden, Brill.

---, 2008: *The prehistory of the Silk Road*, Philadelphia, University of Pennsylvania Press.

KWANG-TZUU Chen / HIEBERT Fredrik T., 1995: "The Late Prehistory of Xinjiang in Relation to Its Neighbors", *Journal of World Prehistory* [Dordrecht] 9 (2), p. 243-300.

LEBEDYNSKY Iaroslav, 2006: *Les Saces : les "Scythes" d'Asie, VIII^e siècle av. J.C.-IV^e siècle apr. J.C.*, Paris, Errance.

LEONT'EV N. V. / KAPEL'KO V. F., 2002: *Steinstelen der Okunev-Kultur*, Mainz, Verlag Philipp Von Zabern (Archäologie in Eurasien 13).

LI YONGXIAN, 2004: "Zhada pendi yanhua de faxian ji dui Xizang yanhua de jidian renshi" ("The Discoveries of Rock Painting in Zhada Basin and Some Ideas on Tibetan Rock Painting"), in: HUO WEI / LI YONGXIAN (eds.), *Xizang kaogu yu yishu guoji xueshu taolunhui lunwenji* (*Essays on the International Conference on Tibetan Archaeology and Art*), Chengdu, Sichuan renmin chubanshe, p. 30-46.

---, 2011: "Archaeological Survey of 'Khyung Lung Silver Castle' in Western Tibet", in: H. BLEZER (ed.), *Emerging Bon: The Formation of Bon Traditions in Tibet at the Turn of the First Millennium AD. PIATS 2006: Proceedings of the Eleventh Seminar of the International Association for Tibetan Studies, Königswinter 2006*, Halle, International Institute for Tibetan and Buddhist Studies GmbH, p. 35-52.

LIANG ZHENHUA, 1998: *Zhuozi shan yanhua* (*Rock art in Zhuozi Mountains*), Beijing, Wenwu chubanshe.

LITVINSKY Boris A., 1993: "Pamir und Gilgit Kulturhistorische Verbindungen", in: K. JETTMAR / D. KÖNIG / M. BEMMANN (eds.), *Antiquities of Northern Pakistan: reports and studies*, vol. 2, Mainz, Philipp von Zabern, p. 141-149.

LÜ HONGLIANG, 2010: "Xi Ximalaya yanhua Ou Ya caoyuan yinsu zai jiantao" ("A Reexamination to the Eurasian Steppe Elements in the Petroglyphs of the Western Himalaya Region"), *Kaogu* [Beijing] 10, p. 76-85.

MALLORY J. P. / MAIR V. H., 2000: *The Tarim Mummies: Ancient China and the Mystery of the Earliest Peoples from the West*, London, Thames & Hudson.

MANI B. R., 1998: "Rock Carvings and Engravings in Ladakh: New Discoveries", *Pragdhara* [Uttar Pradesh] 9, p. 65-74.

---, 2000-2001: "Rock Art of Ladakh: Glimpses of Economic and Cultural Life", *Purakala* [Agra] 11-12, p. 93-108.

MAR'JASEV A. / GORJACEV A. / POTAPOV S., 1998: *Répertoire des pétroglyphes d'Asie centrale. Fascicule n° 5 : Kazakhstan 1 : choix de pétroglyphes du Semirech'e (Felsbilder im Siebenstromland)*, Mémoires de la Mission Archéologique Française en Asie Centrale, Tome V.5, Paris, Diffusion de Boccard.

MARTIN Dan, 1991: "The Emergence of Bon and the Tibetan Polemical Tradition", Indiana University, Bloomington (Unpublished Phd thesis).

MARTYNOV A. J. / MARIACHEV A. N. / ABETEKOV A. K., 1992: *Gravures rupestres de Saimaly-tach*, Alma-Ata, Ministry of Public Instruction, Republic of Kazakhstan.

MATOCHKIN E. P., 2007: "Petroglyphs of Komdosh-bom", *Archaeology Ethnology & Anthropology of Eurasia* [Novosibirsk] 30 (2), p. 125-135.

NEBESKY-WOJKOWITZ René de, 1993: *Oracles and Demons of Tibet. The Cult and Iconography of the Tibetan Protective Deities*, Kathmandu, Tiwari's Pilgrims Book House (first edition 1956).

NEELIS Jason, 2007: "Three Passages to India: Sakas and Kusana Migrations in Historical Contexts", in: D. M. SRINIVASAN (ed.), *On the Cusp of an Era-Art in the Pre-Kushana World*, Leiden, Brill (Brill's Inner Asian Library), p. 55-94.

NORBU Namkhai, 1995: *Drung, Deu and Bön. Narrations, Symbolic languages and the Bön tradition in Ancient Tibet* (trans. A. Clemente and A. Lukianowicz). Dharamsala, Library of Tibetan Works and Archives.

OLIVIERI Luca M., 1998: "The Rock-Carvings of Gogdara I (Swat) Documentation and Preliminary Analysis", *East and West* [Rome] 48 (1-2), p. 57-91.

---, 2004: "Beyond Gogdara I New Evidence of Rock Carvings and Rock Artefacts from the Kandak Valley and Adjacent Areas (Swat, Pakistan)", *East and West* [Rome] 54 (1-4), p. 121-180.

---, 2005: "Gogdara I and Beyond. The Cultural Sequence of the non-Buddhist Rock Art in Swat. Preliminary Conclusions", in: U. FRANKE-VOGT / H. WEISSHAAR (eds.), *South Asian Archaeology Bonn 2003 (Proceedings of the seventeenth International Conference of the European Association of South Asian Archaeologists (7-11 July 2003, Bonn))*, Aachen, Linden Soft Verlag, p. 215-222.

OROFINO Giacomella, 1990: "A Note on some Tibetan Petroglyphs of the Ladakh Area", *East and West* [Rome] 40 (1-4), p. 173-200.

OTA S. B., 1993: "Evidences of Transhumance from Ladakh Himalayas, Jammu and Kashmir, India", in: R. K. GANJOO / S. B. OTA (eds.), *Current Advances in Indian Archaeology*, vol. 1, Nagpur, Dattsons, p. 91-110.

PANDE B. M., 1971: "Neolithic Hunting Scene on a Stone Slab from Burzahom, Kashmir", *Asian Perspectives* [Honolulu] XIV, p. 134-137.

PARZINGER Hermann, 2001: "Bemerkungen zu einigen Tierstillbronzen zwischen Karakorum und Pamir", in: R. M. BOEHMER / J. MARAN (eds.), *Lux orientis : Archäologie zwischen Asien und Europa, Festschrift für Harald Hauptmann zum 65. Geburtstag*, Rahden / Westf., M. Leidorf, p. 321-326.

---, 2006: *Die Frühen Völker Eurasiens : vom Neolithikum bis zum Mittelalter*, Munich, C. H. Beck.

---, 2008: "The 'Silk Roads' Concept Reconsidered: About Transfers, Transportation and Transcontinental Interactions in Prehistory", *The Silk Road* [Saratoga] 5 (2), p. 7-15.

PEISSEL Michel, 1984: *L'Or des fourmis: la découverte de l'Eldorado grec au Tibet*, Paris, Robert Laffont.

QIAO HUA, 2007: *Ningxia yanhua (Rock art in Ningxia)*, Yinchuan: Ningxia renmin chubanshe.

RAHAMAN Saeedur, 1990: "Unique find of Gold Ornaments from Pattan (Kohistan)", *Journal of Central Asia* [Islamabad] 13 (1), p. 5-17.

RHODE David / MADSEN David B. / BRANTINGHAM P. J. / TSULTRIM DARGYE, 2007: "Yaks, yak dung and prehistoric human habitation on the Tibetan Plateau", in: D. B. MADSEN / CHEN ZHAO FU / GAO XING (eds.), *Late Quaternary Climate Change and Human Adaptation in Arid China*, Amsterdam, Elsevier.

RICHARDSON Hugh E., 1998: *High Peaks, Pure Earth. Collected Writings on Tibetan History and Culture*, London, Serindia Publications.

SANDER Lore, 1994: "A Graffito with the Quintessence of Buddhist Doctrine from Ladakh", in: N. BALBIR / J. K. BAUTZE (eds.), *Festschrift Klaus Bruhn zur Vollendung des 65. Lebensjahres dargebracht von Schülern, Freunden und Kollegen*, Reinbek, Verlag für Orientalistische Fachpublikationen, p. 561-570.

SAVINOV Dmitrij G. / PODOL'SKIJ M. L., 1997: *Okunevsky sbornik. Kultura, iskusstvo, antropologiya*, Saint Petersburg, Hakasavtodor.

SCHALLER George B., 1977: *Mountain monarchs: wild sheep and goats of the Himalaya*, Wildlife behavior and ecology Series, Chicago, University of Chicago Press.

---, 1998: *Wildlife of the Tibetan Steppe*, Chicago, The University of Chicago Press.

SHARMA Arun K., 2000: *Early Man in Jammu Kashmir & Ladakh*, Delhi, Agam Kala Prakashan.

SHARMA K. K. / RAJAGOPALAN G. / CHOUBEY V. M., 1989: "Radiocarbon Dating of Charcoal from Pre-Indus Civilization Fireplace, Upper Indus Valley, Ladakh", *Current Science* [Bangalore] 58 (6), p. 306-308.

SHAUGHNESSY Edward L., 1988: "Historical Perspectives on the Introduction of the Chariot in China", *Harvard Journal of Asiatic Studies* [Cambridge] 48 (1), p. 189-237.

SHER Jakov A., 1980: *Petroglify Sredney i Tsentralnoy Azii*, Moscow, Nauka.

---, 1997: "Petroglify -drevneyshy izobrazitelny folklor", *Naskalnoye iskusstvo Azii* (Kemerovo) 2, p. 28-35.

SHER Jakov A. / BLEDNOVA Natalia / LEGCHILO Natalia / SMIRNOV Dimitri, 1994: *Répertoire des pétroglyphes d'Asie centrale. Fascicule 1 : Sibérie du sud 1 : Oglakhty I-III : Russie, Khakassie*, Mémoires de la Mission Archéologique Française en Asie Centrale, Tome V.1, Paris, Diffusion de Boccard.

SIMS-WILLIAMS Nicolas, 1993: "The Sogdian Inscriptions of Ladakh", in: K. JETTMAR / D. KÖNIG / M. BEMMANN (eds.), *Antiquities of Northern Pakistan: reports and studies*, vol. 2, Mainz, Philipp von Zabern, p. 157-163.

SNELLGROVE David L. / SKORUPSKI Tadeusz, 1977: *The Cultural Heritage of Ladakh. Central Ladakh*, vol.1, Warminster, Aris & Phillips.

SPARREBOOM Marcus, 1995: *Chariots in the Veda*, Leiden, Brill.

STODDARD Heather, 2009: "The Lexicon of Zhangzhung and Bonpo Terms: Some Aspects of Vocabulary in Relation Material Culture and the Persian World", *East and West* [Rome] 59 (1-4), p. 245-264.

SUOLANG WANGDUI (Bsod-nams dbang'-dus), 1994: *Art of Tibetan Rock Paintings*, Chengdu, Sichuan People's Publishing House.

TANG HUIHENG, 1989: "A study of petroglyphs in Qinghai Province, China", *Rock Art Research* [Melbourne] 6 (1), p. 3-10.

---, 2006: "Opposition and Unity in Tibetan and Chinese Prehistoric Art", *Rock Art Research* [Melbourne] 23 (2), p. 217-226.

TANG HUIHENG / GAO ZHIWEI, 2004: "Dating analysis of rock art in the Qinghai-Tibetan Plateau", *Rock Art Research* [Melbourne] 21 (2), p. 161-172.

TANG HUISENG / ZHANG WENHUA, 2001: *Qinghai Yanhua: shiqian yishu zhong eryuan duili siwei ji qi linian de yanjiu* (Qinghai petroglyphs: opposition and unity: a study of Shamanistic dualism in prehistoric art -a decipher of the petroglyphs), Beijing, Science Press.

TCHLENOVA N. L., 1963: "Le Cerf scythe", *Artibus Asiae* [Ascona] 26 (1), p. 27-70.

TENZIN GAYDEN / CADENAS Alicia M. / REGUEIRO Manuela, *et al.*, 2007: "The Himalayas as a Directional Barrier to Gene Flow", *The American Journal of Human Genetics* [Boston] 80 (5), p. 884-894.

TIAN GUANGLIN, 2004: "Neimenggu Chifeng shi Yinhe zhongxialiu gudai yanhua de diaocha" ("Survey of Ancient Petroglyphs in the middle and Lower Yinhe River Valley in Chifeng City, Inner Mongolia"), *Kaogu* [Beijing] 12, p. 13-26.

TONG TAO / WERTMANN Patrick, 2010: "The coffin paintings of the Tubo period from the northern Tibetan Plateau", in: M. WAGNER / WANG WEI (eds.), *Bridging Eurasia*, Mainz, Deutsches Archäologisches Institut, p. 187-213.

TSHANGPA Tashi L., 2007: "A short note on some petroglyphs of the Nubra valley", in: J. BRAY / N. T. SHAKSPO (eds.), *Recent research on Ladakh 2007*, Leh, J. and K. Academy for Art, Culture and Languages : International Association for Ladakh Studies, p. 53-60.

---, 2008: "Withering Heights", www.tibetheritagefund.org/pages/posts/withering-heights30.php

---, forthcoming: "Ancient Petroglyphs of Ladakh: new discoveries and documentation", in: E. F. LO BUE / J. BRAY (eds.), *Art and Architecture in Ladakh*, Leiden, Brill.

TUCCI Giuseppe, 1958: "Preliminary report on an archaeological survey in Swat", *East and West* [Rome] 9 (4), p. 279-328.

UJFALVY Károly J., 1884: *Aus dem westlichen Himalaya: Erlebnisse und Forschungen*, Leipzig, F. A. Brockhaus.

VAN DRIEM George, 2001: "Zhangzhung and its next of kin in the Himalayas", in: Y. NAGANO / R. J. LAPOLLA (eds.), *New Research*

on *Zhangzhung and Related Himalayan Languages*, Osaka, National Museum of Ethnology (Bon Studies 3), p. 31-44.

---, 2011: "Lost in the sands of time somewhere north of the Bay of Bengal", in: B. ZEISLER / M. TURIN (eds.), *Himalayan Languages and Linguistics: Studies in the Phonology, Semantics, Morphology and Syntax*, Leiden, Brill (Languages of the Greater Himalayan Region vol. 5 / 12), p. 13-38.

VERNIER Martin, 2000: "Study of Rock Art in Ladakh Himalayas", *Unmesh* [New Delhi] III (19), p. 15.

---, 2007: *Exploration et documentation des pétroglyphes du Ladakh 1996-2006*, Quaderni Fondazione Carlo Leone et Mariena Montandon, Como, NodoLibri.

---, 2012: "Exploring ancient Ladakh with Martin Vernier", *Flight of the Khyung*, September 2012, <http://www.tibetarchaeology.com/september-2012/>

VERNIER Martin / BRUNEAU Laurianne, 2013: "The rock art site of Zamthang (Zanskar), when money and good will turn into disaster", *Ladakh Studies – Journal of the International Association of Ladakh Studies*, 29, p. 25-27.

VERNIER, Martin / SHARMA Tara, 2011: "Endangered Petroglyphs of Ladakh", *Newsletter of the INTACH Ladakh Chapter* [Leh] 1, p. 3.

VITALI Roberto, 2003: "Tribes which populated the Tibetan Plateau, as treated in the texts collectively called *Khungs chen po bzhi*", *Cosmogony and the Origins* (Lungta 16), Dharamsala, Amnye Machen Institute, p. 37-63.

VOHRA Rohit, 1993: "Antiquities on the southern arteries of the silk route : Ethnic movements and new discoveries", in: C. RAMBLE / M. BRAUEN (eds.), *Anthropology of Tibet and the Himalaya : Proceedings of the international seminar, September 21-28 1990 at the Ethnographic Museum of the University of Zurich*, Zurich, Völkerkundemuseum der Universität Zürich, p. 386-405.

---, 1994: "Sogdian Inscriptions from Tangtse in Ladakh", in: P. KVAERNE (ed.), *Tibetan Studies proceedings of the 4th seminar of the International Association for Tibetan Studies-Fagerne 1992*, vol. 2, Oslo,

The Institute for Comparative Research in Human Culture, p. 920-927.

---, 1995: "Arabic Inscriptions of the late first millennium A.D. from Tangtse in Ladakh", in: P. DENWOOD / H. OSMASTON (eds.), *Recent Research on Ladakh 4 & 5: proceedings of the fourth and fifth international colloquia on Ladakh*, Delhi, Motilal Banarsidass, p. 419-429.

---, 1999: "Tamgas and Inscriptions from Tangtse in Ladakh", in: H. EIMER / M. HAHN / M. SCHETELICH / P. WYZLIC (eds.), *Studia Tibetica et Mongolica (Festschrift Manfred Taube) Redigenda curaverunt*, Swisttal-Odendorf, Indica et Tibetica Verlag (Indica et Tibetica. Monographien zu den Sprachen und Literaturen des indo-tibetischen Kulturraumes, Band 34), p. 279-303.

---, 2005a: *Rock art in Ladakh*, Himalayan Studies Ladakh Series, vol. 4, Luxemburg, Ethnic Unlimited S.A.R.L.

---, 2005b: *Petroglyphs in Purig Area of Ladakh*, Himalayan Studies Ladakh Series, vol. 5, Luxemburg, Ethnic Unlimited S.A.R.L.

WAKANKAR Vishnu S., 2005: *Painted rock shelters of India*, Bhopal, Directorate of Archaeology, Archives and Museums, Government of Madhya Pradesh.

WANG BO, 2001: "Hirschsteine in Xinjiang", *Eurasia Antiqua* [Mainz] 7, p. 106-131.

WANGDU SHARGEN / WANGDU PHURCHOK, 2005: "Xizang kaogu gongzuo 40 nian" ("Forty Years of Archaeology in Tibet"), *Zhongguo zangxue (China Tibetology)* [Beijing] 71 (3), p. 201-212.

WU JUNKUI / ZHANG JIANLIN, 1987: "Xizang Ritu xian gudai yanhua diaocha jianbao" ("A brief investigation report on ancient rock art of Ritu, Tibet"), *Wenwu* [Beijing] 2, p. 44-50.

WU XINHUA / WAGNER Mayke / MEI JIANJUN / GÖRSDORF Jochen / AILIJANG Aisha / TARASOV Pavel, 2006: "Das protoskythische Gräberfeld Liushui im Kunlun-Gebirge, NW-China. Kurzbericht über die Ergebnisse der Ausgrabungen 2002 bis 2005", *Eurasia Antiqua* [Mainz] 12, p. 173-191.

XICRA (Xinjiang Institute of Cultural Relics and Archaeology) / TURPAN PREFECTURAL BUREAU OF CULTURAL RELICS, 2004: "Xinjiang Shanshan xian Yanghai mudi de kaogu xin shouhuo" ("New Achievements in the Archaeological Exploration of Yanghai Cemeteries in Shanshan County, Xinjiang"), *Kaogu* [Beijing] 5, p. 3-7.

XUEBIN Q. / JIANLIN H. / BLENCH R. / REGE J. E. O. / HANOTTE O., 2008: "Understanding the yak pastoralism in Central Asian Highlands: mitochondrial DNA evidence for origin, domestication and dispersal of domestic yak", in: A. SANCHEZ-MAZAS (ed.), *Past Human Migrations in East Asia: Matching Archaeology, Linguistics and Genetics*, London, Taylor and Francis, p. 427-442.

ZHANG JIANLIN, 1987: "Ritu yanhua de chubu yanjiu" ("Initial studies of rock art in Ritu, Tibet"), *Wenwu* [Beijing] 2, p. 51-54.

ZHENMING JIANG, 1991: *Timeless history: the Rock Art of China*, Beijing, New World Press.



Figures

Maps by Quentin Devers. All photographs by the authors: J.V. Bellezza for Upper Tibet and L. Bruneau for Ladakh, except stated otherwise.

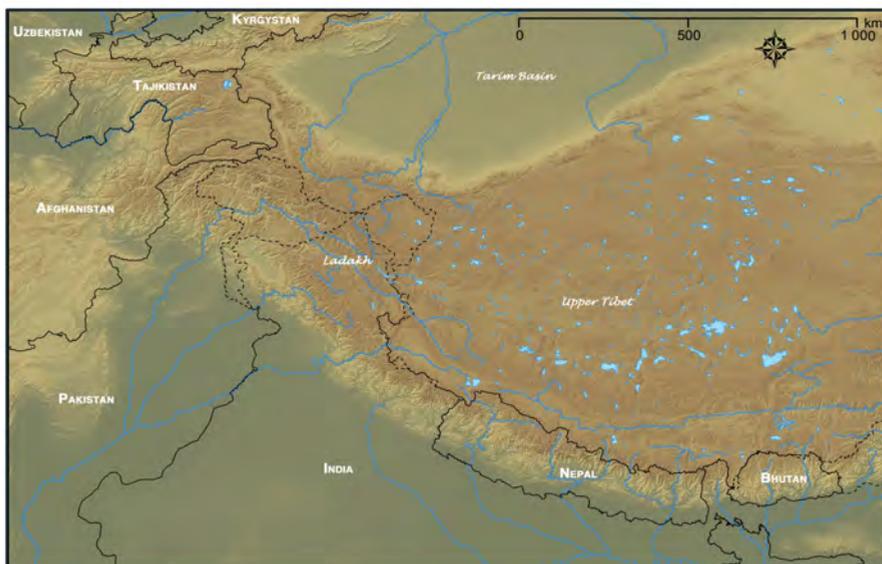


Fig.I.1 Map showing the location of Ladakh and Upper Tibet.

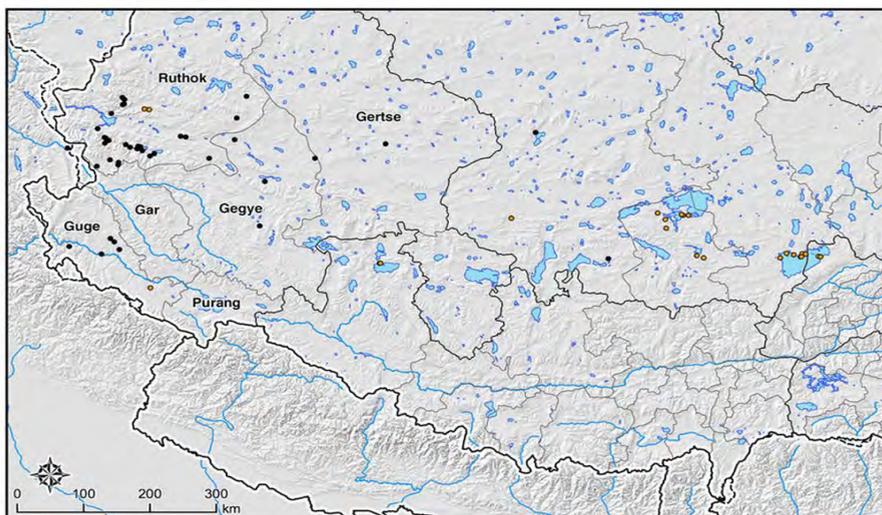


Fig.II.1 Map showing the districts of Upper Tibet and the location of rock art sites.



Fig.II.2 General view of the rock art site of Gongkha, Ruthok, Upper Tibet.

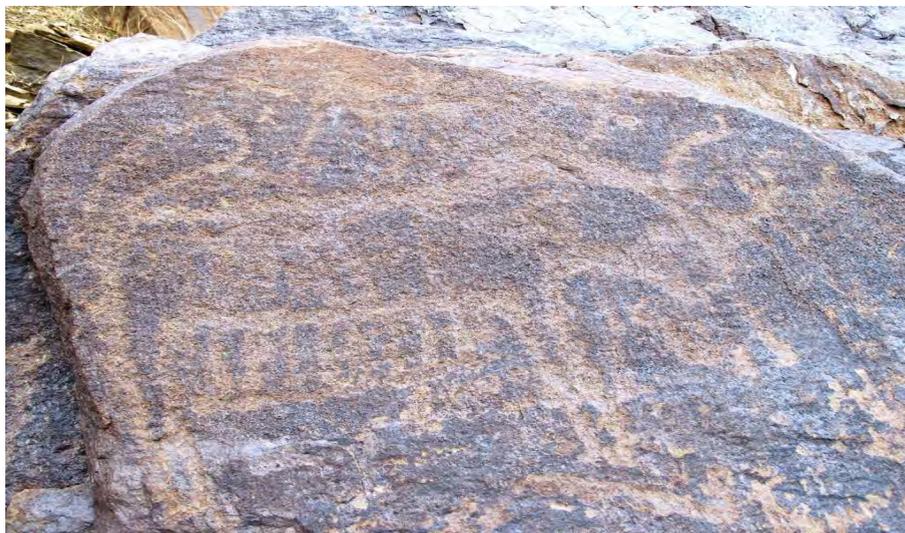


Fig.II.3 Wild yak(s) with belly fringe, Duruchen site, Tsamda county, Upper Tibet.

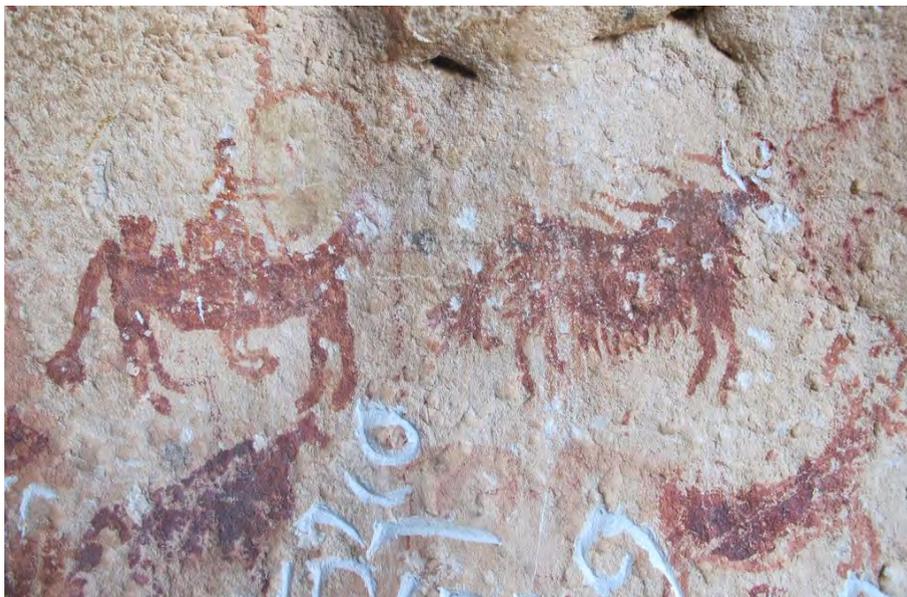


Fig.II.4 Mounted archer in pursuit of wild yak, Chedo site, Palgon county, Upper Tibet.



Fig.II.5 Stag, Shaksang site, Nyima county, Upper Tibet.



Fig.II.6 Archer on foot firing arrow at Bactrian camel and other wild herbivore, Chorten Buknaka site, Ruthok, Upper Tibet.

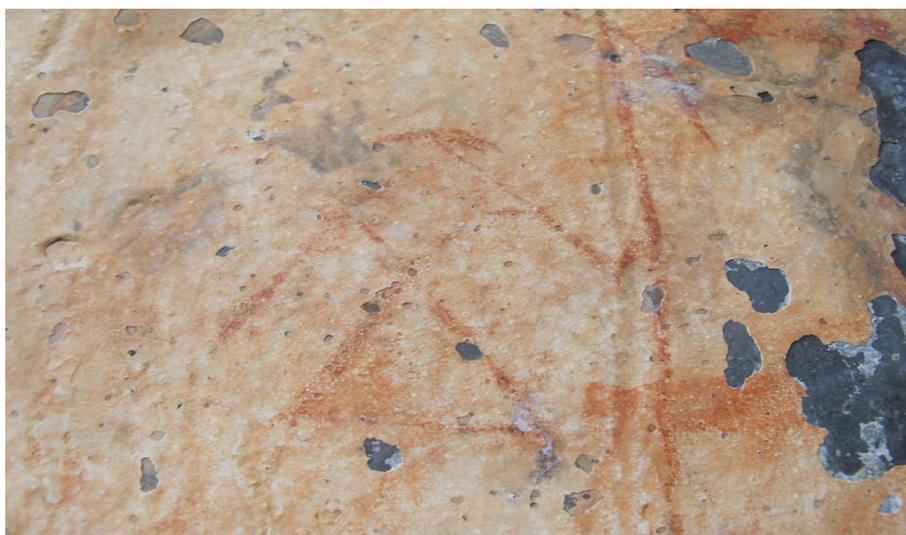


Fig.II.7 Anthropomorph with ornithic features, Khyigen Gakpado site, Palgon county, Upper Tibet.



Fig.II.8 Anthropomorph riding a wild yak, Kyildrum site, Gegye, Upper Tibet.



Fig.II.10 Sun, crescent moon and swastika, Duruchen site, Tsamda county, Upper Tibet.

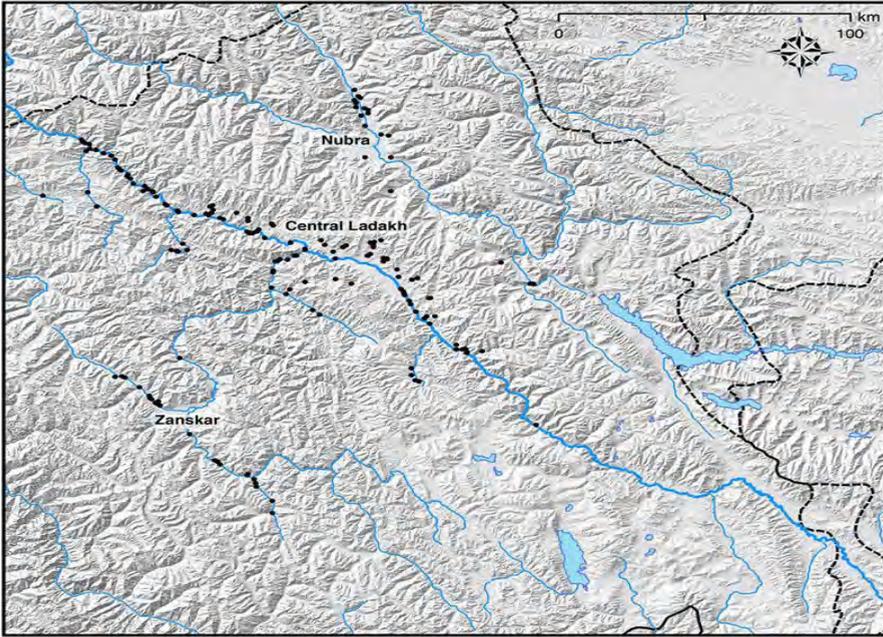


Fig.III.1 Map showing the sub-regions of Ladakh and location of rock art sites.



Fig.III.2 General view of the rock art site of Yaru, Central Ladakh.

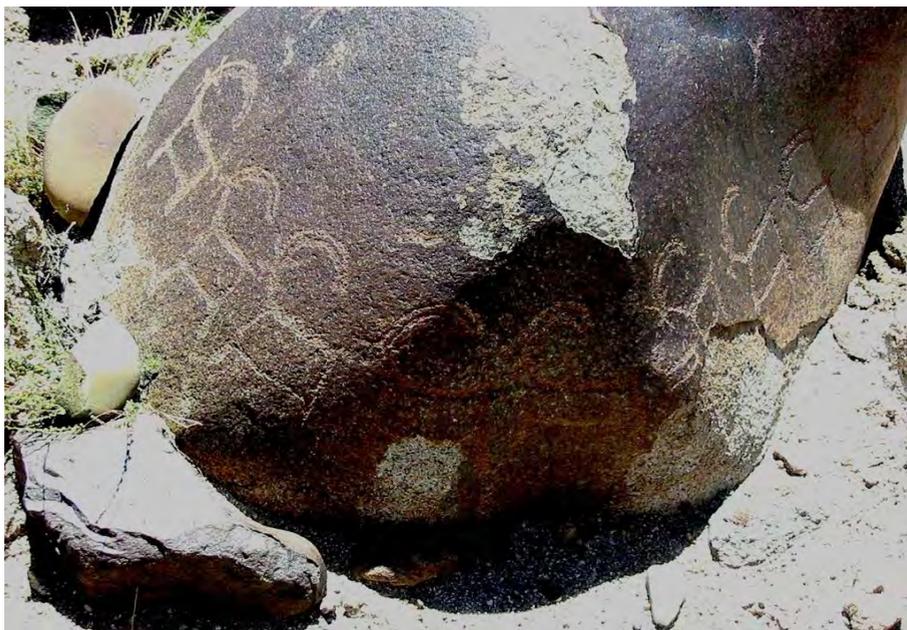


Fig.III.3 Ibexes in herd, Dargo Dun site, Lower Ladakh.



Fig.III.4 Wild sheep, Bazgo Zampa site, Central Ladakh. Photograph by Martin Vernier.



Fig.III.5 Snow leopards, Sumda Rikpa Bao site, Central Ladakh.

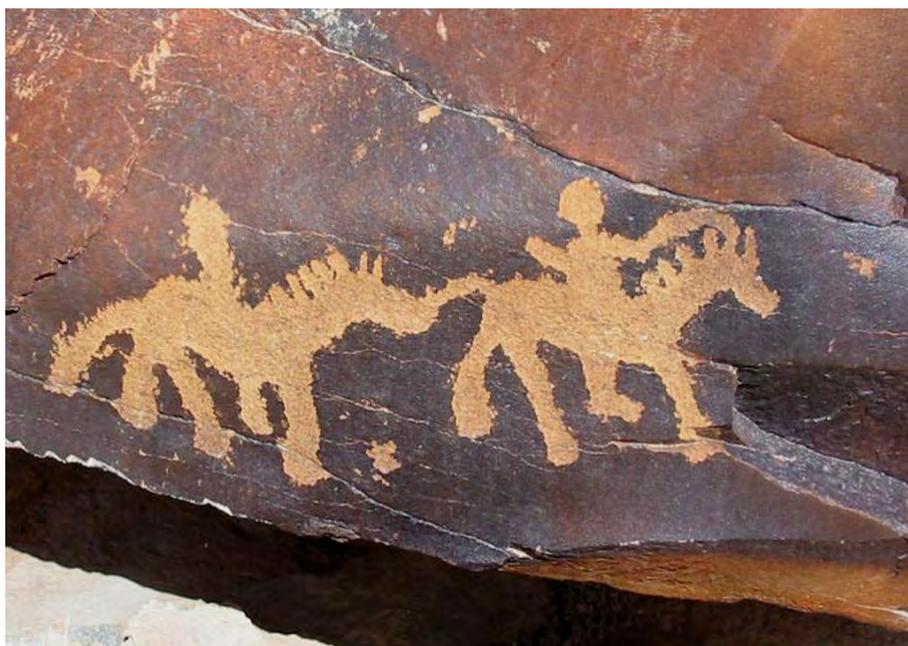


Fig.III.6 Two riders and horse, Sumda Rikpa Bao site, Central Ladakh.
Photograph by Martin Vernier.



Fig.III.7 Domestic Bactrian camels, Murgi Tokpo, Nubra, Ladakh.

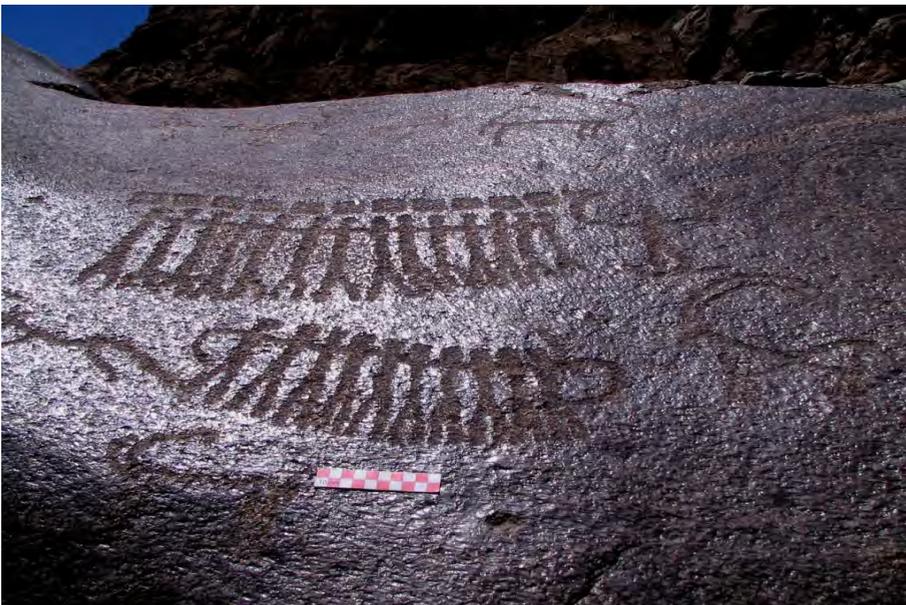


Fig.III.8 Anthropomorph in rows, Tilichang, Lower Ladakh.



Fig.III.9 Archers on foot and other figures, Murgi Tokpo, Nubra, Ladakh.



Fig.III.10 Various signs on a surface at Tangtse, Upper Ladakh.
Photograph by Jean-Louis Taillefer.



Fig.IV.1 Chariot, Duruchen site, Tsamda county, Upper Tibet.



Fig.IV.2 Chariot, Trishul site, Central Ladakh.



Fig.IV.3 Chariot, Yeniugou site, Qinghai. After Tang Huisheng and Zhang Wenhua 2001, colour photograph 16.



Fig.IV.4 Chariot, Tsagaan Gol site, Mongolian Altai. After Jacobson-Tepfer *et al.* 2006, Fig. 919.



Fig.IV.5 Chariot, Gogdara site, Swat, Pakistan. After Olivieri 1998, Fig. 15.



Fig.IV.6 Mascoïd, Murgi Tokpo site, Nubra, Ladakh.



Fig.IV.7 Mascoïd (lower right side of the boulder), Ziyarat site, northern Pakistan. After Ditte-Bandini 2011, Tafel XII, b.



Fig.IV.8 Mascoïd, Mugur-Sargol site, Tuva. After Devlet 1980, p. 116.



Fig.IV.9 Mascoïd with line at eye level, Murgi Tokpo site, Nubra, Ladakh.



Fig.IV.10 Deer on tip of the hooves with a foreleg folded, Domkhar site, Lower Ladakh.



Fig.IV.11 Deer on tip of the hooves and scroll on its body,

Rimodong site, Rutok, Upper Tibet.



Fig.IV.12 Yak with volutes marking its haunches, Domkhar site, Lower Ladakh.



Fig.IV.13 Ibex with scroll and crested bird, Domkhar site, Lower Ladakh.



Fig.IV.14 Yak and two stags with scrolls, Rimodong site, Rutokh, Upper Tibet.



Fig.IV.15 Yak with S design on its body (right side), Ruthok, Upper Tibet.



Fig.IV.16 Wild sheep with S design on its body, Domkhar site, Lower Ladakh.



Fig.IV.17 Panel with deers, *kyang* and fish, Rimodong site, Ruthok, Upper Tibet.



Fig.IV.18 Detail of Fig.17. Deer with three S designs on its body and neck.



Fig.IV.19 Detail of Fig.17. Fish.

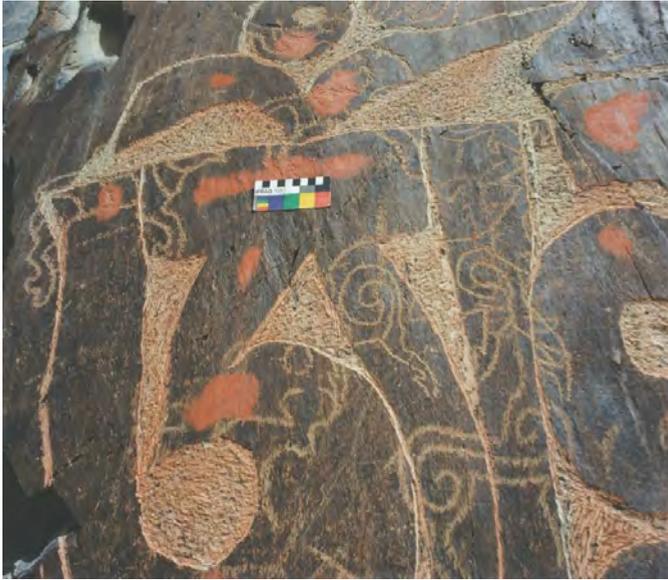


Fig.IV.20 Obliterated panel with predation scene, Rimodong site, Ruthok, Upper Tibet.



Fig.IV.21 Predation scene, Tangtse, Upper Ladakh.



Fig.IV.22 Caprines in the 'animal style', Dardarbat Das, northern Pakistan.
Photograph: Bruneau.



Fig.IV.23 Wooden bushel with S motifs, Djumbulak Kum, Keriya, Xinjiang. After Debaine-Francfort and Abduressul 2001, Cat.101.

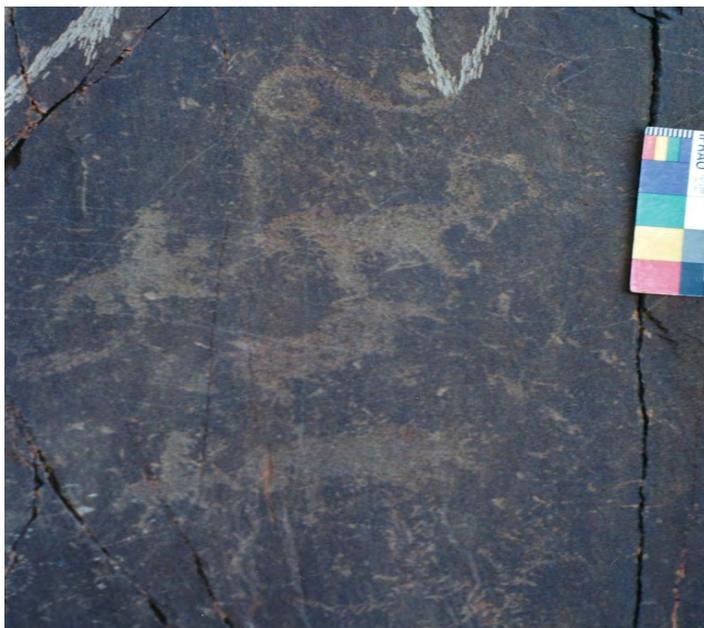


Fig.IV.24 S motif above yaks and rider, Brakdong site, Ruthok, Upper Tibet.



Fig.IV.25 S motifs nearby an avian representation, Yaru Zampa site, Central Ladakh.



Fig.V.1 Yak typical of the WTPS, Rigyal site, Gertse, Upper Tibet.



Fig.V.2 Yak typical of the WTPS, Murgi Tokpo site, Nubra, Ladakh.



Fig.V.3 Yak typical of the WTPS, Kabren Pungri site, Ruthok, Upper Tibet.



Fig.V.4 Yak (right side) belonging to the WTPS, Changa site, Central Ladakh.



Fig.V.5 Wedge-tail yak typical of the WTPS, Changa site, Central Ladakh.



Fig.V.6 Wedge-tail yak typical of the WTPS, Kabren Pung Ri site, Ruthok, Upper Tibet.



Fig.V.7 Archer on foot hunting a yak characteristic of the WTPS, Rigyal site, Gertse, Upper Tibet.

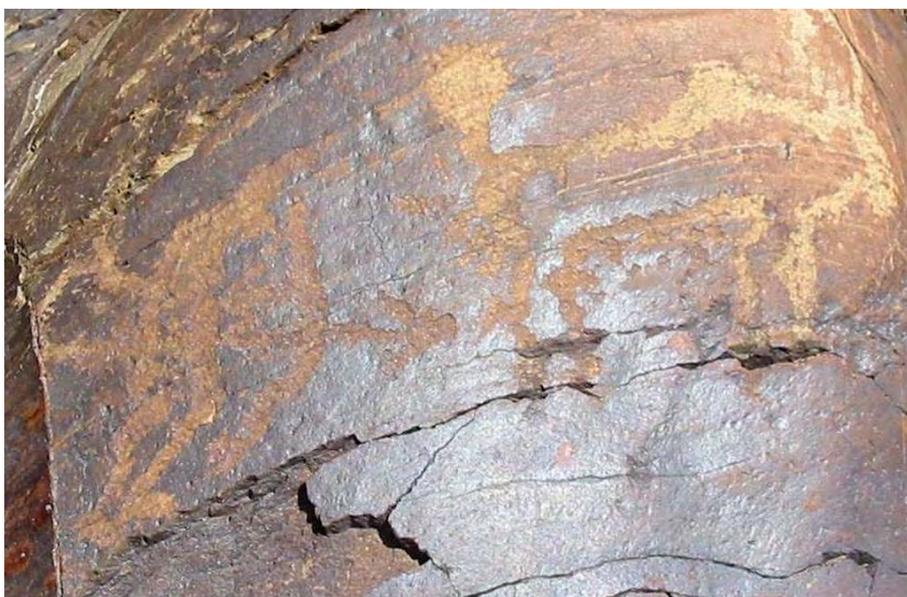


Fig.V.8 Archer on foot hunting a yak typical of the WTPS, Zamthang site, Zanskar, Ladakh.

Photograph: Martin Vernier.



Fig.V.9 Rider hunting a yak with convex belly typical of the WTPS, Zamthang site, Zanskar, Ladakh. Photograph: Martin Vernier.



Fig.V.10 Yak with convex belly typical of the WTPS, Chorten Buknaka, Ruthok, Upper Tibet.



Fig.V.11 Archers on horseback chasing yaks with long necks and head projecting forward typical of the WTPS, Chorten Buknaka, Ruthok, Upper Tibet.



Fig.V.12 Yaks with long necks and head projecting forward typical of the WTPS, Murgi Tokpo site, Nubra, Ladakh.



Fig.V.13 Triad of animals (yak, elephant and blue sheep), Yaru Zampa site, Central Ladakh.



Fig.V.14 Deer belonging to the WTPS, Duruchen site, Tsamda county, Upper Tibet.

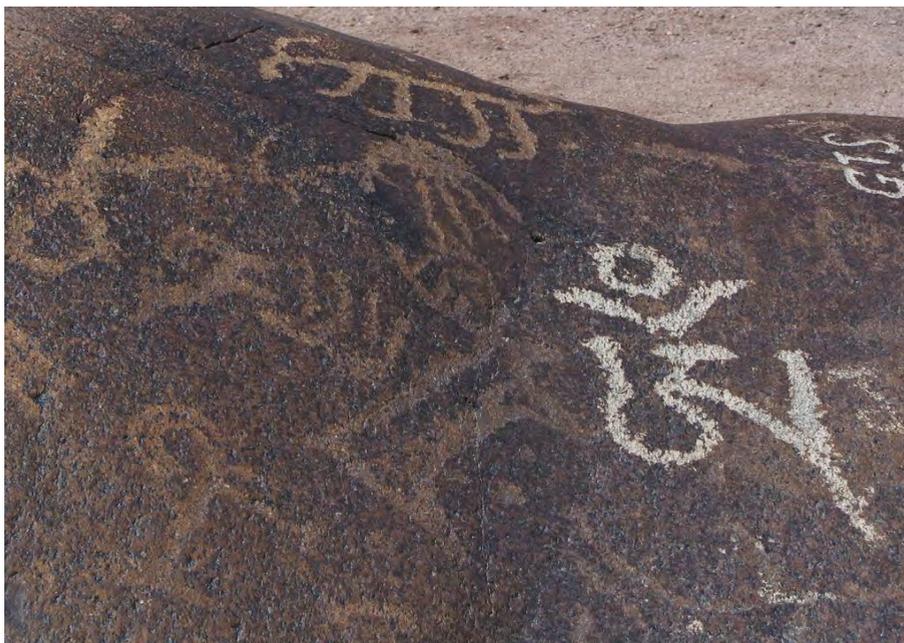


Fig.V.15 Deer (middle of image) typical of the WTPS, Trishul site, Central Ladakh.



Fig.V.16 Caprine with spiraling horns, Duruchen site, Tsamda county, Upper Tibet.



Fig.V.17 Caprine with spiraling horns, Sanjak site, Lower Ladakh.



Fig.V.18 Spotted felines (upper specimen) typical of the WTPS, Kabren Pungri site, Ruthok, Upper Tibet.

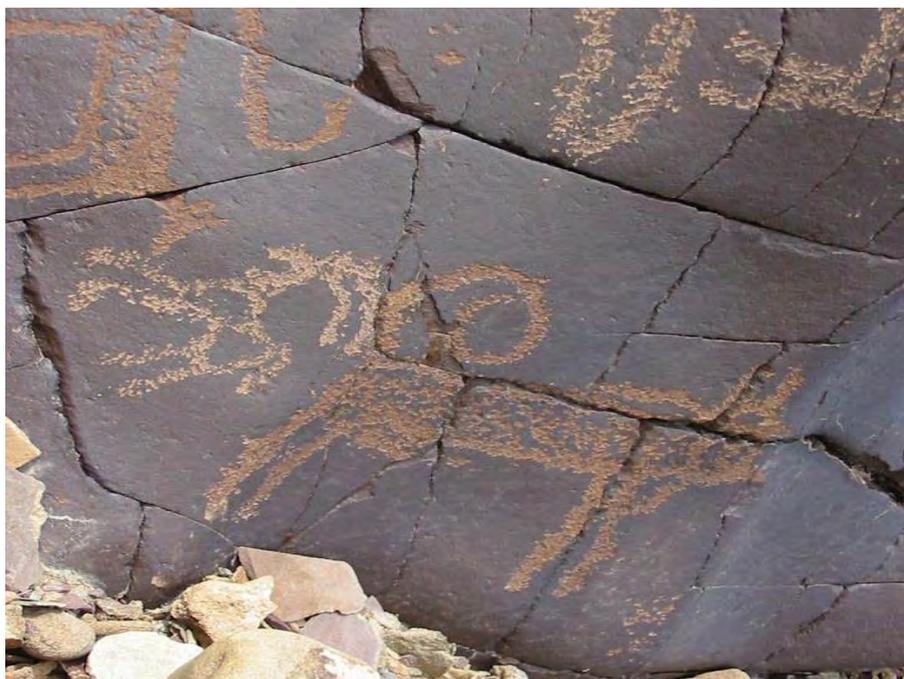


Fig.V.19 Spotted feline typical of the WTPS, Sumda Rikpa Bao site, Central Ladakh.
Photograph: Martin Vernier.

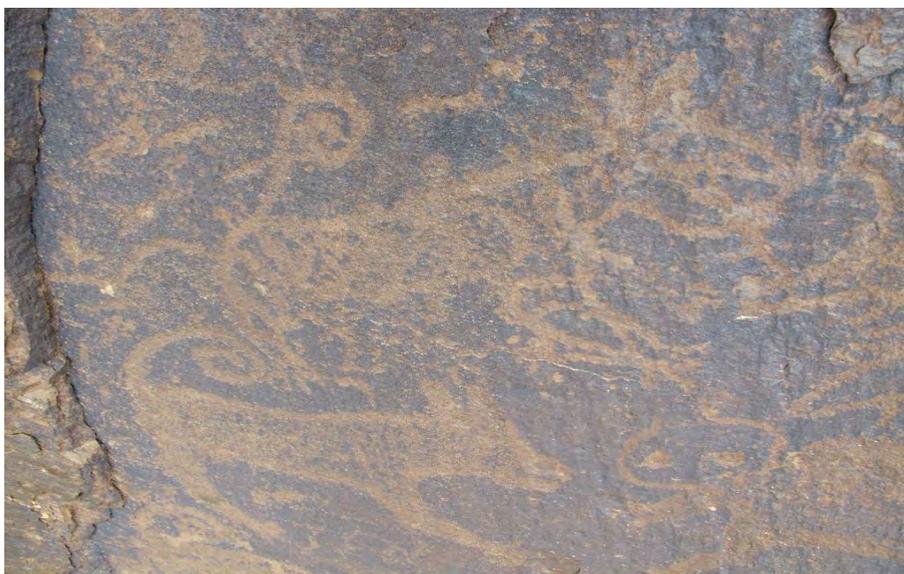


Fig.V.20 Striped felines typical of the WTPS, Duruchen site, Tsamda county, Upper Tibet.



Fig.V.21 Striped felines typical of the WTPS, Bajro Batto Beach site, Central Ladakh.



Fig.V.22 Striped feline typical of the WTPS, Zamthang site, Zanskar, Ladakh.
Photograph: Martin Vernier.



Fig.V.23 *Thog-lcags* in form of a striped feline typical of the WTPS, private collection.
Photograph by John Vincent Bellezza

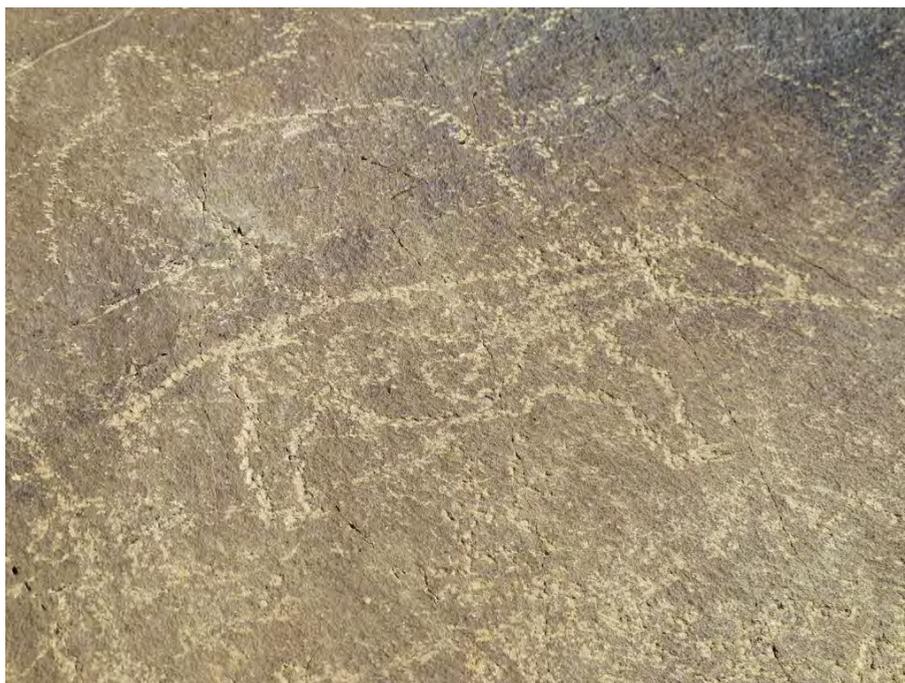


Fig.V.24 *Kyang* with scrolls, Rimodong, Ruthok, Upper Tibet.



Fig.V.25 *Kyang* with scroll, Laidoh Zampa site, Lower Ladakh.



Fig.V.26 *Khyung*, Rigyal site, Gertse, Upper Tibet.



Fig.V.27 *Khyung*, Yaru Zampa site, Central Ladakh.



Fig.V.28 *Khyung* with downwards pointing wings, Sumda Rikpa Bao site, Central Ladakh.
Photograph: Martin Vernier.



Fig.V.29 *Khyung* with downwards pointing wings, copper alloy talisman, private collection, Lhasa.



Fig.V.30 Horse mount typical of the WTPS, Kharlung site, Ruthok, Upper Tibet.



Fig.V.31 Horse mount typical of the WTPS, Murgi Tokpo site, Nubra, Ladakh.



Fig.V.32 Horseman representative of the WTPS, Kyildrum site, Gegye, Upper Tibet.



Fig.V.33 Horseman representative of the WTPS, Murgi Tokpo site, Nubra, Ladakh.



Fig.V.34 Anthropomorphic figure squat with legs spread widely apart and hands held upwards typical of the WTPS, Nowa Yangdo site, Ruthok, Upper Tibet.



Fig.V.35 Anthropomorphic figure squat with legs spread widely apart and hands held upwards typical of the WTPS, Tangtse site, Upper Ladakh.

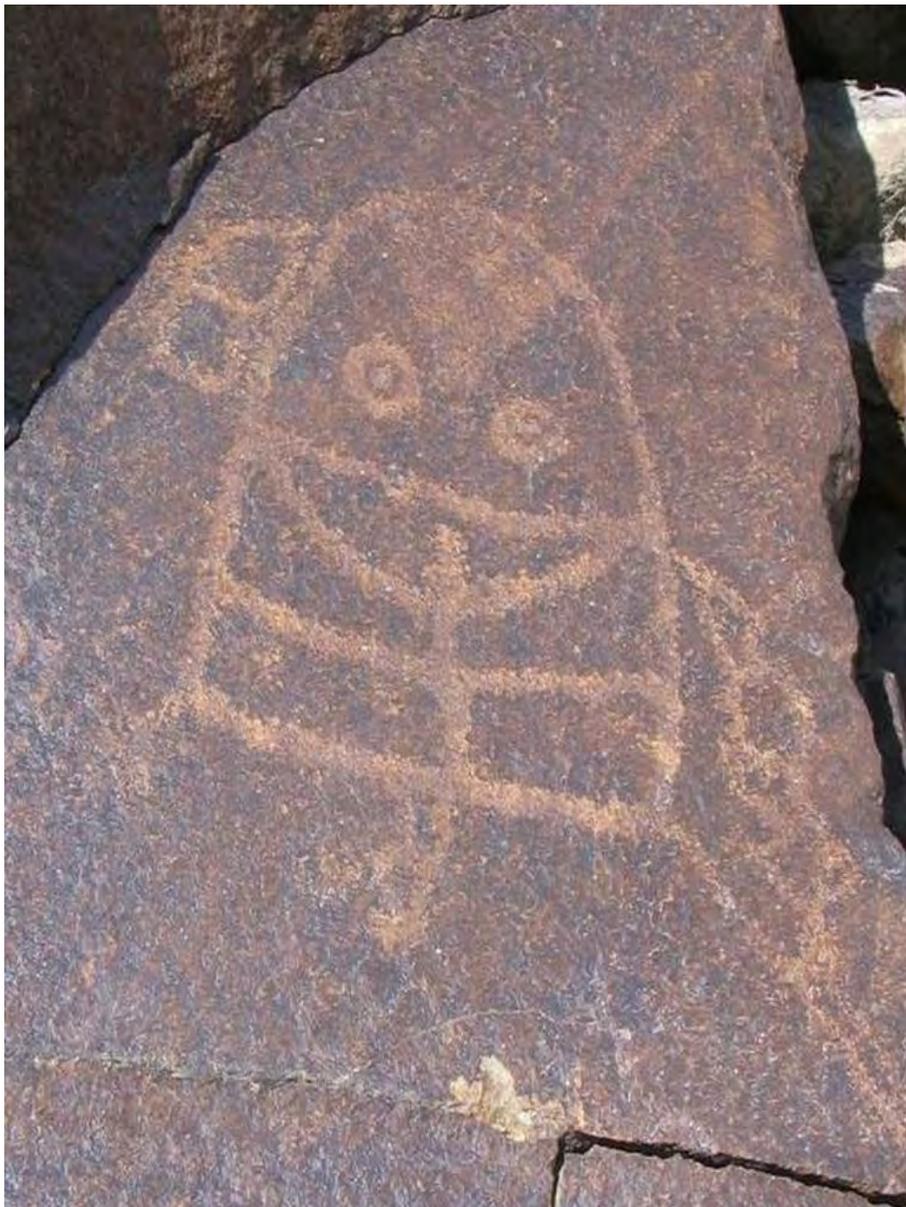


Fig.V.36 Mascoid with feet and bow and arrow, Murgi Tokpo site, Nubra, Ladakh.



Fig.V.37 Mascoïd with feet and bow and arrow, Murgi Tokpo site, Nubra, Ladakh.



Fig.V.38 Pinched mascoïd with feet, Gokra site, Ruthok, Upper Tibet.



Fig.V.39 Bi-circular mascoid with feet, Gokra site, Ruthok, Upper Tibet.



Fig.V.40 Bi-circular mascoids, Rimodong site, Ruthok, Upper Tibet.



Fig.V.41 Bi-circular mascoid, Kawathang site, Upper Ladakh.



Fig.V.42 Bi-circular mascoid, Kawathang site, Upper Ladakh.



Fig.V.43 'Anthropomorph in emblematic form', Gokra site, Ruthok, Upper Tibet.



Fig.V.44 'Anthropomorphs in emblematic form', Gokra site, Ruthok, Upper Tibet.



Fig.V.45 'Anthropomorphs in emblematic form', Domkhar site, Lower Ladakh.



Fig.V.46 'Anthropomorphs in emblematic form' (right) and figures with outstretched arms (left), Domkhar site, Lower Ladakh.



Fig.V.47 Spoked circles, Stagmo site, Central Ladakh.



Fig.V.48 Spoked circles, Duruchen site, Ruthok, Upper Tibet.

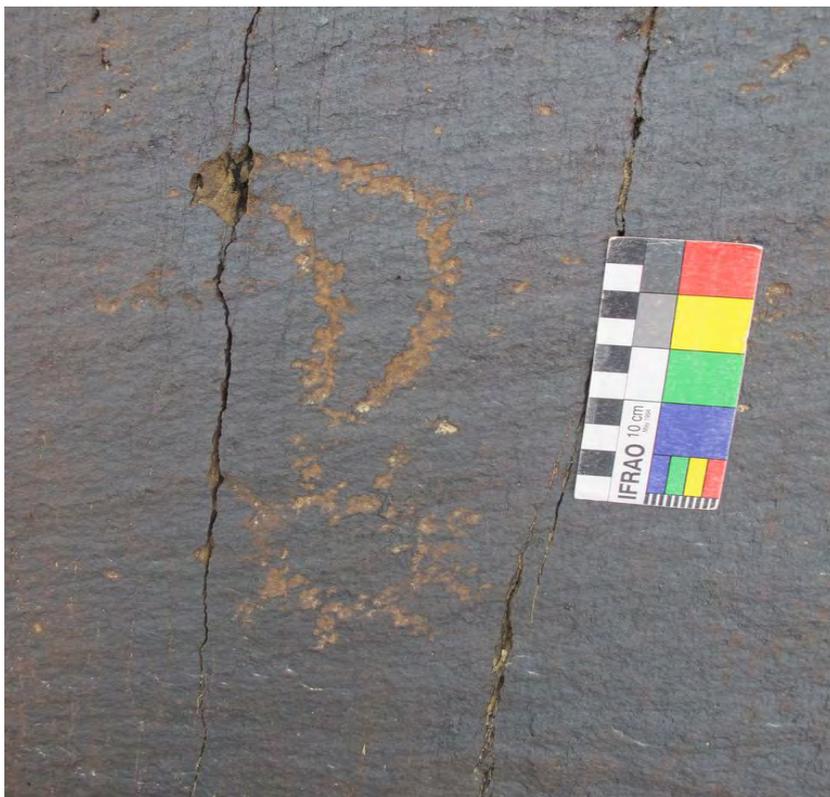


Fig.V.49 Sun and moon, Duruchen site, Ruthok, Upper Tibet.



Fig.V.50 Sun and moon (lower right), Dah site, Lower Ladakh.



Fig.V.51 Sun presiding over a hunting scene, Rigyal site, Gertse, Upper Tibet.



Fig.V.52 Sun (left side of image) presiding over a hunting scene, Kawathang site, Upper Ladakh.



Fig.V.53 Various signs including a branched motif, Rigyal site, Gertse, Upper Tibet.



Fig.V.54 Various signs including a branched motif (center of boulder), Yaru site, Central Ladakh.



Fig.V.55 Bird-like swastikas (top), Yaru site, Central Ladakh.

