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The Neolithic rock art of Valcamonica: reinterpreting the “topographic motifs

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Introduction

Valcamonica is a pre-alpine valley running for around 90 km in a south-to-north direction. It is located in the Central Alps and is almost integrally a part of the province of Brescia. In 1979, it became the first rock art site on the UNESCO World Heritage list, as well as being the first Italian site to achieve such an accolade. While the engravings cover six main periods (Epi-Palaeolithic, Neolithic, Copper Age, Bronze Age, Iron Age, and Medieval), the focus of this study is represented by the Neolithic and First Copper Age engraving cycles. The interpretative theory of the figures from these periods has been canon since its elaboration in the 1930s and has gone virtually unchallenged since. This theory proposes that the engravings have a "topographic" value and depict fields, paths, threshing floors, enclosures, orchards, and agricultural villages. However, there is now substantial new data which can be used in order to provide a new interpretative framework. The present study proposes a thorough re-examination of the "topographic" interpretation by highlighting its inherent problems and contextualising it through the use of specific case studies. This study also proposes an integrated approach in which archaeology and the study of rock art are seamlessly brought together in order to provide a full picture. The first chapter is dedicated to this purpose alone, as it offers an up-to-date analysis of the archaeological evidence of the Neolithic period in Valcamonica. The second chapter shifts its focus instead to the rock art phenomenon not just in Valcamonica but in the wider Alpine region. The Neolithic rock art engraving cycle of Valcamonica is first presented, after which the analysis is further extended so as to encompass the Western Alps with their painted rock shelters. Therefore, Valcamonica is organically integrated into a wider context that leads to fruitful iconographic and chronological comparisons. The third chapter tackles the "topographic" interpretation by presenting its main points and bringing into discussion counter-arguments. Starting from a comparison made by one of the proponents of the "topographic" point of view, the fourth chapter presents a series of rock art sites from across the globe with comparable sets of figures, the majority from a shamanic context. The next chapter brings up the importance of context as instrumental to the research and interpretation of rock art in Valcamonica. For this purpose, the site of Dos dell'Arca has been chosen as a perfect case study in which the "topographic" interpretation does not appear convincing. In the sixth chapter, an older interpretation of the "topographic" figures is presented and brought up-to-date, as it was the only other point of view formulated in the history of research so far. The theory supports a male-female value of the engravings, based on comparisons with European Palaeolithic art.

The seventh chapter carries over and develops the arguments made in the fourth one and sets the premises of the new interpretative framework offered in this study. Shamanism and the altered states of consciousness are presented and explained by the use of the Consciousness Contract theory formulated by D. Lewis-Williams. This section examines the different characteristics of the altered states of consciousness encountered by shamans, the different stages one passes through to achieve a trance and the visions which serve as a base for rock art making. The last chapter proposes a new interpretative framework for two classes of figures from Valcamonica, each with its own value and role. This section also deals with the neuropsychological aspects involved when creating and perceiving art. Ample sections are reserved for the way the visual brain functions and to certain neuropsychological principles involved in the aesthetic experience. Finally, the Embodied Simulation theory is presented, a major breakthrough in the fields of neuroaesthetics and cognitive sciences.

Chapter I

An archaeological review of the Neolithic in Valcamonica

The Neolithic of Valcamonica and its phases are just starting to be understood and elaborated. Previously lacking any thorough archaeological investigations, the Neolithic of the valley was inferred only through its rock art manifestations[1], as only sparse archaeological data was collected and published until the 1980s. Anati's monopoly over the research being carried out in the valley led to a fracture between the two disciplines, rock art and archaeology, which parted ways and became separate entities with little connection, although both of them were under the direction of E. Anati. This situation can be perfectly illustrated by the research carried out on the multi-layered site of Dos dell'Arca (Capo di Ponte, BS)[2] when the archaeological data was published separately[3] from the rock art analysis[4]. Another site investigated by Anati was the hill of Luine (Darfo Boario Terme, BS)[5]. A pivotal change was the research conducted by Francesco Fedele (of the University of Naples) on the hill housing the medieval fortress of Breno[6], starting from the 1980s. The lower levels of the Breno Castle (BC3) represented the first discovery of a Neolithic settlement in Valcamonica and led to the establishment of the still-to-be-defined Breno culture or *facies*.

From a chronological point of view, the periods of interest within the scope of research, as they have been recently defined[7], are the *Neolitico recente* (definable in English as Late Neolithic) and *Neolitico tardo* (definable in English as Final Neolithic)[8]. The *Neolitico recente*, spanning between 4500/4300 – 3900/3800 cal B.C., refers to archaeological complexes characterised by the presence of "Western/Chassey" elements (*Neolitico recente occidentale,* NROc), Square Mouth Pottery (*Vasi a Bocca Quadrata*, VBQ) and the first stages of the aforementioned Breno cultural horizon. The *Neolitico tardo* refers to the poorly definable archaeological complexes of the first half of the IVth millennium cal B.C. which, in Lombardy, are represented by the *Lagozza di Besnate* cultural horizon, phases 2 and 3 of Monte Covolo and stamp-decorated Breno ware. These are chronologically contemporaneous with the

[1] see FOSSATI 2014 for a description of the Neolithic rock art phenomenon.
[2] RONDINI & MARRETTA 2017.
[3] ANATI 1968.
[4] SLUGA 1969.
[5] ANATI 1982a.
[6] FEDELE 1985.
[7] PEDROTTI *et alii* 2022.
[8] The two can sometimes be grouped together as *Neolitico recente-tardo*, for example RONDINI 2022.

Northern Alpine Classic and Late Cortaillod, Pfyn, Altheim and Mondsee cultures, spanning between 3900/3800 – 3500/3400 cal B.C.

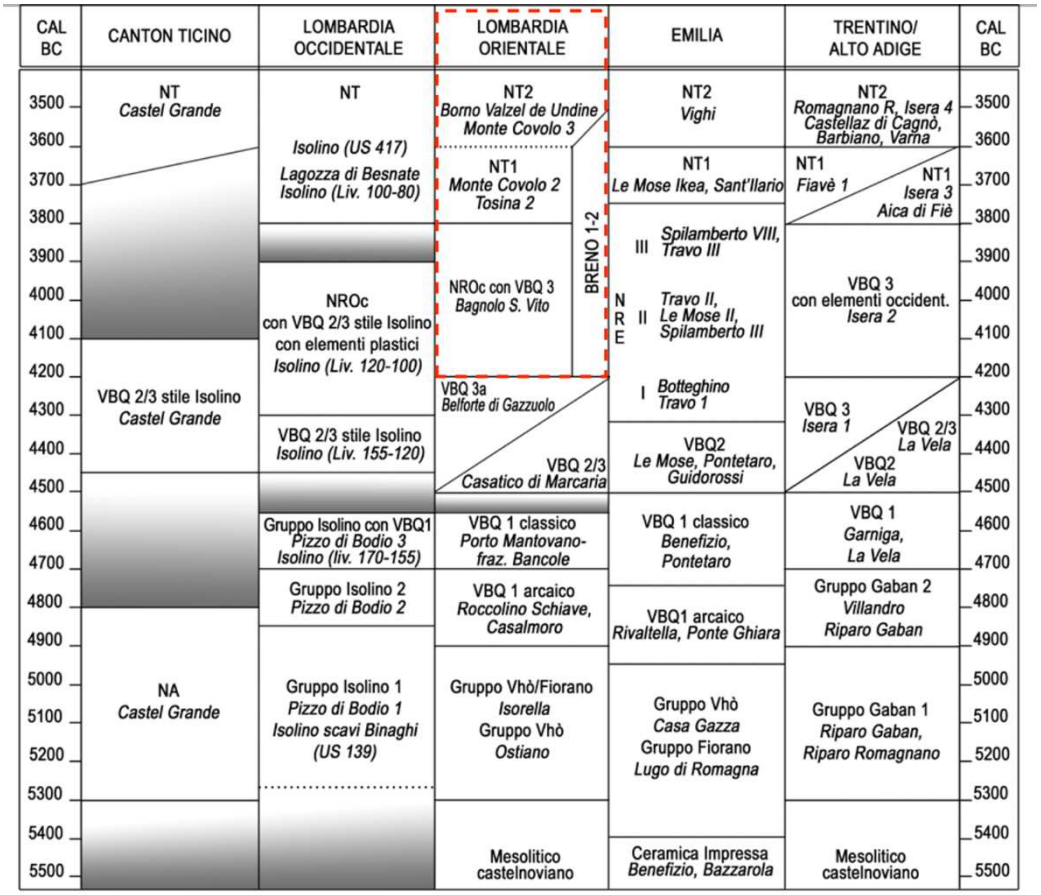


Figure 1. Neolithic chrono-cultural table of Lombardy and bordering areas. Graphic processing by A. Pedrotti, M. Bersani. Source: A. Pedrotti et alii 2022. In red, the area and cultural horizons mentioned.

The *Neolitico recente* marks a period of cultural changes and new settlement patterns. This is in part due to the spread of French Chassey elements which penetrated central-northern Italy and its derivations can be found at the site of Isolino, directly over VBQ2/3 Isolino style layers[9]. This, in turn, is supposed to be at the origins of the Chassey-Lagozza cultural horizon, although lately the two cultural aspects have been divided into distinct entities, the *Lagozza di Besnate* chrono-cultural complex which spans between 3800 – 3500 cal B.C.

The end of the Vth millennium B.C. can be characterised, culturally, by the ever-increasing presence of Chassey-Lagozza elements, the persistence of VBQ3 elements which are being pushed further east, and the colonisation of the Alpine valleys, marked by the appearance of the Breno *facies*. This new cultural horizon should be viewed as a result of the increasing mobility of people and contacts being established, generally, in the eastern valley regions of Lombardy, where patterns of penetration can be traced from the pedemontana area[10]. There is

[9] PEDROTTI *et alii* 2022.
[10] BAGOLINI 1982.

a change in the type of sites which become inhabited. If, during the Early and Middle Neolithic, the choice of site was that of low-altitude settlements in the plain and lake shores[11], now the small hills overlooking valley floors or strategic points are favoured, which range in altitudes between 200 and 600 m. asl[12]. Monte Covolo, Rocca di Manerba, and Nave-Vhò di Sopra are just a few examples from the province of Brescia, while Breno-Castello, Luine, Dos dell'Arca, and Rogno-Coren Pagà can be cited for Valcamonica proper. These new settlement patterns come as a clear disruption between the Middle and Late Neolithic, as completely new places are now occupied for the first time and will show signs of frequentation and re-occupation during all the later periods, the Copper Age, Bronze Age, and Iron Age[13].

The birth of the Breno *facies*, at first, should be seen in this key of cultural exchanges and occupation of the Alpine valleys. It would appear that the colonisation of this area was made by diverse groups of distinct cultures[14]. The Breno *facies* was defined upon the eponymous site of *Castello di Breno*, a rocky outcrop in the city of Breno. From the very start, it appeared to be a mix of multiple traditions and influences. The first phase, Breno 1 (end of the Vth millennium B.C.), is linked to a VBQ3 (incision and impression style) tradition and contacts between the two can be evidenced by the presence of fingernail decorated Breno ware in VBQ3 contexts of the Veneto area (for example the site of Meolo[15]). It may not be a surprise since the Bresciano offers a number of sites with VBQ3 presence[16]. The next phase, Breno 2, is linked to the growing influence and presence of Lagozza tradition elements during which the fine pottery decorated with stamps is definitory. The start of this phase could be placed between 3800 – 3700 cal B.C., as suggested by the presence of Breno ware at the site of Monte Covolo[17]. But the Breno *facies* shows another peculiar set of influences, this time to be recognised in northern transalpine contexts. From the very start, Fedele recognised a significant Central European influence, mainly from the *Stichbandkeramik* (SBK) and Rössen cultural groups[18]. Pottery motifs show a connection with "regions across the Alps, especially the Einstich-ornamented Epi-Rössen tradition of the middle and upper Rhine"[19], while some "fragments with Einstich triangle-filled triangles have close counterparts in Rössen culture patterns"[20]. The

[11] COSTA 2016.
[12] RONDINI 2022.
[13] *Ibid.*
[14] PEDROTTI *et alii* 2022.
[15] *Ibid.*
[16] COSTA 2016.
[17] POGGIANI KELLER *et alii* 2010.
[18] FEDELE 1985.
[19] ODONE & FEDELE 1999, p. 17.
[20] *Ibid.*

ceramic comparisons analysis outlines, as before, two distinct phases of influences: the first is a mixture of Rhine-Danube groups of Epi-Rössen tradition (like Aichbühl and Bischheim), elements from eastern Switzerland (spätrössener Kugelbecher), ranging chronologically between 4500/4400 – 4200/4100[21] cal B.C. and the VBQ3 counterpart, its ceramic comparisons dating between 4100 – 3700 cal B.C. Visentini *et alii*[22] also place the provinces of Bergamo and Brescia under an Epi-Rössen sphere of influence, recognisable in the *Breno Nera* pottery. Valcamonica seems to be one of the major axes of contact between the VBQ3 culture and transalpine groups, a factor which can be seen at BC3 (*Breno Castello*). The second phase is that of Western influences, Lagozza specifically, with a ceramic comparison arc between 3700 – 3400 cal B.C.[23]

Figure 2. Location in Valcamonica valley of Neolithic sites mentioned in the text. 1-Breno Castello (BC3); 2-Malegno; 3-Castello di Castione della Presolana; 4-Lovere; 5-Coren Pagà; 6-Luine; 7-Cividate Camuno; 8-Valzel de Undine; 9-Cemmo; 10- Dos dell'Arca.

Numerous sites that can be attributed to the "Breno group" have now been found and documented in Valcamonica proper, apart from the eponymous *Castello di Breno*.

[21] *Ibid.*
[22] VISENTINI *et alii.* 2002.
[23] ODONE & FEDELE 1999.

Archaeological excavations in *Malegno* (BS), via Cavour, have brought to light a multi-layered site of different levels of occupation, the most notable being the Roman ones. Seven coherent phases have been identified[24] which start with the Neolithic age and finish with the Roman monumentalisation. The first phase is a walking level[25] complete with post-holes and is dated between the end of the Vth millennium and the first half of the IVth B.C., based on the presence of stamp-decorated *Breno Nera* pottery. Although the first Neolithic presence cannot be properly attributed to a culture, the first half of the IVth millennium is well represented by characteristic Lagozza material associated with *Breno Nera* pottery[26].

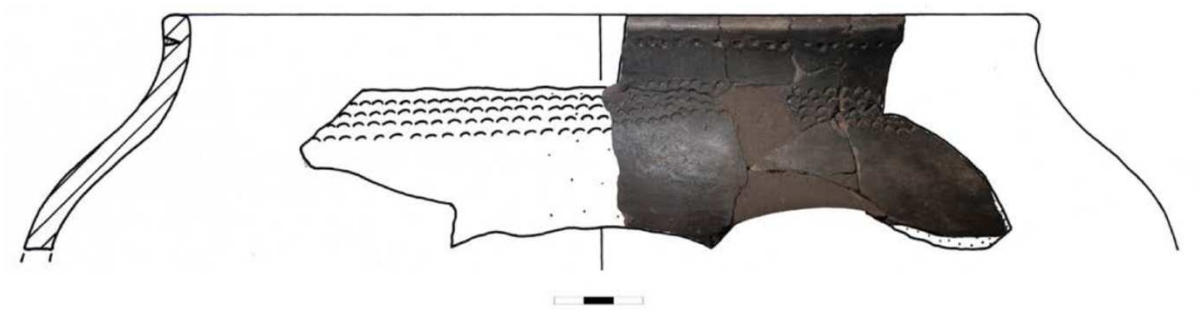


Figure 3. Breno Nera pottery from Malegno, via Cavour. Source: RONDINI 2022, p. 99.

A recent re-evaluation of the site *Castello di Castione della Presolana* (BG) has brought to light a well accentuated Neolithic phase comparable to that of *Castello di Breno*[27], because of both the nature and variety of the material culture and the "*dosso*" type of settlement, notwithstanding its location in the Bergamasque Prealps (Prealpi Orobie), in a valley that runs parallel to Valcamonica. The first proper phase of frequentation of the site is datable in the first half of the IVth millennium B.C. due to the presence of *Breno Nera* pottery and some VBQ3 material found. The pre-1960 excavated material of the *Mappale 560* area contains two fragments of cup rims, one decorated with impressed "V"s, and the other with a row of horizontal "C"s[28]. They are both of *Breno Nera* type and are dated to the Late Neolithic. Of particular interest is the fragment decorated with three rows of stamped "V"s[29] that was found, unlike the other Neolithic material[30], in a stratigraphic context which attests to an actual Neolithic layer at the site[31]. Some Neolithic material has been found due to the discharge of the

[24] RONDINI 2022. The excavation was carried out by the *Soprintendenza per I Beni Archeologici della Lombardia* between 2003 and 2005. For the preliminary results see POGGIANI KELLER 2008; 2017.
[25] For a detailed account of the stratigraphy and archaeological inventory check US 119, US 110, Pit T194 and Pit T191 in RONDINI 2022, pp. 54-55 and 62-63.
[26] RONDINI 2022.
[27] *Ibid.*, p. 231
[28] RONDINI 2022, Tav. 39B, CP 72-73.
[29] *Ibid.,* Tav. 50D, CP 219.
[30] Found in secondary positions as surface finds.
[31] *Ibid*., p. 227.

side of *Mappale 560*[32], as surface finds, while others have been found in what is named "*Area del Castello*" (probably discharge as well) and consist of Breno material that shows some affinity towards the third VBQ style[33].

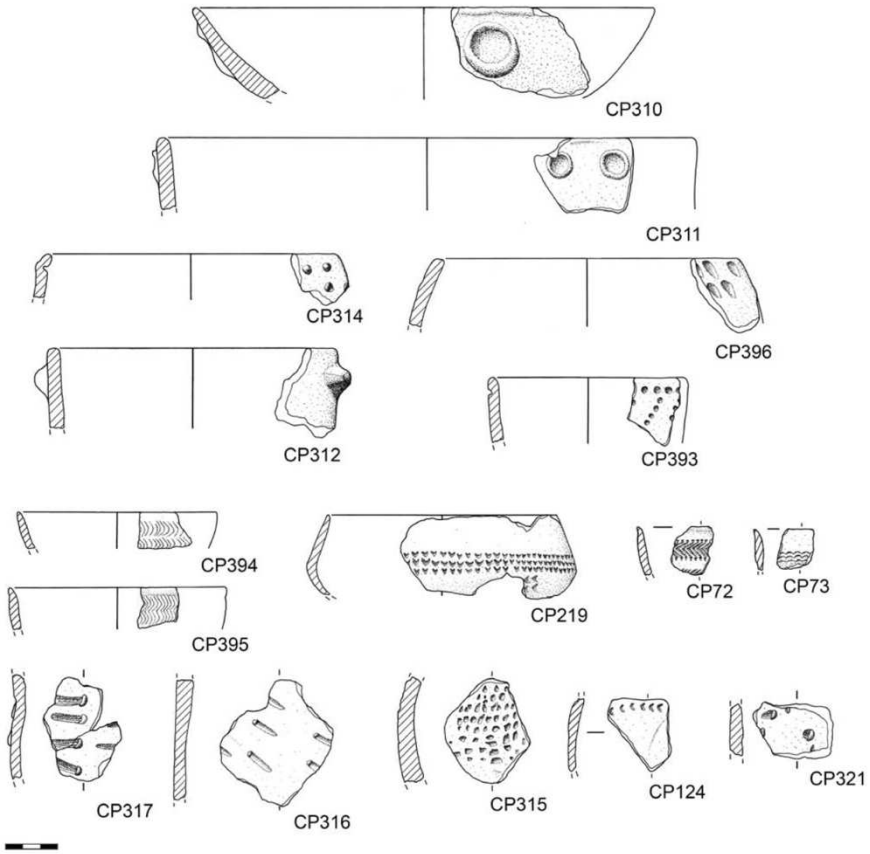


Figure 4. Most representative Neolithic pottery from Castione della Presolana. Source: RONDINI 2022.

Perhaps the most complete stratigraphic sequence found in the entire valley is at *Lovere* (BG), via Decio Celeri, near the shores of Lake Iseo. The archaeological deposit, whose maximum thickness reached 7 meters, shows a multi-layered site with continuity from the Ancient Neolithic and up to the Final Bronze Age[34]. As was the case for *Castione della Presolana*, the first proper signs of frequentation date from the Final Neolithic, when the settlement was established on the high point. This first phase, *Fase 1*, was defined by the layers US 41 *basale*, US 41 and t. 1 and 2[35]. The ceramic repertoire is a mix of transalpine influences (Late Pfyn culture) and late Lagozza elements. The clear absence of any VBQ elements would indicate, according to the author, a more 'advanced' chronology of the site of *Lovere*.

[32] *Ibid.*, Tav. 57.
[33] *Ibid.*, Tav. 63.
[34] POGGIANI KELLER 2000.
[35] *Ibid.*, pp. 363-364, for the in-depth analysis of the material culture.

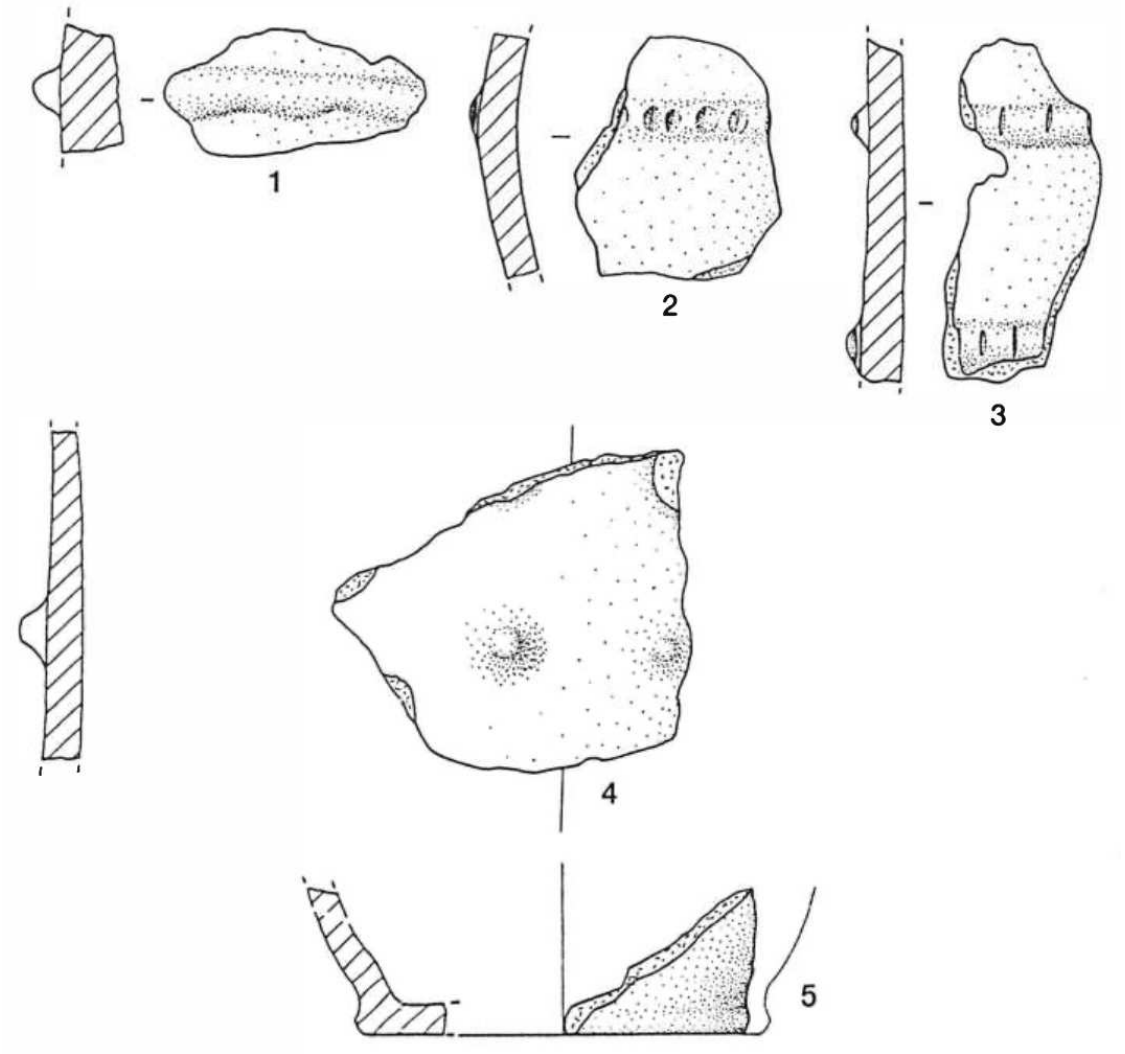


Figure 5. Ceramic fragments of transalpine influence from US 41 basale. Source: POGGIANI KELLER 1999.

Another example of a clear Neolithic sequence is to be found at the site of *Coren Pagà di Rogno* (BG)[36], a rocky hilltop characteristic of the new settlement pattern and behaviour of the *Neolitico recente-tardo*. The three layers individuated seem to suggest a shift from a recent Breno type Neolithic (layers 3 and 2) to a later Neolithic phase (layer 1). All three layers contain VBQ and Chassey-Lagozza tradition shapes, while the Breno type ware is also present. Regarding general ceramic comparisons for the Breno pottery, Northern Alpine examples are again invocated: Rössen and Epirössen[37], influences that are interpreted as a local, autochthonous, re-elaboration.

There are 5 more known and published sites with Neolithic material found in Valcamonica. One is the hill of *Luine* (Darfo Boario Terme, BS), where E. Anati already

[36] FERRARI *et alii* 2002.
[37] *Ibid.*, p. 345.

conducted an archaeological excavation[38]. More recent research has evidenced the first phases of occupation which can be dated to the *Neolitico tardo*, based on a flint dagger of Lagozza type and VBQ3 pottery fragments[39]. Another site with Neolithic layers is *Cividate Camuno – Via Palazzo* (BS), where three layers (US 146, 149, and 172), together with post-holes, have been identified and attributed to a VBQ phase[40]. The next site on the list is *Valzel de Undine* (Borno, BS), where the Copper Age megalithic sanctuary is found. During the 2009-2011 campaigns, several firing pits were found in Sector 5. The radiocarbon dates obtained have revealed a Late Neolithic phase, prior to the start of the megalithic sanctuary: 5043 ± 45 BP (LTL12407A), 1σ (68,2%) 3950-3780 a.C., 2σ (95,4%) 3960-3710 a.C.[41]. The next point of interest is *Cemmo-Pian delle Greppe* (Capo di Ponte, BS), one of the most well-known megalithic sanctuaries. Excavations during 2010-2011 have identified, in the proximity of the Cemmo 1 boulder, an oval-shaped buried structure (t. 316) which gave few ceramic fragments, one of which can be attributed to a VBQ3 phase[42]. The last site on this list is quite literally on the other side of the valley, across from *Cemmo*. The site of *Dos dell'Arca* (Capo di Ponte, BS) seems to have had a first phase of frequentation during the Late Neolithic/First Copper Age[43]. During the 2018 campaign, a new sector ("Saggio C") was opened in the northern part of the site. US 1203, although a disturbed layer which contained some iron artefacts as well, has revealed a pottery fragment of Rössen tradition[44], comparable to *Coren Pagà di Rogno* and *Breno-Castello* BC3.

Figure 6. Rössen tradition pottery fragment found in US 1203. Source: RONDINI & MARRETTA 2019.

[38] ANATI 1982.
[39] POGGIANI KELLER 1999a, p. 41.
[40] POGGIANI KELLER 1990a, pp. 27-30.
[41] POGGIANI KELLER 2011a, pp. 113-116.
[42] POGGIANI KELLER 2011b, pp. 119-121.
[43] RONDINI *et alii* 2018.
[44] RONDINI & MARRETTA 2019, p. 13.

These eight selected locations present only a glimpse of what is surely a more complex and denser phenomenon of settling during the late to last phases of the Neolithic. Out of these, only five sites can be surely interpreted as settlements, *Breno Castello*, *Lovere*, *Coren Pagà*, *Malegno-via Cavour*, and *Cividate Camuno*. The first three of them fit into the new type of sites which are being occupied in this period, strategic points situated at higher altitudes than the valley floor and overlooking the landscape (~220-250 m. asl in the case of *Lovere*, ~400 m. asl for *Breno*, and 386 m. asl for *Coren Pagà*). Very promising in this regard seems to be *Castione della Presolana* (880 m. asl), which, judging by the quality and amount of ceramic material found and by its location, points towards a possible settlement location. The other sites, such as *Cemmo* (~390 m. asl), *Dos dell'Arca* (350-450 m. asl), *Luine* (350 m. asl), and *Valzel de Undine* (700-750 m. asl), although fitting into the above-mentioned territory-occupying pattern, only show signs of frequentation linked to the general phenomenon of the Neolithic occupation of the pre-alpine valleys.

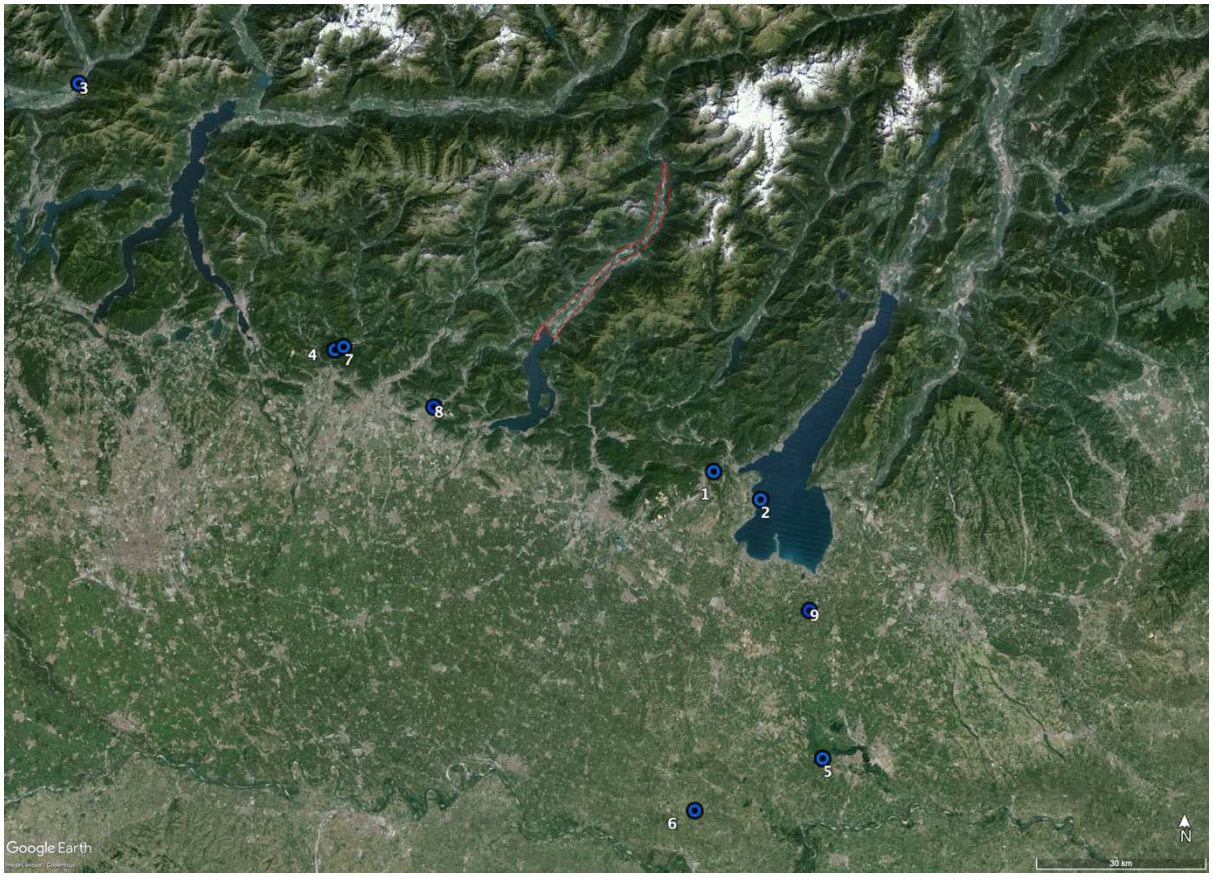


Figure 7. Location of sites with Breno material outside of Valcamonica mentioned in the text. 1-Monte Covolo; 2-Rocca di Manerba; 3-Castel Grande; 4-Ubiale-Clanezzo; 5-Levata di Curtatone; 6-Rivarolo Mantovano; 7-Grotta del Tabac; 8-Trescore Balneario; 9-Tosina di Monzambano.

But, of course, the Breno *facies* is not a valley-locked culture. During the *Neolitico tardo*, an expansion towards the plain of the Breno *facies* can be observed, as shown by the stratigraphy at *Monte Covolo*[45] (Monte Covolo 2). There seems to be a general diffusion of Breno ware, noticeable not just in the plain but also towards the west and across the Alps. This is a period of great cultural mixing in which, usually, VBQ3, Lagozza, and Breno material are found together, or one settlement of a specific culture has material from the others. The site of Monte Covolo is exemplary in this instance, as it is also one of the only settlement sites of this period to have benefitted from extensive excavations and clear stratigraphy. The first Neolithic phase (*Neolitico tardo*) is dominated by Lagozza fine pottery, while the coarse ware seems to gravitate towards a VBQ3 style and Breno tradition[46], showing similarities with the cases of *Castelaz di Cagno*[47] and *Corsi di Isera*[48]. The second phase is characterised, as far as the fine ware is concerned, by *Breno Nera* ware, specifically the "C" shaped impressed decorations. The third phase lacks any clear cultural markers and indicates a transitional phase towards the Copper Age. Therefore, two distinct phases can be observed: a first Lagozza phase with some VBQ and Alpine products, and a second phase in which, although the characteristics of the site remain the same, Breno pottery now predominates.

Another interesting case attesting to the great cultural mobility of this period is *Rocca di Manerba* (BS). The site, located on a promontory overlooking Lake Garda, has furnished an interesting mix of Lagozza, VBQ, and Breno pottery, together with some Northern Alpine products (Cortaillod and Saint-Léonard)[49]. Two phases have been identified, Manerba 1 and 2. Manerba 1 is characterised by the presence of Chassey and *Breno Nera* pottery, to which Northern Alpine products are added, one type being known at Saint-Léonard, Lagozza di Besnate and Monte Covolo. Manerba 2, on the other hand, lacks Chassey and Breno elements. The pottery assemblage is represented by a Besnate component and other post-Chassey groups. Again, two fragments point towards Northern Alpine productions, one of which is also signalled at *Breno Castello* and the other at Saint-Léonard. The difference between the two ceramic assemblages has led to the hypothesis of a pre-4000 B.C. Manerba 1 and a post-4000 B.C. Manerba 2[50].

[45] PEDROTTI *et alii* 2022.
[46] POGGIANI KELLER *et alii* 2010.
[47] PERINI 1973.
[48] BARFIELD 1970; PEDROTTI 2001.
[49] BORELLO 2022.
[50] *Ibid.,* p. 241.

This expansion outside of the confines of Valcamonica can also be observed in Switzerland, at the site of *Castel Grande*, in Bellinzona (Canton Ticino, Switzerland). The site is located on a rocky outcrop overlooking the city (much like the castle of Breno), and it was systematically excavated from 1984 to 1985. A recent[51] re-examination of the material led to the elaboration of 13 'situations'[52], 5 of which contain material (82 ceramic fragments) datable to the *Neolitico tardo* (*Neolitico finale* in the publication). This period is best seen in situations 7 and 9, for which a radiocarbon date is also available: "ETH-75085: 4747±26BP"[53], dating which places situations 7 and 9 towards the end of the first half of the IVth millennium B.C.

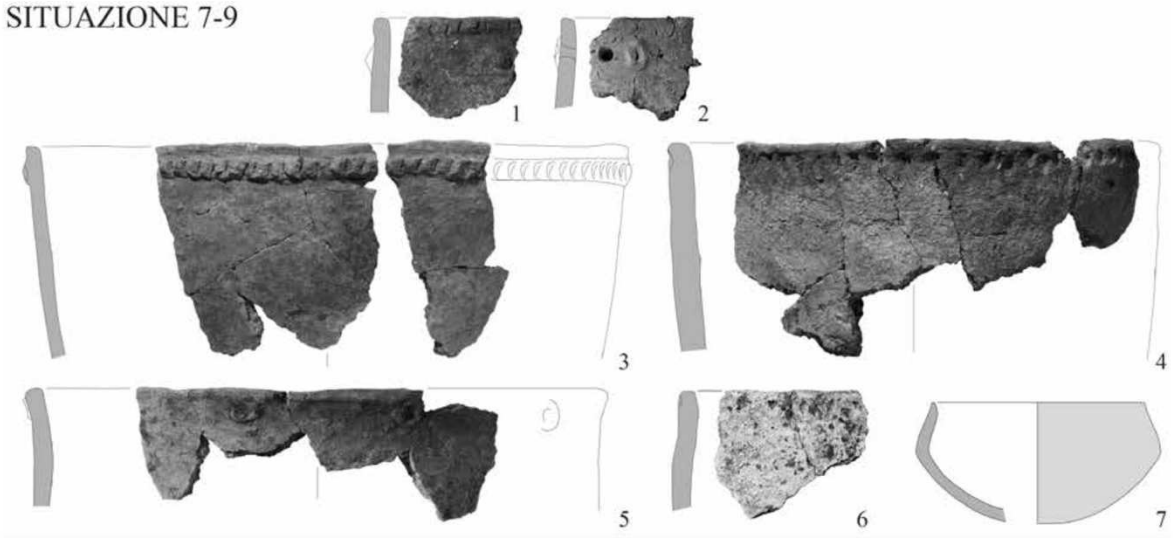


Figure 8. Selected Neolitico tardo pottery from situations 7-9. Source: VAN WILLINGEN & CARAZZETTI 2022.

What was somehow surprising was the absence of any characteristic Lagozza di Besnate ceramic shapes, despite the contemporaneity of the two sites. In fact, the best comparisons come from the sites of Fiavè[54] and Isera-La Torretta 3 and 4[55]. Some other, already mentioned sites, present elements which are very similar: *Breno Castello*, *Coren Pagà*, *Lovere*, *Monte Covolo*, *Rocca di Manerba*, and *Ubiale-Clanezzo*.

Another site of interest is *Ubiale-Clanezzo* (Castello, BG). During the 1986-1989 campaigns, a Neolithic pit (n. 154) was found along with other surface finds[56], some of the pottery being interpreted as Breno type. In 1998 the excavations were completed and, as such,

[51] VAN WILLINGEN & CARAZZETTI 2022.
[52] Only ceramic material from the 1985 campaign was used.
[53] VAN WILLINGEN & CARAZZETTI 2022. The sample was obtained from some residue found within a pot from situation 7.
[54] PERINI 1994.
[55] PEDROTTI 2001.
[56] POGGIANI KELLER 1990b, pp. 24-25.

the Neolithic levels revealed the remains of diverse settlement structures[57]. The ceramic inventory comprises all three major cultural complexes of the *Neolitico tardo-finale*: Lagozza, VBQ, and Breno.

Towards the south, Breno material has been found as far as Mantua, at the site of *Levata di Curtatone*. The second phase of the site, dated to the *Neolitico tardo*, is represented by two wells and numerous pits which disturbed the previous structures of VBQ (I-II-III) phase[58]. This site fits in the general panorama of the IVth millennium B.C., showing the survival of certain VBQ tradition elements and the presence of Breno style decorative elements, all indicating a phase that can be attributed to the first centuries of the IVth millennium B.C. A similar situation is to be found at the site of *Rivarolo Mantovano* (Cascina Becchelli, MN), but this time with Lagozza material which seems to rely on a VBQ tradition[59]. The then enigmatic "S" motif decoration pottery can now be attributed to being of Breno type (related to a VBQ3 tradition)[60] and is similar to those found at BC3 and Zogno (Grotta del Tabac cave site)[61].

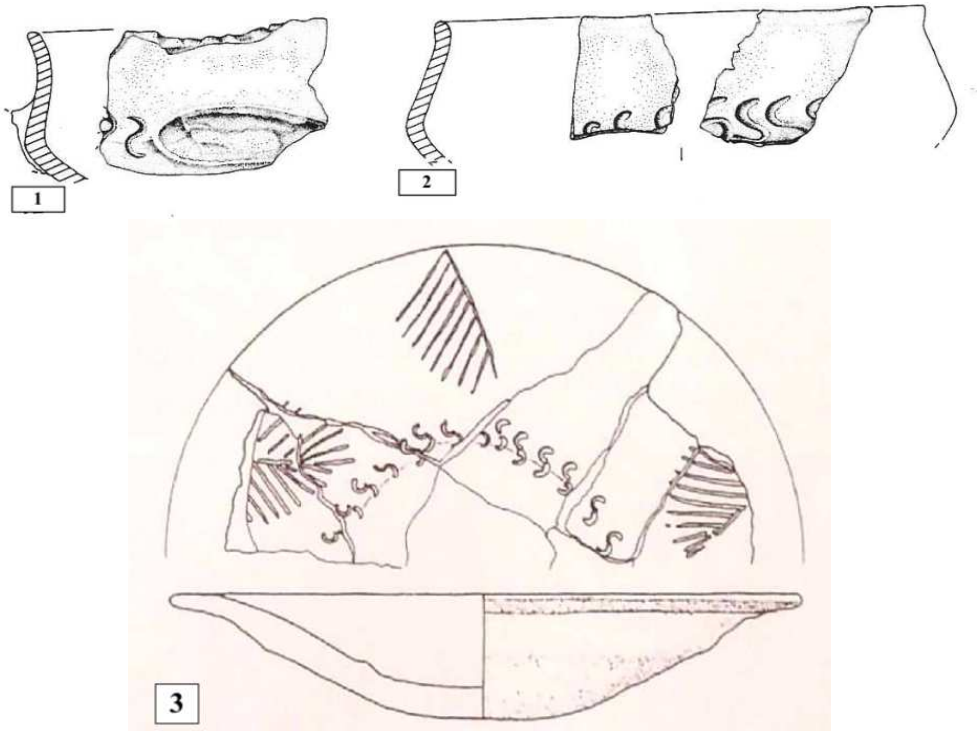


Figure 9. "S" stamped Breno type pottery. 1-2: Rivarolo Mantovano (ANGHINELLI & ANGHINELLI 1994); 3: Breno Castello (ODONE & FEDELE 1999)

[57] POGGIANI KELLER 1999b, pp. 27-28.
[58] BAIONI *et alii* 2022.
[59] ANGHINELLI & ANGHINELLI 1994.
[60] ODONE & FEDELE 1999.
[61] POGGIANI KELLER 1980; BASEZZI & DELL'OLIO 1981.

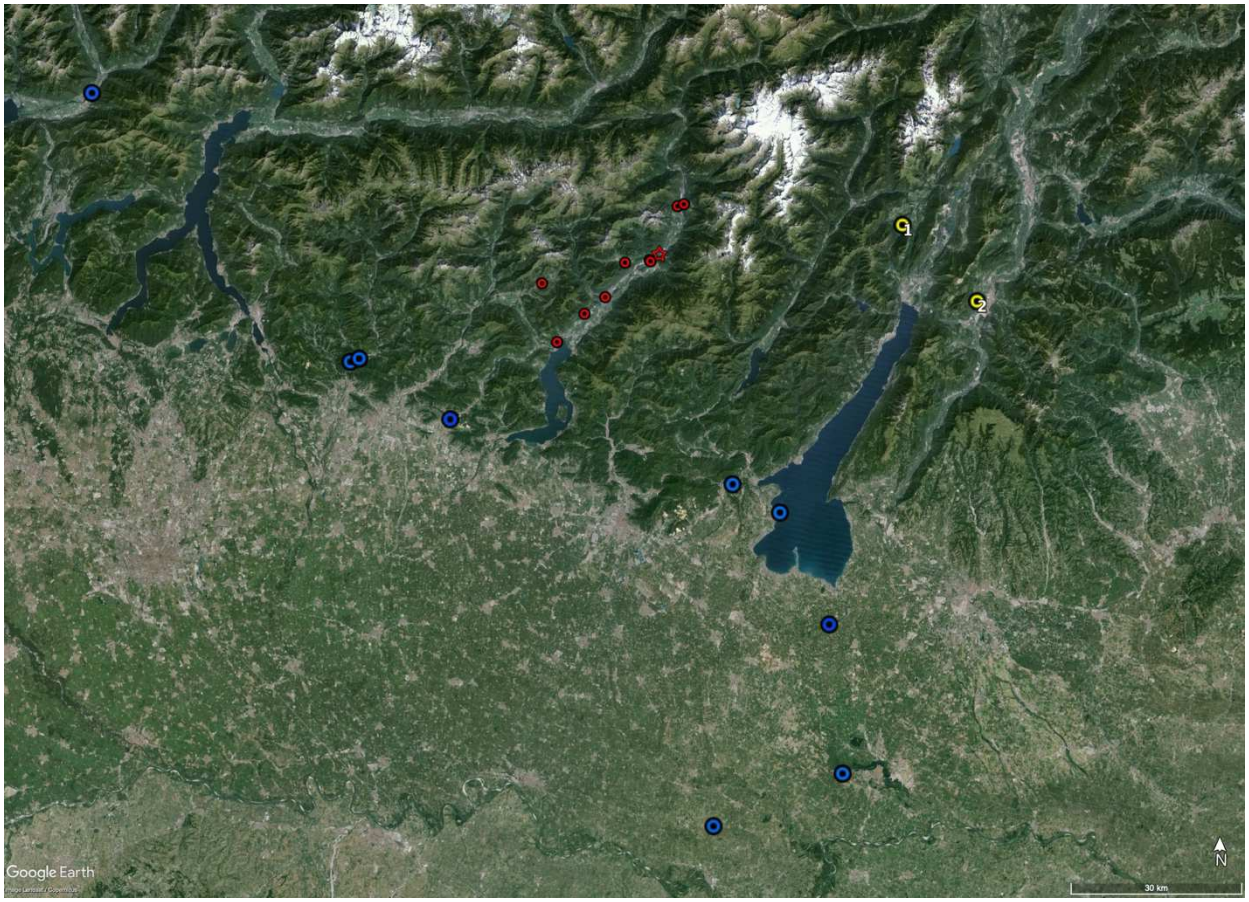


Figure 10. Location of all sites mentioned in the text. In red: Valcamonica sites; In blue: sites outside of Valcamonica; In yellow: comparable contexts. 1-Fiavè; 2-Isera-La Torretta.

At first, the Breno 'phenomenon' appears as a Valcamonica-centred event linked to the re-population of the area and part of a new territory occupation strategy which sees rocky outcrops and elevated points as favourable for settling. The hybrid character of this new *facies* is evident from the start, in what could be defined as a first phase. Based on a VBQ3 incision-impression style, it appears as a local reinterpretation of rather well-defined northern, trans-alpine influences from the Epi-Rössen sphere, the Swiss Valais, and other groups such as Pfyn, Altheim and Cortaillod. This phase can be placed between the end of the Vth millennium (around 4200/4100) B.C. and ends around 3800 B.C. when a new group emerges as dominant, Lagozza. The expansion and arrival of this group marks a new stage of cultural mixing, which can be seen through the presence of Lagozza material in Valcamonica and other VBQ sites outside the valley. This is also a period in which Breno material starts travelling, together with the new Lagozza material, outside the valley, towards the south and southeast in VBQ3 contexts, testifying perhaps to the strong links with this culture. Apart from the examples already cited, this can also be observed at the site of *Tosina di Monzambano*[62]. The mix of these

[62] POGGIANI KELLER 2014; RONDINI 2022.

different cultures, VBQ, Lagozza, and Breno is attested also towards the west, as seen at *Trescore Balneario*[63] (BG), apart from the examples already cited. This phase of expansion and enlargement of contacts could appear as a preface to the Copper Age with its megalithic sanctuaries and artistic expressions which denote a great number of links and influences.

[63] POGGIANI KELLER 2004; of interest is also a mound erected on a VBQ level and subsequently ritually ploughed in a period marked by the presence of both Lagozza and Breno material: POGGIANI KELLER *et alii* 2010.

Chapter II

The Neolithic rock art phenomenon in the Alpine area

II.1: A general overview of the Valcamonica petroglyphs

As we have seen, Valcamonica presents itself as a rather sparsely occupied territory, with most of the settlements and archaeological presence on the right orographic side of the valley. This seems quite odd if we are to take into consideration the quantity and density of the rock art phenomenon ascribed to the chronological arc of the Neolithic of Valcamonica (~4200 – 3500 B.C.). The Neolithic rock art tradition is a rather peculiar one, and has, thus, sparked much debate. Indeed, the two elements which constitute it have always been the subject of discussion. The first element, the so-called "topographic" representations, although with a clear, uncontested, Neolithic chronology, is still the most enigmatic out of all the repertoire of the valley and a convincing interpretation still lacks. The second element, the '*oranti*' (worshippers), although very clear in shape and intent, have a very disputed chronology, some

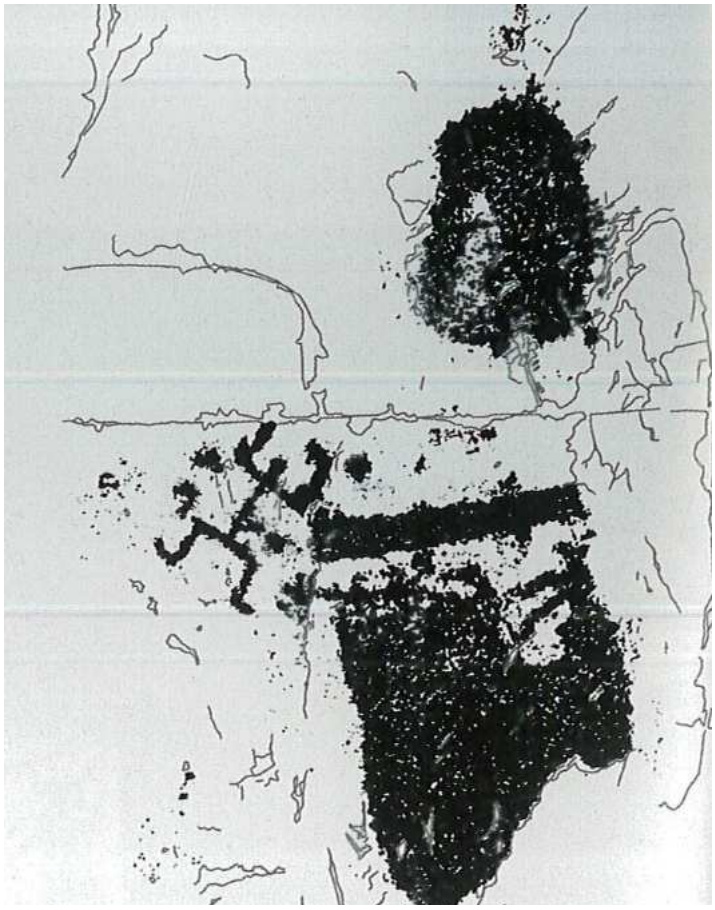


Figure 11. Foppe di Nadro R. 29, sector D. Oranti associated with macule ("topographic" representations). Source: SANSONI 2022.

(Arcà[64] and Fossati[65]) placing them in the Bronze and Iron Age, others (Anati[66] and Sansoni[67]) placing them firmly in the Neolithic[68]. There is, however, a rock (Fig. 11) which, somehow ironically, brings together all these elements and gives us a glance into the Neolithic Mind of Valcamonica.

Following the stylistic chronology established by Anati[69], the Neolithic period corresponds to styles I and II, which range from 5500 to 3300 B.C.[70] This is the period in which the rock art phenomenon of Valcamonica restarts after a long break, signalling a clear rupture

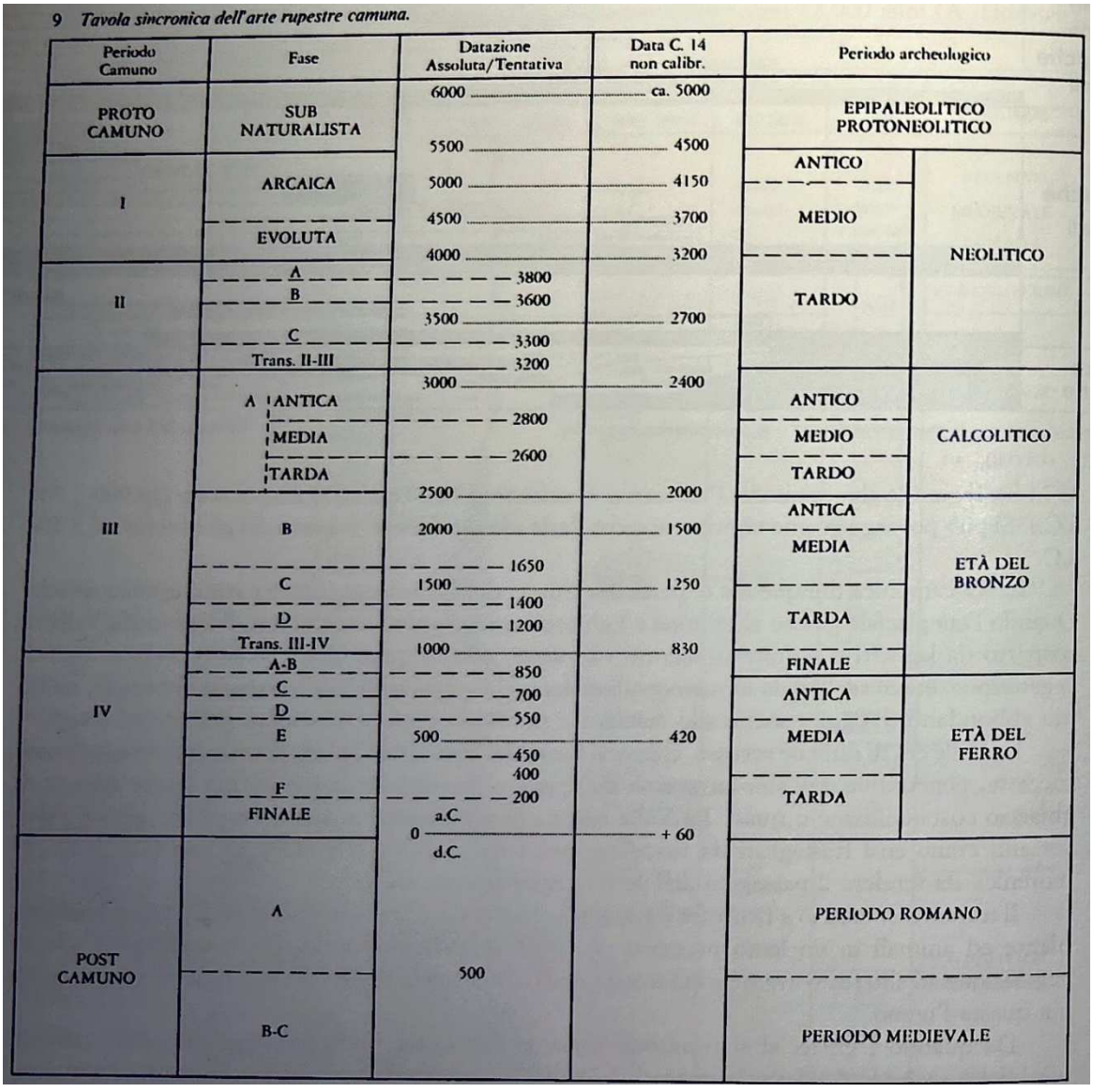


Figure 12. Stylistic chronology. Source: ANATI 1992.

[64] ARCÀ 2001.
[65] FOSSATI 2014.
[66] ANATI 1982; ANATI 2014.
[67] SANSONI 2022.
[68] For a recent review see: POGGIANI KELLER *et alii* 2022.
[69] ANATI 1976; ANATI 1982b; ANATI 1992.
[70] ANATI 2009; ANATI 2014.

between the sleek animals representative of a hunter-gatherer culture and environment. Anati, followed by Umberto Sansoni, tried to paint a clear and linear picture of the Neolithic rock art phenomenon of Valcamonica. But, right from the start, we are faced with a peculiar choice of Anati, that of splitting the Neolithic into two distinct stylistic phases, I and II, a division that makes it even more confusing. The first motivation seems to be based on climatic stages, rather than styles, as he places the start of style I in synchrony with the start of the Atlantic climate phase, around 5500 B.C. and lasts through the whole Vth millennium B.C.[71] The following style II is represented by the second half of the Atlantic period and designates the IVth millennium BC. A revised chronology of his[72] places the Ist style between 5000 and 3800 B.C. and the IInd between 3800 and ~2900 B.C.

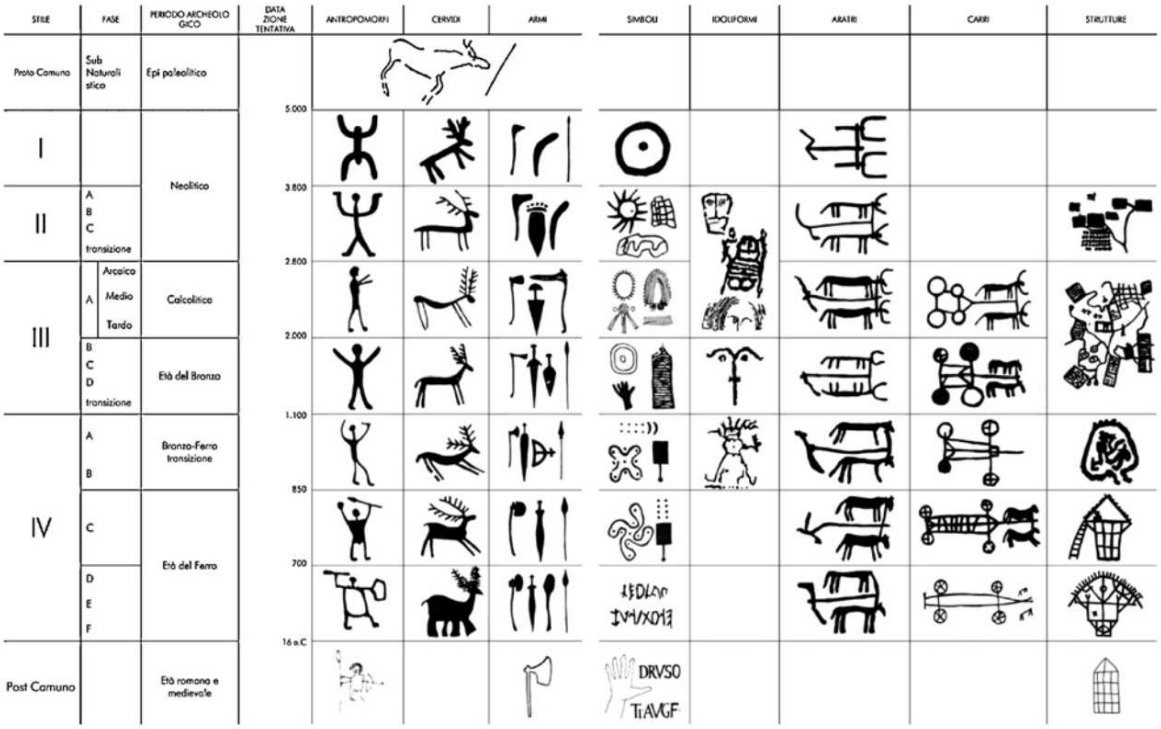


Figure 13. Revised stylistic chronology. Source: ANATI 2009.

Style I is characterized as "synthetic and essential, with worshippers accompanied by adoration symbols, such as the solar disc or the axe."[73]. Nonetheless, according to Anati, the main theme and element of styles I and II are the so-called '*oranti*', in Italian, or worshippers. It is a schematic anthropomorphic fixed in a conventional position with its arms raised towards

[71] ANATI 1982.
[72] ANATI 2009.
[73] ANATI 2014, p. 10.

the sky. They constitute around 60% of the type of figures seen in periods I and II-A[74]. At first, the compositions are simple, with only 1 or 2 anthropomorphic figures, which can range between 10 and 35 cm high. The dating of the '*oranti*' to the Neolithic is due mainly to the fact that it is, indeed, highly representative of the period and is found throughout Europe, especially in the Balkan region. The cup-marks are also to be included in styles I and II. The subsequent II-B (3800 – 3500 B.C.) and II-C (3500 – 3300 B.C.) styles bring more complex and cared-for compositions which now include new figurative motifs, such as: meanders, spirals, zig-zags, reticles, disks, concentrical disks, and idol-shaped figures[75]. Rituals, social and economic gatherings are now represented as well, while some scenes "represent ceremonial occasions; weddings (?), worshipping of the dead and sun worshipping."[76]

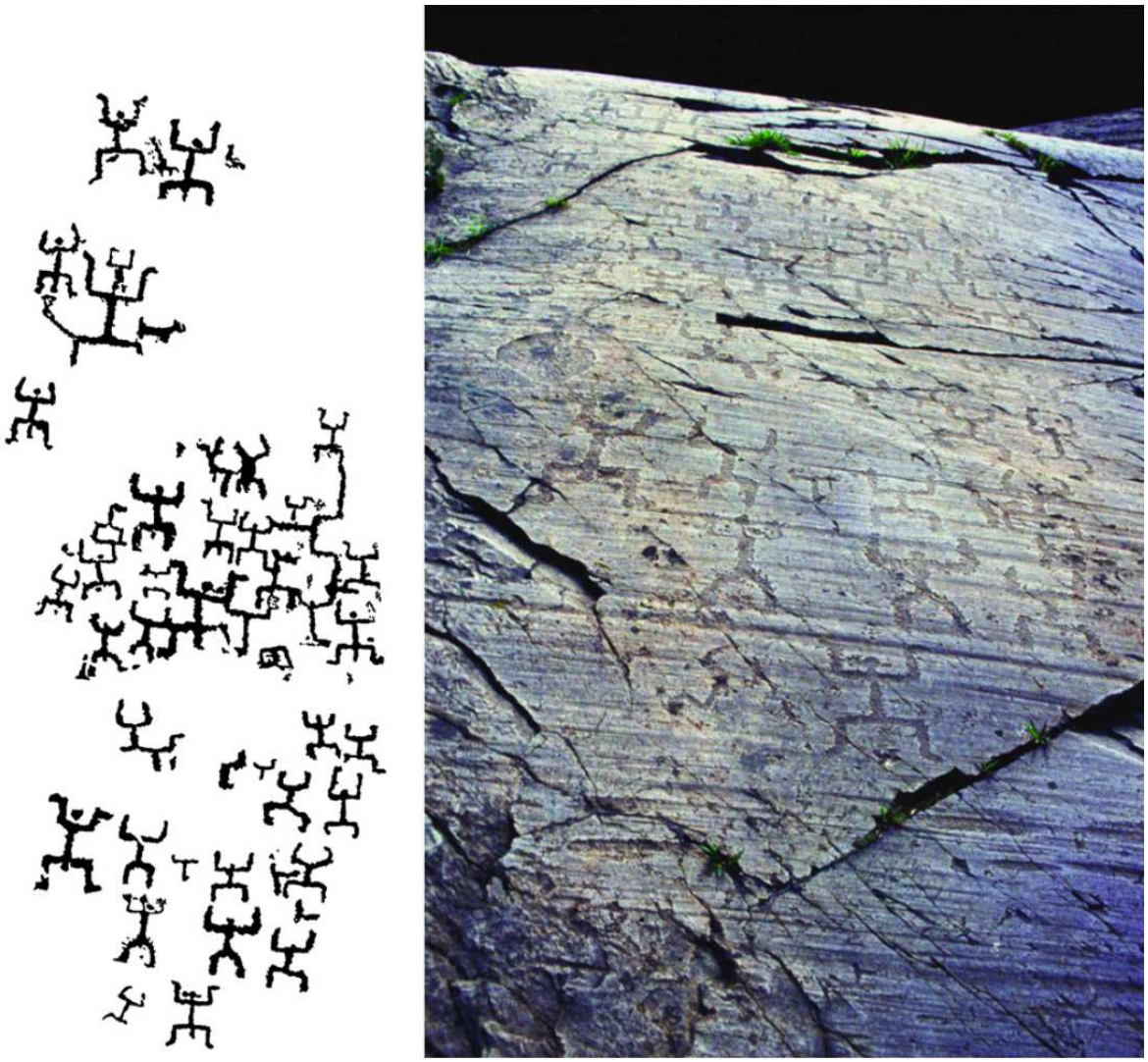


Figure 14. Naquane R. 50. Composition of around 50 figures (oranti). Some appear in couples, some headless. One figure seems to be wearing a mask. Source: ANATI 2009.

[74] ANATI 1982.
[75] *Ibid.*
[76] ANATI 2014.

To summarize, for Anati the most important and definitory element of styles I and II is the *oranti*. Interestingly, Anati chooses not to mention, just discreetly at times, the *macule,* and "topographic" representations.

Umberto Sansoni, following in the footsteps of E. Anati, firmly places the *oranti* in the Neolithic as well but also fully mentions the "topographics". Continuing Anati's more anthropologic view and interpretation, he marks the switch between the "Proto-Camunian" (Epi-Palaeolithic) and Ist/IInd styles as a switch in focus from a first animistic interest in the emblems of the natural world to one on man himself and his domesticated space, stating that if the hunter-gatherer is a predator dependent on wildlife and spontaneous fruit, the farmer-herder is a worker, sedentary or semi-sedentary, an alchemist[77]. As such, art is dominated by the humanised space, "topographics" and *oranti*: male, female, asexual, as busts or headless, isolated or in groups, and associated or not with schematic elements such as circles, ovals, rectangles, lines, channels (*canalette*), serpent-shaped elements, but especially cup-marks, singular or/and in geometric modules (module of eight)[78]. As for Anati, the *oranti* are a clear *leitmotiv*, repeating over hundreds of images and with an emphasis on the female figure (which

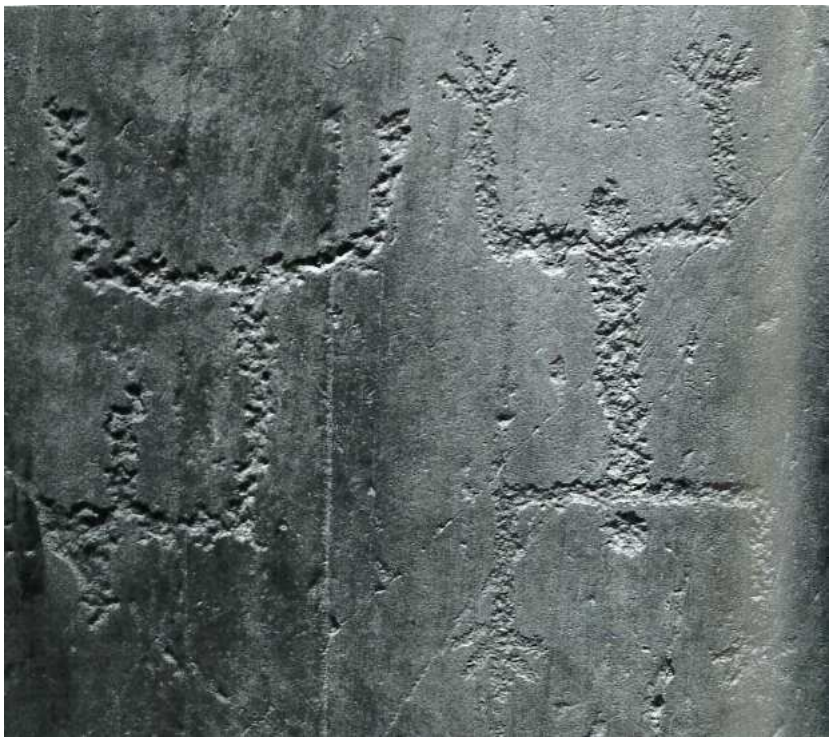


Figure 15. Foppe di Nadro R. 33. "Big hands" oranti next to a possible anomalous bucrania. Source: SANSONI 2022.

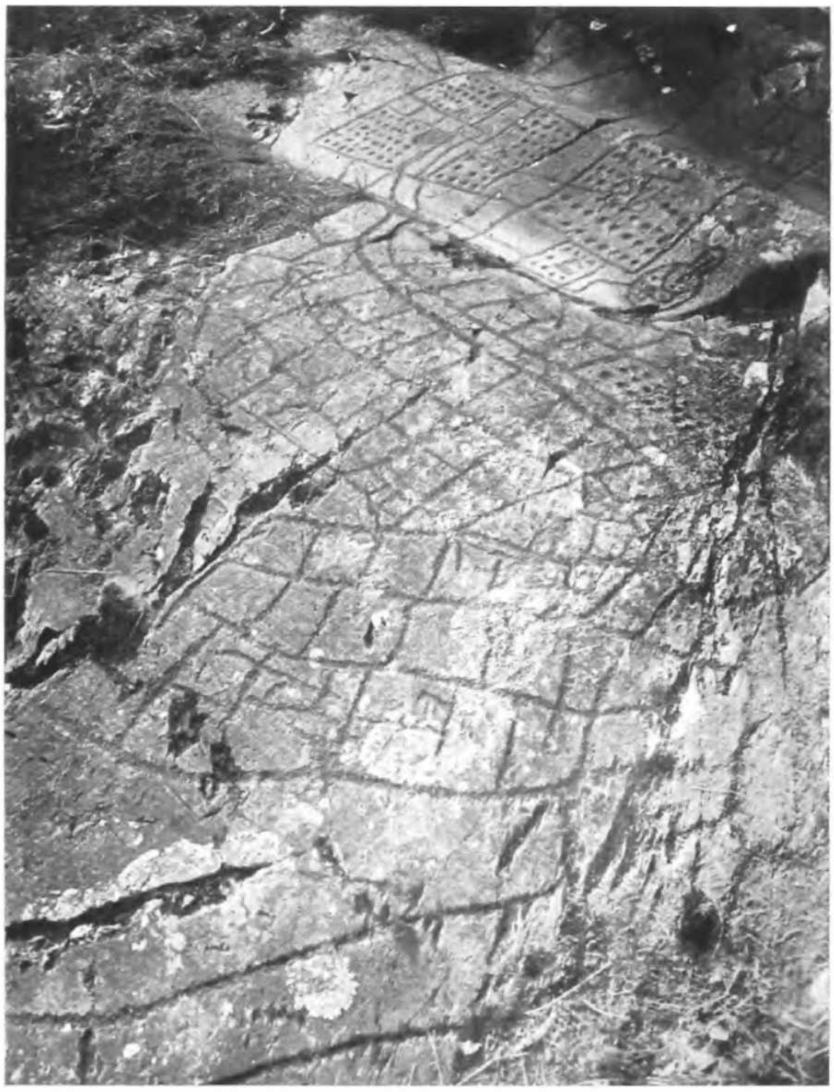
[77] SANSONI 2022.
[78] SANSONI 2022, p. 26.

makes up ~55% of all figures with their sex indicated[79]), a characteristic that fits in with the general prominence women representations have in the Neolithic. The "big hands" *oranti* make their appearance now as well, element that will reappear during the Bronze and Iron ages. As for the *mappiformi* ("topographics"), Sansoni does not deviate from the interpretation (a detailed account will be given further below) of Arcà[80]. Sansoni recognizes the *macule* as the first chronologically and also that the "topographics" represent indeed cultivated fields, pastures, enclosures and farmhouses, if not necessarily as a mirror of the actual situation, as pertinent to the domestication of the territory. Sansoni further reinforces a Neolithic dating of the *oranti* by pointing out that they are very often associated with *macule* (as on Foppe di Nadro R. 29). But what is lacking from Sansoni's review of the Neolithic rock art phenomenon are Anati's complex scenes and compositions, ceremonial occasions, ritual gatherings, sun worshipping and weapons. And even more contrasting are Arcà and Fossati's[81] views which only admit the *macule* and "topographics" as Neolithic.

Andrea Arcà, the most prominent scholar regarding this enigmatic set of figures, defines them as follows: "*La definizione <<di incisioni topografiche>> si riferisce a moduli geometrici ripetuti, delimitati e regolarmente suddivisi, che fanno pensare alla rappresentazione planimetrica di un insediamento, nella forma di una serie di appezzamenti edificati o coltivati*"[82]. A rather broad definition, it encompasses all the general characteristics of these sets of figures. This idea of topographic representations, of the colonised environment with houses, farms, enclosures, and fields represented on the rocks first came about in the context of Mt. Bego when C. Bicknell[83] advanced this hypothesis. The same idea was used by R. Battaglia[84], following specifically the words of another Mt. Bego researcher, Sacco[85]. The same idea was taken up by Anati[86] as well in what was the first study dedicated to the whole rock art phenomenon of Valcamonica. Referring to the IInd style, he notes that "The sense of composition, already rather advanced at this stage in the artistic development of the Valley, appears primarily in large patterns composed solely of lines, dots, and dotted surfaces; these

[79] SANSONI 2022, P. 27.
[80] ARCÀ 1999a; ARCÀ 2010; ARCÀ 2016.
[81] FOSSATI 2014.
[82] ARCÀ 1999a, p. 207. "The definition of <<topographic engravings>> refers to repeated, delimited and regularly subdivided geometric modules which make one think of a planimetric representation of a settlement in the shape of built or cultivated plots".
[83] BICKNELL 1913.
[84] BATTAGLIA 1934.
[85] SACCO 1930.
[86] ANATI 1961.

are maps of fields and villages, as certain more naturalistic carvings of later periods have taught us."[87] A first issue with this interpretation is the fact that, in the case of Valcamonica, it was used for the Iron Age "topographics" which also include human figures, structures, and have a very organized structure. This idea was then retroactively used for the Neolithic/First Copper Age "topographics" which use the same figurative motifs. When speaking about cultivated fields and enclosures, Battaglia was referring to Iron Age compositions from the area of Seradina-Bedolina and Pia d'Ort, where the famous "Bedolina Map" is found. This is particularly problematic as there are several cases of distortions which have intervened throughout the interpretative phases. The "topographic" interpretation came about as the result



1 - *Giadighe* — Grande reticolato rappresentante probabilmente campi coltivati e sentieri, attraversati dal fiume

Figure 16. Iron Age "topographic" composition from Giadighe (known today as Pia d'Ort). Source: BATTAGLIA 1934, original caption at the bottom.

[87] ANATI 1961, p. 101.

of a purely visual comparison: that with present-day fields, orchards, and villages. This purely formal and visual analysis made the researchers of the first half of the century (Bicknell, Sacco, Battaglia) to think of the Iron Age "topographic" compositions as analogous to what they were seeing in their times: a developed agricultural environment with an abundance of hamlets and villages to tend to these fields and orchards. This was the first distortion. The second one came with the linear-evolutive character of Anati's periodisation. The "topographic" point of view was applied to the more "chaotic" Neolithic/First Copper Age compositions just by a formal comparison with the Iron Age ones. The Iron Age figures, part of the richest and most visually pleasant engraving cycle, were considered to be the most developed form of an older expression and rendition of the surrounding environment. Thus, the "topographic" interpretation was retroactively imposed upon a set of figures from the other end of the chronological spectrum which only appeared similar in shape. Therefore, the "topographic" engravings of the Iron Age became only a more "naturalistic" way of depicting fields and villages. This "perpetuation" of the purely formal and visual comparison can be seen nowadays as well, as A. Arcà uses contemporary photographs of fields and orchards to compare the Iron Age and Neolithic/First Copper Age compositions to.

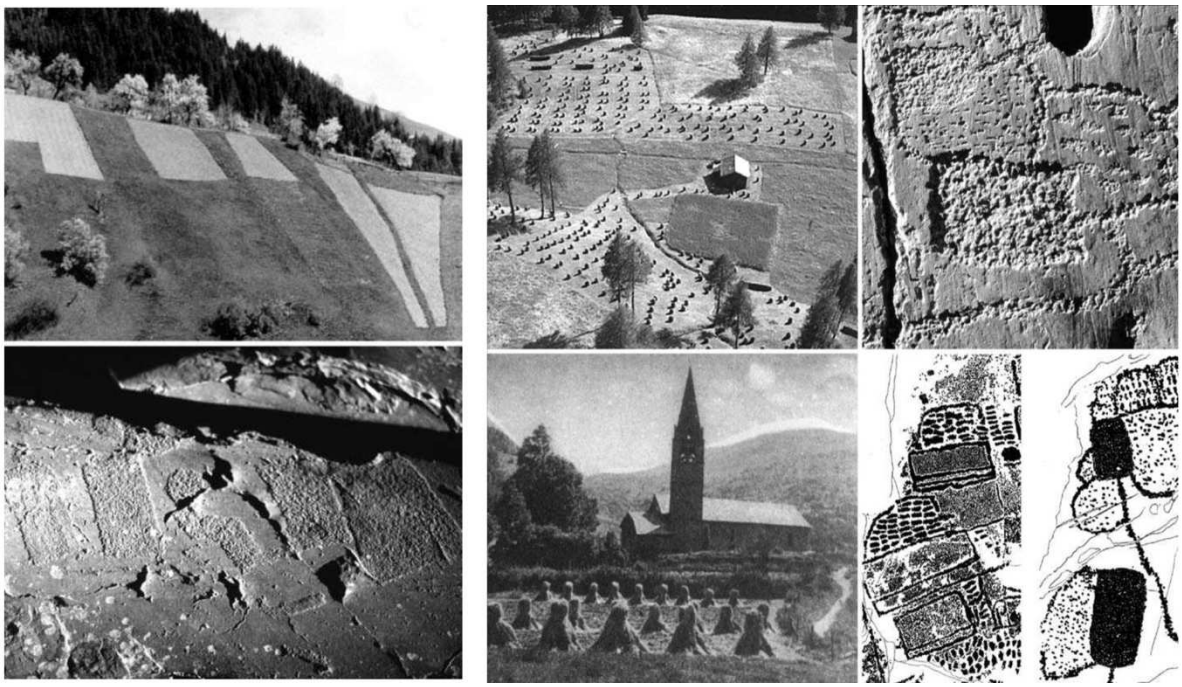


Figure 17. Comparisons between the modern-day agricultural landscape and Neolithic/First Copper Age compositions. Source: ARCÀ 2016.

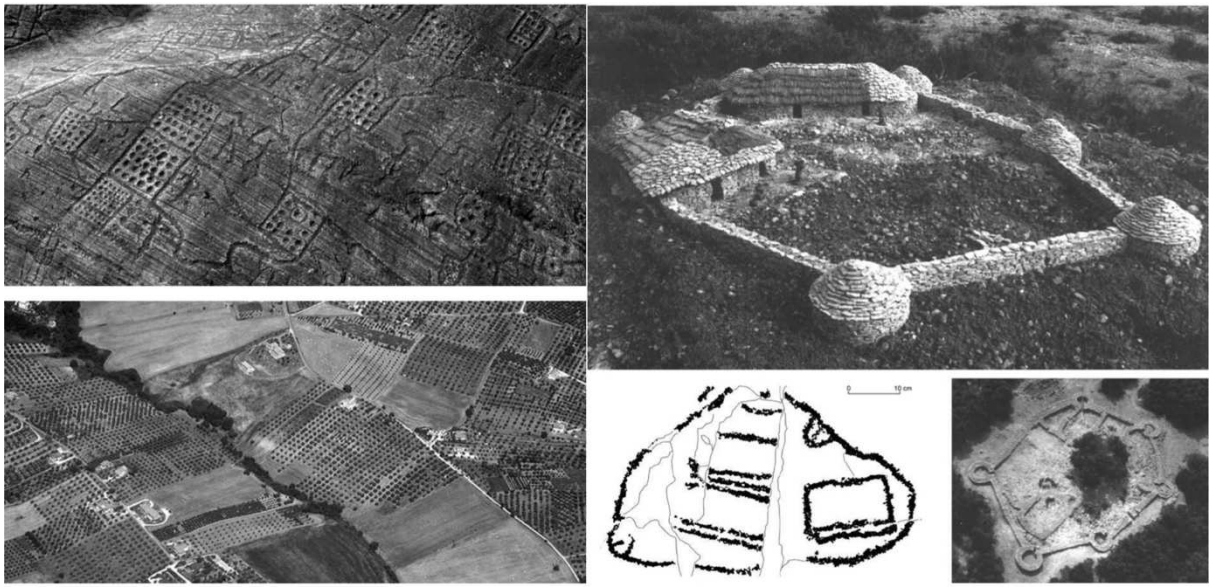


Figure 18. Comparisons between a modern-day orchard, a Copper Age settlement from Boussargues (France), and the Bedolinao Map, respectively Vite R. 21. Source: ARCÀ 2016, respectively ARCÀ 2004.

The organisation and aspect of the agricultural landscape of XXth and XXIst centuries were used to define, firstly, the aspect and organisation of the situation in the Iron Age. This was extended to the Neolithic/First Copper Age repertoire without taking into consideration the archaeological evidence and particular cultural choices regarding the figures themselves.

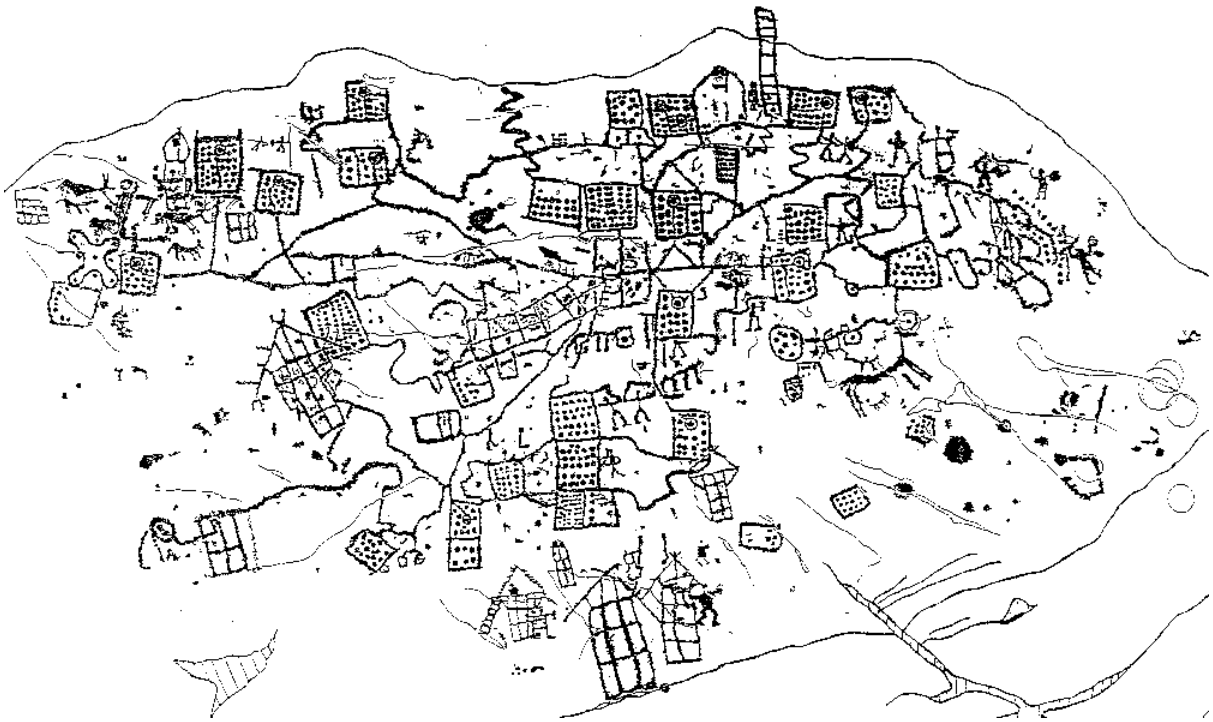


Figure 19. The famous "Bedolina Map". Source: TURCONI 1997.

Critically, the whole interpretative framework was based, at the start, on just one rock: the famous "Bedolina Map" (Figure. 19). The idea of "topography" was given by this engraved rock which features several enclosures with aligned rows of dots inside them, which are connected to other enclosures by "paths". The presence of huts/granaries, animals, and anthropomorphic figures further reinforced the hypothesis that this is a depiction of the agricultural landscape seen in the valley below. This is a perfect example of how a contemporary way of viewing and understanding things was imposed upon an archaeological record from a completely different period. Our own, modern, sense of space and territory which is defined from our early stages of education by maps and real topographic rigours led to this distorted perception of how the ancient people perceived themselves in their surrounding environment[88]. In fact, the "Bedolina Map" is a rare case in which huts/granaries, animals, and anthropomorphic figures are found together in a "topographic" composition. The nearby R. 7 is a unique case in which a thick crowding of human figures is associated with the "topographic" compositions[89]. The "Bedolina Map", already an exception in itself, was used to define the interpretative norm that was itself dictated by a contemporary perception and definition of the landscape. This was casually extended over the Neolithic/First Copper Age figures in view of their formal similarity and the phenomenon of "neolithization".

[88] See MARRETTA 2013, p. 347, for a more detailed explanation.
[89] MARRETTA 2013, p. 346.

II.2: Attempts towards a typology

Up until A. Arcà, these "topographic" compositions were not subjected to a typological analysis which would take into account variation by figure, style, chronology, and site. Diverse sets and arrangements of motifs were conveniently placed into the encompassing category of "topographic" figures. The main areas that contain topographics are the following: Bedolina,

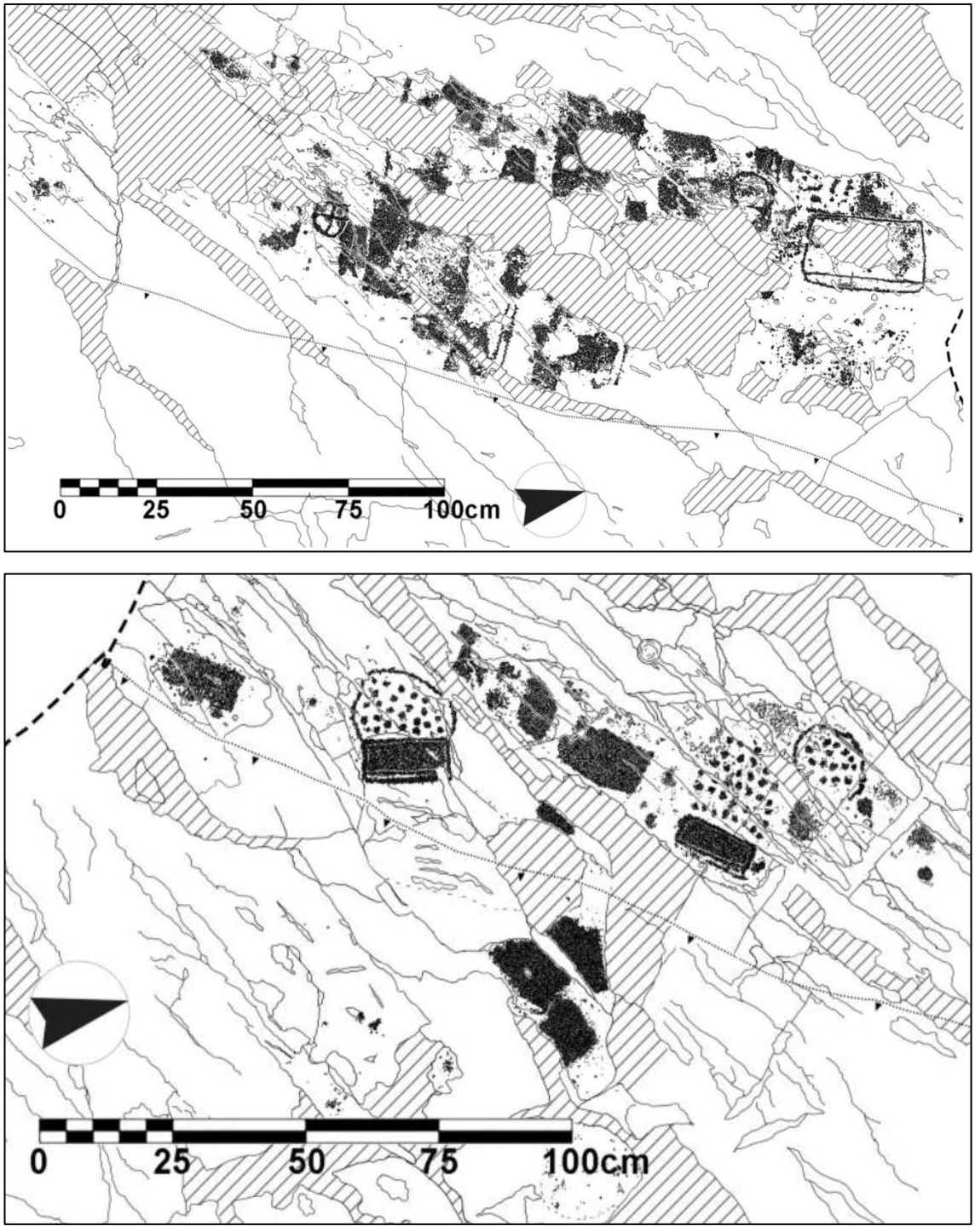


Figure 20. Dos dell'Arca R. 10. Top: sector B. Bottom: sector C. Source: RONDINI & MARRETTA 2019.

Dos Cuì, Dos Costa Peta, Dos dell'Arca - Piè, Foppe di Nadro, Pia d'Ort, Seradina, Sonico, Vite (for Valcamonica), and Dosso Giroldo (near Rupe Magna) and Caven (near Teglio) for the neighbouring Valtellina. The first step towards a better understanding of this peculiar category of representations was undertaken by Sluga[90]. In her study of the rock art of *Dos dell'Arca*, she traced and published 11 rocks, numbered from 1 to 11. Out of these, only rocks number 1, 8, and 11 did not contain any "topographics".

Her analysis yielded 10 different motifs, all part of different combinations encountered at *Dos dell'Arca*:

1) "rettangolo a contorno diviso in due parti asimmetriche da una linea (rectangle, just in contour, asymmetrically divided into two parts by one line)
2) semicerchio a contorno (semicircle, just in contour)
3) serie di coppelle in file parallele (series of cup-marks in parallel rows)
4) linee ad andamento irregolare (irregularly running lines)
5) rettangolo a contorno unito a serie di coppelle su file parallele (rectangle, just in contour, united with series of cup-marks in parallel rows)
6) rettangolo interamente picchiettato accanto a serie di coppelle delimitate da un semicerchio a contorno (fully pecked rectangle next to series of cup-marks delimited by a semicircle, just in contour)
7) semicerchio a contorno, con rettangolo picchiettato interamente al centro e serie di coppelle nell'interspazio, con linea retta apparentemente uscente dal rettangolo stesso (semicircle, just in contour, with a fully pecked rectangle in the centre and cup-marks in the spaces between the two, with a straight line exiting apparently from the rectangle itself)
8) rettangolo interamente picchiettato, accanto a serie di coppelle disposte su file parallele ed unito ad altro rettangolo da linee ad andamento irregolare (fully pecked rectangle, next to series of cup-marks in parallel rows and united with another rectangle by irregularly running lines)
9) rettangoli interamente picchiettati, uniti fra loro da linee ad andamento irregolare (fully pecked rectangles, united by irregularly running lines)

[90] SLUGA 1969.

10) figure rettangolari a contorno, più serie di coppelle disposte su file parallele e figure circolari con coppelle nel loro interno, unite da linee ad andamento irregolare"[91] (rectangular shapes, just in contour, series of cup-marks aligned in parallel rows and circular figures with cup-marks inside them, united by irregularly running lines)

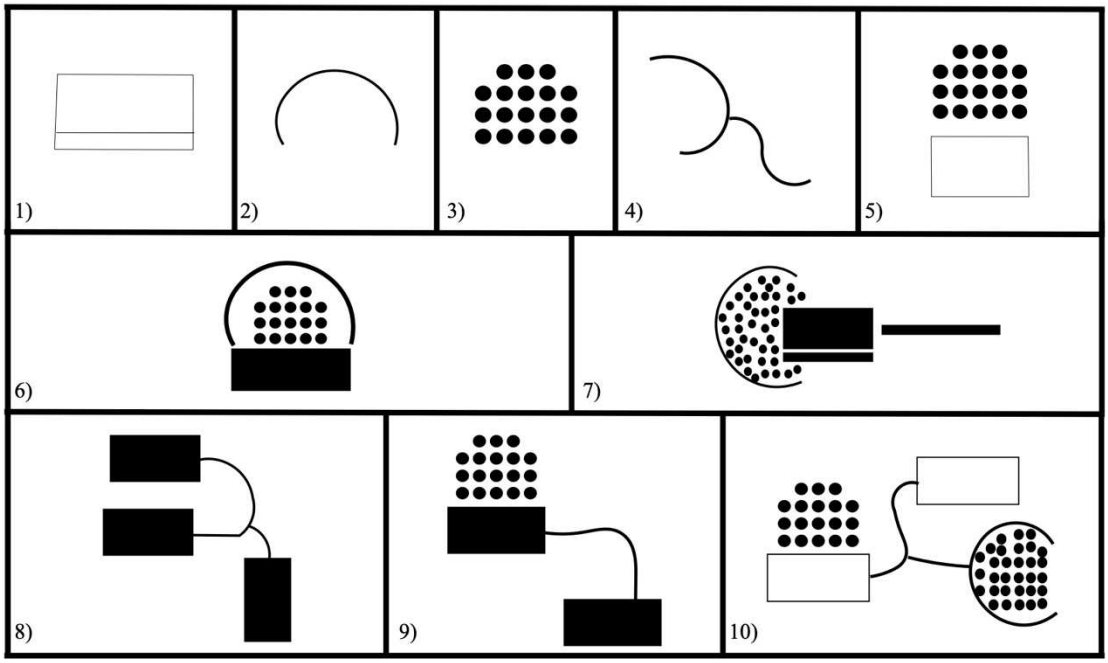


Figure 21. Table showing the ten motifs elaborated by Sluga.

More recently, A. Fossati[92] has proposed a more rigid and clear typology of all the different "topographic" compositional elements based on all the variety encountered in different rock art sites of Valcamonica. Thus, 8 clear categories have emerged:

1) Spots (*macule*): sub-rectangular pecked areas (fully or partially). They appear on both rocks and Copper Age monuments. The term *micro-macule* can be employed for very small pecked areas.
2) Double rectangles (or double-base rectangles): usually drawn just in contour, can be fully pecked. The motif is comprised of two rectangles glued to each other, one bigger and the other smaller. They sometimes contain a dot in the centre.
3) Groups of dots: small, round pecked areas or lengthened dots (*maccheroni*).

[91] SLUGA 1969, p. 56.
[92] FOSSATI 2002; FOSSATI 2007; FOSSATI 2014.

4) Oval shapes: associated with other motifs, like *macule* and rectangles, and often connected by lines.
5) 'Mushrooms': unitary composition of double rectangles/rectangles, groups of dots, and oval shapes. It is also called the 'common module' by Arcà because it appears in Monte Bego as well and shares the same figurative components.
6) '*Bandoliera*' (or perimetral line): or shoulder-belt figure, in Valtellina it only occurs on Copper Age stelae, whereas in Valcamonica it can also be spotted on rocks. It is a circular figure, made up of one or two contour lines. It contains on either the outside or inside part attached semi-circular motifs which are sometimes split in two by a line (*occhielli*).
7) Grids/grills: rectangular (sometimes round) shapes which have regular and meticulous partitions inside. Most encountered at Vite.
8) '*Scutiformi*' (shield-shaped): a vast and heterogeneous category of abstract geometric figures made up of a rectangular, elliptic or ogival contour filled with areas and internal partitions organized with regularity. They regularly appear in Valtellina[93].

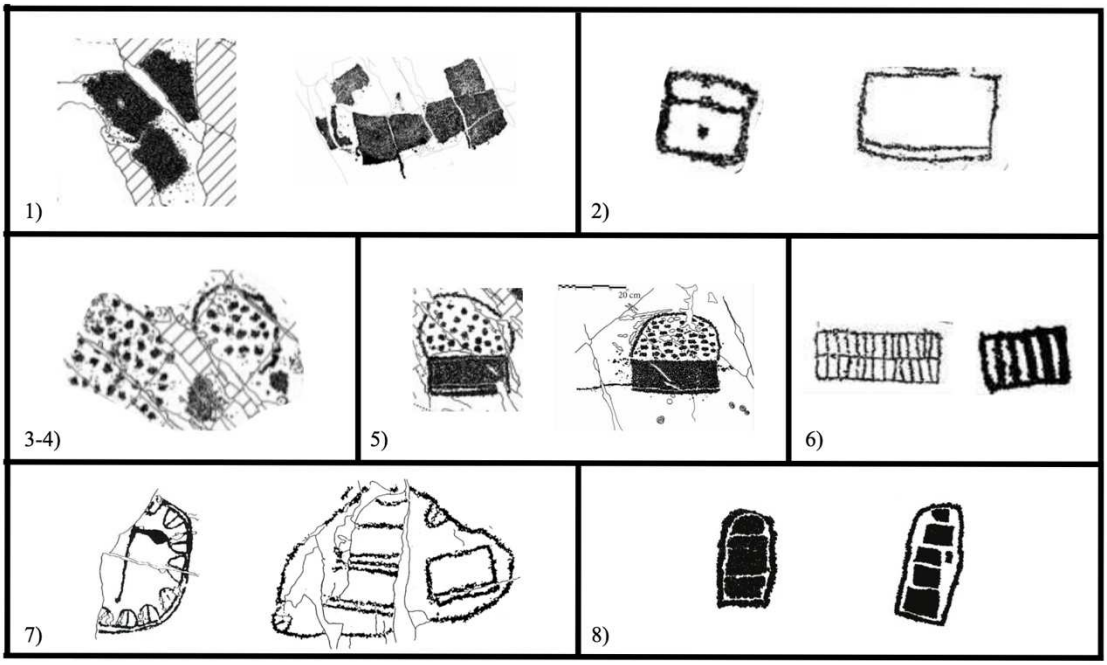


Figure 22. Table showing the eight categories of "topographic" representations.

[93] MARTINOTTI 2012.

Dos Dell'Arca R. 10 (Fig. 20) is a good case showcasing multiple motifs:

- *Macule*: both sub-rectangular (sector C), with a clear geometric intent, and random in shape and distribution (sector B).
- Double-base rectangles: a stereotypical double-base rectangle, done just in contour, can be observed at the right limit of sector B.
- Groups of dots: alignments of dots are present just above a rectangle done in contour and which has been filled by a geometric *macula* (sector C).
- Oval shapes: two oval shapes can be seen: one incomplete, surrounding a group of dots, and another one which is part of a 'mushroom' (sector C).
- 'Mushroom': a complete mushroom, composed of an oval shape, groups of dots, and a rectangle filled with a rectangular *macula* (sector C).

I would like to point out three details regarding the two sectors of R. 10[94]. First of all, the compositional difference between the two sectors. Sector B appears to have a more haphazard composition, with very little geometry involved. The *macule* are rather randomly dispersed and show little rectangularity, whereas Sector C shows more planning and the shapes are well defined. Secondly, although there is one 'mushroom', there are two other incomplete ones (sector C, Fig. 23 b). One seems to be missing its rectangle, while the other is missing its oval shape. The question is whether this incompletion of the figures was intentional (in which case the two incomplete figures should not be regarded as possible 'mushrooms') or if the authors simply did not return to complete the figures. Thirdly, the difficulty in identifying the rectangles of the 'mushrooms' as simple rectangles or double-base rectangles. It seems they are a combination of two styles, the double-base rectangle just contoured (as seen in sector B) and the fully pecked rectangle with a fully pecked underline (as on R. 12 Coren di Redondo, Fig. 24). Or, perhaps, there are two separate moments in which the figures were completed. The rectangular *macula* which seems to fill the rectangle of the first incomplete 'mushroom' (Fig. 20) seems to be aligned with the other sub-rectangular *macule* to its left. Could the contour of the double-base rectangle and the group of dots have been added later? At the same time, the complete 'mushroom' does not seem to align with any other figures. This would show a clear intent in filling the rectangle but leaving a small margin between the contour and the *macula* filling it, thus giving the impression of a double-base rectangle. For example, the 'mushroom' seen on R. 24 (Fig. 23 a) has *maccheroni* instead of the simple dots, and the base

[94] RONDINI & MARRETTA 2019, pp. 22-27.

is composed of a fully pecked rectangle which is underlined in the ‘classic’ style, as seen on the already mentioned Coren di Redondo R. 12.

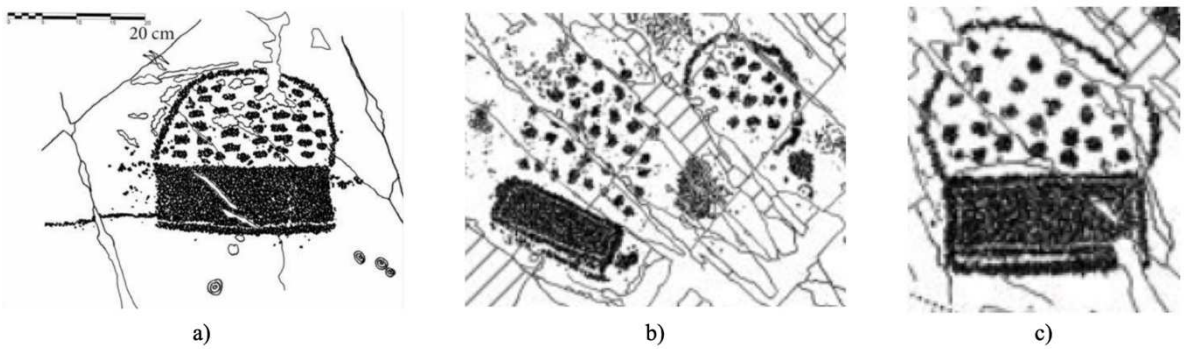


Figure 23. Comparison between the different Dos dell' Arca 'mushrooms': a) R. 24; b) Incomplete 'mushrooms' from R. 10 C; c) R. 10 C.

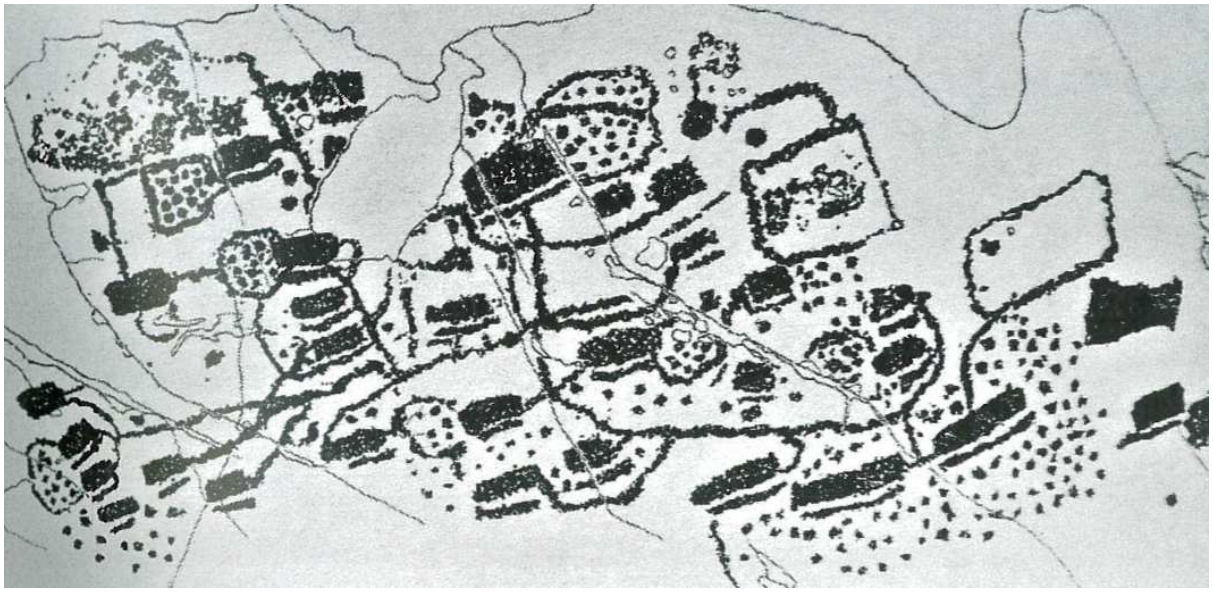


Figure 24. Coren di Redondo 12; Source: SANSONI 2022.

II. 3: Chronology and comparisons

The *macule* are unanimously regarded as the oldest figures incised following the Epi-Palaeolithic phase. This is due to a number of superimpositions in which the *macule* find themselves below very well datable Copper Age compositions and later “topographic” motifs, like the double-base rectangle. The best example is the boulder Borno 1 (face B), on which *macule* and other “topographic” representations are covered by Remedello daggers pertaining to the IIIA1 phase. On the boulder Bagnolo 2 a double rectangle is overlapped by a solar disc, Interestingly, the “topographic” composition of Borno 1 was incised before the boulder was

Figure 25. Boulder Borno 1, face B; a) full tracing, up-right position; b) full tracing, original pre-Copper Age position; c) tracing with just the "topographic" figures left (source: FOSSATI 2002).

up-righted (traces of the ropes used for this purpose were observed during its tracing[95]) during the Copper Age and incised with the Remedello daggers. Therefore, both sets of figures have to be older than 2900 B.C. But the *macule* should be even older than that, considering there are cases in which double-base rectangles overlap *macule*, as in Dos dell'Arca R. 10 (sector B). This can also be seen at the site of Vite, at which there is a first engraving phase consisting just of *macule*, on top which are later added double-base rectangles and alignments of dots[96] (VIT 6 and VIT 29[97]). Another indicator for the chronology of the *macule* comes from the Copper Age sanctuary of Ossimo-Pat[98]. Here, a series of blocks engraved with sub-rectangular *macule* were reused for the construction of cenotaph mounds. Mound A, which contained two such blocks (PAT 8 and PAT 9), was partly overlapped by Mound B, for which the following dating is given: 4472 ± 45 BP, cal. 2σ 3380 (95,4%) 3010 a.C. (LTL15630A)[99]. Moreover, beneath Mound A, a first level of frequentation consisting of a post pit and other pits with carbonized wood was dated (GX 31248) before the middle of the IVth millennium B.C., between 3700 – 3510. Furthermore, still in the northern part of the sanctuary, 6 votive enclosures have been identified which show an internal organization and varied types of offerings. The objects were offered in the central part and were 'hidden' under accumulations of rocks or single rocks,

[95] FOSSATI 2002.
[96] ARCÀ 1999a; ARCÀ 2016.
[97] Can be seen in ARCÀ 2007.
[98] POGGIANI KELLER 2009; POGGIANI KELLER & RONDINI 2024.
[99] POGGIANI KELLER & RONDINI 2024.

some of which contained ‘topographic’ representations and which were placed upside down, thus concealing the engravings.

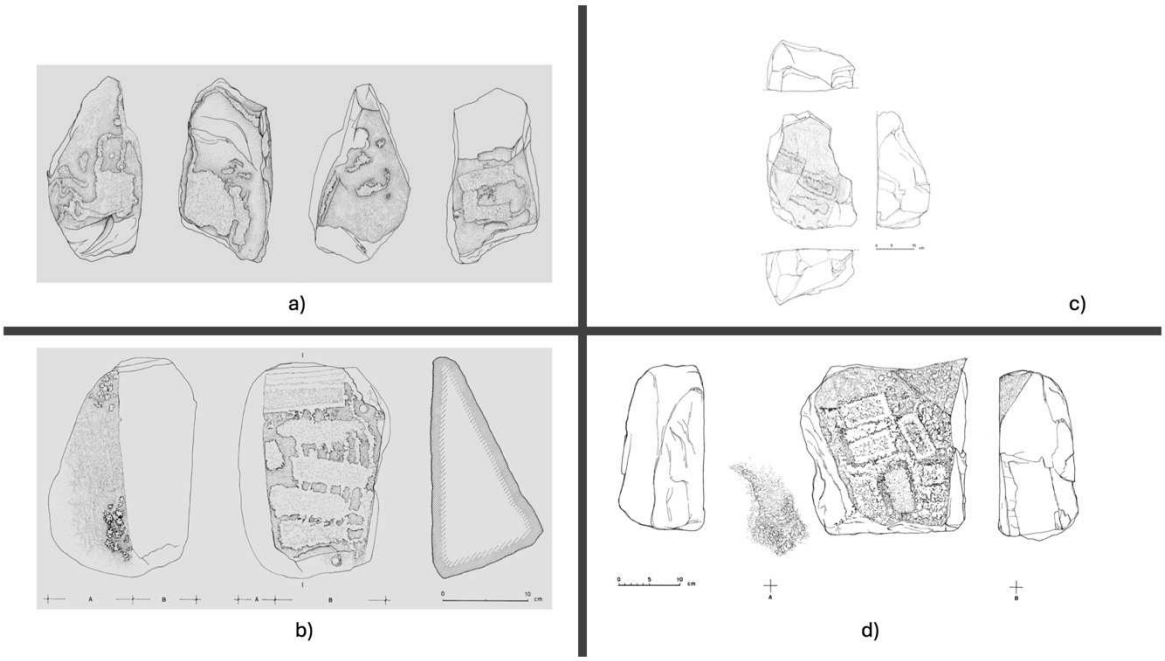


Figure 26. Engraved blocks from the sanctuary of Ossimo-Pat; a) PAT 08; b) PAT 09; c) PAT 29; d) PAT 28; Tracings by: Remo Rachini; Tracings kindly provided by Prof. P. Rondini.

Figure 27. Photograph of the Ossimo-Pat Copper Age sanctuary taken during excavation; Source: RONDINI 2018.

A Neolithic dating is also supported by several cases from Monte Bego. “The Rock of the Three Hundreds” (at Fontanalba, area XIX) presents a composition made of “topographic” representations and ploughing scenes which, judging by the superimpositions, overlap on six[100] occasions the “topographic” ones, proving their antiquity[101]. In a different area, the “Marvels Valley”, a grid from the rock of the “False Prophet” (ZIV GII R11A) is covered by three Copper Age daggers and a horned figure[102]. Interestingly, the two areas, Fontanalba and “Marvels Valley” have two distinct repertories of “topographic” representations. Fontanalba is very rich in “common module” engravings while in the “Marvels Valley” they are almost completely absent, being replaced by simple and complex grids.

Figure 28. "The Rock of the 300" (ZIXI. GIV R21A). Source: DE LUMLEY & ECHASSOUX 2009.

Figure 29. Grids superimposed by Copper Age daggers from the "False Prophet" rock (ZIV. GII R11A); Source: DE LUMLEY & ECHASSOUX 2009.

[100] The number is lowered to just four in ARCÀ 2016.
[101] ARCÀ 1999a.
[102] ARCÀ 2016.

All things considered, and following Anati's bipartite IInd style, Arcà proposes a first IIA style (4200? - 3700 B.C.) which would include only the *macule* and the subsequent IIB (3700 – 2900 B.C.) for the geometric compositions. IIB would be further subdivided into IIB1 for the geometric compositions with fully pecked areas and IIB2 for those pecked just in contour[103].

Valcamonica is not the only Alpine valley to offer such a figurative repertoire. The first comparison from outside I would like to bring into the discussion is Crête de Barmes. This is a rock situated east of the village of Saint-Léonard (Valais, Switzerland), already signalled in 1912[104]. In 1974, a team set out to execute a full tracing of the rock and establish a chronology. For this purpose, the degradation and erosion of the engravings were taken into consideration, along with any superimpositions[105]. Some 30 motifs and 15 different subjects were identified on the rock which measures 22 x 5 meters. Among these, fully pecked rectangular engravings were also spotted, very similar to the *macule*. Interestingly, the author places these figures in the IVth period of the Crête des Barmes rock art chronology, the last period which corresponds to the Bronze Age. On the contrary, they assign the *oranti* to the Ist and IInd phases, during the Middle Neolithic. A revision of the figures[106] led to some rectangular engravings being placed during the IInd style. An interesting situation thus appears. The Ist style is placed during the Middle Neolithic, starting from ~4700 B.C. This is due to the presence of a worshipper figure, very similar to the Crête de Barmes one, on menhir number 9 from Chemin des Collines (Sion). This first style is defined only by the figures of *oranti*, for which Corboud follows Anati's dating, although he acknowledges Arcà's[107] revision of the chronology of the *oranti*. The second style corresponds to the start of the settlement of Sur le Grand-Pré, in the immediate vicinity, around 3700 – 3600 B.C. and includes the first "topographic" representations. The settlement is defined by two phases, a pre-4000 B.C. with Chassey influences and a later, Saint-Léonard type Cortaillod for which the radiocarbon date is also available[108]. This image seems to closely reflect the situation in Valcamonica, where *oranti* and "topographics", especially *macule*, are representative of the Neolithic period. Even more striking is the situation seen in sector J/24, where a first-phase worshipper is partly covered by a rectangular *macula*. Another interesting figure is that of J/23, where what appears to be a double-base rectangle is covering

[103] ARCÀ 2016, see pp. 13-14.
[104] REBER 1914.
[105] CORBOUD 1978.
[106] CORBOUD 2003.
[107] ARCÀ 2001.
[108] WINIGER 2009; PIGUET 2011.

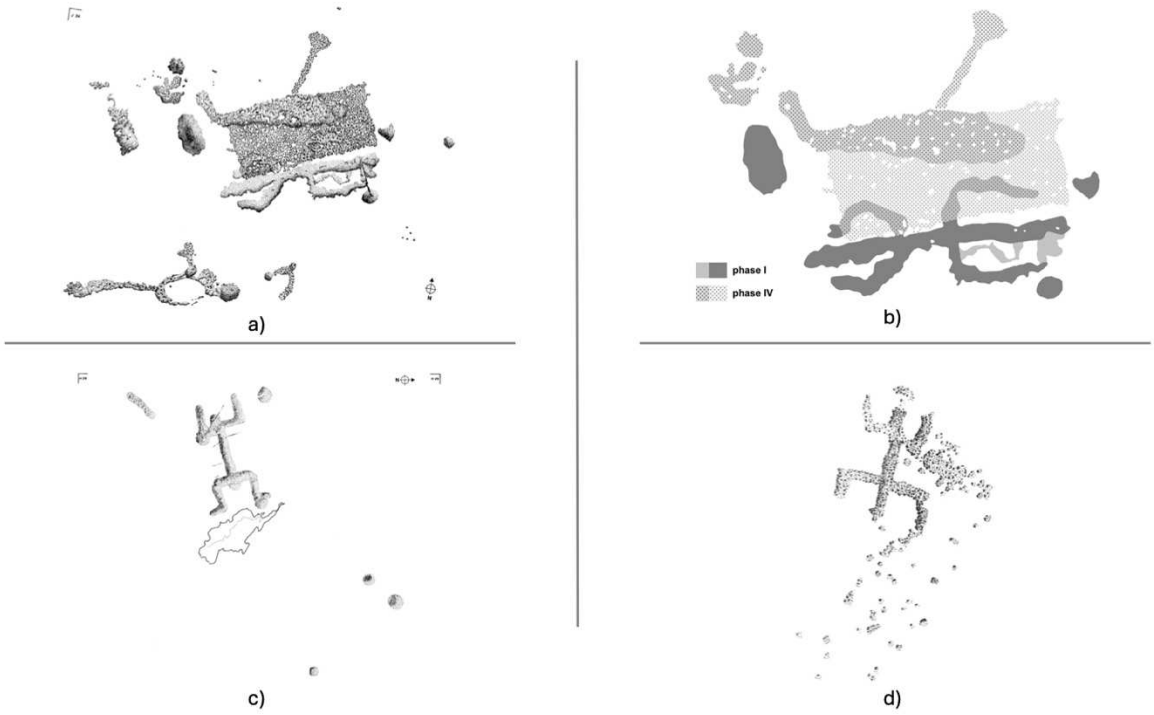


Figure 30. a) and b): Sector J/24 of the Crête de Barmes rock. Phase 1 worshipper covered by a phase 4 macula; c) Sector H/29. The great worshipper, phase 1; d) Schematic worshipper from menhir 9 from Chemin de Collines; Source: CORBOUD 2003.

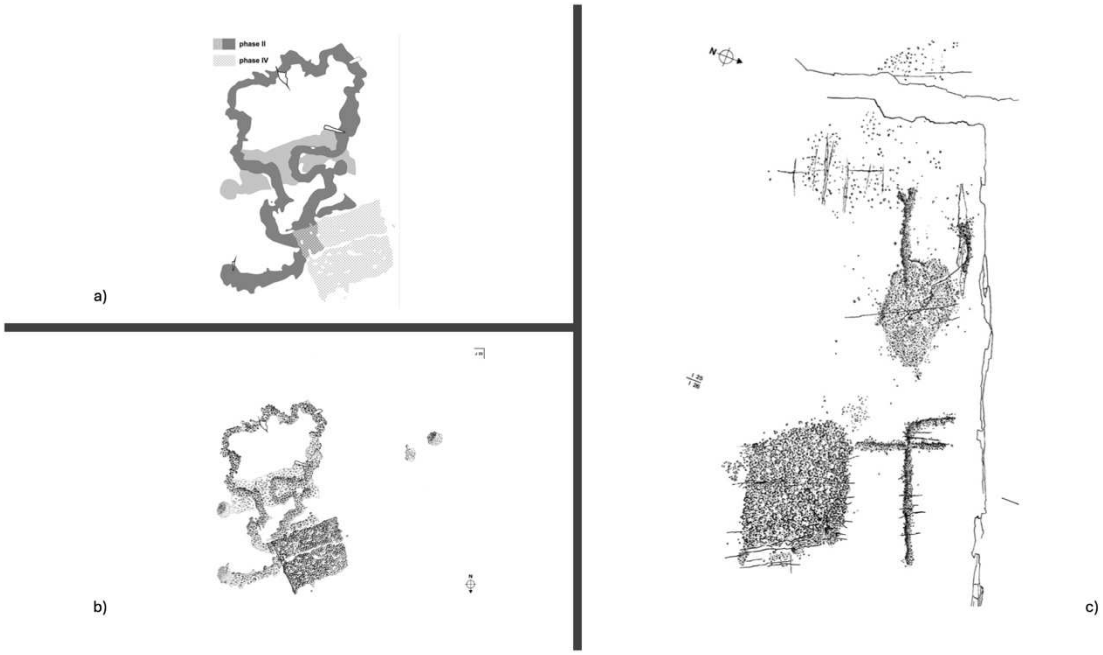


Figure 31. a) and b): Sector J/23 of the Crête de Barmes rock. Phase 2 meander covered by phase 4 macula; c) Sector I/25-26. Two phase 4 sub-rectangular macule; Source: CORBOUD 2003.

a meander. While the author maintains a IVth phase (Bronze Age) dating for the *macula*, I suggest that this superimposition should be the object of further revision. The case of Crête de Barmes is very important not only because of its iconographic repertoire but also from an archaeological standpoint. As we have seen, Valcamonica is well-connected with the

transalpine territories of Switzerland, as attested by the case of *Castel Grande* and the other mentioned sites which contain transalpine products. Significant is also the presence of Rössen ceramics in the area of Saint-Léonard[109], a type of material culture attested in Valcamonica as well. All the evidence points towards a rather synchronous and unitary phenomenon. The two areas not only share aspects of the same material culture and rock art iconography, but the chronology also seems to point towards a strong link and synchronicity.

Returning to the Western Alps, we shift our attention to the incised wall of the Chenal (AO) rock shelter, CHN003. Containing some 300 figures, the wall was predominantly incised during the Neolithic period, more precisely around the middle of the Vth millennium[110]. 182 figures (60,66%) can be attributed to the Neolithic, defined as style III, and further subdivided into IIIA (Ancient Neolithic, 5700 – 5000 B.C.), IIIB (Middle Neolithic, 5000 – 4200 B.C.), IIIC (Late Neolithic, 4200 – 3700 B.C.) and IIID (Final Neolithic, 3700 – 3500 B.C.). Out of these, 133 (44,33%) can be placed during IIIB, 19 during IIIC (6,33%), and 30 during IIID (10,00%)[111]. The majority of the figures are defined as masks, mostly of bovines and deer, and show a remarkable similarity with the Iberian rock art phenomenon. Excluding the non-significant figures (figures which can't be placed in any category, amounting to around 60%), 29 figures have been identified as geometric figures[112]. 10 can surely be identified as *macule*[113], 7 as grids/lattices, and 3 as contoured rectangles. What is significant is the association of the

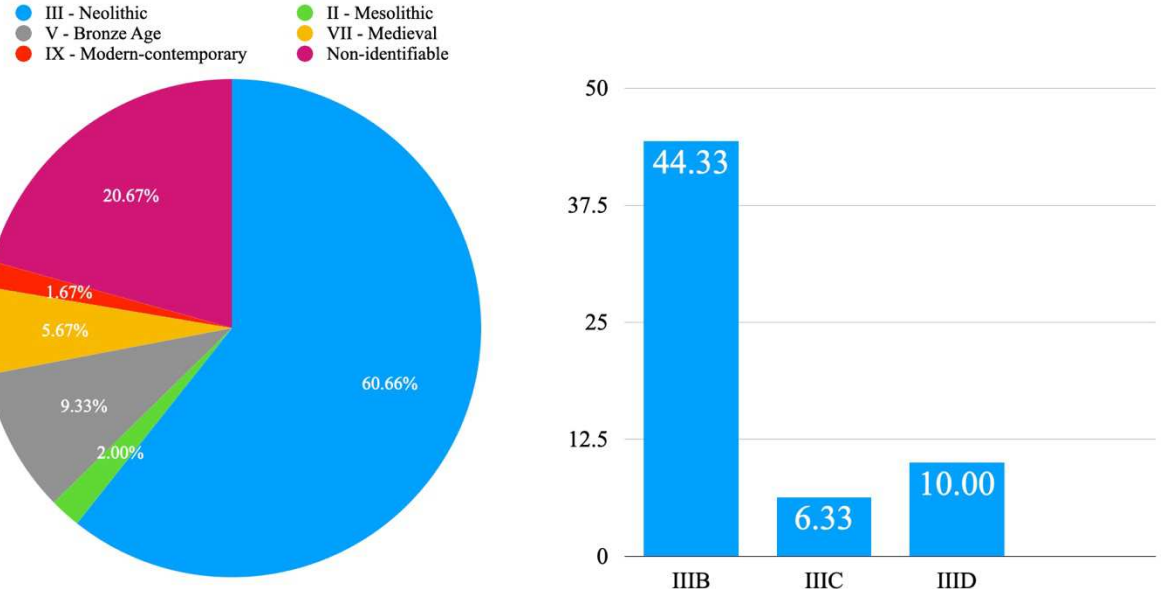


Figure 32. Charts showing the percentual distribution of figures during various periods.

[109] GALLAY & GALLAY 1966.
[110] ARCÀ *et alii* 2015.
[111] ARCÀ *et alii* 2014.
[112] ARCÀ *et alii* 2015.
[113] CHN003 – B105, C32, C33, C35, C45, C51, E12, E63, E68, E69.

"topographic" figures with those of masks, especially when we consider the similarity with the Iberian ones. In Iberia, specifically in the area of Alicante, also occur what are considered to be representations of the Mother Goddess, a female worshipper sometimes adorned with what seems to be a type of headwear[114]. This is seen as a religious context that could be linked to shamanism as well. The dating of these images is during the Cardial (VIth millennium B.C.) period, a cultural phenomenon which reached Liguria around 5400 B.C. and lasted until around 5100/5000 B.C., being the second phase of Neolithization of Northern Italy[115]. This does not seem improbable as most of the Chenal engravings are dated from the start of the Vth

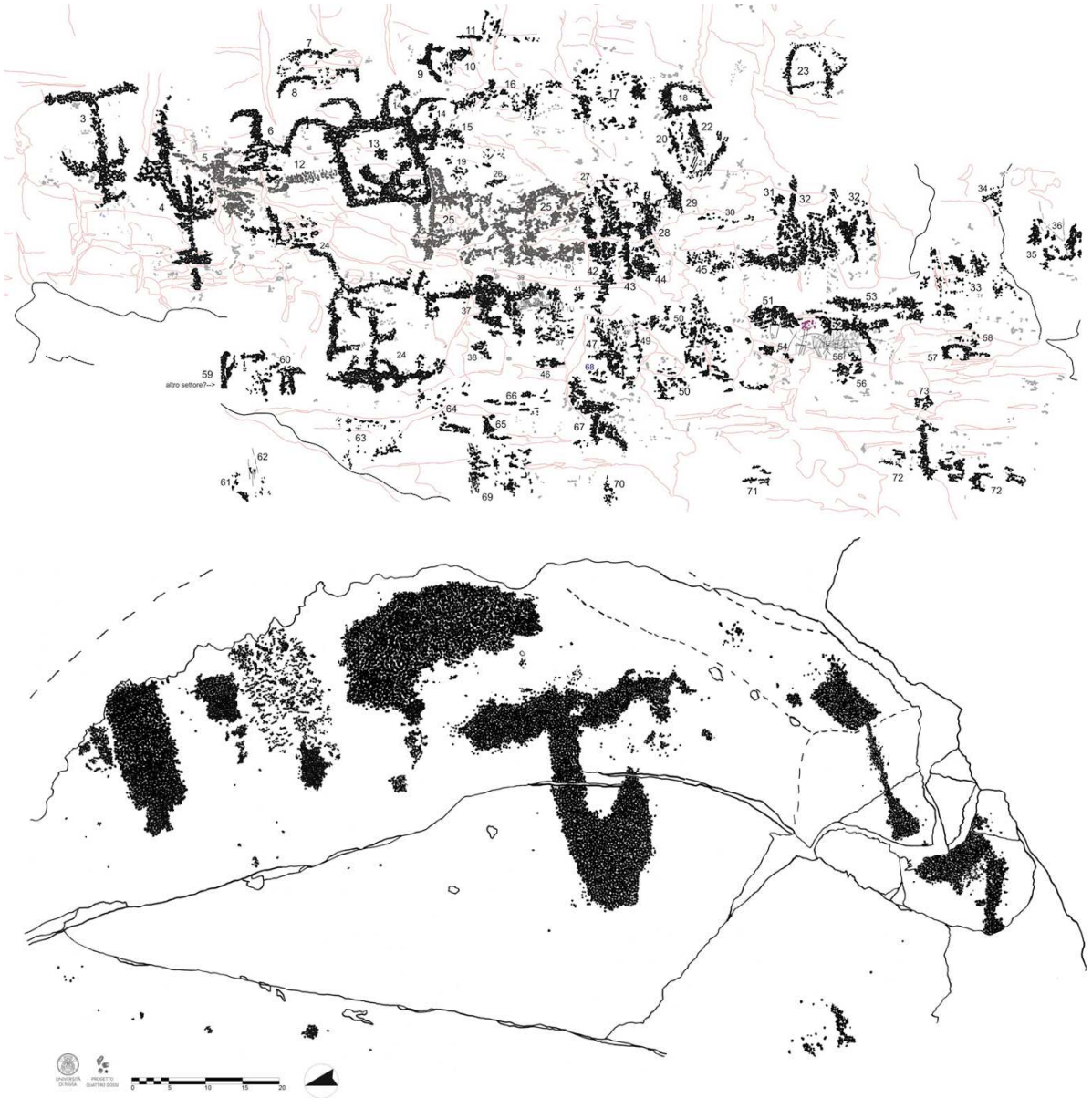


Figure 33. Top: Sectors C and D of the Chenal engraved wall (Source: ARCÀ et alii 2015); Bottom: Dos dell'Arca R. 19. Tracing by Maneesh.

[114] ROCHE CÁRCEL 2020.
[115] BARFIELD *et alii.* 2003.

millennium B.C. and its location would explain a slight delay in relation to the penetration of Cardial elements in Liguria. Of particular interest, in my opinion, is the figure CHN003 – C3 (Fig. 34 right). It is placed by the authors[116] in the IIIB period style and the schematic T-shaped mask figures category. It is 31 cm high and 23 cm wide, positioned on the same horizontal line as the mask C13 and in relation with C4. The figure depicted in C3 (Fig. 34 right) shows a strong resemblance with a newly discovered figure from Dos dell'Arca R. 19, in Valcamonica (Fig. 34 centre). It appears to be an incomplete C3, missing its left 'moustache' and measuring around 30 cm in height and 35 in width. Perhaps forcing the comparisons, the figure on R. 19, together with the 'brain' shaped *macula* above it, could resemble the disparate figures CHN003

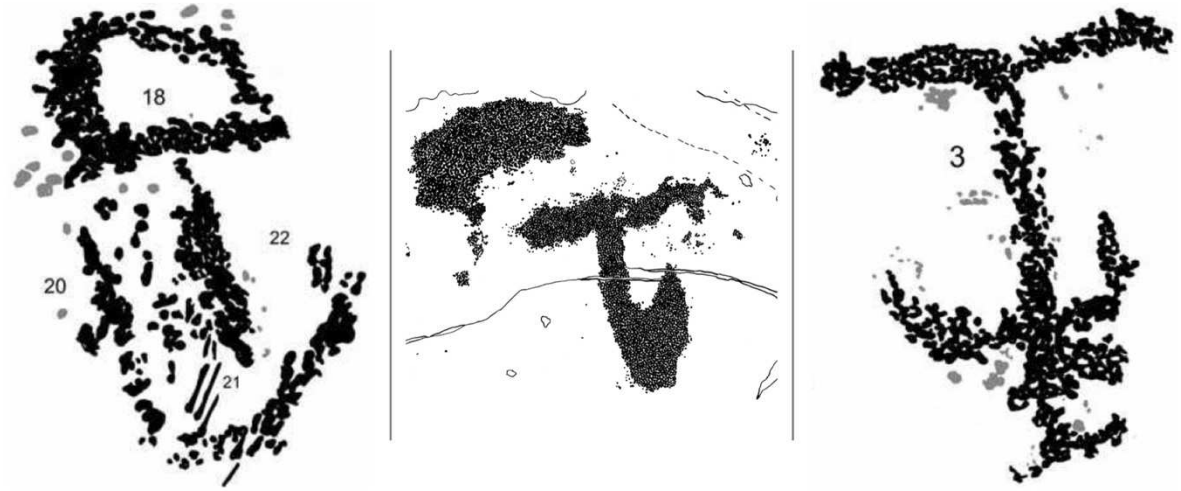


Figure 34. Comparison between two figures from Chenal (Source: ARCÀ et alii 2015) and the T-shaped figure from Dos dell'Arca.

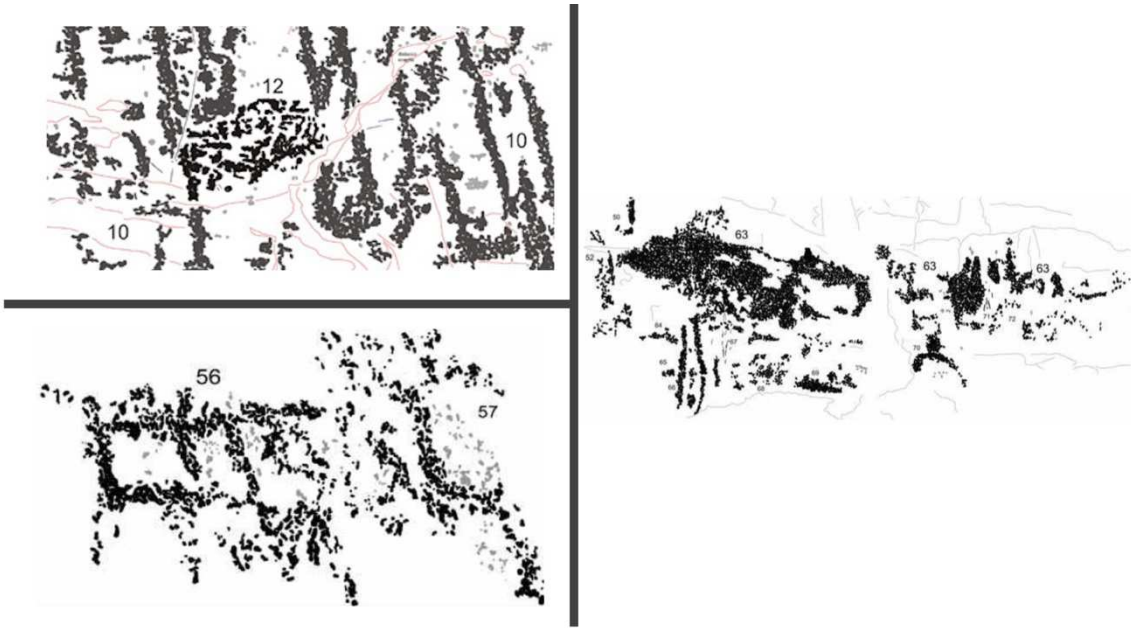


Figure 35. Selection of macule and "topographics" from Chenal: C12, B56, E63. Source: ARCÀ et alii 2015.

[116] ARCÀ *et alii* 2015.

– C18, 20, and 22 taken as one (Fig. 34 left). Interestingly, this figure on R. 19 is associated with both rectangular *macule* and irregular ones. Such an association of figures would also further reinforce a dating during the Vth millennium of the *macule* and show a link between the *macule* and the religious sphere.

II. 4: Painted rock shelters

At this point, it would be worthwhile mentioning that the engravings are not the only artistic manifestation of the different Neolithic cultures of the Western and Northern Alps. Indeed, there are several painted walls, mostly part of rock shelters. These paintings, coming from 15 sites, are part of a more general trend observable mostly in the Western Alps, in both Italy (provinces of Turin and Aosta) and France, and show general similarities with Iberian art[117]. Seven of them are of particular interest due to the presence of "topographic" representations. Three of these examples come from France, the first from the painted rock shelter of *Eissartènes* (Le Val, Provence), situated at an altitude of about 420 m and measuring 23 meters in length and 4 in height[118]. Originally 15 m long, now only 8 m of painted wall remain. Painted mostly in red, a large number of grid-like figures can be seen, paired with *arboriformes*, short straight lines and rows of dots (Fig. 36 c-f). The next site on the list is *Rocher du Château* (Bessans), situated at an altitude of 1750 m. Although the rock surface measures around 80 m, only a couple of figures have been painted, abstract schematic figures and a composition of deer with very prominent antlers. Unfortunately, the only full tracing dates from 1976[119]. More recently, archaeological investigations have brought to light levels dated to the Middle and Final Neolithic. Even more interestingly, remains of the materials used for colouring have been found in a layer attributed to the VBQ culture (dated between 4500 and 4000 B.C.)[120]. Still, dating the paintings is difficult. The only dating marker comes from the painted rock shelter of *Les Oullas*, where Remedello type daggers cover some *ramiformes* figures. As such, the painted figures should at least be dated before the second half the IIIrd millennium. More recently, a new tracing project of the *Rocher du Château* has started, bringing to light more and more figures, some of which can be compared to grids and enclosures[121] (Fig. 36 a-b). This is a very exciting prospect, considering the presence of grids

[117] FOSSATI, ARCÀ 2012.
[118] HAMEAU 1989.
[119] NEHL 1976.
[120] THIRAULT 2008.
[121] DEFRASNE 2015; DEFRASNE & CHALMIN 2015.

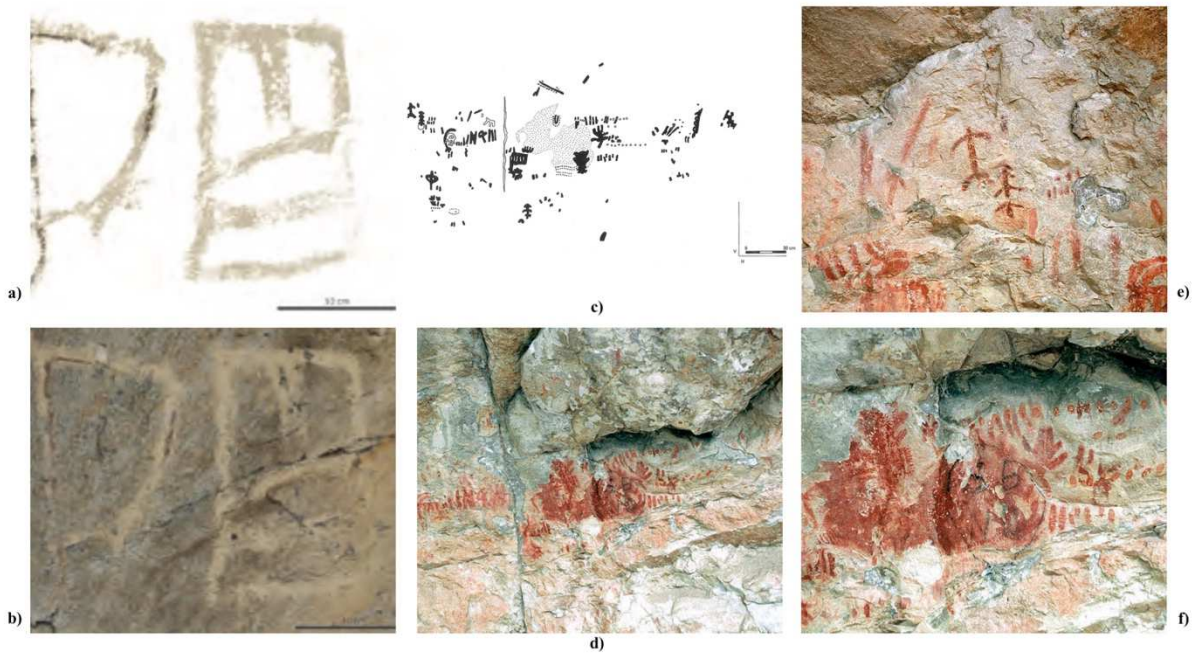


Figure 36. a) and b): Schematic figures from Rocher du Château (Source: DEFRASNE & CHALMIN 2015); c)-f): Tracing and photos from Eissartènes (Tracing from HAMEAU 1989; Photos from https://www.pop.culture.gouv.fr/notice/merimee/PA00081796).

and "topographic" figures in an archaeological context with a certain VBQ presence. But perhaps the most impressive painted rock shelter is *Trou de la Féclaz*, due to both the quality and quantity of the figures. Located at an altitude of 1140 m, it is the second rock art site of the Savoy region. The latest research has brought the number of figures up to 264 and they consist

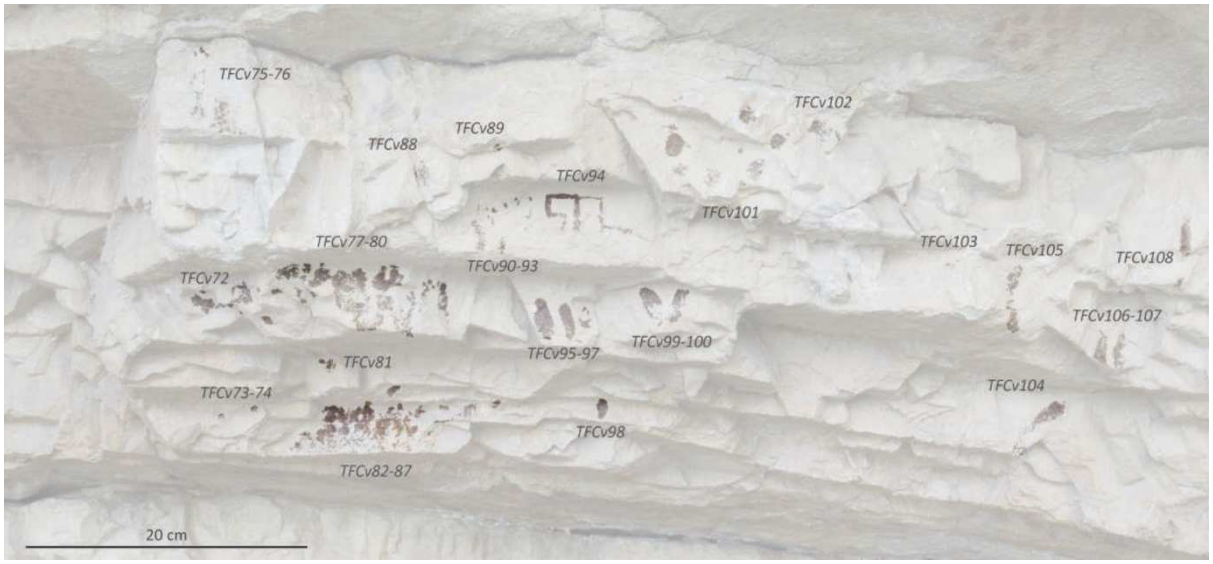
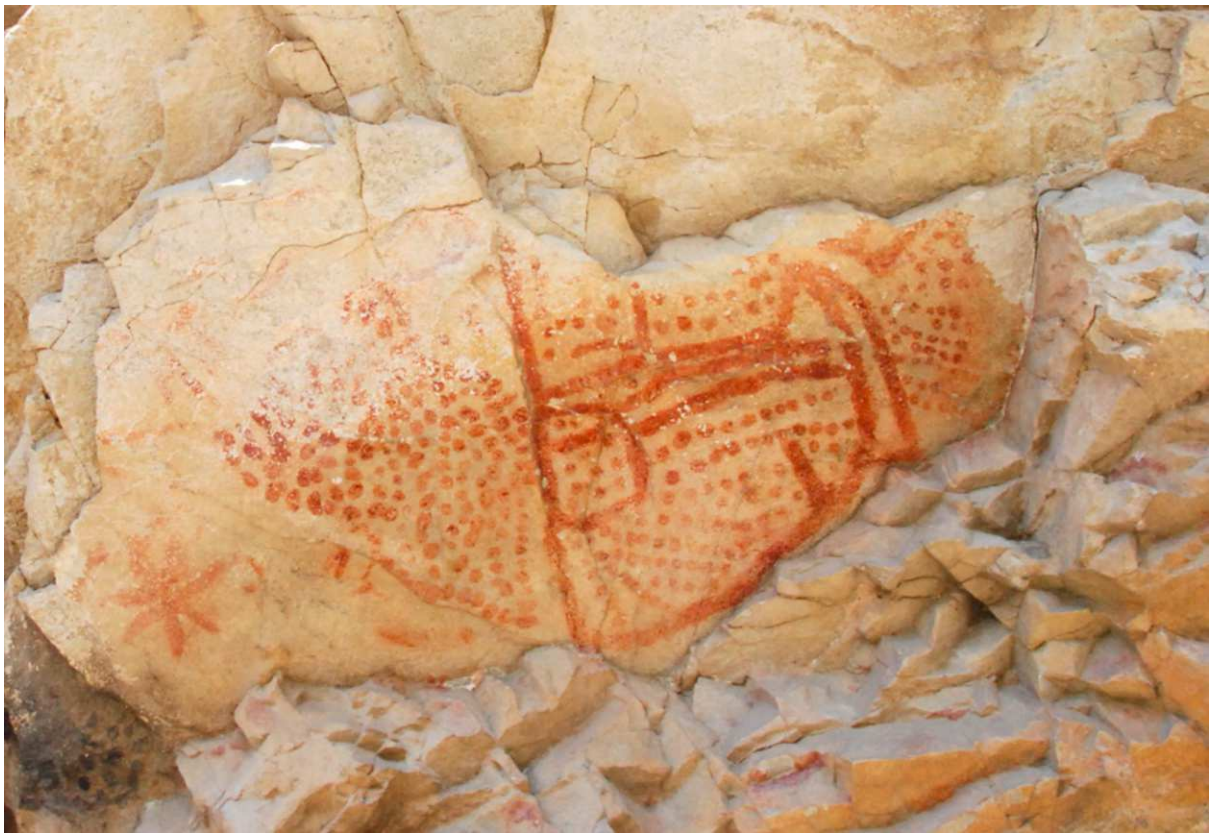


Figure 37. Enhanced pictures from Trou de la Féclaz (Source: DEFRASNE 2015; ROY 2016);

of simple graphic marks, lines, dots, and groups of dots[122] (Fig. 37-38). The most famous and complex composition is found on the ceiling of the rock shelter, composed of a multitude of red dots ("*nuvole di chiazze*") which, in the middle section, are contained within different enclosures. Just as with the previous cases, dating these figures is very tricky. Comparisons



[122] DEFRASNE 2021.

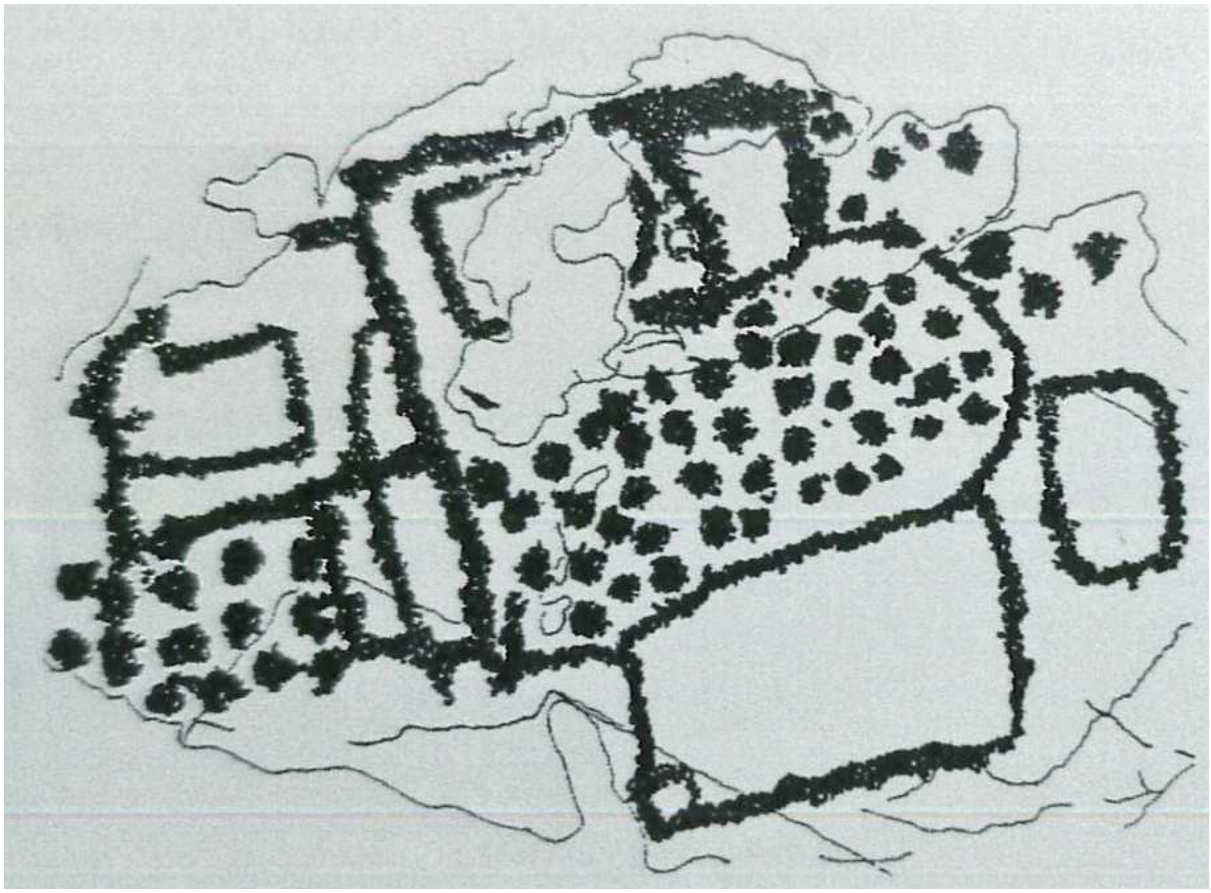


Figure 38. Comparison between the main composition from Trou de la Féclaz (top) and R. 20 from Deria (Valcamonica, bottom). Source: ROY 2016; SANSONI 2022.

with the engravings from Valcamonica have been made but the similarities with the schematic Iberian art remain the strongest[123] and lead towards a Final Neolithic dating.

Crossing the border back into Italy, there are four cases of paintings which can be attributed to the Neolithic: *Rocio 'd la Fantino* (Ponte Raut, Val Germanasca), *Rocca di Cavour*, *Balma 'd Mondon* (Vall Pelice), and *Balma dei Cervi* (Crodo).

Discovered in the 1930s, the rock paintings of the rock shelter of Ponte Raut were the first example of such prehistoric art in the Italian Alps. The rock shelter itself is rather small in size, just 3,50 m by 1,30 m and 2 m in height[124]. Done in a yellowish-whiteish paint, the main figure of the assemblage is a big and intricate grid figure, approximately 110 x 60 cm in size. To its left, three "*scutiformi*" can be observed, while on the right side, there are large painted surfaces without any shape or clear link with the other figures. They appear, thus, similar to the engraved *macule*, only this time depicted by means of painting. The only comparisons, up to date, can be drawn with the "topographic" figures of Monte Bego.

[123] REY 2016.
[124] SEGLIE & RICCHIARDI 1988.

Rocca di Cavour represents a unique feature in the landscape as it is a rocky outcrop which surges 150 m above the level of the plain, in the western part of the province of Torino. Just as in the case of Rocher du Château, some surveys have produced archaeological material which corresponds to a VBQ presence on the site[125]. The painting is composed of 125 aligned dots, a schematic female anthropomorphic figure. Covering it is a smaller anthropomorphic figure, perhaps in connection with another one, to the right of the big schematic one. Once again, in the absence of some clear markers for dating, the similarities with the Iberian rock art are evoked and, as such, the *Rocca di Cavour* paintings find themselves as part of this larger, semi-coastal, phenomenon which seems to have its origins in the Iberian Peninsula.

The paintings of *Balma 'd Mondon* (Val Pellice) represent, perhaps, the most "topographic" figures so far (Fig. 39). The figures occur on a rock surface approximately 1 meter long and with a height of 50 cm[126]. Painted in red, the three main elements are grills around which there are two, much smaller, lines of anthropomorphic figures holding hands. Between the two lines of human figures, three *ramiformes* are present and, further to the right, two upside-down 'hook' figures. As far as the grills are concerned, the best comparison comes from Valcamonica, specifically from the site of Vite, where such grills are found in great numbers and cover the chronologically older *macule*. Regarding the anthropomorphic figures, the similarities are drawn between the lines of human figures seen on Camunian Copper Age

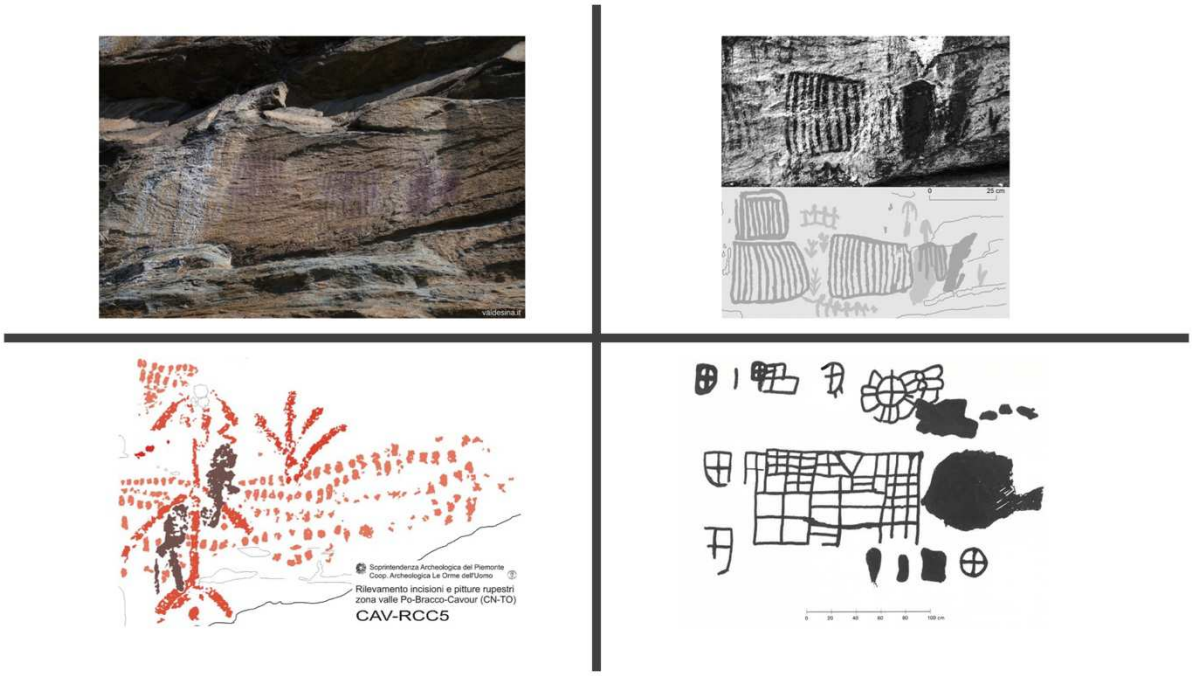


Figure 39. Top: Balma 'd Mondon paintings. Tracing by Le Orme dell'Uomo; Bottom left: Rocca di Cavour. Tracing by Le Orme dell'Uomo; Bottom right: Ponte Raut paintings. Tracing by Prof. S. Pons.

[125] CINQUETTI 1988; GAMBARI 1992.
[126] ARCÀ 1999b.

monuments, although the bodies are represented differently, and the anthropomorphic figures of the Iberian schematic art. The *ramiformes* are also found at *Eissartènes* and *Rocca di Cavour*.

Particularly interesting and complex is the more recently discovered rock shelter of *Balma dei Cervi* (Crodo, Valle Antigorio), situated at an altitude just shy of 800 m. The painted area, split into sectors A to F, is 6,5 meters long and 1,5 meters high and contains 100 painted figures[127] (Fig. 40). Although archaeological investigations were carried out at the base of the rock shelter, the data retrieved could not provide a clearer image. The little archaeological material found, of which one piece of VBQ pottery, can only show a human frequentation during the Middle Neolithic. The main elements for dating the paintings come, once again, from comparisons: mainly with the Iberian schematic art (to which we include the rock shelters from France presented above) and, for the *oranti*, with the one incised on a bone from Riparo Gaban (see further below). Both comparisons point towards a Middle Neolithic chronology, while the idol shapes can be placed during the Final Neolithic. Unfortunately, no clear hypothesis for interpretation has been advanced so far. There are, however, some ideas which can be expressed, especially for sectors D and E (Fig. 40, 41, 44). The main composition of sector D (Fig. 41) is made of two *oranti*, headless and male, on top of which two lines of dots are "*specularmente*"[128] arranged in a V-shape and closed up top by a single row of dots. The idea is rather evident, in my opinion, and it is a stereotypical representation of the female pubic triangle, as seen since the Palaeolithic and during the Neolithic and Copper Age. The incised bone from Riparo Gaban, which presents a schematic sign representing the pubic triangle, and the female statuette from Cucurru s'Arriu (Bonu Ighinu culture, Vth millennium B.C., Sardegna, Fig. 41 d) are a couple of examples from the Italian space. The choice of painting such a figure may not seem haphazard at all if we then turn our attention to sector E. It counts five clear anthropomorphic figures, what appears to be a painted *macula*, and numerous alignments and rows of dots. The most striking figure is that of a headless female figure which has a series of dots departing from between the legs. To her left is a male (?) figure whose sex is encircled by dots of the same darker shade as those of the female. The two series of encircling dots seem to be united by another line of four dots. Five rows of dots can be seen pointing towards the bottom left of the sector where an anthropomorphic figure is 'trapped' in a circle that is linked to another smaller one. It is possible the figure has no determined sex, as both a

[127] ARCÀ *et alii* 2022.
[128] SANSONI 2022, p. 27.

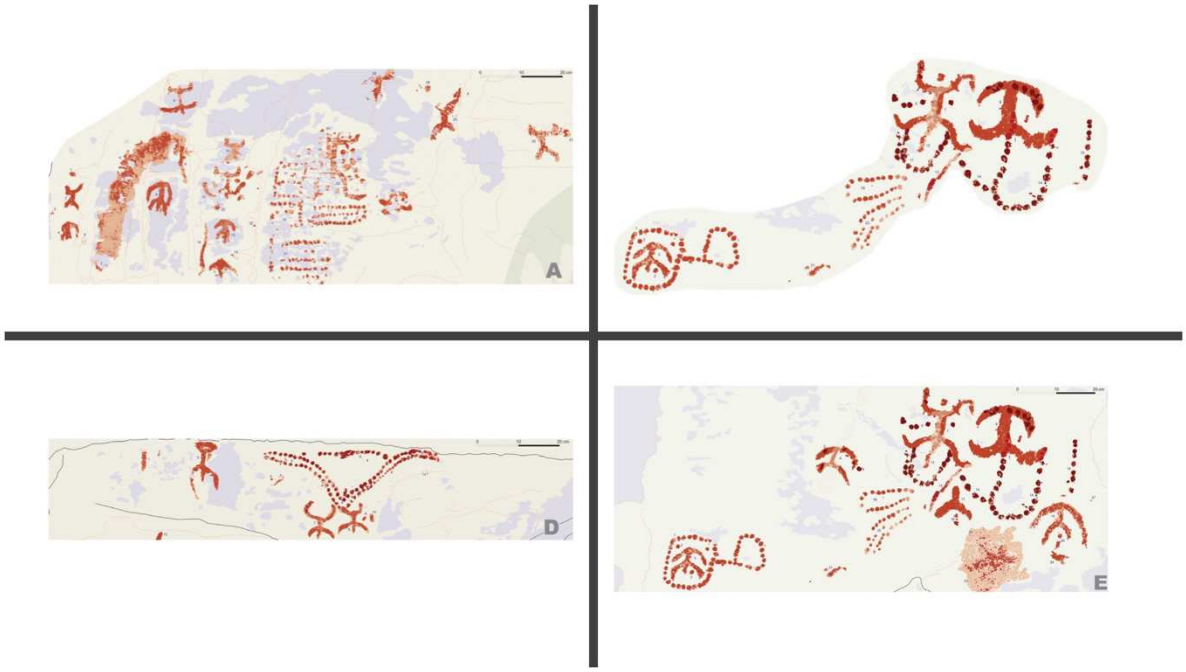


Figure 40. Balma dei Cervi rock paintings; Source: ARCÀ et alii 2022.

stick and dot are present between the legs. Although further away, sector D is found following the same bottom-left direction. Despite being very highly speculative, one can go in the interpretative direction of a pregnancy/birthing scene, with the two parents next to each other, partially encircled, while the five rows of dots point to the expected result, the smaller anthropomorphic figure without a determined sex, perhaps a representation of the child in the

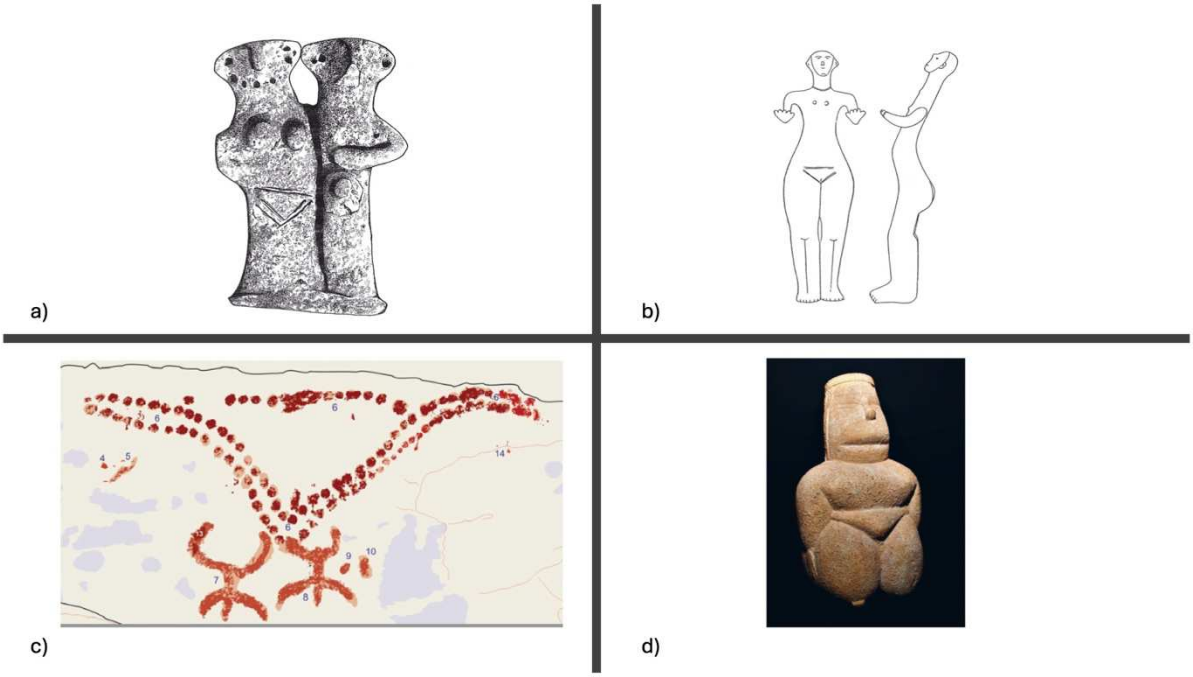


Figure 41. Various Neolithic representations of the pubic triangle. a) "The Gumelnița lovers", Gumelnița culture, Romania, Vth millennium B.C. (Source: GUILAINE 2022); b) Clay statuette from Hluboké Mašuvki (Czechia), Lengyel culture, Vth millennium B.C. (Source: GUILAINE 2022); c) Sector D of Balma dei Cervi; d) Statuette from Cuccuru s'Arriu, Sardegna, Vth millennium B.C. (Source: GUILAINE 2022).

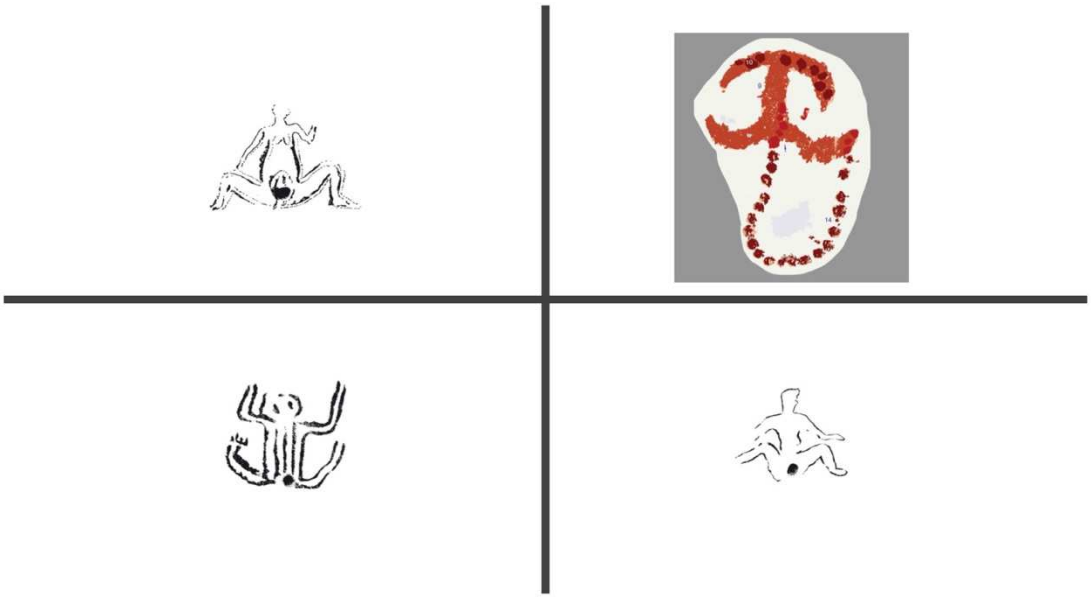


Figure 42. "Femmes ouvertes"; Source: GUILAINE 2022.

womb. The way the hypothetical pregnant woman is represented seems to fall in Guilaine's[129] category of "Femmes ouvertes" ("Open women"), with the best comparisons seen in Libya at the site of Wâdi-l-Khêl (Fig. 42). But perhaps the most interesting comparison, at least at the level of compositional elements and ideas, is to be found in Valcamonica, on R. 7 in Caneva-Berch (Fig. 43). The site is next to Cimbergo and contains 9, fully documented[130], rocks. The main composition of R. 7 is a line of 7 *oranti* and 4 "shovels" neatly arranged horizontally, through the middle of which a vertical line of dots cuts and stops, seemingly in line with an eighth worshipper found at the bottom of the rock. At the top of the arrangement of dots, there is a "module of four"[131]. Another one is seen towards the bottom left of the rock. Two of the worshippers have big hands and are headless with no gender shown. The eighth worshipper found at the very bottom of the rock represents, so far, the only figure of this sort: a headless worshipper with a *micromacula* neatly positioned between the legs (Fig. 45). There seems to be an indication of gender, as a small round dot can be observed just below the body and between the legs. Sansoni[132] sees in this a very organic bringing together of the two subjects of the Neolithic engraving period of Valcamonica: the *oranti* and the *macule*. He proposes a scene in which the *macula* is being birthed and the worshipper would represent The Great Mother and a "cosmic birth"[133]. The presence of a painted *macula* type of figure can also be seen

[129] GUILAINE 2022.
[130] SANSONI *et alii* 2019.
[131] Described as a "module of five" in SANSONI 2022.
[132] 2022.
[133] SANSONI 2022, p. 49.

beneath the ‘pregnant’ anthropomorphic figure of *Balma dei Cervi*. Other *macule* can be seen in sectors A and C, BDC1.A6 impressing with its size.

Figure 43. Caneva-Berch R. 7. Source: SANSONI 2019.

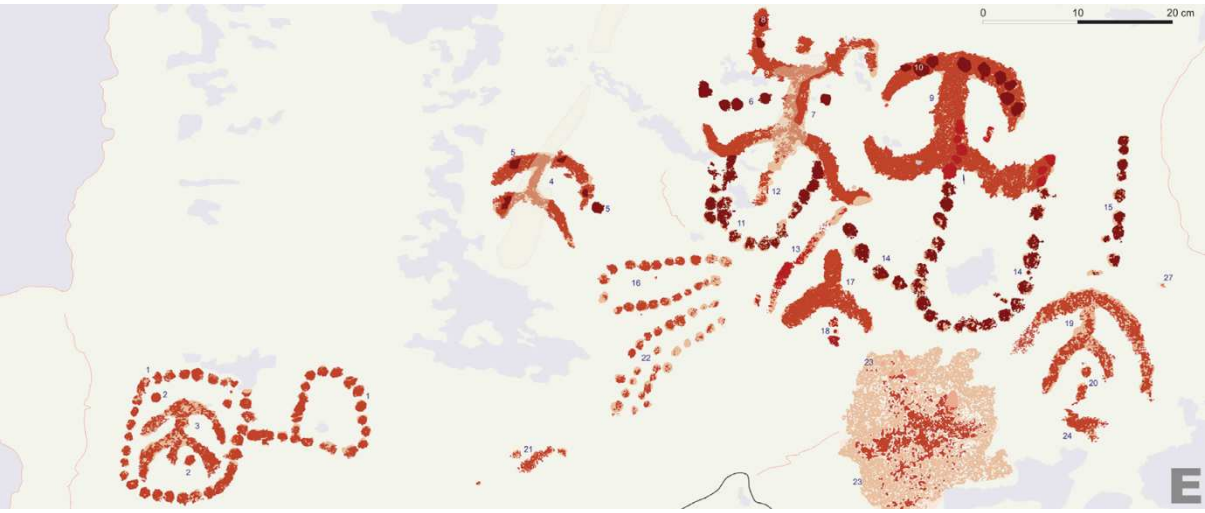


Figure 44. Sector E of Balma dei Cervi. Source: ARCÀ et alii 2022.

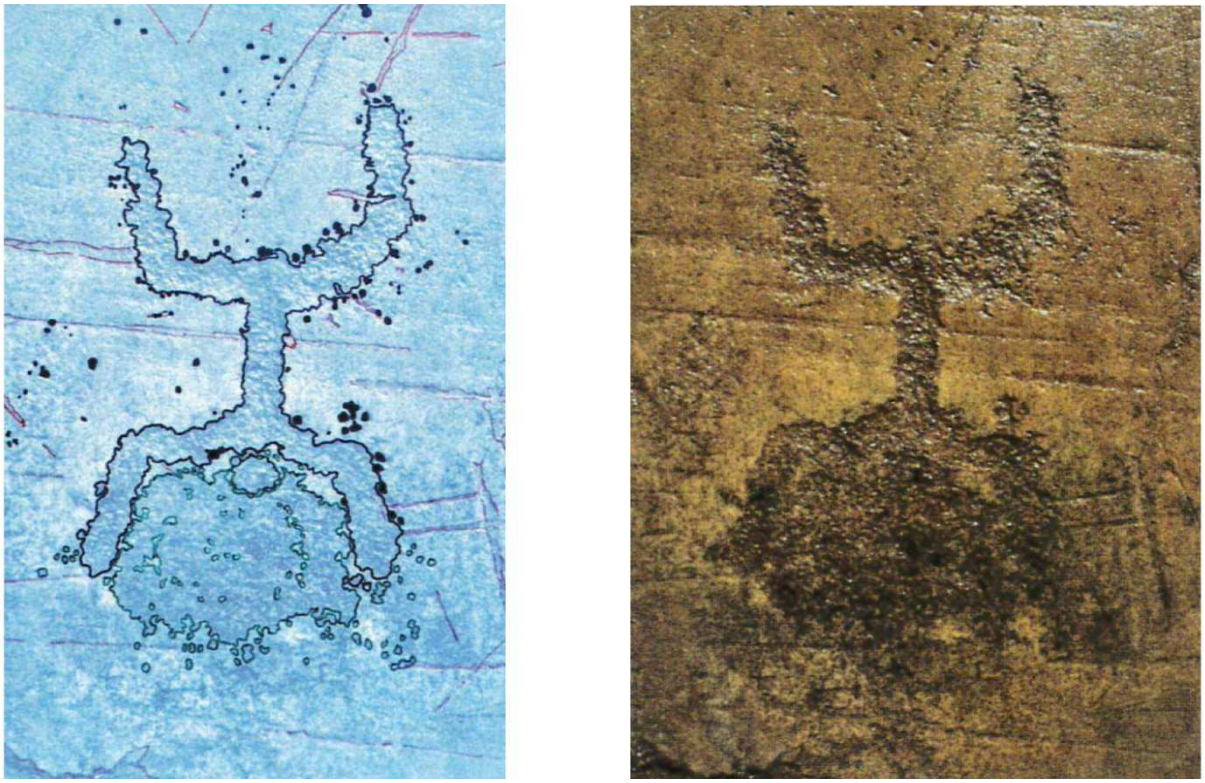


Figure 45. Headless anthropomorphic figure with a micro-macula between its legs, Caneva-Berch R. 7. Source: SANSONI 2022.

The general picture, as can be seen, is a lot more nuanced and difficult to comprehend. The lack of a solid dating for the individual sites and sets of pictures makes any possible interpretations even trickier to be formulated. Unfortunately, the only way is to make comparisons and follow general stylistic trends as they appear or disappear in various regions. However, there seems to be a discernable trend: an eastward diffusion starting from the Iberian space, following southern France and then spreading into the Western Alps, on both the French and Italian sides. Initially just in the form of paintings, the artistic expression soon took the shape of engravings rather synchronously as testified by the Chenal rock shelter, in Valcamonica and Monte Bego. As such, Valcamonica seems to be the easternmost area of this phenomenon which shares some similar figurative elements and symbolism. Regardless, there does seem to be a recurrent element appearing in both engravings and paintings, "topographics" and, more specifically, *macule*. Indeed, all sites have this irregular, rather shapeless figure in their repertoire, whether engraved or painted. This is something, in my opinion, highly significant as it testifies to the symbolic and abstract, rather than descriptive, value of the figure. Especially in the context of rock shelters, it is hard to talk about depictions of the land. The

case of *Balma dei Cervi* is a good example, as the "narrative" of the paintings does not seem to point towards anything to do with any structures, fields, or topographical features. The rock shelters are very tough-to-reach places, symbolically charged, and in any case reserved for very specific groups of people and frequentation purposes. This can be linked to a more general issue, that of neolithization and the issue of the pre-existing Mesolithic population. Displacement, acculturation, integration, total demise, the problem of the Mesolithic populations and what happened to them is still an open question. "What 'characterises' a period is almost always prefigured in the period that precedes it"[134]. If, for a second, we take a step back from any debates regarding dating and the cultural-historical aspects, and look at the Palaeolithic, Mesolithic, and Neolithic art which is concerned in this study we can indeed find common figurative and compositional aspects. Should we assume a material, cultural, and ideological exchange between the Neolithic newcomers and Mesolithic people? Perhaps[135]. I tend to plead for a degree of continuity rather than an abrupt change in the figurative expression and repertoire. The rock shelters may be a good indication, both artistically and topographically. Generically speaking, it is a type of tradition which can be readily appropriated to a Paleo-Mesolithic horizon and also demonstrates a very good knowledge of the land, valleys, paths, and general locations found at high altitudes. At any rate, this is a more ample discussion which should be treated separately but it is something to keep in mind.

II. 5: Riparo Dalmeri – a sanctuary from the Epigravettian

Towards this end, I would like to offer a brief overview of the Epigravettian site of Riparo Dalmeri (Grigno, Trentino). Carbon dates have dated the three phases of the rock shelter settlement during the Recent Epigravettian (13.410-13.210, 13.300-13.120 and 13.300-12.940 ^{14}C cal BP 2σ)[136]. The site is composed of a dwelling (a circular hut), two pits, and the deposition of 267 rocks painted with red ochre (U.S. 65 and 15a)[137]. The most important aspect of the site is the choice of figures to be deposited and their spatial distribution within the rock shelter itself. They are distributed on a surface of about 30 m^2, with a width bigger than 4 m (Fig. 47). They seem to follow a pattern which starts from the hut and gradually expands in number and density towards the two pits. The general pattern seems to have a fan shape which creates an outmost limit, a boundary between the ritual area covered by the rock shelter and

[134] CAUVIN 2000, p. 14.
[135] See BIAGI 1997 and BIAGI & STARNINI 2021 for a view on the Mesolithic of Valcamonica.
[136] DALMERI *et alii* 2009.
[137] DALMERI *et alii* 2011.

the exterior[138]. 12 categories of figures have been identified which include anthropomorphic depictions, animals, and signs. 75% of all the painted stones were placed upside down in order for the painted side to not be visible. The unrealistic figures (signs) category consists of "simple or complex ovals, bands, angular and quadrangular geometrical motifs, associations of triangles, line compositions, star forms and curved or linear traces, in relief or associated with narrow linear incisions"[139]. Interestingly, the maximum concentration of these figures is found in sectors F-G which define the inner and outer limit of the 'sacred area'. For example, pieces RD 012+058, RD 156, and RD 182 (Fig. 46) have well-defined rectangular surfaces painted on them, just like the rectangular and sub-rectangular *macule* seen in Valcamonica and, curiously, the ones engraved on the aforementioned blocks from the sanctuary of Ossimo-Pat. Just as in the case of Riparo Dalmeri (a place with religious value), the blocks with rectangular engravings at Ossimo-Pat (a sanctuary) which were used to cover the votive enclosures were placed faced down. This intriguing similarity between the two cases may not be just casual, instead, it points to a continuity at the level of symbolism and practice between two successive chronological phases and, importantly, from within the same geographical area.

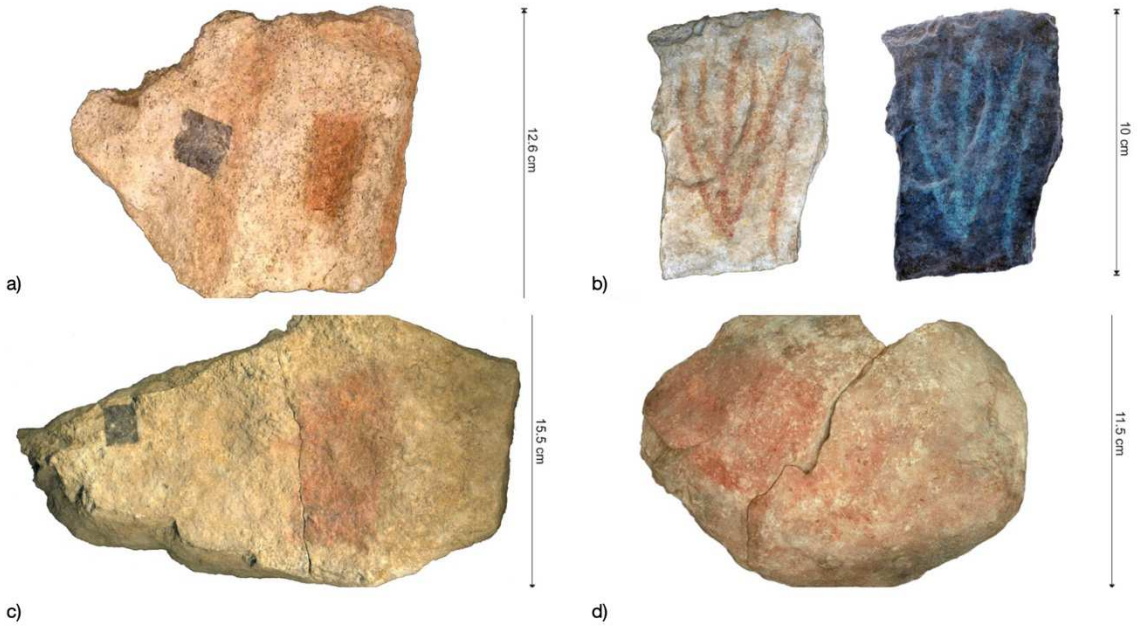


Figure 46. a) RD 182; b) RD 007; c) RD 012+058; d) RD 156. Source: DALMERI et alii 2011.

[138] DALMERI *et alii* 2009.
[139] *Ibid*., p. 102.

Figure 47. Reconstruction of the Dalmeri rock shelter. Source: DALMERI et alii 2009.

Chapter III

The "topographic" point of view. Problems and discussion

Having established some typological criteria and cleared the chronology, it is now time to pass on to interpreting these figures, the broad majority being seen as representations of fields, villages, enclosures, huts, orchards, and barns, veritable maps. As it stands right now, this is the only accepted interpretation, and it has not been openly challenged yet. We turn our focus to the work of A. Arcà, perhaps the most prominent scholar of these figures alongside A. Fossati. In his various studies[140], he has reached the conclusion that each different typology represents a different feature of the anthropic environment. As such, he has established 4 "subjects"[141] (Fig. 48), all pertaining to the Neolithic advent of agriculture and settlements. The first subject is rectangular, square, or round "*geometrical areas*", fully pecked or done just in contour. This subject is "the measure of the earth" and some of these figures can be interpreted as houses (especially the double-base rectangles), or as agricultural fields more probably, as this is also a very common view in mountainous regions. Going even further, the sub-geometric *macule* of IIA (4200 – 3700? B.C.) would represent fields worked by hoe, whereas the rectangular geometric modules of IIB (3700 – 2900 B.C.) would be ploughed fields[142]. The second subject, perhaps representing the interpretative key, is the alignment of spots/dots ("*pallini*"), or fields of them. Too regular and too aligned to be animals, they could be fruit trees (orchards), or, more probably, hay bales. The third subject, the most problematic, is represented by the 'grills'. The smaller ones resemble and could represent certain alpine wooden structures used for drying cereals. But the most interesting comparisons, according to Arcà[143], are with the celled mudbrick structures used for drying and storing cereal from Mergarh (Indus Valley) or Çayönü Tepesi, both sites of the aceramic Neolithic. The fourth and final subject is the "*bandoliera*". Again with a topographic value, it represents megalithic structures, specifically Copper Age perimetral walls with towers. The so-called 'mushroom', or 'common module' would be the representation of the threshing floor, surrounded by bales (subject number two), waiting for maturation, and protected by walls. The Valcamonica 'common module' is compared to a very similar figure found in Mugur-Sargol (Republic of Tuva, Russia).

[140] ARCÀ 1999a, ARCÀ 2010, ARCÀ 2016.
[141] ARCÀ 1999a, p. 220.
[142] ARCÀ 2010.
[143] ARCÀ 1999a, p. 222.

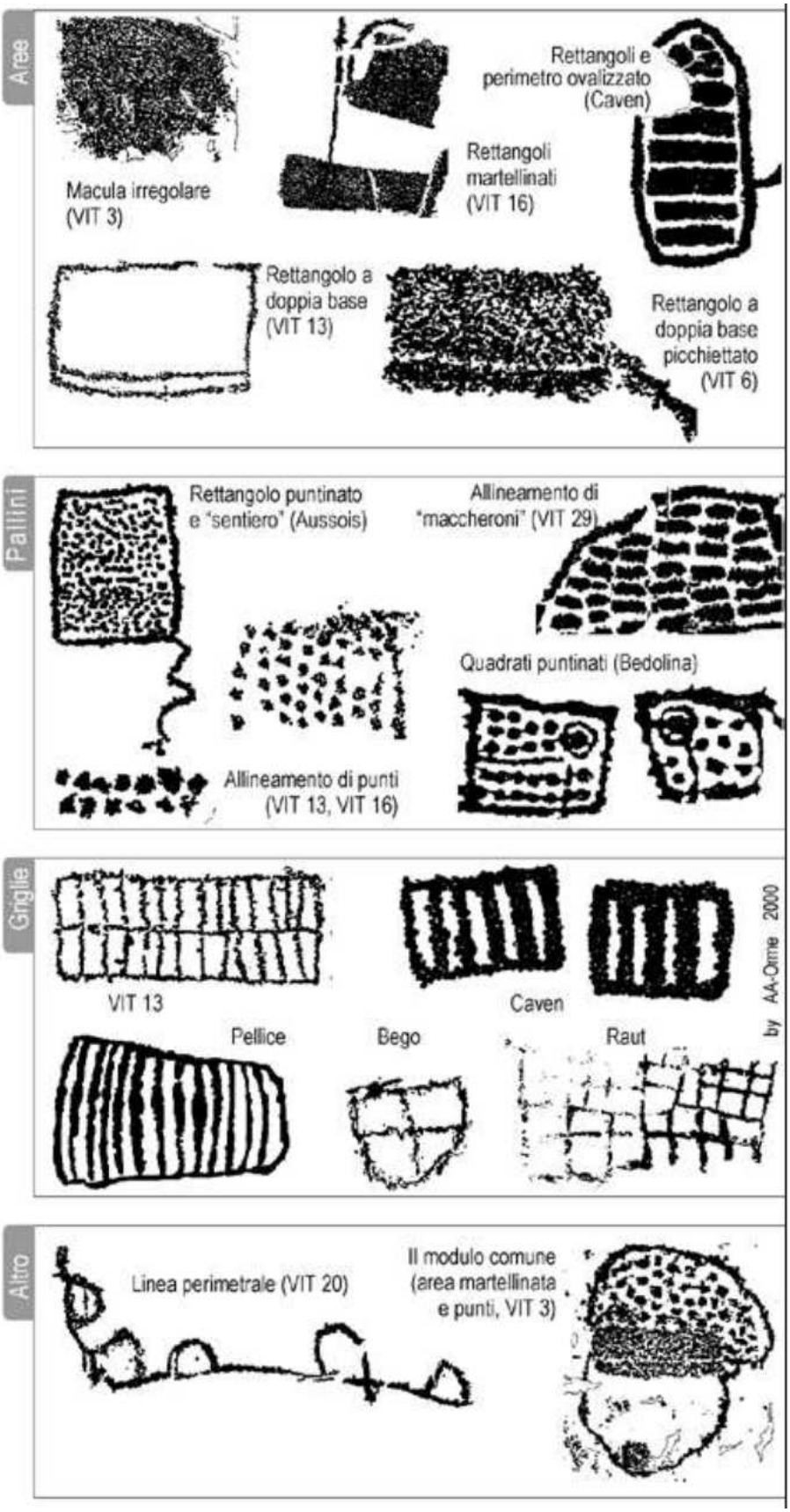


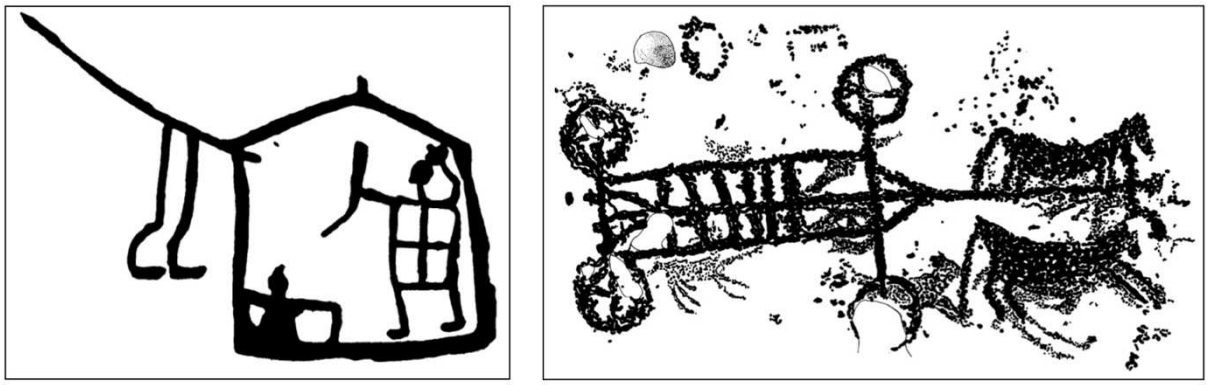
Figure 48. The four "subjects" elaborated by A. Arcà; Source: ARCÀ 1999.

These representations of the humanised environment may or may not be real, descriptive, or symbolic. For example, in the case of the rocks which don't have a clear overview of the valley, the territory represented is metaphoric, as is the case of Monte Bego where the agricultural territories represented are surely the ones from the lower valleys[144]. This may explain the lack of any real, natural, topographic elements found in the areas of the engraved rocks, such as rivers, streams, mountains, hills, or any other identifiable features of the land. The interpretation goes as far as hypothesising the types of communities which might have inhabited, practiced agriculture, and engraved the rocks of Valcamonica. For example, in the case of the Neolithic/Copper Age "topographics", the close and compact geometric modules, in some cases contained by a perimetral line, represent an agricultural village, which would indicate a communitarian type of property, which would, in turn, correspond to a tribal society according to Service's model[145] used in the article[146]. The interpretation is further developed by trying to better understand the social hierarchy and land ownership by applying Testart's model[147] of classifying human societies. As such, according to what the rock art is showing us, the society of Valcamonica would fall into the second level, which corresponds to the presence of richness but the absence of land ownership. The world presented by the Neolithic/Copper Age "topographics" would fall into the plutocratic-ostentatious category of the second level societies. The ostentatious character would be implied by the figures on the statue-stelae and menhirs, and it is a type of richness linked to acquiring prestige rather than material goods.

These are the main arguments of this interpretation which, at a first glance, seems to make sense. It bases its rationale around a Neolithic "state of mind" in which agriculture and fertility are the main actors. What really compels one to agree, at first, are the very visual comparisons with photographs of modern and contemporary agricultural practices and fields, and representations of threshing, for example. But, other than this, it is a theory which still remains highly speculative and there are some problems. Because the truth is, it takes a great deal of arguments to make the case that the engravings are fields and agricultural villages just because they resemble actual, modern fields and structures seen today from above.

[144] ARCÀ 2016.
[145] SERVICE 1962.
[146] ARCÀ 2010.
[147] TESTART 2005. His model uses 'richness' (by means of presence, absence, or type) as the structural base upon which societies may be classified. There are three levels ("worlds"): the first lacks any levels of richness, the second possesses it while adapting the stocks and resources of produce in relation to social parental obligations; and the third one collects income from land.

The first question regards the depictions themselves or, rather, the curious way in which the authors chose to execute these "maps". If we are indeed facing a zenithal top-down viewpoint, it would be a world first in what regards the chronology. Next, what would be the actual, point-blank value of these maps if they cannot actually be used? The lack of any real features of the land, such as mountains, peaks, rivers, streams and so on, immovable landmarks in the territory after which one could actually identify the fields, villages, etc. makes one question the "map" quality of the engravings. Another interesting aspect is also the lack of any accompanying lecture clues, such as depictions of tools, and people labouring and carrying out various activities. The birds-eye point of view would not impede the addition of, for example, a couple of schematic anthropomorphic figures with tools or the schematic depiction of buildings. This would have been very possible from a technical point of view, as the Iron Age images show. The number of buildings, huts, or granaries, is compelling, as so is the rendering. The example of the "*Casa del fabbro*" ("The house of the blacksmith", Fig. 49 a), found on Pià d'Ort R. 1 is a remarkable engraving in which the blacksmith is shown in his house working the iron. Also, in the scenes of horse-drawn carts (for example Naquane R. 23, Fig. 49 b), the cart is drawn from a top-down perspective, whereas the horses are shown in profile.



a) b)

Figure 49. a) "Casa del fabbro" (ANATI 1961); b) Horse-drawn cart from Naquane R. 23 (ANATI 2009).

The lack of any human subjects is also peculiar from a Neolithic mindset point of view. The Neolithic is, first and foremost, an anthropocentric system of values and activities, especially if we are to follow Cauvin. It is man depicting man and slowly, but surely, subduing and bending nature to his will. Of course, this may be debated if we would accept the schematic *oranti* figures as Neolithic but there are no such figures associated with any, for example, 'mushrooms'. If the 'mushrooms' do indeed represent the threshing floor, related buildings and the bales protected by enclosing walls, then this would be one of the beating hearts of these societies, a focal point in their survival. If this is the case, then the very schematic

representation does not do it justice and, again, completely leaves out the main protagonist: man. The lack of any vegetal symbols is also curios, especially for such agrarian communities who made the fields their main art subject. There is yet another problem of representation, that of the highly irregular, randomly pecked surfaces. These *macule* have no shape, or clear intent, and are not always associated with any other elements (Fig. 50). Their general shape and organization can hardly make one identify them as fields. The site of Dos dell'Arca has numerous such figures, just as the area of Paspardo does (for example rocks VIT 3 and VIT 64), or Foppe di Nadro (for example FdN R. 21, 23, 35). Of particular interest are the very small, irregularly pecked areas which seem to care more for the topography of the rock, as they are made in the natural grooves and depressions of the rock (Fig. 51).

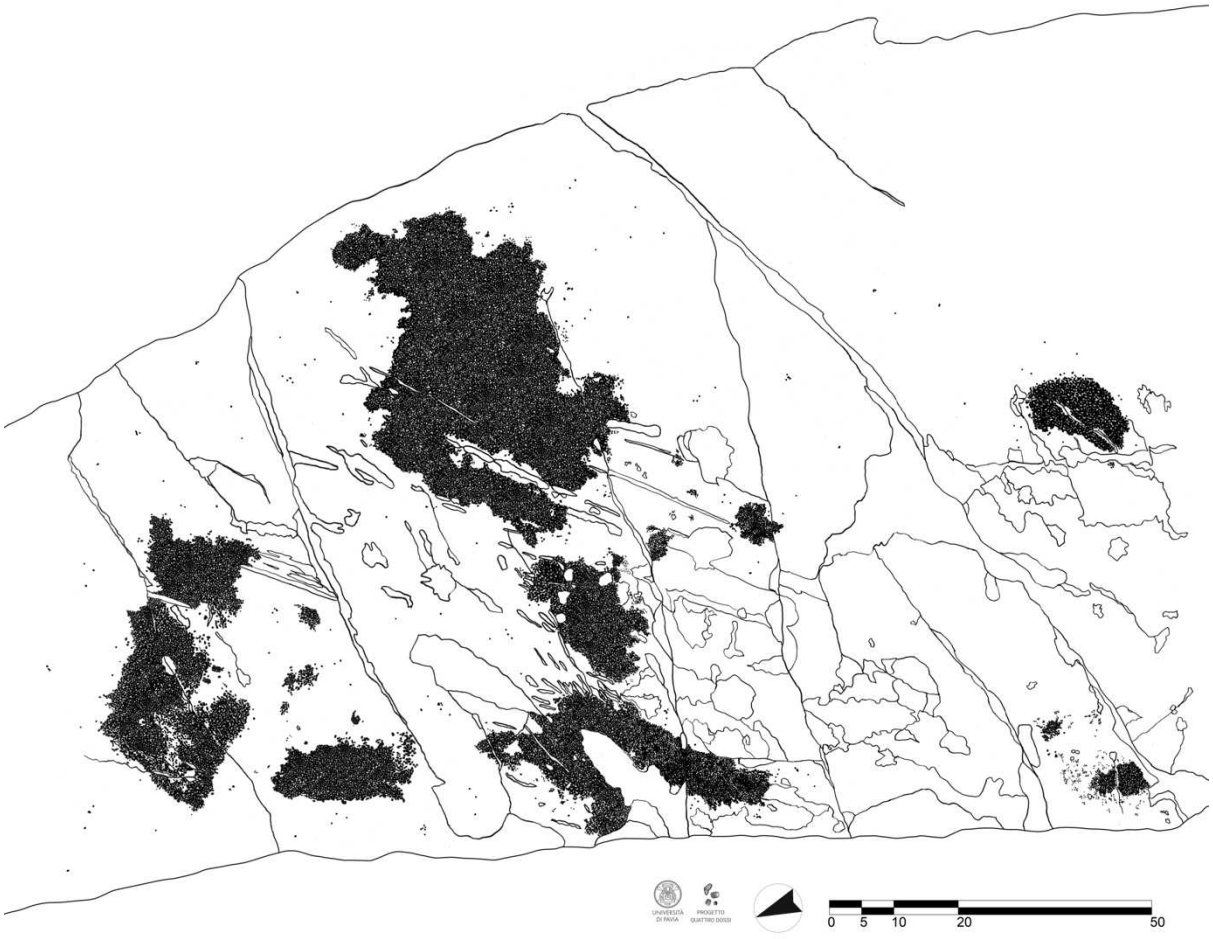


Figure 50. DDA R. 26b. Tracing by Toma Bucuroiu.

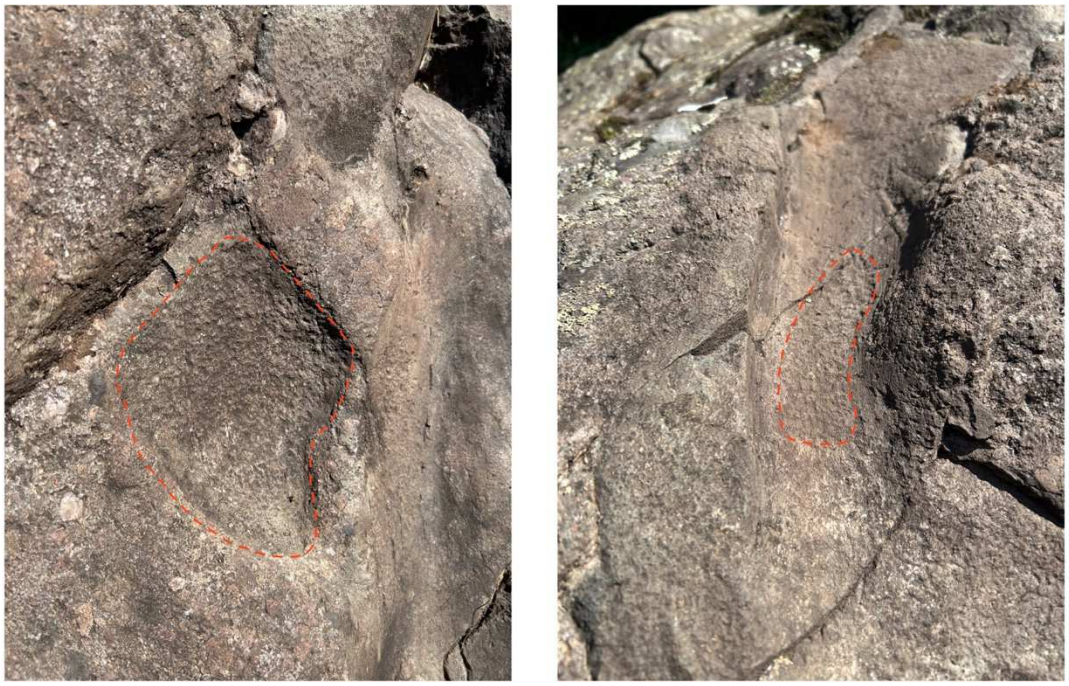


Figure 51. Macule engraved in the natural depressions of the rock, DDA R. 22; Photos by Toma Bucuroiu.

Another peculiarity is site specialization in certain figures, if it can be called as such. Although there are common elements between them, the sites of Vite, Dos dell'Arca, and Foppe di Nadro seem to all have characteristic elements which can also be seen when it comes to the *macule*. Vite is best known for its grills, "*maccheroni*", and contoured rectangles (double-base rectangles, rectangles with a single central dot, and rectangles with an "*occhiello*"), making up the "purest" and most elaborate "topographic" compositions between the three sites. Dos dell'Arca is known for its *macule*, as they are more numerous than other "topographic" elements, and they tend to have a horizontal orientation (those with a more geometric form). What is curious about the site is the presence of large, shapeless, and irregularly pecked surfaces. At Foppe di Nadro, the geometry is better established, and a large number seem to have a vertical orientation. The three sites are close to each other, yet they have their own particularities. The same tract of valley can be seen, more or less, from all three sites. Why would there be no grills or contoured rectangles (in such abundance, in any case) present at the other sites if the rocks depict the same tract of valley? The general panorama becomes even trickier when we return to the archaeological situation and evidence. Read in a "topographic" key, the engravings present us with a highly anthropic environment, with a high density of fields, hamlets, and agricultural "infrastructure". For example, at Foppe di Nadro alone the

number of "topographic" figures reaches 541[148]. The general panorama leads us to a valley full of fields, with an adequate amount of people and settlements to account for that, presumably. However, the situation presented in the chapter dedicated to the archaeological overview during the Neolithic in Valcamonica seems to be rather contradictory. The three rock art sites, Vite, Dos dell'Arca, and Foppe di Nadro are all in the same vicinity: around Capo di Ponte and Paspardo in the middle portion of the valley. As we have seen the only sites for which we can hypothesise a settlement are *Breno Castello*, *Coren Pagà di Rogno*, *Malegno – via Cavour*, *Cividate Camuno*, and *Lovere*, all further down south and on the right orographic side of the valley. Out of the 10 identified sites with a Neolithic presence/frequentation, only *Cemmo-Pian delle Greppe* and Dos dell'Arca are found in the area of the engravings. This lack of density and archaeological structures and features attributed to the Neolithic comes in stark contrast with the density and agglomerations of engravings depicting fields and agricultural structures. It is also very difficult to presume that the settlements further south would establish their agricultural operations so far. It seems these sites have a special, symbolic value which made the inhabitants of the valley visit them for very specific reasons. Another point to be taken into account, poorly discussed, is the effort put into executing the engravings. Even if we could hypothesise some nuclei of people around the engraved areas, reaching the sites alone would be a task in itself. On top of this, the action of engraving itself would occupy a large amount of time. Anyone who completed at least one tracing has quickly realised what an arduous and time-consuming task it is. One simple rectangular *macula* of 20 x 10 cm may take hours to completely fill in, with a marker. A full tracing of a rock with multiple *macule* may take more than a working day to complete. With this in mind, we should consider the amount of time and effort it would take the original author/authors to complete a single *macula* by forcefully pecking the rock with the stone tools. On top of this, the body position one must adopt is often unpleasant and requires constant adjustment and stretching due to limb numbing. For such an act to be completed, one also needs adequate amounts of food and water, especially since some rocks over virtually no shade. Of course, considering the long chronology of the *macule* (4200? – 3700), at least, one could presume a very long and numerically poor engraving cycle, which would presume sporadic visits to the sites and a small number of figures being added with each visit. A problem lies in the purpose of this visit since it requires the trek to be made, the resources (including tools?) to be transported, the rock to be picked, and the engraving itself to

[148] I reached this number by adding up all figures classified as "topographics" in the two catalogues containing the rocks from the site: CITTADINI (ed.) 2017 and MEDICI & GAVALDO (eds.) 2019.

be made. A tedious project, therefore. Or perhaps some five rocks were all carved at the same time by different authors, which just shows how little chronological evidence we can extract. This very simplistic *chaîne opératoire* does tell us one thing: the importance of the figures which surely don't have a descriptive nature, or don't serve as an official act of sanctioning a real topographic situation of the cultivated fields below. The archaeological evidence may also offer a helping hand when it comes to interpreting the grills, 'mushrooms' and the "*bandoliera*" figures, for which A. Arcà uses "exotic" comparisons. Regarding the grills, the comparison[149] is made with celled mudbrick structures from the site of Mergarh (Indus Valley, Balochistan, Pakistan), periods Ib, II, and III. The first phase is a mound occupation which starts around the VIIIth millennium B.C., therefore in the aceramic Neolithic. The last phases are dated to the IIIrd millennium B.C. Later research has better put into perspective the different phases, therefore periods Ia and Ib have been united, as period I designates the initial mound occupation during the aceramic Neolithic. All the excavated buildings have a multi-room plan: two-roomed, four-roomed, six-roomed, and ten-roomed[150]. The buildings which are referenced in Arcà's text are part of the settlement pattern of the IInd (there is one radiocarbon date for IIb: 6000 – 5800 B.C.[151]) period, when the new buildings were built on top of the ruins of the Ist period mound. Platforms and a system of terraces were put in place which housed various quadrangular buildings that were geometrically divided into cells. These compartments were filled with fallen bricks and imprints of cereals, testifying to their role as granaries. The rectangular architecture, associated with a celled plan, is a definitive trait of the PPNB (8600 – 7000 B.C.), especially in the area of the Taurus Mountains[152]. Once again, the argument is mainly visual: the two figures, one an engraved motif on a rock in Valcamonica, the other a plan of a building drawn after the archaeological evidence found in Pakistan, only look similar. It is very difficult to assume the artists of Vite chose to draw, in a top-down fashion, the internal partitions and architecture of structures when these buildings would have been protected by a roof and seen as such from a distance. Another issue is the archaeological evidence which has not provided any traces of such massive structures for storing cereals in Valcamonica. The same can be said of Monte Bego. Regarding the figures of grills, site specialization can be seen once again: the Marvels Valley area seems to be characterized by these figures, while in Fontanalba they are lacking and are replaced by *macule* and *maccheroni* with curved lines[153].

[149] ARCÀ 1999, p. 222.
[150] JARRIGE 2007.
[151] JARRIGE 2007, p. 151.
[152] CAUVIN 2000.
[153] ARCÀ 2016, p. 9.

Regarding Mergarh, of more interest and relevance would be analysing and comparing the use of red ochre for decorating the exterior of the houses. One part of fallen plaster shows red V-shaped motifs and another one has a "complex geometrical pattern of red lines and red and black dots"[154]. The same visual argument is used for the "*bandoliera*" figures as well, seen on four rocks from Vite, VIT 13, 20 (Fig. 52 a), 21 (Fig. 52 b), and 29[155]. The interpretation of this figure is particularly problematic as it is a Copper Age motif found on seven statue-menhirs: Borno 1 (Fig. 52 f), Cornàl 5, Ossimo 3, Valgella 3, Vangione 1 (Fig. 52 e), 2 (Fig. 52 d), and 3. The "topographic" point of view claims these figures are either fortified walls complete with towers, or simple enclosures (Fig. 52). The first question mark is the out-of-context appearance on the rocks, and only in 4 cases. The *bandoliera* is typically a male motif seen on the Copper Age monuments and it carefully follows the shape of the boulder, and it is placed in accordance with the "anthropomorphic" value of the statue-menhir[156]. This "topographic" interpretation has already been critiqued, therefore I shall only list the arguments made by the authors[157]. The first point made concerns the coherence of the figure itself. The towers of the Copper Age structures to which the figure is compared are all pointed towards the exterior, whereas the *occhielli* of the *bandoliera* point inwards. The next point made, which I have raised considering the comparison with the Mergarh structures, regards the completely out of context comparisons invoked: "L'analogie formelle est recherchée dans des contextes distantes des plusieurs milliers de kilomètres quand seuls les vestiges laissés par le collectifs auteurs de ces images sont en mesure d'éclairer leur compréhension"[158]. Moreover, just as in the case of the Mergarh granaries, the Alps offer virtually no archaeological evidence of massive structures such as those compared with or represented by the engravings. Such monumentality would not simply vanish from the archaeological record or disappear from the topographical reality of the valley. In the context of the statue-menhirs, their position on the sides and on two contiguous faces strongly suggests a male ornament worn on the shoulder. The more difficult part is understanding the associations made with this figure, as different objects are engraved within the interior of the *bandoliera*. For example, Vangione 1, 2 (Fig. 52 d-e), and Valgella 3 all have halberds encircled by the *bandoliera*. This particularity of the *bandoliera* is something to be taken into account considering that on the rocks they encircle

[154] JARRIGE 2007, p. 141.
[155] ARCÀ 1999, p. 223.
[156] DEFRASNE & FEDELE 2015.
[157] DEFRASNE & FEDELE 2015.
[158] DEFRASNE & FEDELE 2015, p. 556. "The formal analogy is sought in contexts several thousand miles away when only the images themselves left by the authors are able to clarify their understanding."

rectangles done just in contour or, as on VIT 21 (Fig. 52 b), a double-base rectangle and multiple series of parallel lines.

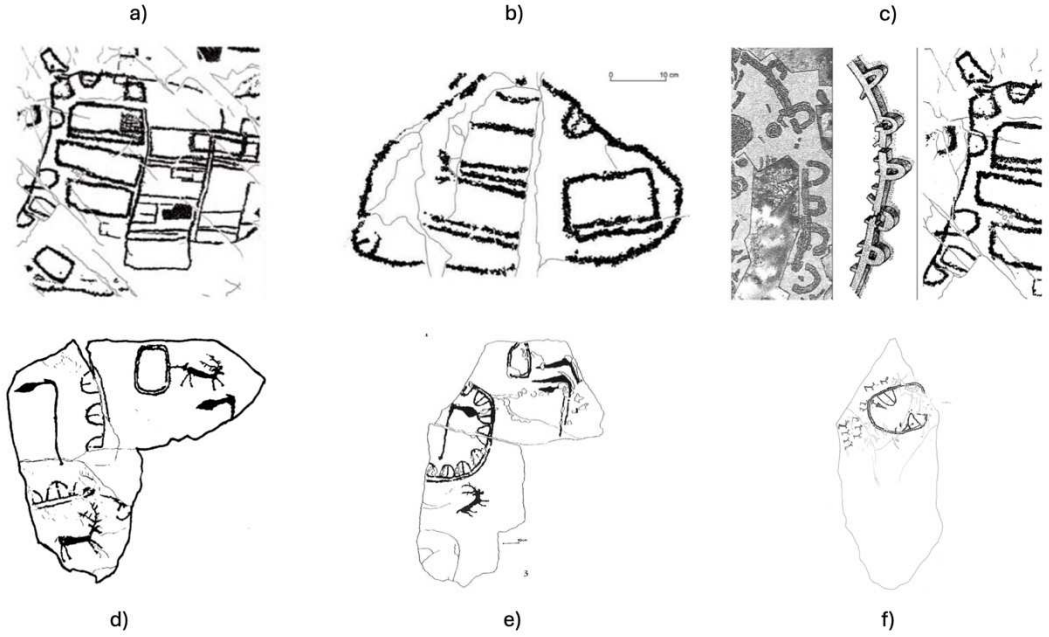


Figure 52. Bandoliera figures on rocks (a-c) and statue-menhirs (d-e); a) VIT 20 (ARCÀ 2007); b) VIT 21 (ARCÀ 1999); c) Comparison between Copper Age fortifications and VIT 20 (ARCÀ 1999); d) Vangione 2 (FOSSATI 2002); e) Vangione 1 (CASINI, DE MARINIS, FOSSATI 1995); f) Borno 1, face D (kindly provided by P. Rondini).

Yet another out-of-context comparison is made by one of the authors of the "topographic" interpretation, this time with an image from Siberia. The figure in question is a 'mushroom', or 'common module', very similar to the ones from Valcamonica and Fontanalba. Arcà[159], making the point that the area from which the figure comes has large areas dedicated to agriculture and animal herding, hypothesizes that the similarity may not be accidental. Indeed, the similarity may not be accidental but from a different point of view. The figure in question is found on an "altar" from the Bronze Age sanctuary of Mugur-Sargol, Tuva Republic (Southern Siberia, Russian Federation, near the border with Mongolia, Fig. 53). The "altar" is a complex multi-tiered rock outcrop depicting the Universe's three tiers. This information is given by ethnographic reports, and according to those studies, the "upper celestial world is the world of light powers, the middle world is the intermediate sphere inhabited by the living, and the lower world is one of death and evil powers"[160]. In order to create the partitions, the natural

[159] ARCÀ 1999, p. 213.
[160] DEVLET & DEVLET 2002, p. 121.

fissures of the rock were used. Therefore, the upper and middle sections of the “altar” depict the upper world inhabited by the spirit ancestors, while the bottom part is left for the middle tier of the world where the common people live. The lower world, reserved for the evil spirits and the underworld, is never depicted, at most it is marked by special symbols. The upper part is almost completely dedicated to the supreme deities and other important mythical characters, all depicted as masks. The ‘common module’ figures seen on the “altar”, together with other “topographic” looking figures, represent enclosed spaces which are inhabited by the celestials[161]. This vertical perception of the Universe contains within itself the enclosed spaces thought of as the settlements of the celestials. This is a very interesting comparison indeed, but, once again, the context is vital. We are facing a structured religious system and view of the Universe, all within a shamanic society. It could be argued that the Mugur-Sargol ‘common modules’ are “topographic” representations, but they have no connection with agriculture. Instead, they show a fictive, celestial, topography contained within the higher realm, one to which only the shaman has access.

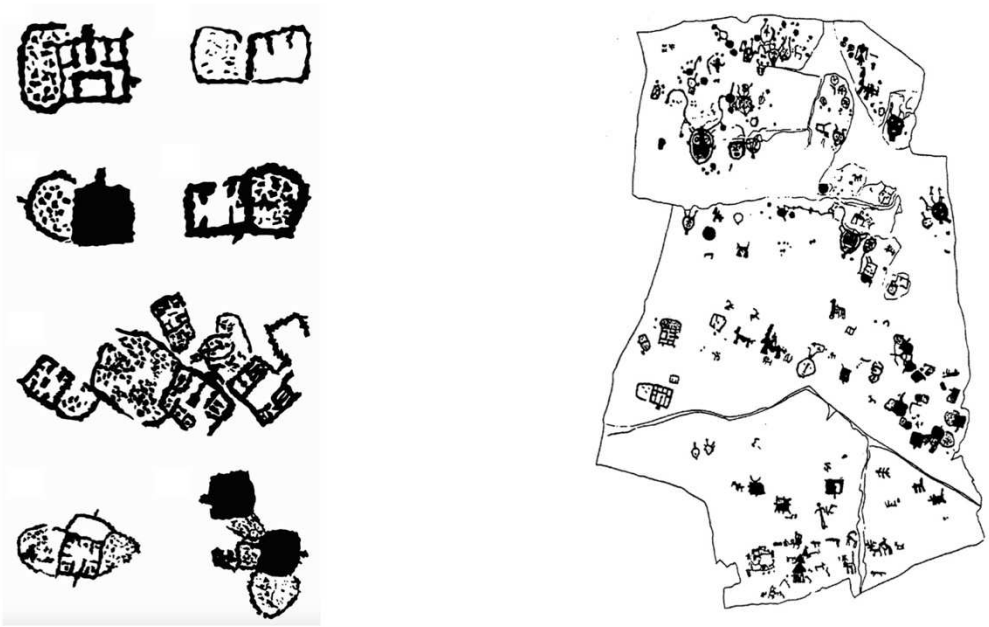


Figure 53. The Mugur-Sargol "altar" (DEVLET & DEVLET 2002) and the "topographic" figures (DELANO SMITH 1994).

The general situation described above may also be cited for the Iron Age “topographics” which use the same Neolithic/Copper Age figurative elements to create even more complex

[161] DEVLET & DEVLET 2002.

and intricate compositions. The bulk of the Iron Age "topographics" is located on the western side of the Valley and is concentrated in the areas of Bedolina and Redondo. The first "topographic" counter-example is offered by the Coren di Redondo site, located in a hard-to-reach position. R. 12, already mentioned, is an example which goes against the argument that the rocks depicting "topographic" elements have a good view of the valley floor. Apart from being in a difficult place to access, the rock only has a moderate view of the valley, and it faces the mountain slope[162]. The typology of the motifs, the most notable being the double-base rectangle, and the way they are placed on the rock when being looked at contradict the bird's eye viewpoint. The regularity and uniformity of the composition, specifically of the lines connecting the rectangles, do not follow the natural patterns which can be observed in real-life landscapes and settlements. The lack of a panoramic view of the valley and the "topographic" improbability of the depictions can be further illustrated by the case of a panel from Redondo which is near vertical and presents a series of unconnected rectangles with lines departing from them and ending just as abruptly towards the upper part of the panel[163]. Similarly, rocks 4, 7, and 9 from Bedolina have the back of their engraver turned away from the valley and in an uncomfortable crouched position. Another striking particularity is the topography of the rock itself, as this seems to be an important deciding factor in the choice and location of figures to be engraved. This has already been noted for the Neolithic/Copper Age compositions. In the case of the Iron Age "topographics", the motif with dots inside is oftentimes placed on particularities of the rock, such as bumps, vertical sides, or crests[164].

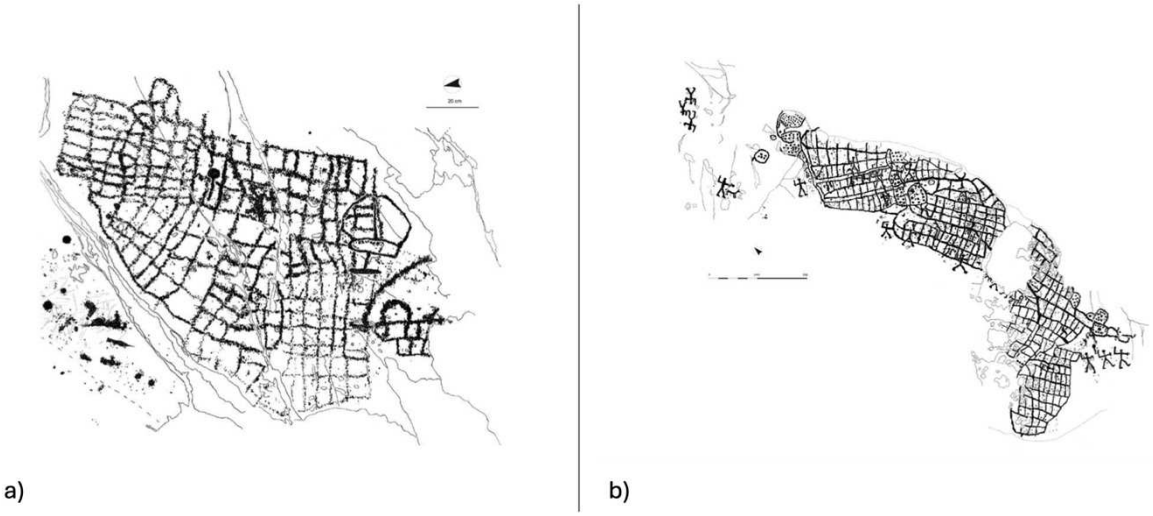


Figure 54.Iron Age "topographic" compositions; a) Piè R. 1; b) Seradina I - Ronco Felappi R. 57; Source: MARRETTA 2013.

[162] MARRETTA 2013.
[163] MARRETTA 2013, p. 347.
[164] MARRETTA 2013, p. 349.

Chapter IV

Exotic comparisons

The example from Mugur-Sargol given by Arcà is not an isolated case. The cave art of the Trans-Baikal region furnishes some similar examples of figurative expression: rows and lines of dots, coupled with enclosures. This is the Selenga rock art tradition of the Bronze Age which has its origins in the Early Bronze Age Taiga area (4th – 3rd millennium B.C.) and flourishes in the Late Bronze Age and Early Iron Age (13th – 3rd centuries B.C.)[165]. This tradition has four predominant motifs: non-figurative (rows of dots and chaotic assemblages of dots), anthropomorphs (often in rows), ornithomorphs, and enclosures (round or rectangular) which sometimes contain any of the three types of figures. There are six sites (some of which include both caves and open-air sites) which contain such representations of enclosures. For example, the site of Sarbaduy (Fig. 55 a) is composed of the Sarbaduy cave, and the open-air rock art sites Narin-Khunduy (3 km to the south-east) and Perevosnaya-3 (2 km to the south-west). The cave is found at the top of the mountain, whereas the two other sites are located at the foothills. In the cave, non-figurative depictions are predominant, while the two other sites feature mostly rows of dots and chaotic assemblages. The only enclosure figure is found at Narin-Khunduy. The cave of Ust'-Kyakhta (Fig. 55 c), for example, contains 10 enclosures (out of 180 figures). The three open-air sites recorded nearby present a smaller number of enclosures: Ust'-Kyakhta #1 (5 km upstream) has two enclosures (out of 38 figures), Ust'-Kyakhta #2 (1 km upstream) has one enclosure (out of 41 figures), and Derevenskaya Mountain (8 km upstream on the other bank) has four enclosures (out of 149 figures). Ust'-Kyakhta #1 and #2 present only the rectangular type of enclosure. Continuing, the cave of Temnikovskaya (Fig. 55 b) has only one enclosure (out of 94 figures), whereas the open-air site of Galtay II (0,4 km to the north-east) has four enclosures (out of 34 figures). The cave is dominated by non-figurative elements, while the open-air site by anthropomorphs. The majority of the enclosures at Galtay II are rectangular, whereas the one in the cave is round. Interestingly, the cave is located at an altitude of 600 m, overlooking the whole valley, while the open-air site sits at a much lower level and its views are blocked by rocky outcrops and vegetation. The cave of Nadeino features three enclosures (out of 32 figures), while the open-air site of Nadeino (2.5 km to the south-west) features only one. All the enclosures of the cave are round, unlike the rectangular one of the open-air site. The cave of Bain-Khara (Fig. 55 d-e) is perhaps the most

[165] PONOMAREVA 2021.

impressive one with 34 enclosures (out of 647 figures). There are three surrounding open-air sites, all containing enclosures. In the cave, rectangular and round enclosures are in equal proportions, while round ones prevail at two sites and rectangular ones at the other. The last site on the list is Gorodovoy Cliff, with two enclosures, one round and one rectangular (out of 213 figures). Quantitatively, though, the enclosures represent the least number of figures, as the non-figurative elements dominate the cave art. The conclusions of the study[166] are rather interesting, and most of the clues are offered by the ever-present bird symbolism. The ethnography suggests an association of the cave rock art with female religious practices, as caves related to fertility cults are mentioned. The ethnographic records point also towards shamanic rituals being held in the caves, again with the aim of childbirth. The eagle is an integral part of both ritual and religion, as it is both deity, spirit-animal, and giver of the gift of shamanism. There is the possibility, considering the predominance of abstract figures in the caves, that these were linked to more private rituals, such as having children. The open-air sites, with more figures of rows and groups of anthropomorphs, were designed for more public and communal ceremonies. Unfortunately, no explanation for the enclosures was given, or regarding the choice of rectangular or round enclosures depending on the type of site. Chances are that we are, once again, not dealing with realistic depictions of real "topographic" landmarks or features seen in the land. The caves do not abound with figures of enclosures

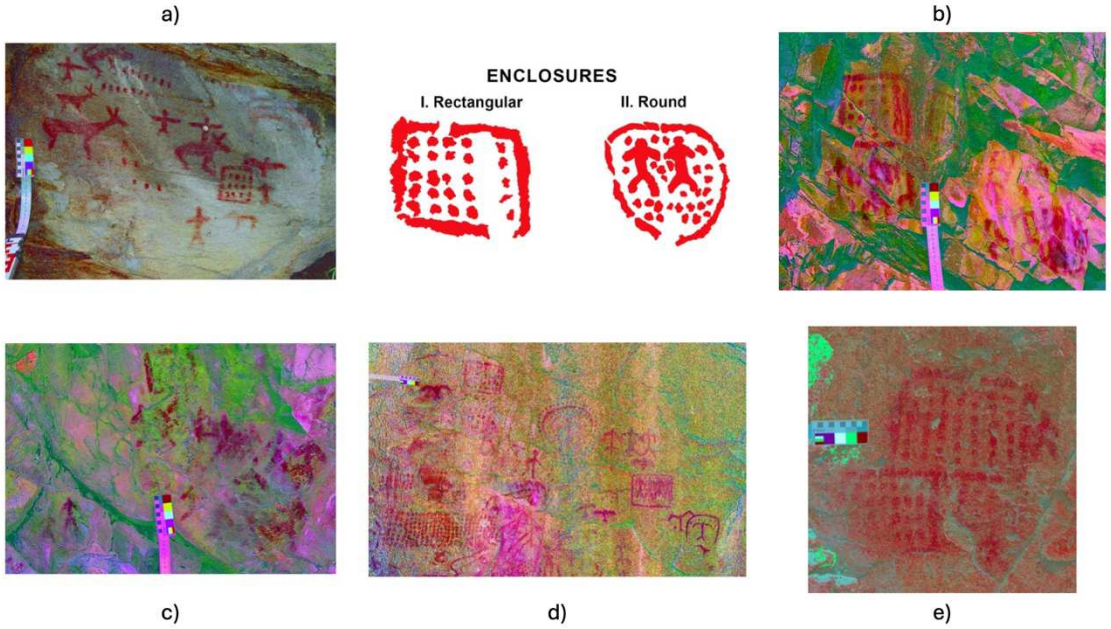


Figure 55. Examples of enclosures. a) Sarbaduy; b) Temnikovskaya; c) Ust'-Kyakhta; d) Bain-Khara; e) Bain-Khara. Source: PONOMAREVA 2021.

[166] PONOMAREVA 2021.

despite their very advantageous positions, usually high up and overlooking the valley floor. They are probably, as in the case of the Mugur-Sargol "altar", the enclosures of the spirits and deities which are called upon during rituals and which often inhabit, for example, the caves.

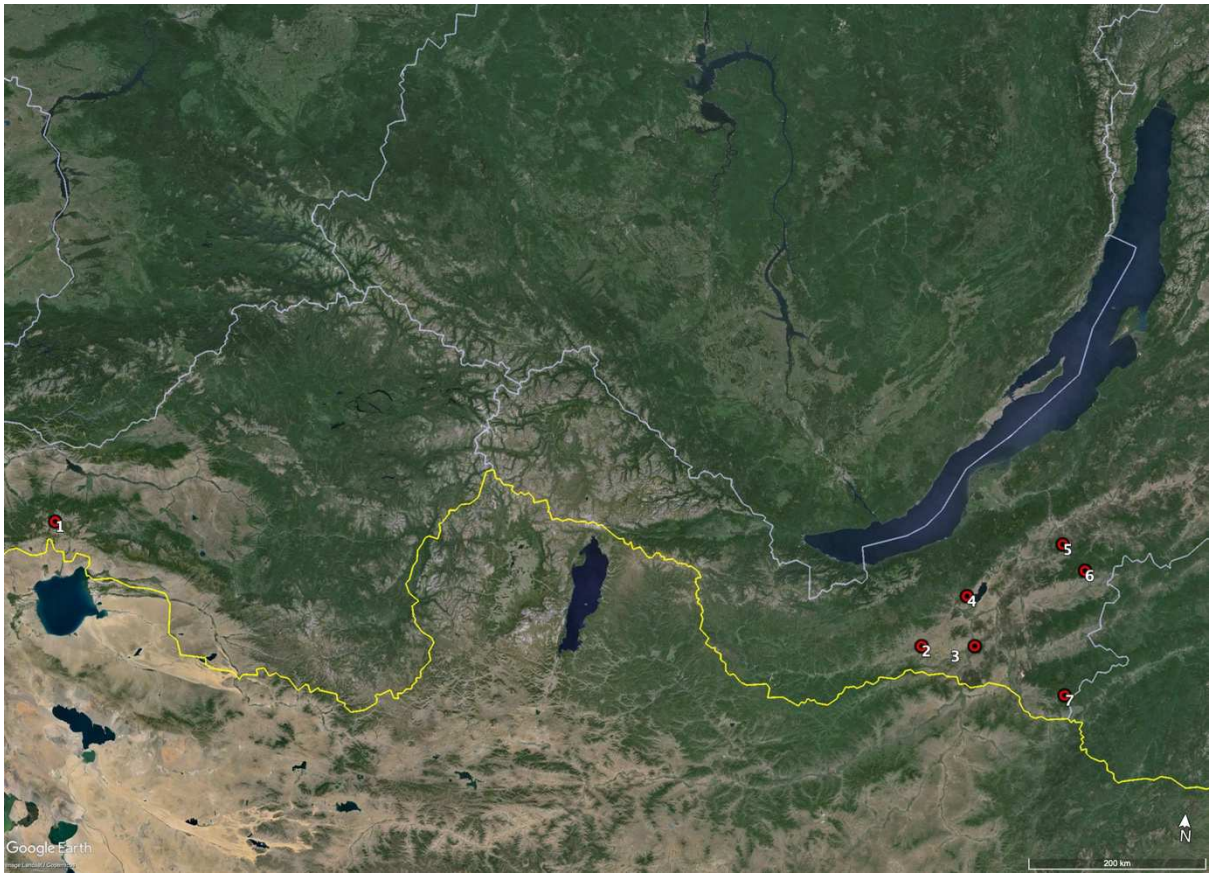


Figure 56. Map of the Siberian rock art sites mentioned. 1) Mugur-Sargol; 2) Sarbaduy; 3) Ust'-Kyakhta; 4) Temnikovskaya; 5) Nadeino; 6) Bain-Khara; 7) Gorodovoy Cliff. In yellow: border with Mongolia.

Continuing towards the West, one example from the Saymaly-Tash Valley in the Fergana Range (Kyrgyzstan) is worth mentioning. Located at an altitude between 3,000 and 3,400 m, the valley is accessible for a very short period of time (around 20 days) only due to the permanent snow. The area of the two adjoining valleys (Saymaly-Tash I and II) is perhaps the largest concentration of rock art in Central Asia: around 10,000 rocks containing around 100,000 petroglyphs[167]. The chronological range of the rock art is between the second half of the IIIrd millennium/beginning of the IInd until the Middle Ages, with the earliest engravings having been made in a geometric style and dated to the Eneolithic and Bronze Age. Of interest is a large grill figure (Fig. 57 d), similar to what can be seen at Vite, or with the Ponte Raut painting. The two dots at the ends of the figure present an interesting similarity with motifs seen at Vite. Another region which presents interesting similarities is the Armenian Highland,

[167] AMANBAEVA *et alii* 2011.

where the main concentrations of rock art can be found at altitudes of up to 3,300 m. In this case, the abstract and geometric signs and figures are mostly interpreted as sky maps, calendars, and compasses, some rocks having an "applied astronomical significance: solar (30/31-day, 12-month, 354/365-day annual) and lunar (7, 14, and 28/29-day) calendars, sunrise, sunset and Earth poles markers"[168]. Given their astronomical interpretation, the author has developed an equally astronomical method in order to obtain the absolute dating of the rocks[169]. Comparing the current position of the stars to the ones engraved and calculating the deviations that occurred during the centuries, he was able to date them based on a rock showing the Zodiac constellations of Leo, Sagittarius, and Scorpio to the 27th – 25th centuries B.C.[170]. The impressive Sevsar complex (20 engraved rocks in an area of 50 x 20 m, Mt. Sevsar, Vardenis Ridge) is given an astronomical interpretation as well. The main piece, a massive boulder, is thought to represent a meteor crash, the Milky Way, and the place in the sun from where the meteor came crashing down (Fig. 57 a-b). Following the direction (of the supposed flight path) indicated by three lines on the right part of the image, the author did indeed notice a crater 30 m wide and 5 m deep at the foothill of Mt. Azhdahak. Another example of an astronomical record, according to the author[171], is a 1-meter-long rock found in the Geghama Mountains, at an altitude of 2920 m. The rock depicts a similar grill figure to those of Saymaly-Tash and

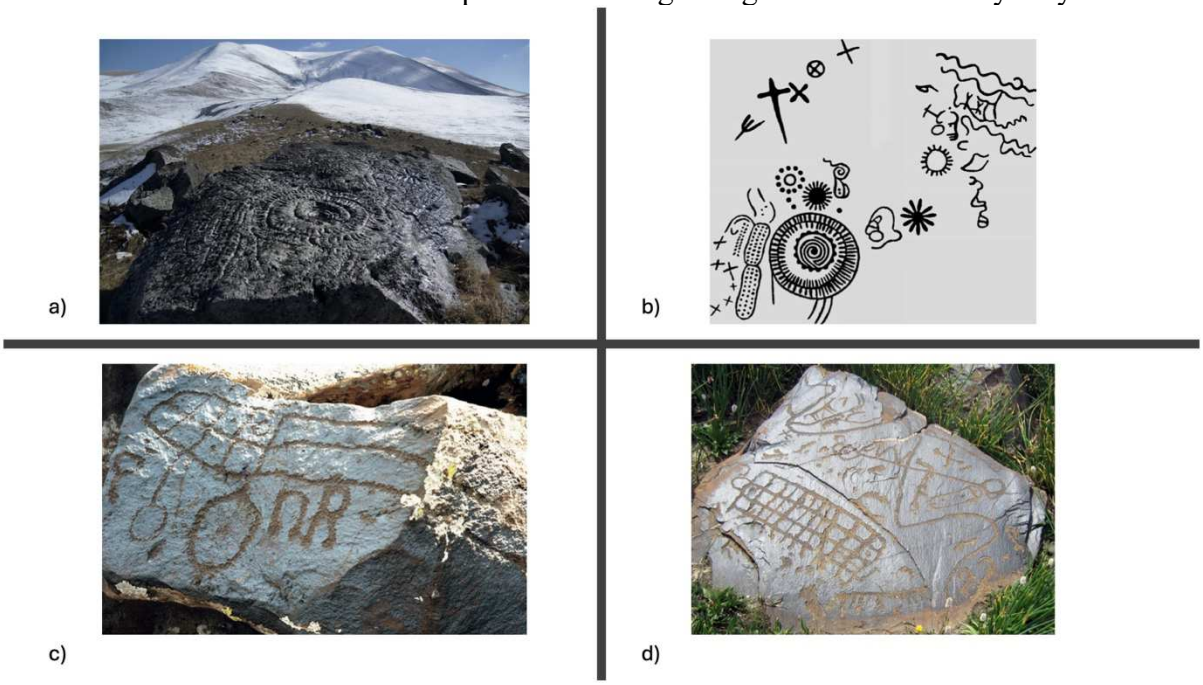


Figure 57. a) Sevsar astrological complex (TOKHATYAN 2022); b) Tracing of the main rock from Sevsar (TOKHATYAN 2015); c) Geghama astronomical records (TOKHATYAN 2022); d) Saymaly-Tash (AMANBAEVA et alii 2011).

[168] TOKHATYAN 2022, p. 23.
[169] TOKHATYAN 1997.
[170] TOKHATYAN 2022, p. 27.
[171] TOKHATYAN 2015.

Vite, complete with dots inside some of the partitions. It is thought to be a table of astronomical records (Fig. 57 c).

The next series of exotic comparisons takes place across the ocean, in South America. The first examples come from the area of the La Silla Observatory, in Chile (Fig. 58). Located in what can be best described as the middle of nowhere, the discovery and documentation of the engraved rocks are owed to the numerous researchers and permanent staff of the Observatory. The engravings can be tentatively attributed to the *El Molle* culture, which were the first people to occupy this semi-arid landscape. The chronological range of this culture spans somewhere between the start of the Ist millennium A.D. and 700 – 800 A.D.[172]. Located at altitudes of 2,000 m, around 800 engravings have been identified. As a whole, the subjects of the rock art can be divided into two: abstract and figurative. The abstract figures predominate, a large quantity of which are geometric designs, of which we can note the grill figures, neatly partitioned rectangles, and "enclosures" containing dots. The so-called "triptych" is of particular interest as it features diverse geometric figures associated with male worshippers, one of which has a headgear and is holding the leash of a camelid.

Figure 58. Two engraved rocks from La Silla featuring abstract geometric designs (BALLEREAU & NIEMEYER 1990).

[172] BALLEREAU & NIEMEYER 1990.

The next stop is in the Province of Bahia, Brazil. A major concentration of painted rock shelters has recently been re-documented and led to the development, in literature, of the *São Francisco* tradition. For example, 36 sites alone have been photographed and documented in the *serra de São Francisco* area, all rock shelters[173]. Of particular interest are *Cacimba III*, *Formosa*, *Maninho I*, *Puçá IV*, *Puçá V*, *Gangorra II*, *Olho D'Água I*, *Olho D'Água IV*, just to mention a few. A special mention is also worth the rock shelter from *Toca do Gado*, from the

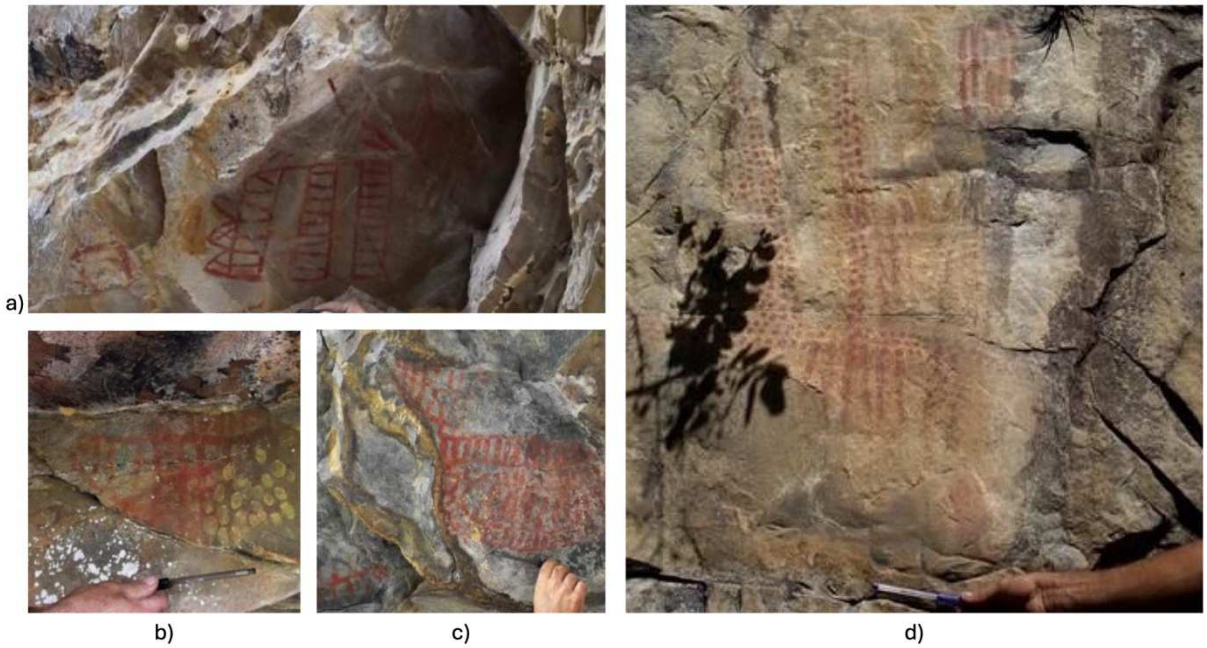


Figure 59. a) Cacimba III; b) Formosa; c) Maninho I; d) Gangorra II (SILVA-SANTANA et alii 2017).

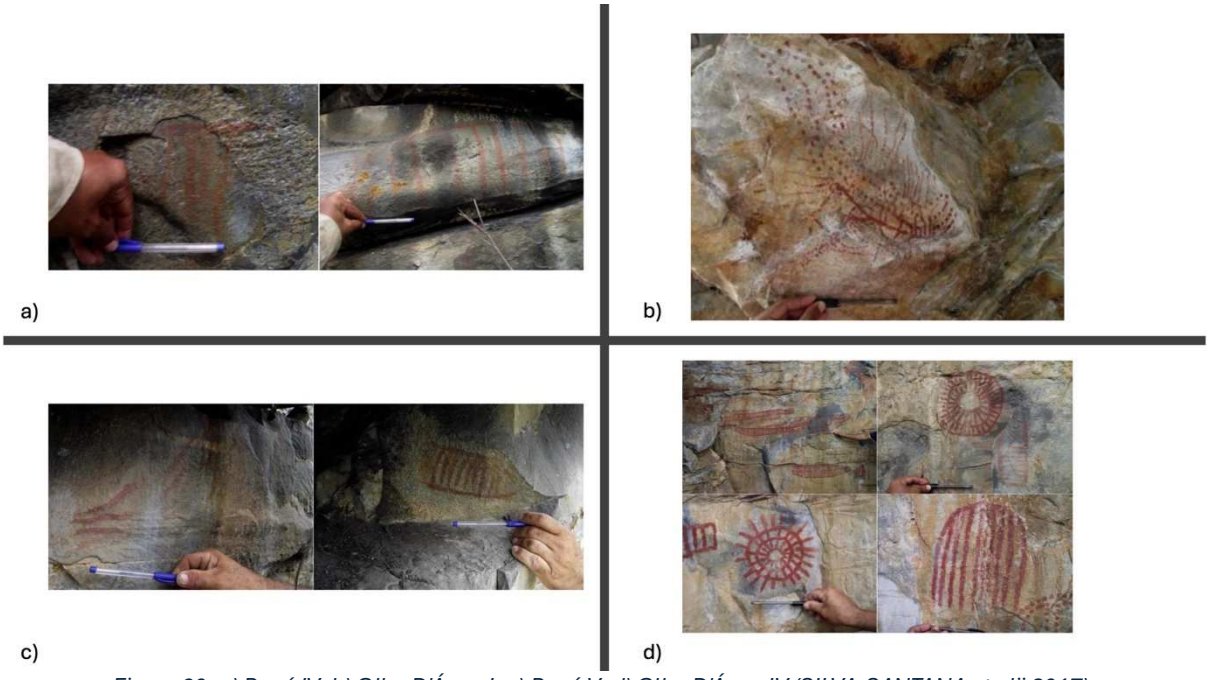


Figure 60. a) Puçá IV; b) Olho D'Água I; c) Puçá V; d) Olho D'Água IV (SILVA-SANTANA et alii 2017).

[173] SILVA-SANTANA *et alii* 2017.

same province of Bahia (around 120 km away from *serra de São Francisco*), as it contains over 20 panels spread over a 53.5 m long wall[174] (Fig. 61).

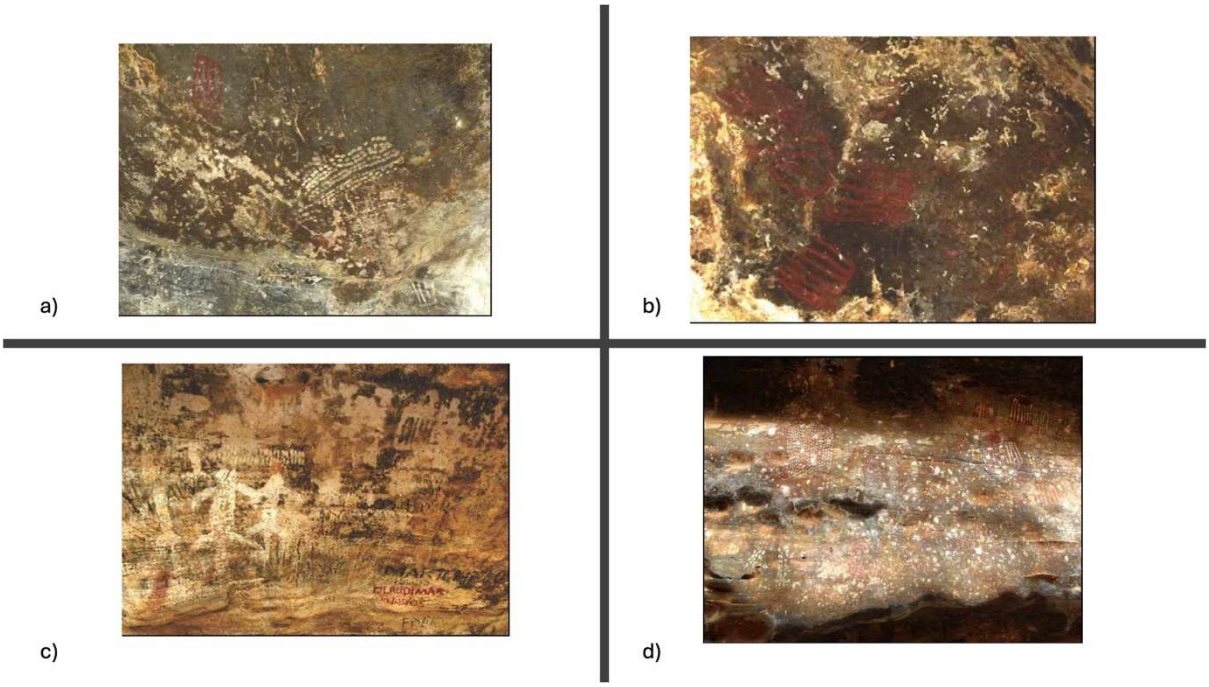


Figure 61. Panels 7 (a), 8 (b), 14 (c), and 18 (d) from Toca do Gado (MARTINS DOS SANTOS & KESTERING 2017).

Once again, most of the figures are geometric. The two specific elements of these rock shelter paintings seem to be the grill figures, sometimes arranged as a *scaliforme* (ladder-shaped), and the arrangements of dots. There are also some figurative ideas which we have seen before, for example at Val Pellice. At *Toca do Gado* there are present grills, painted in red, and anthropomorphic figures holding hands, just as in the painting from Val Pellice. The arrangements of dots seem to be ever-present, just as the ones seen in the painted rock shelters of the Western Alps (Rocca di Cavour, or Trou de la Féclaz). Unfortunately, this is still a new research topic in Brazil and, as such, they cannot yet be attributed to a specific culture or be given a relative chronology.

The next case study is, perhaps, the most spectacular. We shift our focus deeper within the Amazonian Jungle, in Colombia. The hills of the *Serranía de la Lindosa* contain tens of painted walls, covered in hundreds of figures, and spread across vast surfaces (Figs. 62-66). Dating the paintings proved to be a difficult task, as there are numerous superimpositions and the sites have been frequently visited for the purpose of adding more figures. Archaeological excavations have been carried out in some of the rock shelters. The *Angosturas II* rock shelter has signs of frequentation ranging between 8100 and 4000 years ago. In the *Cerro Azul* rock

[174] MARTINS DOS SANTOS & KESTERING 2017.

shelter, deposits from the end of the Ice Age have been found[175]. Moreover, thin fragments of painted detached wall surface were found in archaeological layers and radiocarbon dated to 8241 B.C. (*Cerro Montoya* rock shelter) and a piece of processed ochre was dated to 9204 B.C.[176]. The surfaces are massive, and some paintings have been made at heights of even 10 m. In some cases, the ladders used are represented, with human figures on them, and there is even an image of a wooden scaffolding from which a human figure seems to be jumping. The diversity of figures is astonishing, as is the level of detail. Animals, which range from extinct megafauna (Fig. 64) to caymans, tapirs, deer, bats, and snakes; human figures, dancing, floating, worshipping, wearing elaborate headdresses, and a wide variety of geometric figures and arrangements (Fig. 62), found in all sites and between every type of figure. Right from the start, the geometric patterns have been associated with "shamanic vision". As in the case of Siberia, we are lucky to still have access to the tribes of the Amazon Jungle and document not

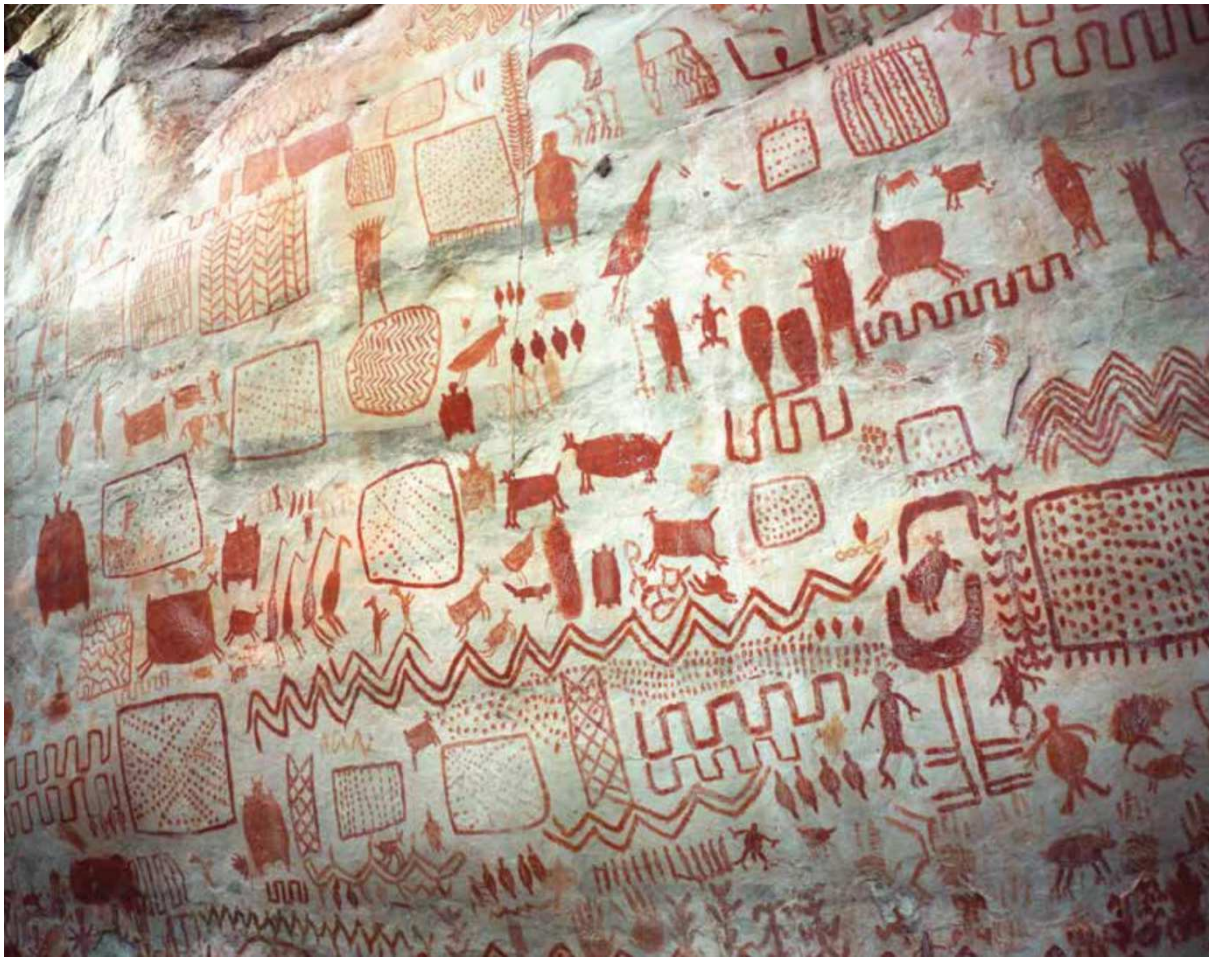


Figure 62. Section of the Principal panel; Source: IRIARTE et alii 2022.

[175] IRIARTE *et alii* 2022.
[176] IRIARTE *et alii* 2022, p. 24.

only their way of life and art but also their stories. Even in modern times, shamans from nearby tribes have been recorded[177] drawing images of striking resemblance to the ones of the *Serranía de la Lindosa*. South American shamans often use psychoactive substances (such as ayahuasca or seeds of yopo) in order to achieve altered states of consciousness and enter trance. These substances can also stimulate the retina, causing one to see phosphenes (luminous floating patterns). The phosphenes take geometric shapes, such as circles, grids, zig-zags, dots, and diamonds.

Figure 63. Nuevo Tolima panel; Source: MUÑOZ CASTIBLANCO 2020.

The strong link between the geometric figures and animals, for example, is explained by the supernatural being called the Master of Animals, a common belief of many Amazonian groups. The Master of Animals is a non-human being who inhabits the area and protects game animals, "who live and breed in the tepuis (local name for the table-top hills) in their human spirit form"[178]. It is the duty of the shaman to travel (by use of hallucinogenic substances and rock crystals) to the tepuis and meet with the Master of the Animals and negotiate the release of animals. Animals are released in exchange for the souls of humans who broke the ethical rules of behaviour during their lives. The shaman and the Master then make an inventory and agree on a number. As part of this negotiation, the shaman paints the animals requested on the walls.

[177] See REICHEL-DOLMATOFF 1971 and 1987.
[178] IRIARTE *et alii* 2022, p. 43.

Figure 64. Painted panel from Cerro Azul. Source: MUÑOZ CASTIBLANCO 2020.

Figure 65. Dantas panel; Source: MUÑOZ CASTIBLANCO 2020.

Therefore, the geometric patterns represent the journey to the Master of Animals and thus, proof. Once again, as in the previous cases from Siberia, we are dealing with a very delicate and intricate shamanic context. Perhaps this framework could be applied to the rock shelter paintings from Brazil as well since they all feature geometric patterns, and humans dancing or wearing headdresses. Once again, we can notice a wide variety of common figurative elements between these "exotic" cases and, specifically, the painted rock shelters of the Western Alps. The repetition, in all cases, of grills (be they engraved as in La Silla or painted) exactly like those of *Balma 'd Mondon*, *oranti*, rows of anthropomorphic figures holding hands, and rows and lines of dots, like the ones from *Trou de la Féclaz* or *Balma dei Cervi* is at the very least interesting. The comparison can plausibly be extended to include various designs from Valcamonica as well.

Figure 66. Reserva panel; Source: IRIARTE et alii 2022.

To conclude this section, I would like to offer just one more "exotic" comparison to highlight the dangers of this visual approach. We turn our attention to the South African San people and their rock art[179]. The "formlings" are a very abstract and yet specific part of the San figurative repertoire, something that puzzled Leo Frobenius (a familiar name to the rock art of Valcamonica) during his research voyages in South Africa. The "formlings" (Fig. 68) are stacks of oblong, oval, or tubular cores which are vertically or horizontally compartmentalized. Described in terms more familiar to the Valcamonica figures, the "formlings" resemble rectangular areas (which can be rounded at the ends) which can also be dotted, which are contained within an enclosure. Dots exiting the enclosure are usually represented. Animal and botanical representations are rarely associated and may even overlap the "formlings". It is Frobenius himself who gave the name of these enigmatic figures: "The term is neither German nor English, but a nominalization of the word 'form' using German grammar. While 'form' is an abstract word for the outward appearance of things, Frobenius used it with the German suffix '-ling(e)' to mean a thing whose shape or outward appearance is difficult to define and categorise"[180]. The first interpretation, which remained canon for a long time, was a "topographic" one. Frobenius and Breuil supported this view, in which the full landscape was portrayed. Another "topographic" point of view supposed that granite boulders were represented. Other views pointed towards grain bins, cornfields, mud huts, pools of water or rain clouds[181]. The next interpretation which demoted the "topographic" point of view was that of beehives and apiculture. The return in the 80s towards actual San ethnography and mythology gave research a new meaning and it was acknowledged that San art deals with symbols and concepts, rather than reality. As such, the "formlings" started to be associated with the supernatural potency of the shamans and the spirit world. Considering the metaphorical character of the animals and other subjects, Smith[182] interprets the "formlings" as a metaphorical landscape as well.

The "formlings" are the result of both natural and cultural phenomena. After a century's worth of speculation, it is now admitted that the real referent of the "formlings" are, in fact, termites and termite mounds. Therefore, the "formling" contour would be the habitacle, the outlines of "formlings": the idiotheque (the habitacle has protective outer clayey shells or walls called idiotheque), the orifices on forming outlines: chimneys, the "formling" cores: cells and

[179] A more detailed account of their history and methodological framework will be given in the next chapters.
[180] MGUNI 2015, p. 15.
[181] MGUNI 2015, p. 26.
[182] SMITH 1994.

chambers, the interstices between cores: cell walls, “formling” crenellations: support pillars and pinnacles, the microdots on “formling” cores: pores and slit structures, the oval flecks in “formling” contexts: eggs, nymphs, apterous termites, the “formling” caps and domes: fungus combs and agarics, the cusps: moundlets and fungus gardens[183] (Fig. 68 d). The termites are important to the San not only as a food source, referred to as ‘Bushman rice’, but also symbolically as their fat can be used as a substitute for that of the eland in various rituals. Fat,

Figure 67. Entoptic phenomena. Left: Central Africa; Right: southern Zimbabwe. Source: MGUNI 2015.

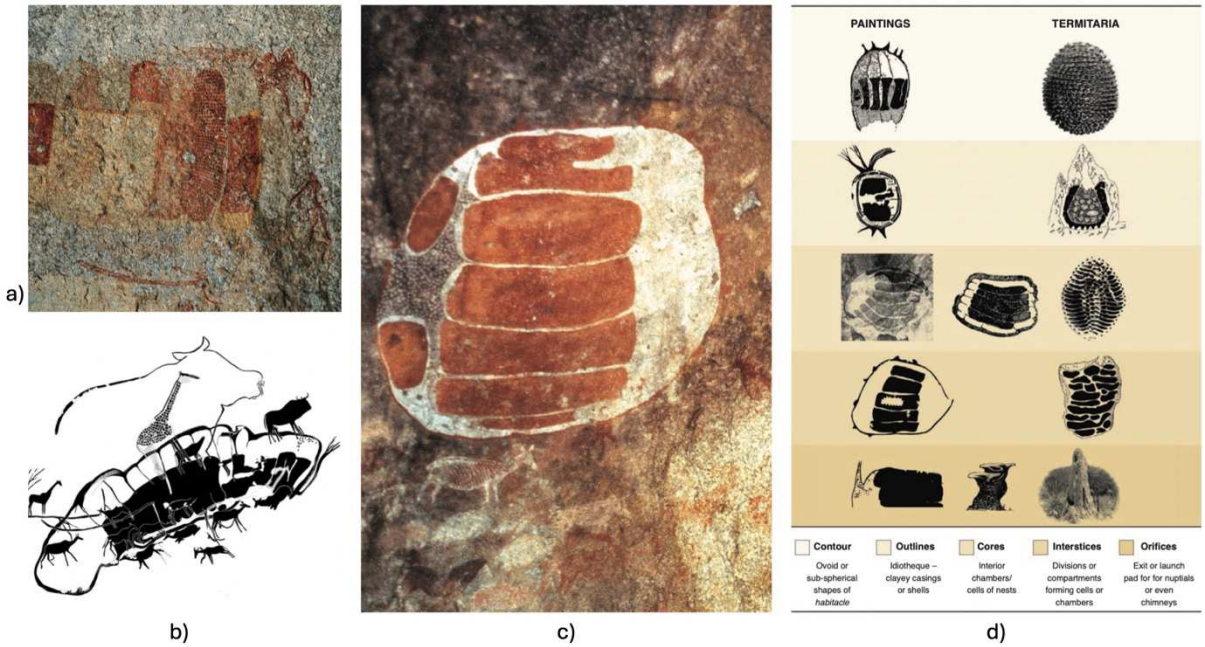


Figure 68. Different "formlings"; c) “Formling” from Zombepata Cave, Zimbabwe; d) Comparative analysis between “formlings” and termitaria; Source: MGUNI 2015.

[183] MGUNI 2015, pp. 108-115.

due to its rarity, is an important component of various myths and cosmologies. The termites and their fat are highly symbolically charged components of the San religious system and are part of a very intricate system of myths, rituals, and cultural-natural associations.

These examples are not here to prove, just by means of visual comparison, that the figures from Valcamonica in question are not representations of fields, hamlets, small agricultural villages, or a ritual act made when taking possession of land. However, they do show a number of things, all linked to what seems to be their most important trait: their universality. Surely, the presence of very similar sets of figures (especially the alignments of dots, enclosures, and grills) in very diverse and far-apart regions of the world and with varying chronologies is not by chance. They are all products of one thing: the human mind and, more specifically, of the neuropsychological wiring which is the same in all humans across the globe. One other aspect which unites all these different cases, apart from the Armenian one, is the religious context linked to shamanic practices and altered states of consciousness. The religious context is of paramount importance in the case of Riparo Dalmeri as well, given the chronology, location, and figurative repertoire. I would like to emphasise the importance of the context when making such comparisons, above all when choosing examples from very different geographical and cultural areas. For example, the painted ceiling from *Trou de la Féclaz*, the panel from *Olho D'Água I* (Fig. 60 b), panel 7 from *Toca do Gado* (Fig. 61 a), and the "formling" from *Zombepata Cave* (Fig. 68 c) all look alike, in shape and constitutive elements. One would assume a similar meaning if one would find them in the same geographical area. The same can be said about the grids from Saymaly-Tash, Geghama, La Silla, and the ones from *Piè* R. 1 (Fig. 54 a) and *Ronco Felappi* R. 57 (Fig. 54 b), both Iron Age "topographics". But similarity in shape does not equal similarity in meaning unless we have reliable archaeological and ethnographical sources at our disposal, if possible. The Armenian case, as fascinating as it seems, should be taken with a pinch of salt, especially if we take into consideration the tone of the author. Without trying to undermine the ingenuity of the interpretation, it has to be said that the whole discourse is constructed around national identity and the genius of the Armenian people who were the first who "divided the sky into constellations"[184]. This is something that can be, even if ever so slightly, observed when it comes to the engravings of Valcamonica, particularly in the "topographic" context. There is a sense of pride, felt in the research, in having the oldest topographic maps and the oldest

[184] TOKHATYAN 2022, p. 27.

representations of fields: “In view of their age, which doesn’t has any equivalent with other archaeological remains of this particular subject, these geometric compositions should be recorded in the history of topography and cartography as the oldest ancestors of maps. It is a record which this scientific discipline should take note. This is not only valid for the western world but also for the middle eastern one. In fact, they are a thousand years older than the Yorghan Tepe (2300 B.C., Kirkuk) clay tablet, depicting a plot delimited by hills and surrounded by a river, and two thousand years older than the Nippur Map (1500 – 1300 B.C.), both considered as the most ancient cartographic items”[185]. There is a real sense of prestige and pride now, conferred by the antiquity and subject of these engravings, which makes one cautious when approaching them scientifically.

[185] ARCÀ 2016, pp. 15-16.

Chapter V

The search for context: the case of Dos dell'Arca

The search for context is, ultimately, a form of introspection. The engraved rocks of a given site are, apart from their general chronological and spatial frame, part of a specific internal logic made more or less clear by the choice of rock (topography of the particular rock and location within the site) and the choice of figures to be engraved, all within an internal coherence with the other rocks. Each site has its own particularities, whether geomorphological, geographical, or figurative. It is within this intimate context of each site that symbolic meanings and relations should be searched for. Of course, this can be a highly subjective process, especially since it implies a very good knowledge of the site and constant frequentation. This allows one to get a feel of the place, to catch its pulse and understand its interior rhythm. A crucial element, as it allows one to, partially, recreate meaningful patterns put into motion when the site was initially used by the first engravers, for example. It creates the experience of a place, a quality unique to each site and each researcher. "Rock-art (or any other archaeological site) establishes a place from space. A place requires that basic human response – experience. […] Choosing a space and turning it into a place, positioning certain figures on certain rock surfaces and using a place over generations require and reinforce an affinity with landscape. We see these mechanisms as the underlying forces that control and manipulate symbolic and religious (cosmological) devices, in this case the art and site location. The more one visits a place, the more familiar one becomes with the idiosyncratic nature of the place. When frequently revisiting a rock-art site, one comes to recall the visual sequence seen in the rock-art itself – which figure goes where or which panel comes before which. One may also recall the landscape position of the site, relating the panel or rock outcropping to localized features such as other rock outcroppings, nearby rivers and streams, escarpments, pathways and so on. On a micro level, one may recall the nature of the surface and the colour changes of the art under different lighting and weather conditions. These observations may change through time and varying experience"[186]. Each site has its own life and logic, one which the researcher should aim to understand with the aid of the personal experience of the site: "One tends to ignore (and forget) that our own experiences when visiting sites are just as valid as an archaeological report or narrative text"[187]. I shall, once again, return to the case of Dos

[186] NASH & CHIPPINDALE 2002, pp. 2-3.
[187] NASH & CHIPPINDALE 2002, p. 4.

dell'Arca. As mentioned before, the site is part of the new occupational trend of the Late Neolithic period in which naturally advantageous areas, such as hills, are now settled. Although Dos dell'Arca only shows signs of sporadic frequentation as far as the material culture is concerned, it does have a high number of engraved rocks which can be dated to the Neolithic/Copper Age, so styles IIA, IIB, and III-A1. A phase in which the site ceases to be frequented seems evident for the period between the final stages of the Copper Age and the Ancient Bronze Age[188], as both engravings and material culture are lacking. The Middle Bronze Age sees the reoccupation of the site as a settlement, of which the massive wall to the north is testimony. There is a strong case for the supposition of foreign settlers as the material culture shows strong links with the *Terramare* pile dwellers from the plain[189]. Towards the Late and Final Bronze Age, the site seems to be once again abandoned. Another engraving cycle starts in the first Iron Age and, starting around the Vth century B.C. the site is steadily reoccupied with a flourish between the IVth and IInd centuries B.C., as the material culture attests[190]. An interesting pattern has emerged so far: whenever the site is occupied, not just sporadically frequented, no rocks are being engraved and, vice-versa when the site shows no sign of settlements or cult activities, there is a rather intense engraving cycle. During the Neolithic/First Copper Age, more rocks (32) were engraved than during the Iron Age (26), in a period when the site was not settled. During the Bronze Age, the site became settled, but the engraving cycle did not restart. The fact that the settlers may have been foreigners may explain the prolonged hiatus between the phases of engraving. Next, during the first Iron Age, engravings were made once again and generally attributed to the IV-1 (VIIIth – VIIth c. B.C.) and IV-2 (second half of the VIIth c. – end of VIth c. B.C.) styles[191], after which the site is reoccupied and the "Bastione" (the highest point of the hill) becomes a cult place. The rocks stop being engraved in this period of constant use of the site. There is a clear pattern of alternating cycles between occupation and engraving, two actions which apparently don't mix. This aspect ultimately infers a special (symbolic and religious?) status of the action of engraving the rocks, particularly when the "Bastione" starts becoming a cult place and the engraving cycle seems to stop. The distribution of the rocks themselves seems to follow some discernable patterns as well (Fig. 69).

[188] RONDINI *et alii* 2018.
[189] RONDINI *et alii* 2018, p. 11.
[190] RONDINI *et alii* 2018, RONDINI & MARRETTA 2021.
[191] FOSSATI 1991; Marretta, personal communication.

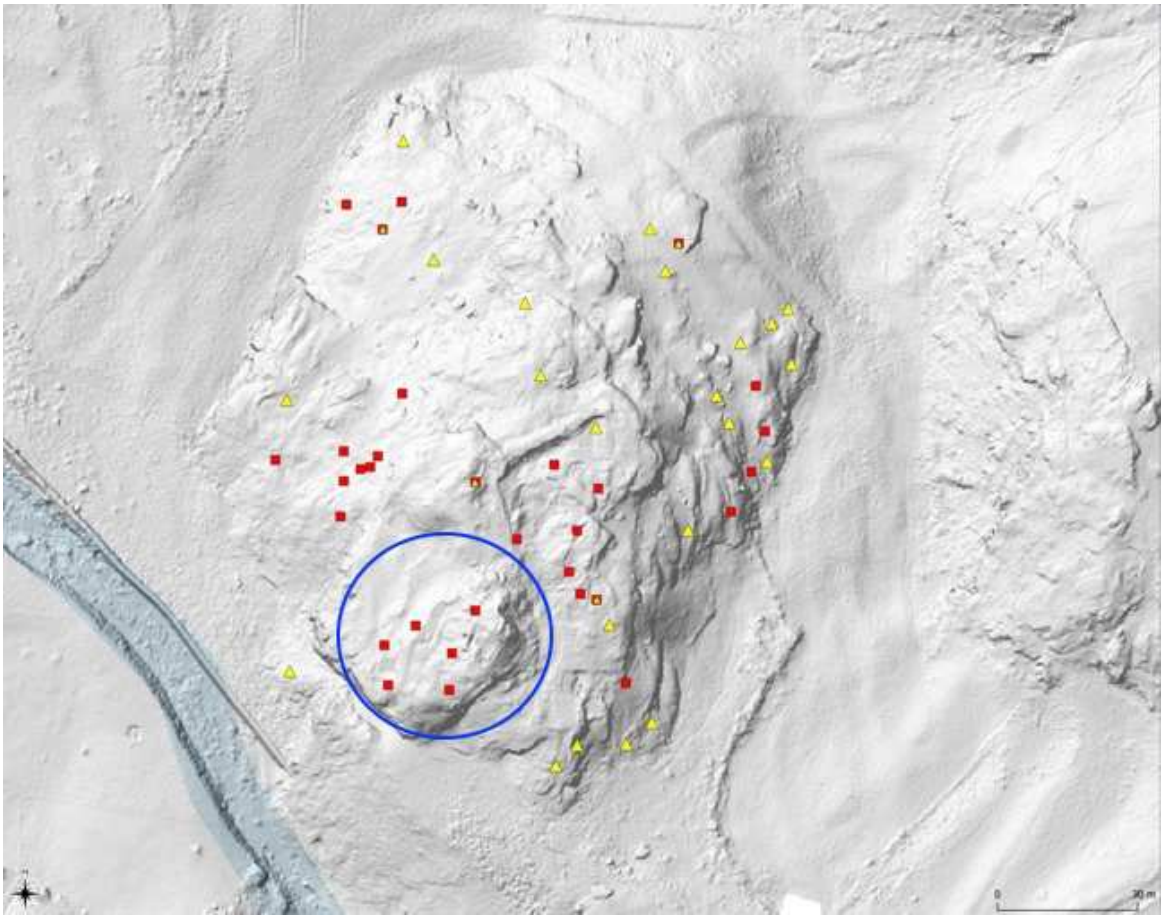


Figure 69. Distribution of the engraved rocks at Dos dell'Arca; Red squares: Neolithic/First Copper Age; Yellow triangles: Iron Age; Blue circle: area of the "Bastione"; Map by A. Marretta.

The first noticeable aspect is the lack of any Iron Age engravings in the cult area of the "Bastione", instead there is a large number of rocks from the IInd style. Then, there are multiple clusters of rocks, as if marking certain areas of the site: one immediately to the northwest of the "Bastione" (the area is very difficult to access from the "Bastione" as there is a very narrow path descending right by a cliff face), where R. 19 (Figs. 71-72) and R. 22 (the westernmost of the group, Fig. 51) are found. Another small cluster of three rocks is at the northwestern tip, seemingly marking the limits of the site. The impressive R. 24 is part of that cluster, featuring a 'mushroom' composition (with '*maccheroni*' instead of the simple dots found on R. 10 immediately to the northeast of the "Bastione"). R. 26 (featuring completely irregularly pecked areas, Figs, 73-79) is almost right below it, very close to the edge of the hill. The cluster immediately to the northeast and below the "Bastione" is the one that was investigated by G. Sluga[192]. Another cluster of four rocks is located in the eastern part. The northern and central northern parts have been left unengraved save from three Iron Age compositions (one of which is R. 11 featuring the two handprints). Firstly, it is interesting to note the two clusters around

[192] SLUGA 1969.

the “Bastione”, in the areas of the cliff sides, apparently delimiting the area. Secondly, the site itself seems to be marked around the edges with engraved rocks, thus setting a boundary. The site does have a circularity to itself and, putting aside the vegetation which has overgrown, it is easily walkable from one side to the other following the outer limit (Fig. 70).

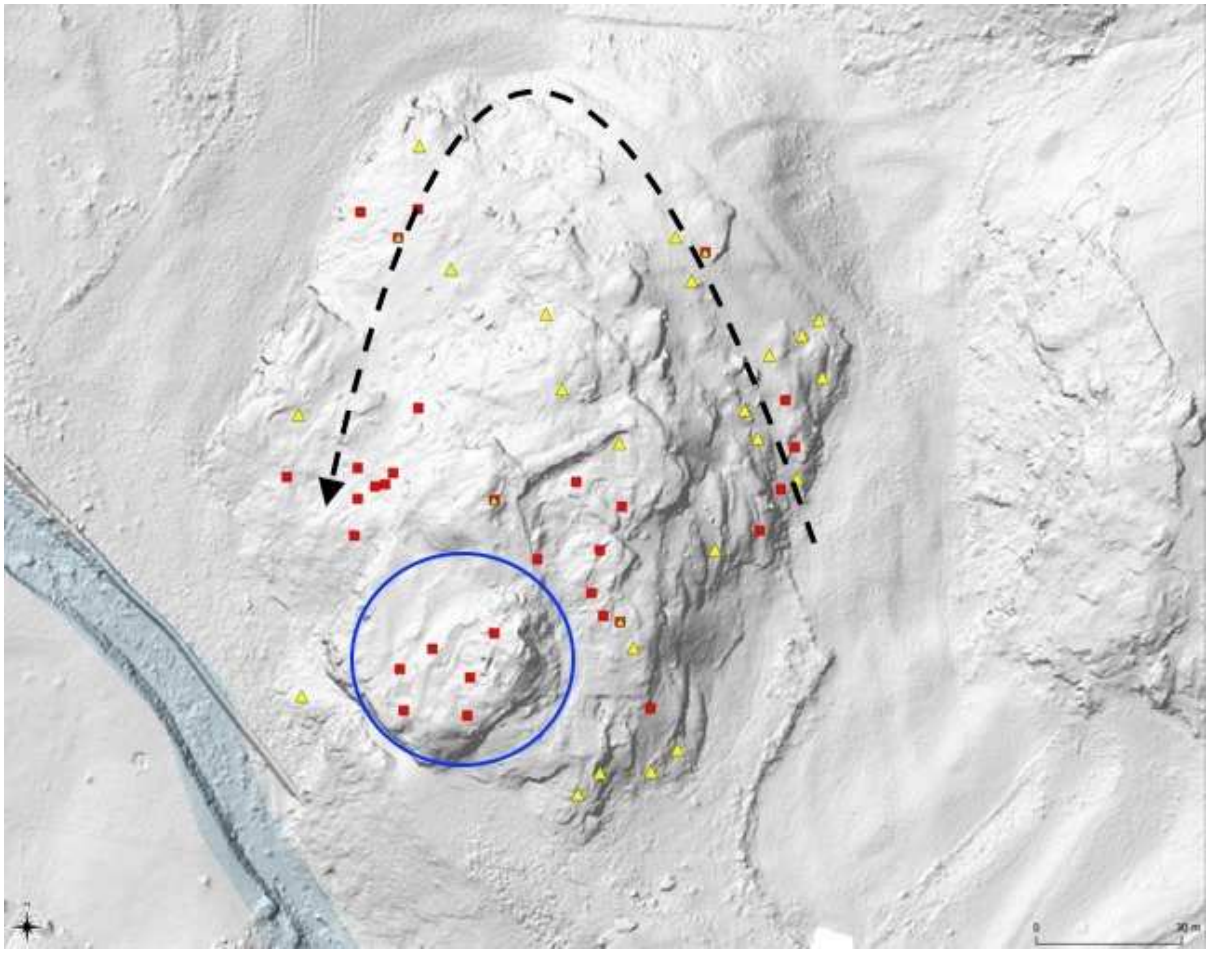


Figure 70. The dotted black line represents the easiest way around the site, seemingly marked by engraved rocks.

The northern part is peculiar, as it misses any engraved rocks. Most probably this is due to the orientation of the rocks themselves. The engraved rocks, irrespective of their chronology, all follow, to a certain degree, a west-to-east orientation given by the way they are tilted. Although the northern part of the site does have suitable surfaces for engraving, they do not follow this west-east axis of orientation. It is also worth mentioning that the Iron Age engravers seem to have taken into account this distribution of the Neolithic/First Copper Age surfaces and chose to engrave in between and in separate areas. The orientation towards the east of the rocks is an important consideration in the context of a “topographic” interpretation. In the context of the rocks situated on the western side of the hill, the engraver had his back turned to the valley and facing the rather rocky and steep hillside. Generally, this area is characterized by very irregularly pecked *macule* (as on R. 26), some in very particular crevices and indentations of

the rock (as on R. 22), and also geometric figures, mostly rectangles both vertical and horizontal. Curiously, the only Iron Age rock near this cluster has a large anthropomorphic figure with very big hands and is in a worshipping position; The same situation applies to the "Bastione" cluster which has a view of the woody hills to the east. The "Sluga" cluster has an even worse view of the surroundings, as it is located in the middle of the site, with the tall "Bastione" behind the engraver and the rocks facing towards the hill of Piè. The eastern cluster is directly overlooking the foresty hillsides, while the back of the engraver is turned towards the steep incline of Dos dell'Arca. This situation is in clear contradiction with one of the arguments of the "topographic" interpretation: "The zenithal point of view is a natural perception in a mountain area, where slopes or valley bottoms are commonly seen as in a bird's-eye view from the opposite side or from panoramic spots at higher altitudes"[193]. The lower altitude of the site (especially in comparison to the area of Paspardo) is another counter-argument: "Tuttavia, a causa della sua collocazione ad una quota altimetrica molto inferiore rispetto alle già citate aree, alcune delle argomentazioni interpretative proposte per il filone <<topografico>>, quali per esempio la naturale visione <<planimetrica>> di terreni e colture per chi vive in zone di montagna, potrebbero risultare poco efficaci …"[194]. The interpretation of memory-related or symbolic depictions of the land[195] seems to fall short as well given the archaeological context already presented. Another aspect which makes problematic the "topographic" interpretation is the nature of the engravings themselves, mostly *macule*.

[193] ARCÀ 2016, p. 15.
[194] RONDINI *et alii* 2018, p. 25. "However, due to its location at a lower altitude with respect to the already cited areas, some of the interpretative arguments proposed for the <<topographic>> interpretation, of which for example the naturally <<planimetric>> view of fields and crops for who lives in a mountain area may result little efficient…".
[195] ARCÀ 2016.

R. 19

R. 19 is part of the southwestern cluster below the "Bastione" and is in close connection to R. 18, R. 20, and R. 21. They all share sub-rectangular pecked areas and smaller, irregular, pecked areas. The rocks are defined by a smooth glacial groove in which figures are engraved.

Figure 71. View of the southwestern cluster of rocks. Note the glacial groove; Red arrow points to the location of R. 19; Photo by Toma Bucuroiu

R. 19 is a unique rock for Dos dell'Arca due to the abnormal "T"-shaped figure (Fig. 72, number 5). A total of seven discernible figures have been identified on it in total. For reasons of simplicity and clarity, I have not included sparse peckings and or very small areas which are pecked in a very disorderly manner. Figures number 2, 4, and 7 are irregular *macule* without a clear shape. Number 5 is the abstract figure which I compared to a figure from Chenal. On R. 33 from Dos dell'Arca, there is a similar figurative intent in one of the figures (a "T"-shaped figure)[196], albeit even more incomplete. There are three more curious figures: 1, 3, and 6. Figures 1 and 3 look as if they could resemble a *paletta* with a very short or incomplete handle.

[196] RONDINI *et alii* 2018, p. 24.

A similar figure can be seen on FdN R. 2 sector H2[197] and perhaps FdN R. 27 sector A[198]. Figure 6 can be more clearly assimilated as a *paletta* as it features a proper handle. The curvature is given by the specific shape of the rock. It can be tentatively compared to a *paletta* from R. 28[199]. Figures 6 and 7 are in a badly cracked area where a tree had lodged its roots.

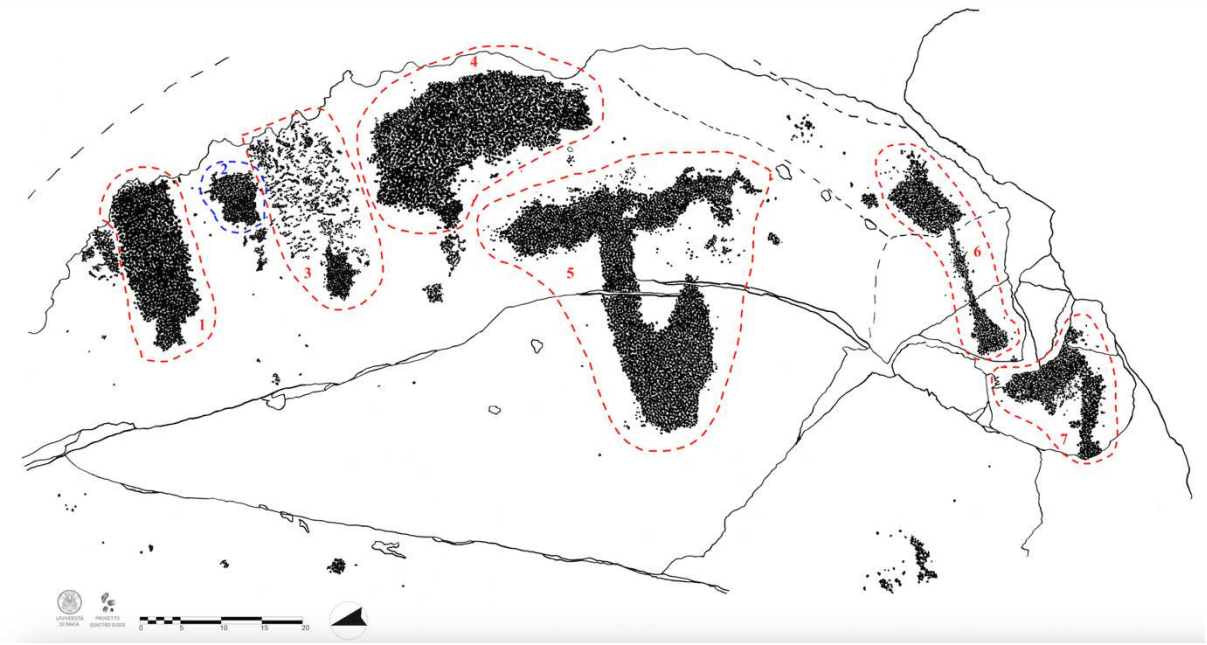


Figure 72. Full tracing of R. 19 with the figures highlighted; Tracing by Maneesh.

R. 26

Below R. 24 and near the cliff edge of the site there is a rather steeply inclined rock surface, R. 26 (Figs. 73-79). It has been split into three sectors: A, B, and C with a total of 25 figures. They all share the same motifs: irregular *macule* and cup-marks. Sector A has 7 figures: 1, 2, 6, and 7 irregular *macule* and 3, 4, and 5 cup-marks (Figs. 78-79). Sector B (Figs. 74-75) has 9 figures, all irregular *macule*. Out of all of them, figure 6 seems to have a sub-rectangular character. Both these sectors have been badly weathered as the surface presents many chips and cracks and, as a result, some of the figures have been rendered incomplete (for example Sector B, figure 4). A large tree which grew in the middle of the outcrop seems responsible for the major crack seen in the middle. Sector C (Figs. 76-77) can be considered the 'tidiest' with 9 figures in total: 5 closely grouped cup-marks with 4 finely and sparsely pecked surfaces. These types of figures are a leitmotif for Dos dell'Arca and constitute a significant presence at Foppe di Nadro as well (for example FdN R. 44[200]).

[197] CITTADINI (ed.) 2017, p. 54.
[198] MEDICI & GAVALDO (eds.) 2019, p. 34.
[199] RONDINI *et alii* 2018, p. 20.
[200] CITTADINI (ed.) 2017, p. 137.

Figure 73. General view of R. 26 during the tracing. Photo by Toma Bucuroiu.

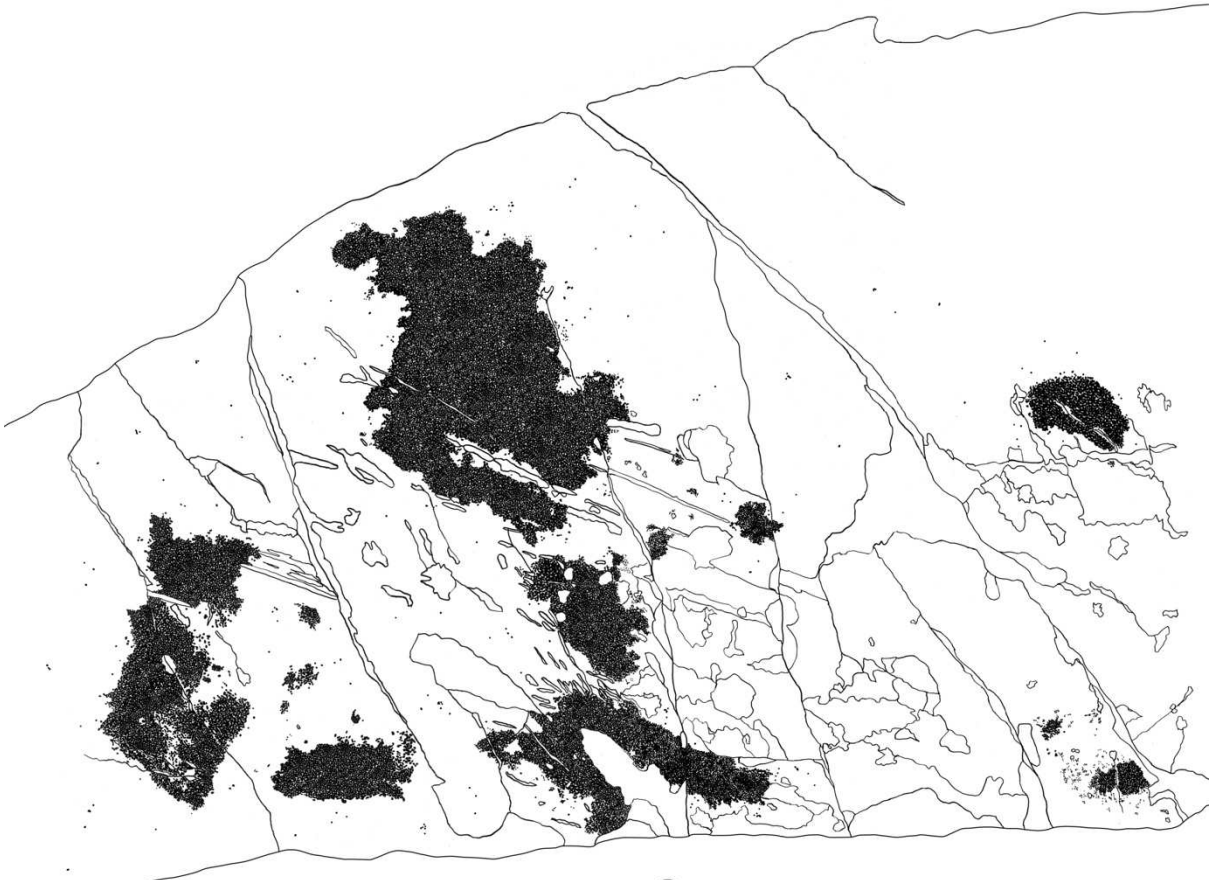


Figure 74. Dos dell'Arca R. 26 B; Tracing by Toma Bucuroiu.

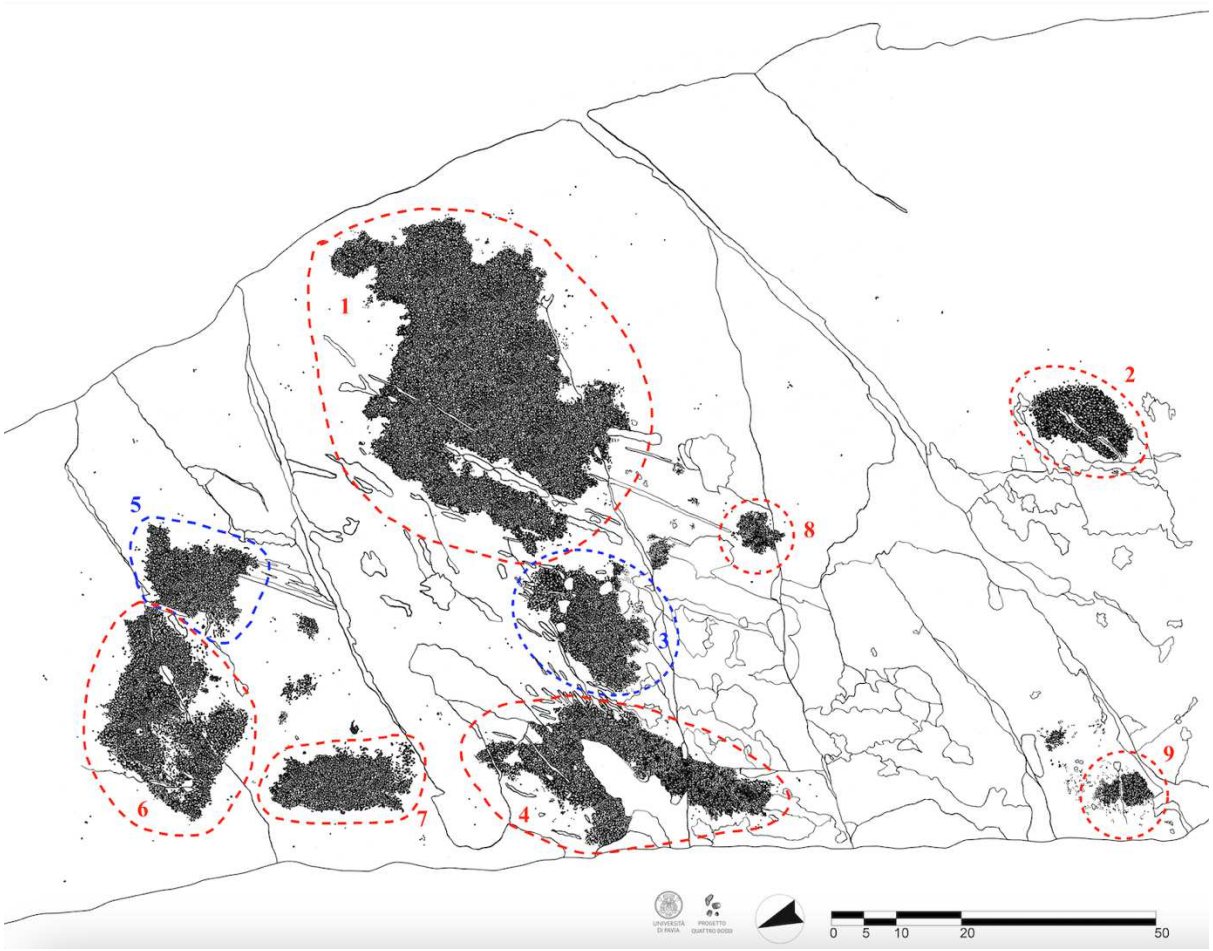


Figure 75. R. 26 B with the figures highlighted.

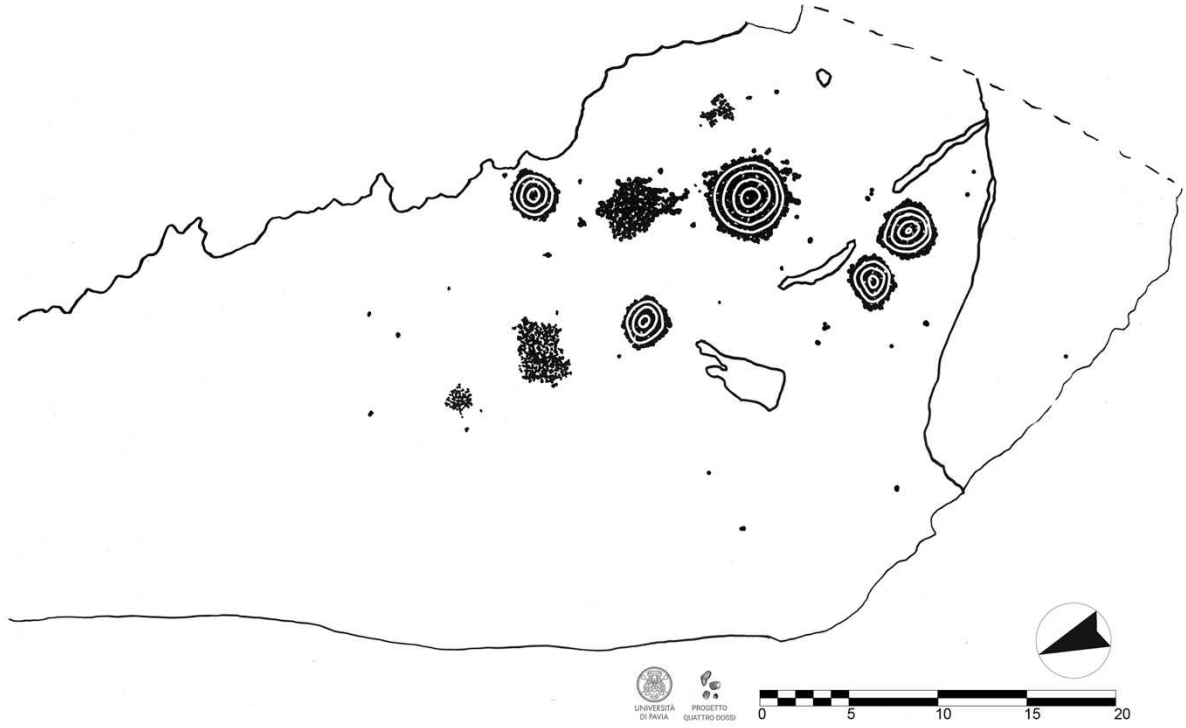


Figure 76. R. 26 C; Tracing by Toma Bucuroiu.

Figure 77. R. 26 C with the figures highlighted.

Figure 78. R. 26 A; Tracing by Toma Bucuroiu.

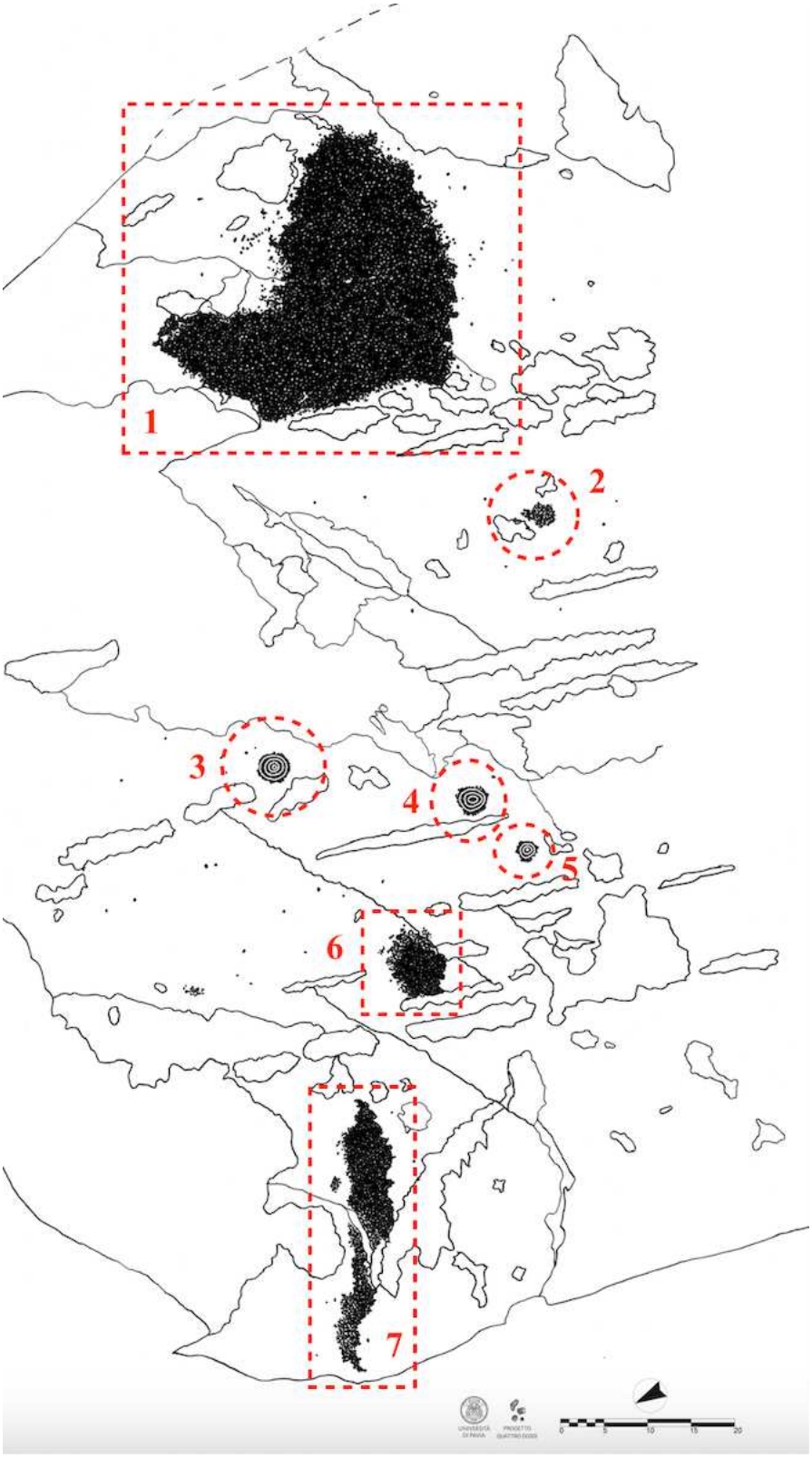


Figure 79. R. 26 A with the figures highlighted.

R. 41

R. 41 is situated in the area of the "Bastione", therefore on the highest point of the hill. The rock could be sighted through the base of the low walls which were not excavated by Anati in 1962[201]. It has a total of 11 figures (Fig. 81). Numbers 1, 2, 3, 10, and 11 fall into the category of irregular *macule*, while 4, 5, 6, 7, and 9 into the sub-rectangular *macule* category. Figure 8, if not for the imperfections of the rock, would constitute the shape of a square. Figures 6 and 7 would also constitute squares, were it not for the small appendages. Although figures 4, 5, and 6 are touching, they have been considered separate due to the clear geometric intent: two vertical rectangles and one square. Figure 9 is a small vertical rectangle to which/from which a line is connected/departs. This seems to be a specific figure in itself as it can be found on a number of rocks: DDA R. 7[202] (where two vertical rectangular *macule* both have a line departing downwards), FdN 25, Sector B[203] (two vertical rectangular *macule* with a line departing from the upper-left corner in one case and the upper-right corner in the other), and FdN 85[204] (an almost rectangular and vertical *macula* has a line departing from its bottom-left corner).

Figure 80. Full tracing of R. 41; Tracing by Christy Wong.

[201] RONDINI & MARRETTA 2019, p. 29.
[202] SLUGA 1969; RONDINI & MARRETTA 2017, p. 13.
[203] CITTADINI (ed.) 2017, p. 127.
[204] CITTADINI (ed.) 2017, pp. 162-163.

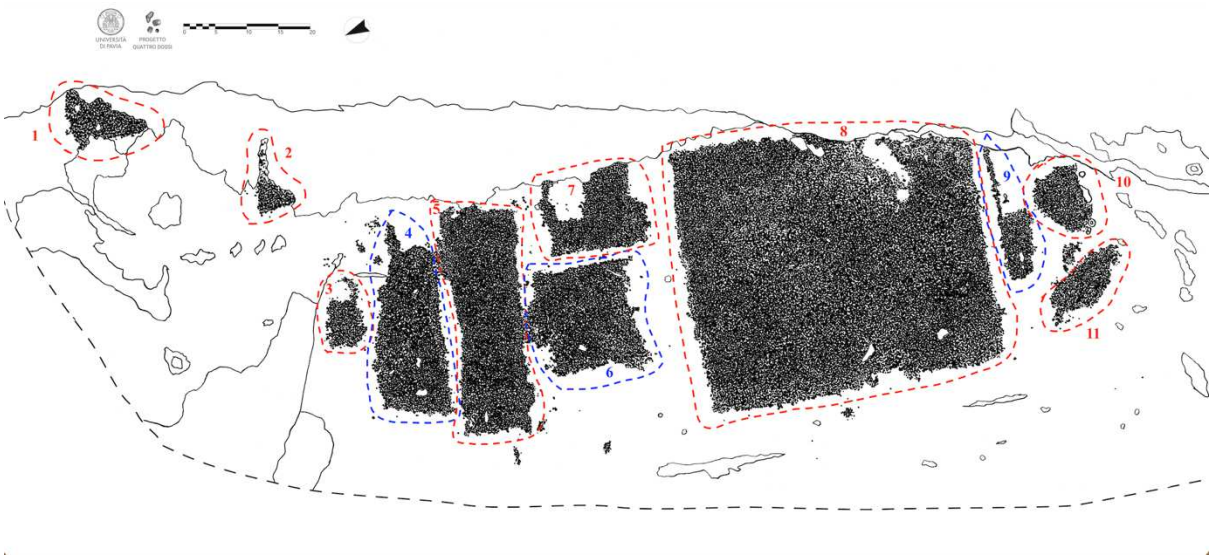


Figure 81. R. 41 with the figures highlighted.

All of the rocks presented above, alongside the others found at the site, have the advantage of having been traced very recently (2018-2023) and, most importantly, come from a very clear context. The site of Dos dell'Arca has been exhaustively researched from both archaeological and rupestrian perspectives. Commonalities can be drawn between the three rocks, and with the others in the larger context. Firstly, the west-east orientation of the rocks and engravings, by far the favourite of the ancient engravers. This, alongside the low altitude of the site, contradicts the "panoramic" and direct view over the valley, as they are not even facing it. This is especially true for the eastern cluster. Secondly, there does not appear to be a dominant type of figure between the irregular *macule* and sub-rectangular *macule*. The lack of geometricity does not favour a "topographic" point of view. This can be further reinforced by the lack of a significant quantity of the 'purer' "topographic" figures such as rows and alignments of dots, double base rectangles, enclosures, "pathways", and so on. The *macule*, especially those of the irregular sort, are uniformly distributed across the site and are not always associated with sub-rectangular ones, as R. 26 shows. Thirdly, the topography of the rock appears as a decisive factor in the type and shape of figures to be incised, as R. 22 perfectly illustrates.

Chapter VI

Interpretations from the past: the Palaeolithic point of view

Sluga is, alongside A. Marretta more recently[205], the only one to have criticised and doubted the "topographic" approach. She argues that "Infatti la massima parte delle << figure topografiche >> è stata incisa su rocce del tutto particolari: il Dos Cui, il Masso di Borno, la Stele di Bagnolo, le rocce dell castelliere di Dos dell'Arca, tutte rocce che dovevano rivestire un'importanza peculiare. Inoltre il Monte Bego ed il Monte Baldo sono due località dove difficilmente si può parlare di lavoro dei campi o di mappe agricole, a causa delle particolari condizioni ambientali, anche se al Monte Bego le figurazioni di aratri e di aratori sono molto numerose."[206] Instead, she chooses to go in the direction of a symbolic connection linked to cults of fecundity and chthonian initiation. She recognizes in the geometric and abstract patterns and symbols of the IInd and IIIrd-A1 (First Copper Age) styles a very strong resemblance and cognitive continuity with Palaeolithic and Mesolithic symbolism, on which she draws her comparisons, with an emphasis on male and female representations and symbolism.

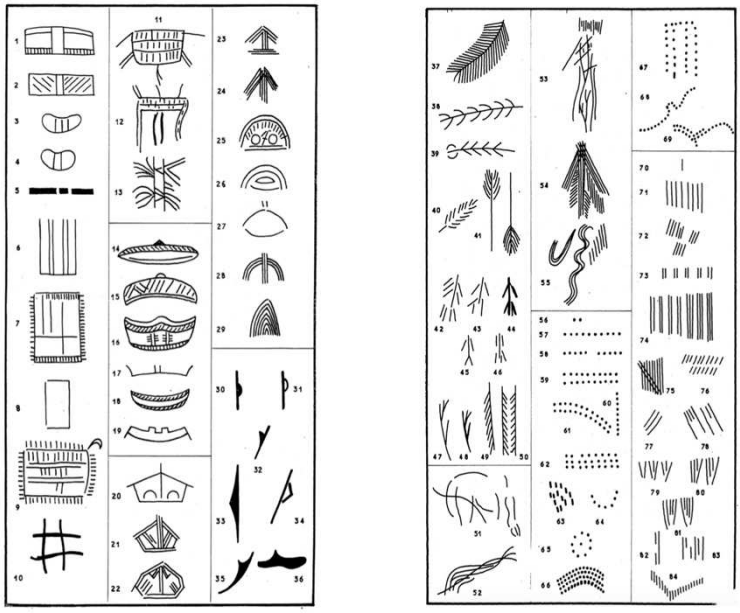


Figure 82. Palaeolithic cave art symbols. Source: LEROI-GOURHAN 1958a.

[205] MARRETTA 2007; MARRETTA 2013.

[206] SLUGA 1969, p. 63. "In fact, most of the <<topographic>> figures have been engraved on very particular rocks: Dos Cuì, the Borno boulder, the Bagnolo stelae, the rocks of Dos dell'Arca, all are rocks which must have had a particular importance. Moreover, Monte Bego and Monte Baldo are two places where it is difficult to talk about agricultural labour or agricultural maps given the particular ambient conditions, even though in Monte Bego the figures of plows and ploughing are numerous."

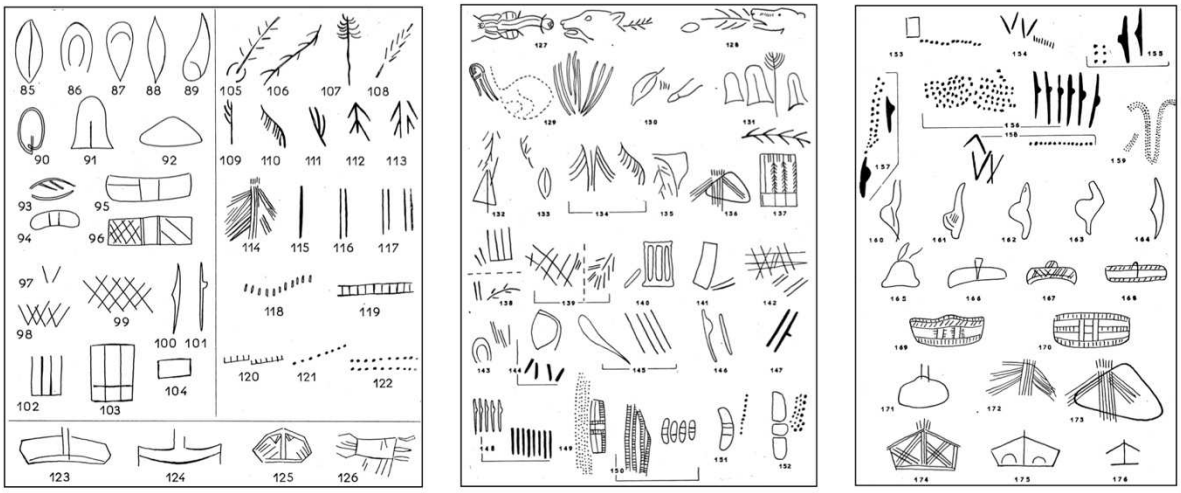


Figure 83. Different Palaeolithic cave art motifs and symbols. 85 to 104: female; 105 to 122: male; Middle table: coupled signs; Source: LEROI-GOURHAN 1958b.

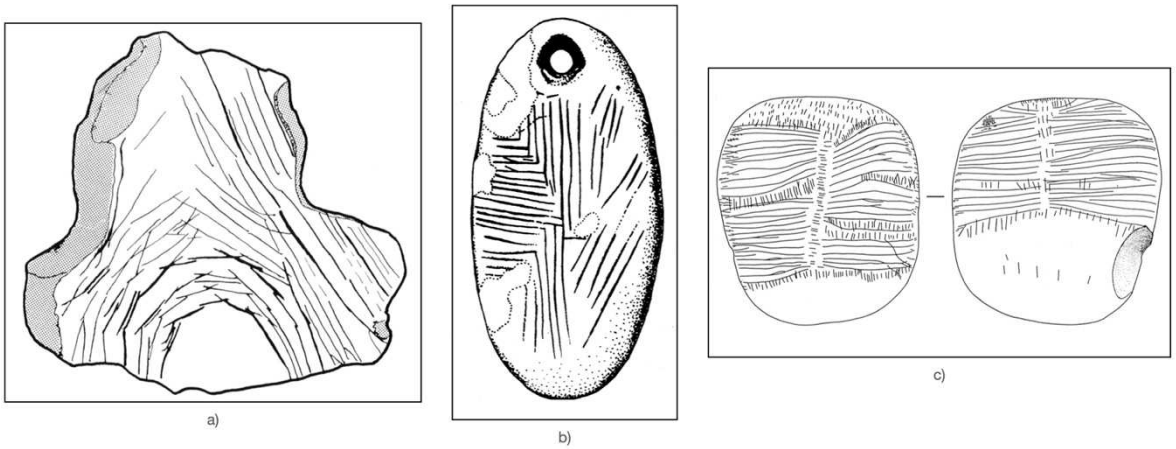


Figure 84. a) Engraved concretion plaque from Quneitra (Israel), ~60.000 BP; b) Engraved pendant from Laugerie-Basse (Dordogne); c) Geometric motifs engraved on pebbles from Rochedane (Doubs), Azilian period (12.000-10.000 BP); Source: PAILLET 2018.

Indeed, a large number of prehistoric figures and symbols show a striking resemblance to the Neolithic/First Copper Age compositions of Valcamonica or, rather, the Valcamonica ones show a resemblance. Geometric patterns of supposed male or female values are found constantly during the Palaeolithic, be they on cave walls or on mobiliary art. The comparisons that can be drawn are, frankly, plenty. Following this interpretational line, one can notice a clear continuity between Palaeolithic and Neolithic symbolism, as seen on two pieces from Riparo Gaban (TN). The famous "Venere del Gaban" (Fig. 85) is a statuette made from deer bone and it contains traces of white limestone and red ochre for colouring, standing at only 6,9 cm high. Two feminine symbols can be observed: a lozenge (observe symbol number 99 from Fig. 83) and a deep vulva, from which a masculine symbol seems to emerge (compare with

Figure 85. a) and b): Venere del Gaban; c) Engraved bone from Riparo Gaban.

symbols 105 to 114 from Fig. 83). The engraved bone (Fig. 85 c) is, perhaps, of even greater interest. The top figure is an *oranti*, often brought into discussion to reinforce the possibility of a Neolithic dating for the *oranti* present in Valcamonica. Below it are present two feminine symbols (numbers 98 and 99, Fig. 83), a rather typical sign for the vulva (Fig. 83, number 158), and geometric motifs. Both of these objects come from a context securely datable between 4900 – 4700 B.C. and provide a rare case of symbolic and stylistic transition between the Mesolithic inhabitants and the Neolithic farmers of the area. While the materials and part of the symbols are of a clear Mesolithic facture, the worshipper is clearly part of a Neolithic ideological package.

Continuing down this line of thought, the motif seen on the engraved plaque from Quneitra (Fig. 84 a), motif which can be found in one of Leroi-Gourhan's tables (Fig. 82, symbol number 29) is also found in a remarkably similar shape and execution on R. 60 (sector A, Fig. 86) from Foppe di Nadro[207]. The series of upturned U-shaped concentric lines ends abruptly by a triangular fracture in the rock, point from which a small glacial channel starts running downwards. Characteristic Copper Age elements from boulders and stelae overlap this figure: animals and a schematic *oranti* with open arms and three fingers. The archaic *oranti* is presumed by Sansoni to be of the same period as the upturned U-shaped concentric arcs.

[207] CITTADINI (ed.) 2017; SANSONI 2022.

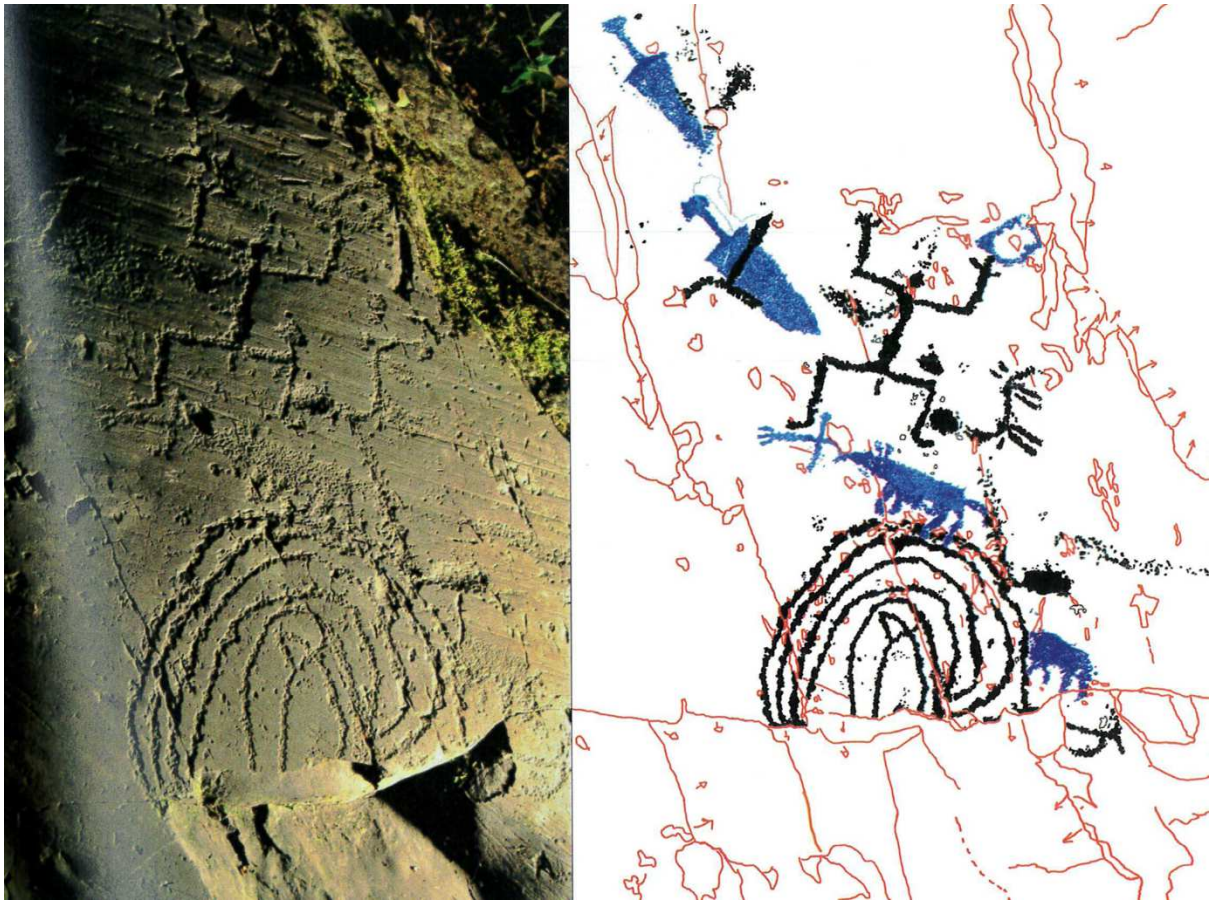


Figure 86. Foppe di Nadro R. 60 (sector A); Source: SANSONI 2022.

The pieces from Laugerie-Basse and Rochedane (Fig. 84 b-c) are fine examples of mobiliary art. The site of Mas d'Azil has offered thousands of such pieces, while around 200 were found at the site of Rochedane[208], both contexts dating from the Azilian period[209]. A very interesting comparison can be made with the Neolithic "minilithic" art from Bornholm Island, Denmark. During the 2014-2016 excavations at the causewayed enclosure at Vasagård, near the megalithic tombs, decorated stones have been found in the system-ditches, associated with small fragments of burnt bone, flint debris, and pottery sherds[210]. These last finds bring the total number up to 200, in addition to the pieces already found at Rispebjerg. The context in which they have been retrieved can be safely dated to the Middle Neolithic (in Scandinavian context), or during the Funnel Beaker Culture (2900 – 2800 B.C.). The pieces in question are either round (usually worked), carefully polished on the sides, and display circular patterns interpreted as solar. Similar iconography is encountered also on earthenware objects. The

[208] PAILLET 2018.
[209] Cultural subdivision and industry dated at the end of the Upper Palaeolithic, around 12.000 – 10.000 BP. It takes its name from the Grotte du Mas d'Azil.
[210] KAUL *et alii* 2016.

others are rectangular or sub-rectangular and have rectangular decorations. The main comparisons come from the British Isles[211], especially from Cornwall and the Orkney Islands.

Figure 87. Sandstone with circular ornamentation from Rispebjerg, Bornholm. Diameter: 3,6 cm. Photo: John Lee, the National Museum of Denmark. Source: KAUL et alii 2016.

A very similar piece to those from Bornholm Island was found in a very similar context in Wiltshire, causewayed enclosure ditches, and is dated to around 3300 – 3200 B.C. It features a pattern of straight and curved intersecting lines and is made on a chalk slab (Fig. 88). Similarly, the rectangular/sub-rectangular pieces from Vasagård have motifs consisting of grids, lines, and strokes. They are very tiny pieces (for example VAS#1567 and 3479 measure roughly 3 x 3 cm, Fig. 89) and are usually broken before being deposited in the trenches. Of particular interest are the upturned U-shaped concentric circles. The authors interpret them as plants,

[211] PIGGOTT 1954.

while the short strokes may symbolise the rain. They choose to follow the "topographic" interpretation of Arcà and link these decorations to agriculture, features of the land, fertility, and rain. Of course, one could draw similarities between the Palaeolithic signs, like the upturned U-shaped concentric circles and the grid-like patterns, and the Neolithic ones. For example, the barbed signs on pieces VAS#1567 and 3479 closely resemble male symbols (Fig. 90). The same can be said for the central symbol from the Rispebjerg piece (Fig. 87) which resembles signs representative of female symbolism. This may not be so far-fetched as a link between sun symbolism, fertility and femininity would seem logical. Thus, the central symbol may fit nicely in either categories A1 or B1 from the chart from Fig. 91. This would lead to a

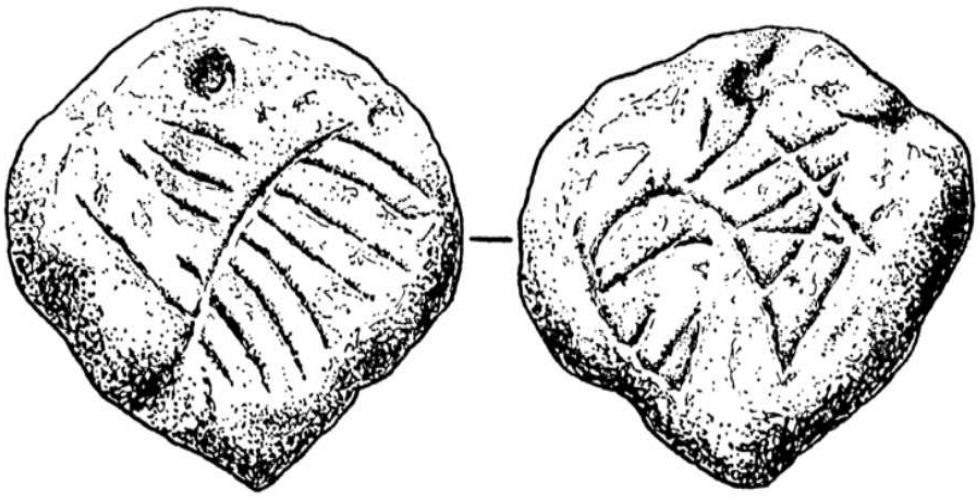


Figure 88. Decorated chalk slab from Wiltshire, England. Source: KAUL et alii 2016.

Figure 89. Shale pieces from Vasagård West. Source: KAUL et alii 2016.

rather interesting general picture, with round ‘minilithic’ pieces containing solar and female symbology, and rectangular/sub-rectangular pieces being representative of male symbolism.

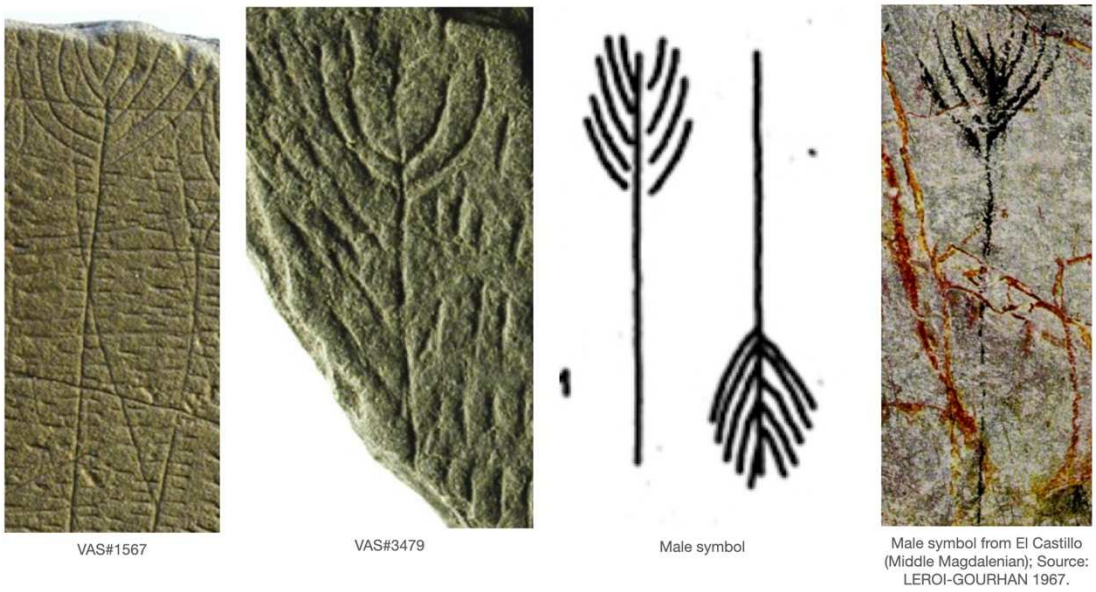


Figure 90. Comparison between the barbed figures from Bornholm and Palaeolithic male symbols.

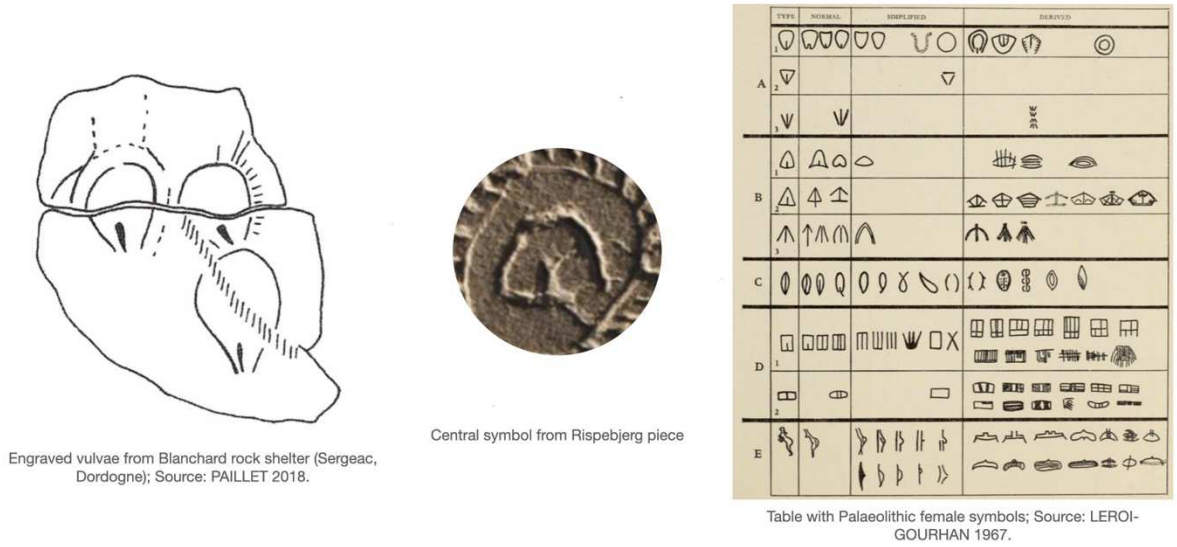


Figure 91. Comparison between the central symbol from the Rispebjerg piece and, engraved Palaeolithic vulvae and general female symbols.

There are, however, two more very interesting pieces of miniature lithic art which bear a very close resemblance to a particular decoration motif present in Valcamonica, the fringed cloak from the Copper Age stelae. The first piece in question comes from another causewayed enclosure, but this time from Cornwall, England, and attributed to a Middle (3400 – 3000 B.C.)/Late (3000 – 2400 B.C.) Neolithic context. The incised slate disc, found in Pit 1092[212], measures around 14-15 cm in diameter and is decorated on both sides (Fig. 92). One side has a chessboard-like decoration, while the other contains lozenges arranged in a chessboard pattern. The other piece, VAS#682, comes from the same Vasagård context as the ones mentioned before. The shale piece, measuring only 3 x 4 cm, contains a very interesting central decoration invocative of a fringed cloak (Fig. 93). The fringed cloak motif (a rectangle with fringes) appears only on the Valcamonica stelae, either by itself or in close association with deer and does[213]. It is present on several monuments, such as Ossimo 5, 7, and 8, Pat 1, 2, 4, and 11, Borno 1 and on the fragment Cemmo 20 (Fig. 93). Chronologically, it can be attributed to the III A1 period[214] (2900-2500 B.C.) The interpretation as a cloak, alongside being considered as a male symbol, is due to the presence of this motif on the back side of the stelae from the "gruppo atesino"[215]. In Valcamonica, the fringed cloak appears only in the upper part of the monuments and mostly on the front side. This comparison would seem to support an interpretative model based on a male/female value of the 'minilithic' pieces. In this case, the interpretation of VAS#682 would remain consistent with the proposed male symbolism, while

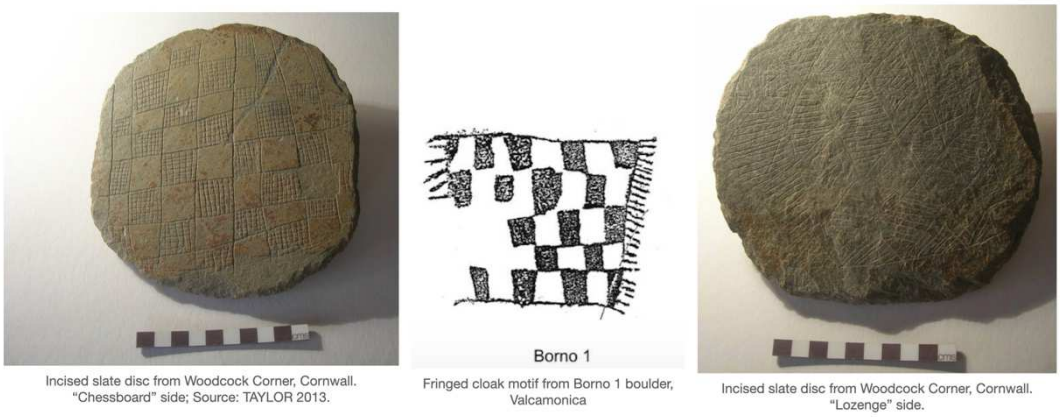
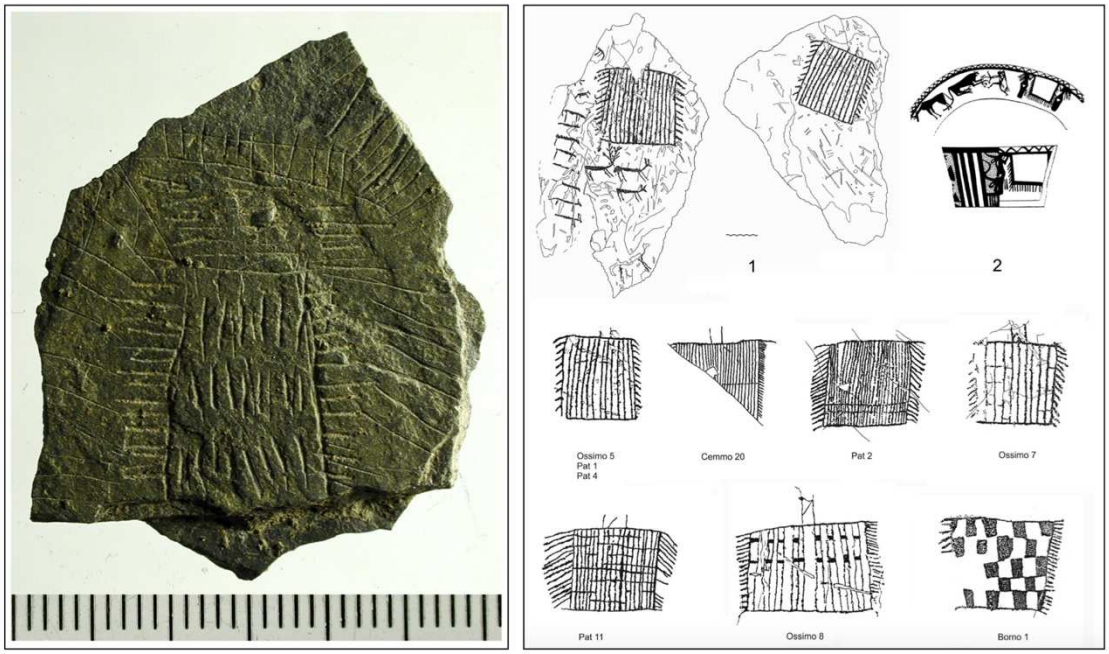


Figure 92. Comparison between the two "fringed cloaks" motifs.

[212] TAYLOR 2013, p. 18.
[213] CASINI 2015.
[214] CASINI, DE MARINIS, FOSSATI 1995.
[215] CASINI, DE MARINIS, FOSSATI 2014.

the piece from Cornwall would be an interesting example of a two-sided piece with a male face (the "chessboard" side) and a female face (the "lozenges" side).



VAS#682; Source: KAUL *et alii* 2016.

1) Ossimo 5; 2) Vase from Arpakiya; Source: CASINI 2015.

Figure 93. Comparison between "fringed cloak" motifs.

Some elements seen on the painted rock shelters of the Western Alps can also fit into this interpretative model. Therefore, the "palm"-like symbol from *Rocca di Cavour* can be interpreted as a male symbol, also by comparison with the "Venere del Gaban". The same can be said for the symbols between the rows of dancers from *Balma 'd Mondon* and *Eissartènes*. Particularly convincing seems the comparison between male symbols and piece RD 007 from Riparo Dalmeri. There are, however, some problems with this approach. They are the same ones invoked in the case of some of the comparisons made by Arcà: the purely visual and formal character of the comparisons. Yes, resemblances can be striking, and the symbolism may appear the same. But we are faced, once again, with the problem of context, specifically chronological and geographical. But there is one way of working around chronological and geographical differences, as all of these can annulled. The key may be found in the human brain, identical across the globe and millennia.

Chapter VII

The Consciousness Contract

The Premise

Just as the modern world now functions and is regulated by a Social Contract (as brought forth by Rousseau), so there is another type of Contract, less obvious and regulated, one that is found deep within our neurological wiring. It is a Contract that one could say was made without our knowledge or approval, and rightly so. Because this Contract, the Consciousness Contract, exists only due to the way our brain works, and there is not much we can do to help it. What does it do or seek to understand, this Contract?
Simply put, it seeks to understand:

- "the experiential foundations of beliefs in supernatural realms and beings;
- the origins of cosmologies that represent both material and spiritual components of the universe;
- the origin of social distinctions that are based on esoteric knowledge and experience, and which therefore cut across brute force, age and sex;
- and also the ways in which these experiences, cosmologies and social distinctions can be marshalled in activities that we call religious practices."[216]

The main premise would be that religion is a fundamentally inherent human manifestation, encountered in all peoples across all periods. This is explained by the way the universal human nervous system functions, although it has to be added that commonalities and "all the stages and experiences of consciousness that we distinguish are mediated by culture"[217]. The key notion with which we deal when tackling the emergence and functioning of religion (comprised of three interdependent elements: experience, practice, and belief), seen as a natural expression of the human mind and the neurological wiring, is **altered states of consciousness**. It is during these, one could say liminal states of being of the mind, that religious thought and behaviour are seen, felt, and conceived.

[216] LEWIS-WILLIAMS & PEARCE 2011, p. 38.
[217] LEWIS-WILLIAMS & PEARCE 2011, p. 40.

The Consciousness Contract

The mental experiences of altered states, regardless of the means of induction, are much alike, and human visions and/or hallucinations have many elements in common across all people and all cultures. A frequent critique of this model assumes that visions and altered states of consciousness are achieved by means of ingesting drugs or other potent substances. In reality, the causes are much more diverse. Hypnagogia is a widespread cause of visions and hallucinations, as is believed that around 70% of people experience it[218]. Hypnagogia refers to the intermediate state between being awake and asleep or while awakening from sleep. During this state of mind, one can experience a whole suite of images and scenes, sometimes accompanied by sounds. But deep down, despite the form of induction, the mental experiences of altered states are similar: seeing bright geometric patterns, floating or flying, passage through a tunnel, transformations of one thing into another, transformations into animal forms and the ability to see mercurially, vividly. Other characteristics may be polyopsya (multiplication of images like reflections) and micropsia/macropsia (reduced or enhanced sizes of objects). What is clear, though, is that "These phenomena arise from common structures in the brain and nervous system, common biological experiences, and common reactions of the central nervous system to stimulation"[219]. The list of what can actually induce these altered states of consciousness is varied: ingestion of psychotropic substances, hypnagogia, near-death experiences, intense rhythmic dancing, auditory input, flickering light, fatigue, hunger, sensory deprivation, extreme pain, intense concentration, migraines and medical problems such as temporal lobe epilepsy or schizophrenia. But, as is almost always the case, it's usually a combination of factors, each aggravating the other, which leads to achieving an altered state of consciousness. In order to further illustrate the combination of factors, Lewis-Williams[220] gives the example of Southern American Bororo's first call for a potential shaman: it starts with a series of life and death related chants being sung all through the night. At some point, the potential shaman will feel a chill surging from his stomach to his chest. He may also feel the smell of rotting corpses. After a few days, he will start having dreams which include animals transforming or sensations/visions of flowing down a river. In the end, he confronts a monster who is someone that is recently deceased. This contracted ethnographic narration perfectly

[218] LEWIS-WILLIAMS & PEARCE 2011.
[219] SIEGEL 1980, p. 911.
[220] LEWIS-WILLIAMS & PEARCE 2011.

illustrates the combination of altered states of consciousness-inducing elements: intense and rhythmic chanting which lasts a whole night, combined surely with fatigue and hunger.

As such, an idealized model of the different stages of altered consciousness and their sequence could be formulated (Fig. 94), although it should be noted that not all people go through all stages: some can directly reach the last stage. Thus, there are three stages, all leading to one another, ideally.

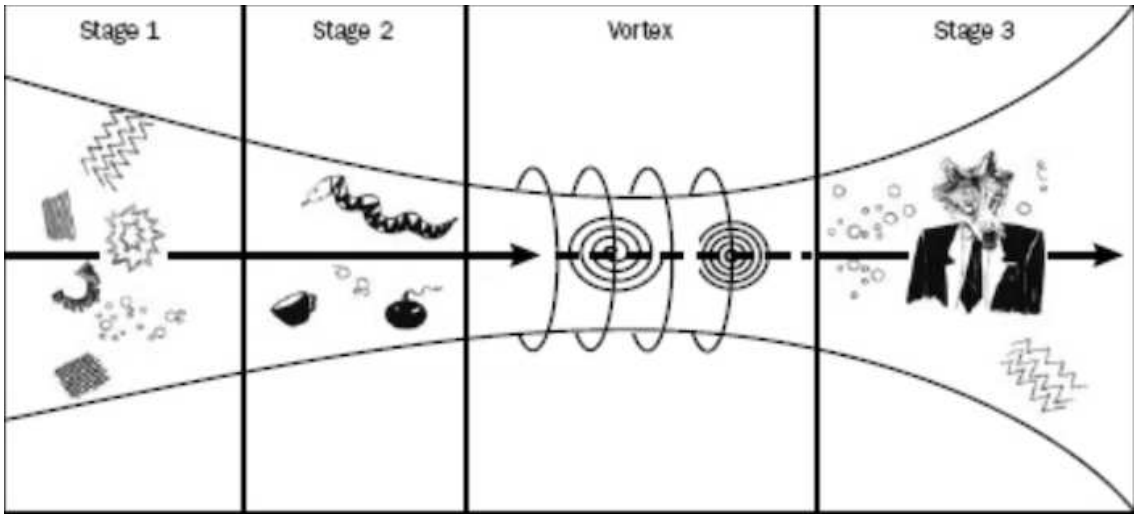


Figure 94. The three stages of altered consciousness. Source: LEWIS-WILLIAMS & PEARCE 2011.

Stage 1 can be defined by the geometrical mental images, called entoptic phenomena. A general list would include the following:

1) A grid and its development into a lattice or expanding hexagon pattern;
2) Sets of parallel lines;
3) Bright dots and short flecks;
4) Zig-zag lines, angular/undulating;
5) Nested catenary curves;
6) Filigrees, or thin meandering lines;
7) Spirals;

All these can manifest in bright, vivid colours, often rotating, expanding, contracting or combining with each other. Another particularity is the fact that, when the eyes are open, these visions project themselves onto surfaces.

In Stage 2, the different shapes seen in Stage 1 are processed and recognized, depending on the current state and availability of the person. It is during this stage that The Vortex is experienced, essential to achieving Stage 3. The Vortex can take many forms, such as rivers,

tunnels, holes in the ground and so on. On its internal surface, there can be a grid, sometimes laced with iconic images of people, animals, monsters, or others. The Vortex can also be a constraining one: difficulty in breathing, affected vision, a sense of being in another world and weightlessness have been reported, all interpreted as being underwater. Referring to the neuropsychological dimension, this particular wiring of the brain is found in the striate cortex, located at the back of the head. Interestingly enough, Southern African San rock art depicts also what only shamans are able to see, one example being the expulsion of sickness from the back of a shaman's head[221], where The Vortex takes place and which leads to the final stage of altered states of consciousness, or the shamanic trance capable of healing people or travelling through the different tiers of the cosmological order.

Stage 3, and the last one, begins with the emergence from The Vortex. This experience may include somatic hallucination like limb and body attenuation, intense awareness of one's body, polymelia (extra digits/limbs), zoopsia (seeing animals) and changing into animals or others. So, all in all, the definitive traits of a shamanic trance. An 1880 account of someone who ingested hashish is compelling: "… Suddenly there was a roar and a blast of sound and the word 'Ismaral' [aural hallucination] … I thought of a fox, and instantly I was transformed into that animal. I could distinctly feel myself a fox, could see my long ears and bushy tail, and by a sort of introversion felt that my complete anatomy was that of a fox [transformation into an animal]. Suddenly, the point of vision changed. My eyes seemed to be located at the back of my mouth; I looked out between parted lips [somatic transformation]"[222].

It is during the third stage that the definitive aspect of shamanism and religious experiences takes place: the transcosmological travel through the different neurologically generated tiers of the cosmos. "The special skill of the shaman is his ability to journey between the mundane world, where the rest of the community is confined, and the spirit realm … When the shaman enters an altered state of consciousness, he is truly transformed, attaining the capacity for supernatural flight … When he travels to the spirit world, he becomes the powerful animal or creature whom he calls on for supernatural aid"[223]. More often than not, as is usually the case with ancient religion and religious practices, the expressions of the tiered cosmology and its organising are reflected carefully in the material world, regulating architecture and behaviour. A perfect example of how the belief in a tiered cosmology, coupled with ritualic shamanic travel through it, is manifested in domestic architecture can be portrayed by the

[221] LEWIS-WILLIAMS & PEARCE 2012.
[222] LEWIS-WILLIAMS & PEARCE 2011, p. 53.
[223] PEARSON 2002, p. 75.

Amazonian Barasana tribe[224]. All Barasana life is centred around the *maloca*, or Barasana longhouse[225]. One *maloca* houses all the members of a single kinship, up to 30 people in some cases, and it is surrounded by its own manioc garden. The front part of the house is reserved for the men, while the women have the back part, divided by a screen. The men drink *yajé* (known more commonly as ayahuasca) for inducing altered states of consciousness, while the women sing from behind the screen. But the *maloca* is much more than this, it is a microcosm, a physical representation of the tiered cosmos through which the shaman regularly travels (Fig. 95). The roof represents the sky, the house posts are the mountains, and the floor is the earth. The roof contains a small vertical post, called the Sun's post, representing the *axis mundi*. Between the roof and the floor, ritual objects are hung, like macaw feathers: they are instruments of transcosmological flight. The graves are dug into the floor, the underworld, and the deceased are placed into a canoe. Sometimes, the canoe can be doubled over, conferring a hexagonal shape, which is associated with the shape of quartz crystals, one of the shaman's power objects used for transcosmological travel. The graves of the men are dug in the centre of the house, while the women are buried at the entrance of the family compartments. The Barasana longhouse is also divided by a horizontal axis: ideally, it is oriented on an east-west axis. The horizontal beam is called the Sun's path. The men's door is the Water Door, and it leads to the river, which is also the connection with other *malocas*. All these elements are regulated by rituals and mythology. When the Supernatural beings, called *He*, enter the house, they enter through the Men's door. During the main dance sequence, the *maloca* becomes a copy of the cosmos and the people inside turn into the primal ancestors. It is the power of the shaman that does that. Barasana mythology states that only one universe existed at the beginning, a house inhabited by Yeba, the original ancestor. He was a jaguar, while his sons were anacondas. Apart from being avatars, jaguars are also mediators between the three cosmic divisions, life and death, the human world, and the spirit world of ancestors, and between nature and culture. All these attributes are also the ones of the shaman, as he travels between cosmological levels, a shaman can kill or cure and mediate between the human and spirit world. As such, powerful shamans are called jaguars and can turn into one. Animals are seamlessly integrated into the cosmology: the eagle is the predator of the sky, the jaguar of the earth and the anaconda of the water (the underworld). Each of them is a mediator: eagles go on land and catch fish in the rivers; jaguars swim and climb trees; anacondas come out of the water and on

[224] LEWIS-WILLIAMS & PEARCE 2011.
[225] HUGH-JONES 1979; HUGH-JONES 1979.

land. This example of the Barasana perfectly illustrates the way in which neurologically generated tiers of the cosmos penetrate and integrate into daily life, regulating contacts, society, and architecture.

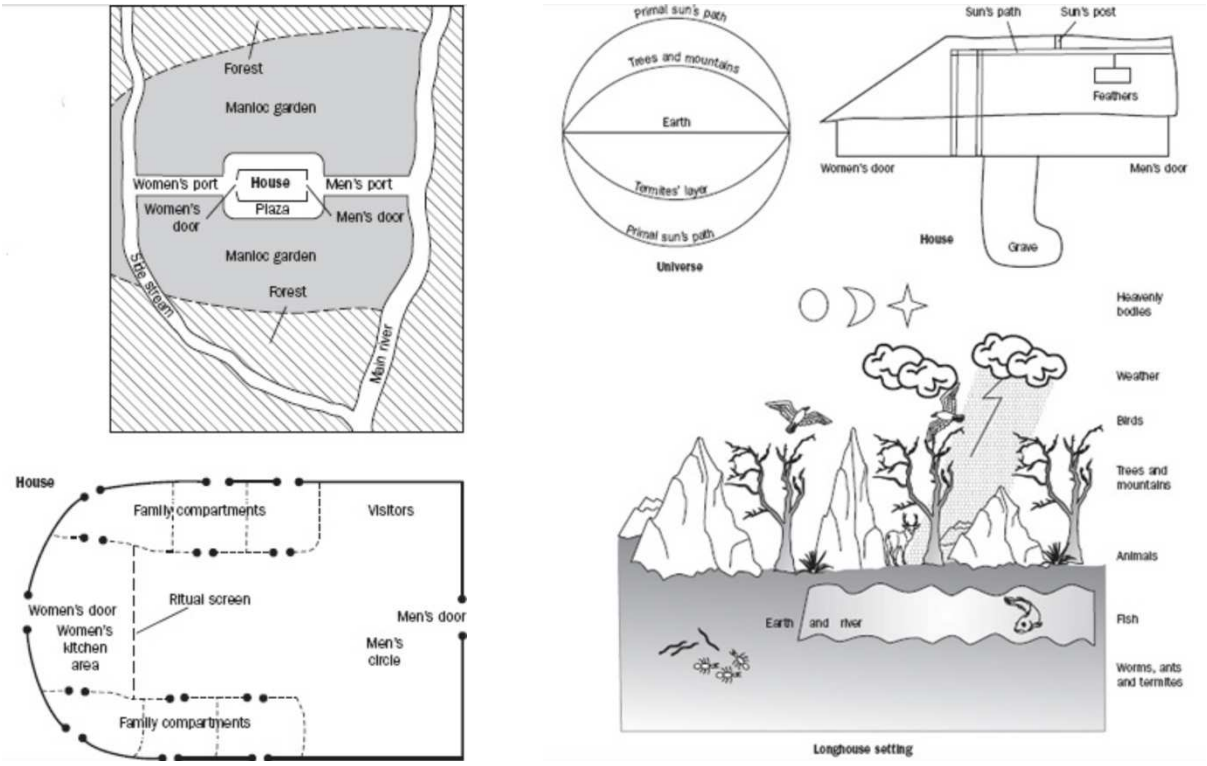


Figure 95. Left: The Barasana longhouse, or maloca; Right: The Barasana longhouse as a microcosm; Source: LEWIS-WILLIAMS & PEARCE 2011.

But perhaps the most evocative case in which the Consciousness Contract can be employed and all the different stages of altered states of consciousness observed is that of the Southern African San hunter-gatherers and their rock art, a people who live in the same way as their ancestors did thousands of years ago. We owe much to understanding their life, beliefs, and rock art due to the wide range of ethnographic reports conducted throughout the 19th and 20th centuries. One such example is the Bleek and Lloyd collection of the 1870s[226], which comprises a verbatim, phonetic /Xam language transcription of detailed accounts from San informers. The most telling example of San practice is the traditional ritual dance employed for a variety of ends, such as: healing the sick, travelling to God's house, controlling animals, journeying to distant parts of the country, or controlling rain[227]. Traditionally, the dance is held in camp, with everyone attending, and can last all through the night. The women generally sit

[226] BLEEK & LLOYD 1911.
[227] LEWIS-WILLIAMS & PEARCE 2012.

in a tight circle around a central fire while men dance around them, their feet making a circular rut in the sand (Fig. 96). The women continuously clap and sing. So far, we can already see some of the elements which lead to an altered state of consciousness: intense, rhythmic dancing, paired with clapping and singing. The fire's flickering light, fatigue, hunger, and intense concentration also contribute a lot.

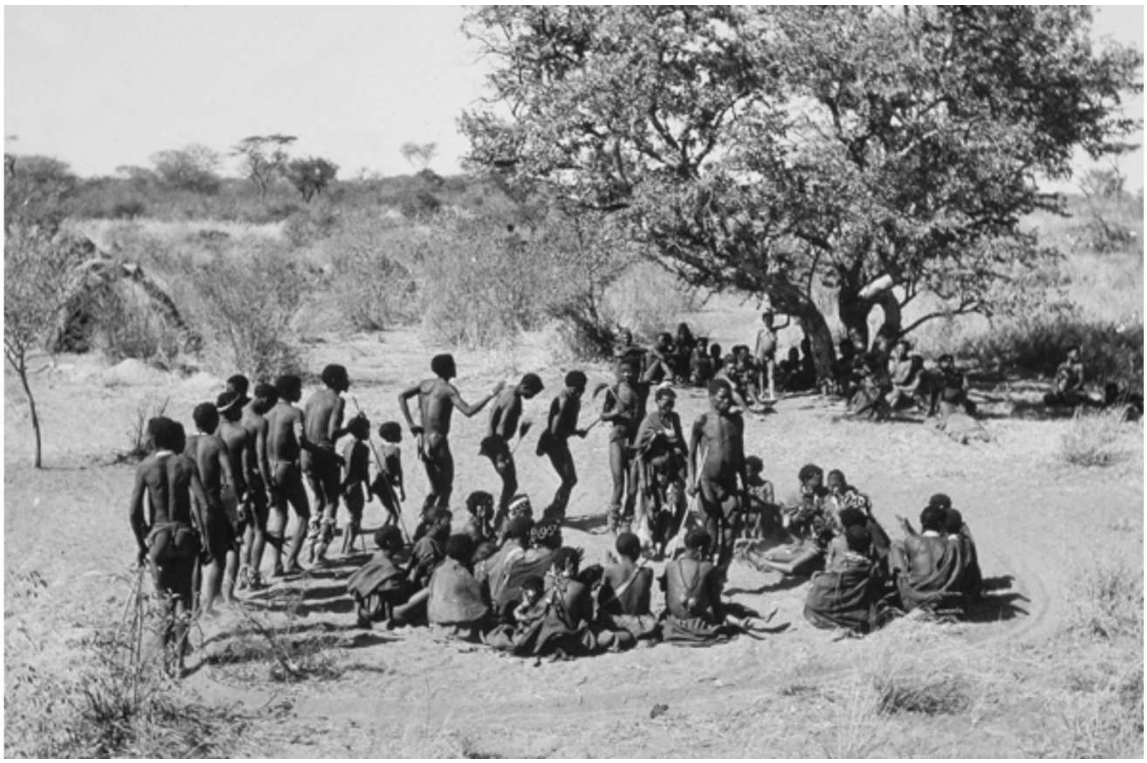


Figure 96. Ju'/hoan San trance, or healing, dance photographed in the Kalahari Desert in the 1950s. Source: LEWIS-WILLIAMS & CHALLIS 2011.

Having reached this point, understanding the terminology the actual San people use to describe the people conducting these trance dances may be of help, for the phonetic manuscripts use the exact San words used by informants. The /Xam word used is *!gi:xa*, translated by Bleek as 'sorcerer', oftentimes also translated as 'medicine person', 'healer', or 'shaman'[228], as used by Lewis-Williams and in this paper[229]. As Guenther puts it: "In the

[228] It should be noted that the origin of the word 'shaman' itself has been clouded in mystery. During the 19th century, it was hypothesised that its origin should be found in the ancient Indian Sanskrit, but this idea has since been debunked, mainly by Németh (1913-1914) and reinforced by Laufer (1917). Its origin is to be found in the Tungusian tribes of Siberia and was brought to Europe between 1692 and 1695 (Laufer 1917).

[229] As we have noticed, many terms can be employed. This causes yet another issue to surface, that of semantics. Although shamanism (and the shaman) is a generally unitary phenomenon, regardless of geography, mainly due to the way the human brain works, it implies varied notions and manifestations. It includes, thus, in itself, many meanings. "One conclusion is to be drawn from all that has gone before: it is an undoubted fact that Language designates things in an incomplete and inaccurate manner" (Bréal 1900, 171). The main issue we face is that a word hardly ever defines the whole object it is used for: "Substantives are signs attached to things: they contain exactly that amount of truth which can be contained by a name, an amount which is of necessity small in proportion

fashion of shamans all over the world, the [San] trance dancer, by means of altered states, enters the spirit world and obtains from it the wherewithal to restore the health of sick fellow humans"[230]. The Kalahari Ju/'hoan equivalent term is *n/omkxao*. The first syllable (*!gi:*) means 'invisible supernatural potency' ('electricity' or 'energy' being harnessed). The second syllable (*xa*) means 'full of'. The Ju/'hoan equivalent of *!gi:* is *n/om* / *n/um*. There are two more /Xam terms which can be translated as supernatural potency: */ko:öde* ('magic power') and *//ke:n* (sorcery)[231]. The */Xam* recognize four categories of 'medicine men' (shamans)[232]:

-the curers: *!gi:xa* (*!gi:ten* in plural)

-the medicine men who 'possess' and have control of game: ⊙*pwaiten-ka !gi:ten*

-those who use their powers to cause harm: *//xi:ka !gi:ten*

-those who perform rain-making rituals: *!khwa-ka !gi:ten*

South Africa is abundant in depictions of trance dances (be they painted or engraved), indicated by the following features and postures: bleeding from the nose, bending forward at an acute angle (sometimes with the help of dancing sticks), holding the arms in a backwards posture, placing the hands on top of heads, wearing dance rattles, carrying fly switches, and

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to the reality of the object. That which is most adequate to its object is the abstract noun, since it represents a simple operation of the mind: when I use the two words *compressibility*, *immortality*, all that is to be found in the idea is to be found also in the word. But if I take a real entity, an object existing in nature, it will be impossible for language to introduce into the word all the ideas which this entity or object awakens in the mind. Language is therefore compelled to choose. Out of all the ideas it can choose one only; it thus creates a name which is not long in becoming a mere sign" (Bréal 1900, 171-172). It is, at this point, that we find ourselves divided between *la langue* and *le langage*: "But what is language [*langue*]? It is not to be confused with human speech [*langage*], of which it is only a definite part, though certainly an essential one. It is both a social product of the faculty of speech and a collection of necessary conventions that have been adopted by a social body to permit individuals to exercise that faculty. Taken as a whole, speech is many-sided and heterogenous; straddling several areas simultaneously - physical, physiological, and psychological – it belongs both to the individual and to society" (Saussure 1959, 9). On the other hand, "language is a well-defined object in the heterogenous mass of speech facts. It can be localized in the limited segment of the speaking-circuit where an auditory image becomes associated with a concept. It is the social side of speech, outside the individual who can never create nor modify it by himself; it exists only by virtue of a sort of contract signed by the members of a community" (Saussure 1959, 14).

[230] GUENTHER 1999, p. 186.

[231] Yet again, we find ourselves dealing with words charged with different ideas and meanings, all pertaining to a certain reality. Or, it could be rephrased, a problem of the meaning of meaning. Generally speaking, there are "three points to be considered in the objective discussion of languages: First, the constituent phonetic elements of the language; Second, the groups of ideas expressed by phonetic groups; Third, the method of combining and modifying phonetic groups" (Ogden and Richards 1923, 7).

[232] LEWIS-WILLIAMS 1980.

clapping women[233]. Referring to a set of rock paintings, one of the informers used by Orpen[234] gives a description of such a trance dance, called the 'dance of blood'[235]: "Cagn gave us the song of this dance, and told us to dance it, and people would die from it, and he would give them charms to raise them again. It is a circular dance of men and women, following each other, and it is danced all night. Some fall down; some become as if mad and sick; blood runs from the noses of others whose charms are weak, and they eat charm medicine, in which there is burnt snake powder. When a man is sick this dance is danced round him, and the dancers put both hands under their arm-pits, and press their hands on him, and when he coughs the initiated put out their hands and receive what has injured him – secret things"[236]. One striking element of San Rock art is the depiction of only what the shamans can see, as the Kalahari San state: "the expulsion of sickness from the back of a shaman's neck, a shaman's spirit leaving the top of his head, 'flecks' of potency scattered among the dancers, so-called 'threads of light' that take shamans to the spirit realm, and transformations of people into animals"[237].

Metaphors and Rain-making

In his 1874 article, Orpen asked Qing (a young hunter) to comment on a set of paintings traced by the author. His answer is related to Fig. 97: "That animal which the men are catching is a snake (!). They are holding out charms to it, and catching it with a long *reim*. They are all under water, and those strokes are things growing under water. They are spoilt by the – dance, because their noses bleed. Cagn gave us the song of this dance, and people would die from it, and he would give us charms to raise them again"[238]. Before Orpen's article hit the press[239],

[233] LEWIS-WILLIAMS & PEARCE, p. 701.
[234] ORPEN 1874.
[235] It should be noted that Orpen did not record the San name of the dance, instead he was given the Sotho name for it, 'Moqoma'. Arbousset (1846), translates this as 'the dance of blood'. Epistaxis (nasal bleeding) is a common feature of trance dances and is often depicted on rock art, as Qing also explains.
[236] ORPEN 1874, p. 10.
[237] LEWIS-WILLIAMS & PEARCE 2012, p. 702.
[238] ORPEN 1874, p. 10.
[239] "Orpen sent his copy, together with three other copies, all done on a single sheet of cardboard, to the editor of the Cape Monthly Magazine in Cape Town. As it happened, Orpen's copies arrived in Cape Town before his accompanying article, 'A glimpse into the mythology of the Maluti Bushmen'. Realizing the copies' importance, the editor at once took them to Wilhelm Bleek's residence in the suburb still known as Mowbray. There, Bleek showed them to Diä!kwain" (Lewis-Williams and Challis 2011, 106).

Bleek showed Orpen's copies[240] of the drawings to Diä!kwain, who said the following: "The paintings from the cave Mangolong represent rainmaking. *We see here a water thing, or water cow,* which, in the lower part, is discovered by a Bushman, behind whom a Bushwoman stands. This Bushman then beckons to others to come and help him. They then charm the animal, and attach a rope to its nose - and in the upper part of the picture it is shown as led by the Bushmen, who desire to lead it over as large a tract of country as they can, in order that the rain should extend as far as possible, - their superstition being that wherever this animal goes, rain will fall. *The strokes indicate rain.* Of the Bushmen who drag the water cow, two are men (sorcerers), of whom the chief one is nearest to the animal. In their hands are boxes made of tortoise (!khu) shell (containing charmed boochoo) from which strings, perhaps ornamented with beads, are dangling down. These are said to be of Kafir manufacture. The two men are preceded by two Bushwomen, of whom one wears a cap on her head"[241]. Both accounts agree on a number of elements: the connection with rain or water and the actions being performed by the men. Both agree that the animal is being 'charmed'.

The key to understanding the descriptions the two informers give lies in deciphering the key metaphors employed, namely the death of the shaman and being underwater. Giving an unrelated response, Diä!kwain said that a medicine man's heart made a sound like rain and 'died', "leaving him and going into a waterhole where the water is alive"[242]. He also adds that "this is the water from which sorcerers are wont to fetch water-bulls"[243]. It is quite clear at this point that death, also expressed metaphorically as being underwater, is not an actual, concrete death, but the symbolic death of the shaman, its soul leaving to travel into 'a waterhole where the water is alive'. Simply put, death is a metaphor for the entrance into altered states of consciousness. Other evidence comes from a *!Kung* medicine man who says that he learned to become a curer while underwater and that during trance he "fought the water for a long, long time"[244]. The links are now becoming clear and the neuro-psychological aspects evident: the experience of being in a trance is completely analogous to being underwater. The constant struggle, gasping for breath, sounds in the ears, weightlessness, inhibited movement and

[240] Nowadays, the paintings in the Mangolong shelter are barely visible anymore. A tracing of the paintings made in the 1960s (see Fig. X) shows just how different the Orpen tracing is. There is also a technical reason for the omission of certain strokes and flecks (see Fig. X).

[241] BLEEK 1874, p. 12.
[242] LEWIS-WILLIAMS 1980, p. 472.
[243] LEWIS-WILLIAMS 1980, p. 472.
[244] *Ibid.*

affected vision are all textbook examples of how one's body is affected during a trance experience and it is no wonder it became such a prominent part of the San rock art. All the three stages described above can be perfectly observed in the San rain-making ritual: in the first stage, the medicine-man 'dies', entering the trance; in the second stage (The Vortex), he is transported into the waterhole (travelling through the neurologically generated tiers of the world); in the third stage (full trance) the shaman is carrying out his duty of fetching the water bull and performing the ritual.

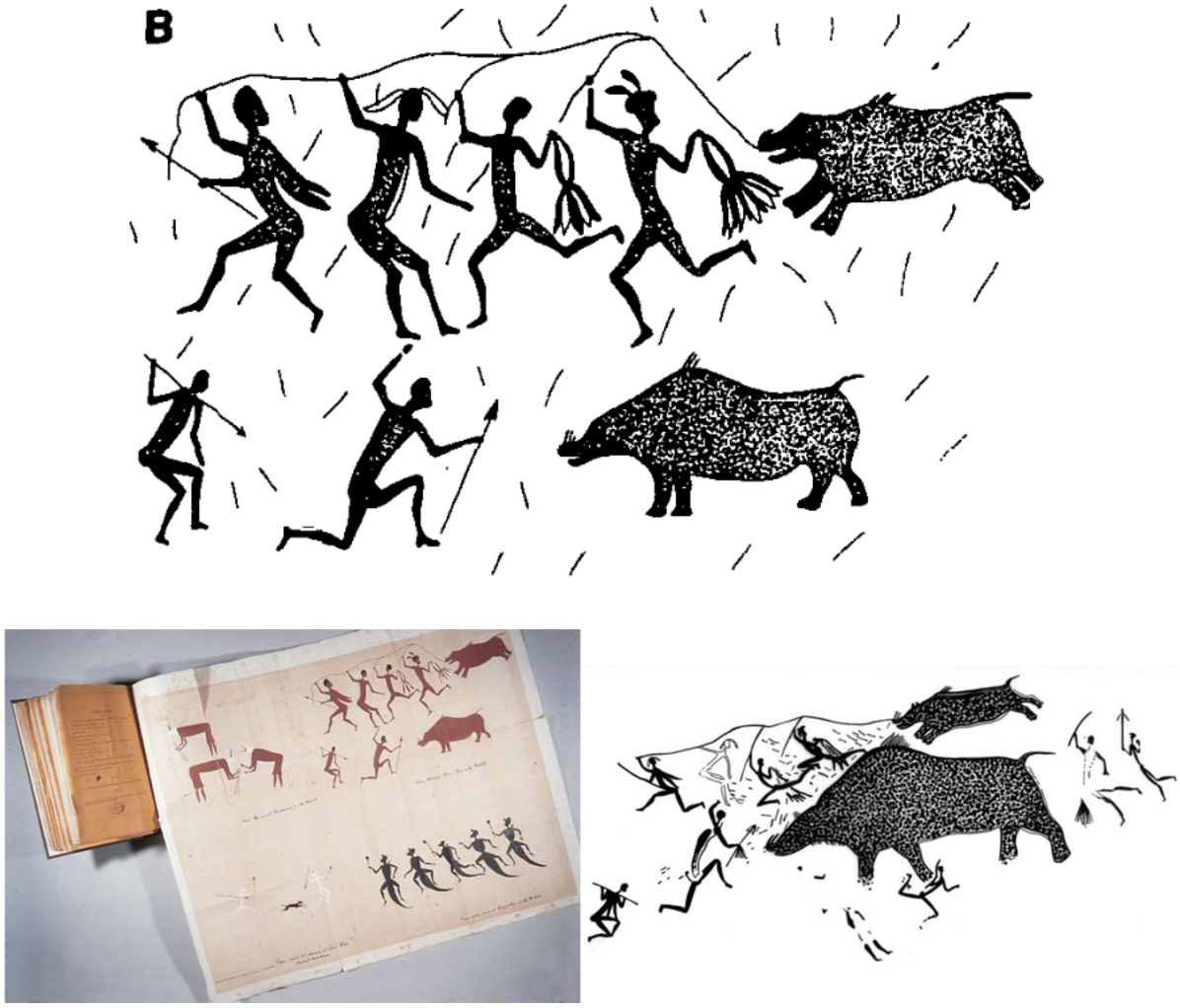

Figure 97. Top: Rain-making: from the Cave Mangolong in the Maluti. Source: LEWIS-WILLIAMS 1980; Bottom left: An original copy of Orpen's 1874 article. Source: LEWIS-WILLIAMS & CHALLIS 2011; Bottom right: A 1960s copy of the painting made by Patricia Vinnicombe; Source: LEWIS-WILLIAMS & CHALLIS 2011.

Chapter VIII

Towards a new interpretative framework

There is a great deal of hidden dangers when faced with the task of interpreting rock art. Thankfully, for various regions of the world, we still have at our disposal not just ethnographic reports and studies, but also the original inhabitants who are still willing to aid with the research. This is especially true for Australia, where the communities are actively re-painting the old sets of figures and are answering all the questions of the researchers. However, the situation in Europe is completely different. Once again, one is able to apply a shamanic interpretative framework just by means of a formal and visual comparative analysis. Nevertheless, this may be an achievable task due to the universality of the neuropsychological wiring and processes found equally across the human mind. There is nothing to say that the brain of a Neolithic Camunian was different and functioned in other ways than the brains of the San Bushmen, Siberian shamans, Amazonian tribes, or modern contemporary artists. As we have seen, Stage 1 has a set of manifestations that stem from the human mind and thus are equally achievable by anyone, anywhere. Truthfully, there is no data on the religion and religious beliefs of the Neolithic Camunians but that does not mean we cannot speculate on the presence of a shamanic-ecstatic type of religious manifestation, so widespread across millennia and cultures. This approach has been tentatively tried by U. Sansoni[245] for the Iron Age, a period which does offer some clues towards a shamanic-ecstatic interpretation. Regarding the Neolithic/First Copper Age figures, the following can be proposed for two distinct categories of figures:

- The highly irregular, shapeless, *macule*: a performative hypothesis in which the ceremonial and ritual engraving of the rock is the aim, not the resulting figure. The rock is pecked at, shapelessly and irregularly, in order to induce an altered state of consciousness or aid with such a ritual.
- The geometric figures such as rectangles, squares, alignments/rows of dots etc.: all fit neatly into the entoptic phenomena/phosphenes category and, therefore into the 'shamanic vision'. They are the product of Stage 1 and can be potentially seen as the result of the *macule*.

[245] SANSONI 2014.

The *macule* appear as the most cryptic type of figures. They have no subject matter, no specific association, and no specific distribution. They are, quite literally, erratic masses of pecked surfaces. It seems quite clear that, from a visual perspective, they do not offer any interpretative clues, and that their representation has no meaning *per se*. As such, a new possibility for interpretation opens up. It is possible, however remotely, that the value of the *macule* lies not in what it depicts or represents, but in the action of engraving them. The act of engraving, in itself, may have been the relevant one in specific contexts, therefore the visual result, the shape and figure which resulted, would not be relevant. This interpretation is in line with the "performance theory", a theoretical approach that has grown in popularity and diversity since the 1980s. It is linked to two keywords: 'perform' and 'performance'. "They usually describe the making of images and related activities. The notion of performance recognises that there is more to rock art practices than images alone: performances may have been as or more important than the images themselves"[246]. Different notions and definitions of 'performance' have emerged since, all focusing on different aspects. But, for our approach, perhaps the most encompassing and flexible is Schechner's: "a performance is an activity done by an individual or group in the presence of and for another individual or group […] I thought it best to center my definition of performance on certain acknowledged qualities of live theater, the most stable being the audience-performer interaction. Even where audiences do not exist as such – some happenings, rituals, and play – the function of the audience persists: part of the performing group watches – is meant to watch – other parts of the performing group; or, as in some rituals, the implied audience is God, or some transcendent Other(s)"[247]. Another aspect of the 'performance' is that it constitutes an accomplishment: "it is an achievement in the world […] We are talking here not only about the achievement in bringing such a performance of successfully, but also the accomplishment of the work it is meant to do"[248]. This quality of the 'performance' can be intuited in the case of the *Serrania de la Lindosa* paintings in relation to the shamans' meeting with the Master of Animals. The depictions of the entoptic phenomena are proof of the travel and the depicted animals are proof that the negotiations went well, and that game is available. Many other elements are to be taken into consideration, such as the private or public character of the performance. Ritual seclusion and image-making are proposed for the preparation of shamanic rituals in Namibia[249]. Site accessibility and visibility

[246] WITELSON 2022, p. 314.
[247] SCHECHNER 1988, p. 29, note 10.
[248] SCHIEFFELIN 1998, p. 198.
[249] WITELSON 2022, p. 321.

are also factors to be considered in the public/private sphere of the ritual, enhanced also by the noise levels made by the act of engraving and the acoustics of the site. Perhaps an act may have been known to be taking place only because of the sounds of the tools hitting the rock in an otherwise visually secluded location. In the Camunian case, the act of chaotically pecking at the rock, with ritual intent, towards the end of achieving an altered state of consciousness seems plausible. It contains some key elements which come into play when trying to achieve such a goal: intense concentration, tough physical activity, prolonged exposure to the elements, hunger and thirst, intense, rhythmic sounds, and awkward positions. It is impossible to say, however, whether it was the engraver himself the one trying to achieve an altered state of consciousness or if he was acting as part of a group performance including, perhaps, dancing and singing.

Regarding the more geometric figures and compositions, the situation is trickier. If we were to adopt the shamanic point of view which would make these figures the result of entoptic phenomena linked to inducing altered states of consciousness, then the repertoire would have to include, for example, zig-zags, filigrees, meandering lines, and spirals. One of the most important points regarding geometricity is its deep root in the human mind. The brain thinks and acts geometrically, from a neuropsychological standpoint, and it is governed by scientific principles. This requires plunging into the world of neuropsychology, of the human brain (and visual brain), and the rather newly formed discipline of neuroaesthetics.

VIII.1: You are what you see; the birth of neuroaesthetics

The human brain is in a constant search for knowledge. Throughout humankind's trajectory across millennia, evolution has 'gifted' us with a unique apparatus for acquiring knowledge to better survive: the visual brain. It is through the visual brain that we acquire most of our knowledge about a world and environment which is constantly changing and presenting us with new challenges. Art and its production, apart from being a quintessential human characteristic, are also a way of acquiring knowledge about the world, as developments in neuropsychology during the last 20 years have shown. In a very influential study, the neuropsychologist Semir Zeki posits that "the function of art and the function of the visual brain are one and the same, or at least that the aims of art constitute an extension of the functions of the brain"[250], that is acquiring knowledge. Indeed, art and the brain have always been treated

[250] ZEKI 1999, p. 1.

separately, as if they are two distinct realities. Decrying this particular situation, Solso writes that "In the beginning, art emerged as the result of a brain able to image things internally and to represent those imaged things externally. Art critics and philosophers of art followed. When art became a topic of academic investigation, opinions were spun off with a passionate centrifugality in which theories of art were flung to the far corners of social theory, political ideology, psychoanalysis, aesthetic principles, religion, and philosophy—to name but a few of the aroused regions. Art theses hit the fan"[251]. But those were the times during which very little was known about the brain in general, never mind the visual brain. We have now reached a "paradigm shift", as Kuhn[252] puts it, regarding the way in which we can view and understand art: "All visual art is expressed through the brain and must therefore obey the laws of the brain, whether in conception, execution or appreciation and no theory of aesthetics that is not substantially based on the activity of the brain is ever likely to be complete, let alone profound"[253]. We can now, jokingly or not, call the great plastic artists of the world neurologists, for they have, completely unbeknownst of the way the brain works, shown us through their works how our mind works and the conscious or less conscious decisions it takes due to its structure. They toy with the intricate mechanism of the visual brain or, as Zeki puts it: "That painters experiment is common knowledge. They do so by working and re-working a painting until it achieves a desirable effect, until it pleases them, which is the same thing as saying until it pleases their brains. If, in the process, it pleases others as well—or pleases other brains as well—they have understood something general about the neural organisation of the visual pathways that evoke pleasure, without knowing anything about the details of that neural organisation or indeed knowing that such pathways exist at all."[254] This is all part of the visual brain's role: acquiring knowledge. "We see in order to be able to acquire knowledge about this world"[255]. But what type of knowledge, because we are of course not talking about some deep esoteric knowledge or trying to figure out whether there is a deep state governing the world. "The only knowledge that is worth acquiring is knowledge about the enduring and characteristic properties of the world; the brain is consequently only interested in the constant, non-changing, permanent and characteristic properties of objects and surfaces in the external world, those characteristics which enable it to categorise objects"[256]. But extracting the

[251] SOLSO 2003, p. 18.
[252] KUHN 1962.
[253] ZEKI 1999, p. 1.
[254] ZEKI 1999, p. 3.
[255] ZEKI 1999, p. 4.
[256] ZEKI 1999, p. 5.

constant from a world and environment that is constantly changing is no easy feat, and the visual brain has developed an array of tricks to do so. We always see, for example, a leaf being green, irrespective of the lighting conditions which change constantly. Said leaf will always be seen as green because, although the composition of the wavelength that is emitted by the leaf will always change due to the lighting conditions, the brain can easily discount the variations in wavelengths. Vision is a completely active process, and the visual system can detect a plethora of information in split-seconds, such as "the state of mind of a person, the colour of a surface, the identity of a constantly changing object. A small inflection here, a spot of paint there, can make the difference between a sad or a happy face because the brain has evolved a quick and highly efficient system of visual recognition"[257]. In order for the neuropsychologist's exercise in appropriating art to the visual brain to start taking shape, a 'newer', broader definition of the functions of art had to be conjured up. As such, a definition that tries to bring together the functions of both art and the brain was brought forth: "*to represent the constant, lasting, essential and enduring features of objects, surfaces, faces, situations, and so on, and thus allow us to acquire knowledge* not only about the particular object, or face, or condition represented on the canvas but to generalise from that to many other objects and thus acquire knowledge about a wide category of objects or faces"[258]. The artist, when choosing to portray something, chooses all the elements he or she (that is, his or her brain) considers to be representative, essential, and constant in his subject. Just as the brain does in acquiring knowledge. The artist paints all of his previously acquired knowledge about a certain object or situation, elements which are then again picked up by the brain of the beholder. From a neuroaesthetic point of view, then, it seems highly unlikely and improbable that the ancient Camunian engravers chose more or less pure geometric shapes to represent the essential and constant features of fields and, more generally, an agricultural landscape.

Writing about Cubism and the painter Gustav Courbet, Albert Gleizes and Jean Metzinger said that "Ignorant que pour découvrir un rapport vrai il faut sacrifier mille apparences, il accepta sans nul contrôle intellectuel tout ce que sa rétine communiquait. Il ne soupçonna pas que le monde visible ne devient le monde réel que par l'opération de la pensée, et que les objets qui nous frappent avec le plus de force ne sont pas toujours ceux dont l'existence est la plus riche en vérité plastiques"[259]. In a neurological sense, 'intellect' would

[257] ZEKI 1999, p. 9.
[258] ZEKI 1999, pp. 9-10.
[259] GLEIZES & METZINGER 1912, p. 6. "Unaware of the fact that in order to display a true relation we must be ready to sacrifice a thousand apparent truths, he accepted, without the slightest intellectual control, all that his

equate to the brain or, even better, the visual brain. Simply put, "In order to represent the real world, the brain (or the artist) must discount ('sacrifice') a great deal of the information reaching it (or him), information which is not essential to its (or his) aim of representing the true character of objects"[260]. Or, as the French critic Jacques Rivière wrote in 1912: "The true purpose of painting is to represent objects as they really are, that is to say differently from the way we see them. It tends always to give us their sensible *essence*, their presence, this is why the image it forms does not resemble their *appearance*"[261]. Yet another neurologist who reached the same conclusion is V.S. Ramachandran, who wrote that "The purpose of art, surely, is not merely to depict or represent reality — for that can be accomplished very easily with a camera — but to enhance, transcend, or indeed even to *distort* reality. The word 'rasa' appears repeatedly in Indian art manuals and has no literal translation, but roughly it means 'the very essence of'"[262]. The function of both art and the visual brain is, therefore, to acquire knowledge not of the appearance of things, of the fleeting instances in which they are seen, but of their constancies and essentials, those elements which simply define what they are. This is significant in the context of geometric shapes and patterns resulted from altered states of consciousness and shamanic-ecstatic religious manifestations. From a neuroaesthetic perspective, it could be said that the art depicts 'the very essence' of their human form, of their belief, and of the shamanic travel. Interestingly, San trance dancers were asked to draw themselves as they reported that they blend with the geometric shapes they see[263]. Their representation of self is, usually, a chaotic zig-zag pattern due to the characteristic manifestation of Stage 1.

VIII. 2: The eye or The 'I'?

We have now exited the paradigm of the 'retinal impression', that what we see is 'impressed' on our retina, then to be transmitted to our brain which would then decode and analyse what was received. Thus, 'seeing' was relegated to a very passive role which had nothing to do with what was going on behind the scenes, and a passive process is not able to continuously search for the constant in a constantly changing environment. The eye and the retina do not possess the necessary equipment to "discard the unnecessary information and

retina presented to him. He did not suspect that the visible world can become the real world only by the operation of the intellect".
[260] ZEKI 1999, p. 10.
[261] RIVIÈRE 1912, p. 184.
[262] RAMACHANDRAN & HIRSTEIN 1999, p. 16.
[263] LEWIS-WILLIAMS & CHALLIS 2011.

select only what is necessary to represent the constant and essential features of objects"[264]. We can now say we are in the 'visual brain paradigm', all due to immense advancements in technology and interest in research. It is now clear that the retina connects with a very well demarcated area of the brain, called the Primary Visual Cortex (PVC or area V1). V1 itself is also surrounded by other visual areas which are called V2, V3, V4 and so on, each of them fulfilling a specific task when it comes to vision.

The Cubist experiment

We can now try to understand the visual brain better by analysing what was undoubtedly a revolutionary artistic movement, Cubism. In this regard, Zeki offers a preliminary remark starting from Juan Gris, "himself a Cubist painter, described Cubism as 'a sort of analysis, a static representation of the result of 'moving around an object to seize several successive appearances, which, fused in a single image, reconstitute it in time'. The aim of Cubist painting, was 'to discover less unstable elements in the objects to be represented. And they [the Cubists] chose that category of elements which remains in the mind through apprehension and is not continually changing', that is to say the constant and essential elements"[265]. This sounds indeed like what the brain is constantly doing. Furthermore, " 'The Cubists are destined ... to give back to painting its true aims, which is to reproduce ... objects as they are.' But, to achieve this, 'Lighting must be eliminated' because '... it is the sign of a particular instant ... If, therefore, the plastic image is to reveal the essence and performance of things, it must be free of lighting effects … It can therefore be said that lighting prevents things from appearing as they are … Contrary to what is usually believed, sight is a successive sense; we have to combine many of its perceptions before we can know a single object well. But the painted image is fixed …'. As well, perspective must be eliminated because it '… is as accidental a thing as lighting. It is the sign, not of a particular moment in time, but of a particular position in space. It indicates not the situation of objects but the situation of a spectator … perspective is also the sign of an instant, of the instant when a certain man is at a certain point"[266], is what the critic Rivière had to say about Cubism. It was a trial in, unconsciously, mimicking the working of the brain. When viewing a stationary object from a single viewpoint, the brain is perfectly capable of recognizing the whole object and its identity just by picking

[264] ZEKI 1999, p. 14.
[265] ZEKI 1999, p. 50.
[266] RIVIÈRE 1912, as cited by ZEKI 1999, pp. 50-51.

up the clues and then, based on its memory, that repository which is full of categories of objects based on constancies, recreates mentally the whole object in the field of view. It is piecing together all known and stored defining elements of the object identified in order to produce a full picture of it. One can see a first trial of this in Picasso's *Les Demoiselles* (Fig. 98 b), in which "it is as if Picasso had walked 180° around his subject and had synthesized his impressions into a single image"[267]. Again, in *Portrait of a Woman*, many facets and angles from differing points of view of the same face are stitched together, in a try to create a unitary image. But, from a neurological point of view, the failure of Cubism is represented by Picasso's *Man with a Violin* (Fig. 98 a), recognizable as such only by virtue of the title. "Picasso depicted his subject from so many different points of view, that the final result is only recognisable as a violin player through its title. A brain ignorant of that title can hardly construe this as a violin player. The brain of course regularly views objects and people from different angles, but it is able to integrate these different views in an orderly way, allowing it to recognise and obtain knowledge about what it is viewing. The attempt by Cubism to mimic what the brain does was, in the neurobiological sense, a failure— an heroic failure perhaps, but a failure nevertheless"[268].

Figure 98. Paintings by Picasso; a) Man with a Violin (1912) (artchive.com); b) Les Demoiselles d'Avignon (1907) (wikipedia.org).

[267] GOLDING 1981, p. 54.
[268] ZEKI 1999, p. 54.

At first, the V1 area receives the multitude of signals picked up by the retina – signals pertaining to "colour, luminance, motion, form, depth and much else besides"[269]. The cells of V1 are orderly grouped in differentiated compartments. These compartments then further send the signals to the other specialized visual areas, either directly or through area V2. "V1 therefore acts in the office of a distributor of visual signals, much like a central post office: it parcels out different signals to the different visual areas in the cortex surrounding it, although it is also involved in a significant amount of elementary visual processing itself, the results of which it communicates to the visual areas surrounding it"[270]. The visual areas that receive the signals from V1 contain very highly specialized cells, each responsible for a very specific attribute. "A cell might, for example, be selective for colour, responding to red but not to other colours or to white; other such cells will respond selectively to other colours. These cells are indifferent to the direction in which the stimulus moves, provided it is of the right colour. They are also indifferent to form, that is to say they will respond if a stimulus of the appropriate colour is a vertical or horizontal bar, or if it is a rectangle, circle, or square. Or a cell might be selective for another attribute of the visual scene, such as lines of specific orientation, or motion in a specific direction, and so on. Here again, selectivity for a particular attribute is coupled to an indifference to other attributes. A cell that is selective for motion in a particular direction (a directionally selective cell) is indifferent to the colour of the moving stimulus and commonly indifferent to its form as well; … Again, cells that are selective for lines of particular orientation will respond to that orientation regardless of the colour of the stimulus or the colour of the background against which it is presented"[271]. For example, by studying the amount of blood flow redirected to a given visual area, we can observe which visual areas get 'excited' by which visual stimulus. As such, a multi-coloured Mondrian scene will increase the blood flow of V1 (because it is the first receiver and decoder of the visual signals) and the area V4 (responsible for colour). But, if observing a pattern of small black and white squares that move, one can observe a blood flow accentuated in V1 and V5, geographically distinct from V4. This complex specialization is obvious in the case of lesions. For example, a person with a lesion in V4 will completely lose the ability to see in colour or understand it, meaning he will never enjoy a colourful Fauvist painting, yet he will be able to appreciate a mono-chromatic Calder or Tinguely because all of his other visual areas responsible for shape, orientation and motion are

[269] ZEKI 1999, p. 59.
[270] ZEKI 1999, p. 60.
[271] ZEKI 1999, pp. 60-61.

intact. Similarly, a patient with a lesion in V5, responsible for motion, will never perceive any form of motion, such as a Calder mobile, but will be able to enjoy a colourful Mondrian.

Let's return to the artists' quest for reducing forms to their essential constituents, asking "whether there are any similarities between the products of artists who have tried to reduce forms to their essential constituents and the discoveries of scientists who have sought, in the responses of single cells in the brain, the answer to their question about how the constituent elements of all forms are represented in the brain"[272]. Each cell has a receptive field, a part of the visual space. A visual stimulus will trigger a reaction of the cell. The visual receptive fields located in the cortex "are usually more or less square or rectangular and their actual size varies from one visual area to another"[273]. But, as stated before, each cell will react to a very specific type of visual stimulation, and a cell might require, for example, that "its receptive field be stimulated with a red square, if it is to respond at all; for such a cell, stimulation with white light, even when confined to the receptive field, may not lead to any reaction. Or it may require that light of a given colour, say blue, be presented against light of another colour, say black, to give its optimal response. Other cells might not respond to diffuse light falling onto their receptive fields, no matter what colour. They may instead prefer lines of particular orientations. Such orientation selective cells are usually very fussy, responding ever more grudgingly as one departs from their preferred optimal orientation until, at an orientation that is orthogonal to their preferred orientation, they cease to respond; these cells would of course also respond well to an edge of the appropriate orientation. Yet other cells may respond only to stimuli that move within their receptive field, not to stationary visual stimuli, and then only to movement in a given direction"[274]. As such, three essential features of the receptive field emerge: position, shape and a certain specificity. And it is modern art that best appears similar to these characteristics of the visual brain. As it developed, while remaining set on its mission of representing essentials and constants, modern art became increasingly similar to the physiology of the visual areas and the responses of the cells contained in them. Artists, art critics, philosophers, and neurologists, as well, speak of the term *Einfühlung*, that "link between the 'pre-existent' forms within the individual and the forms in the outside world which are reflected back"[275], or the "art de peindre des ensembles nouveaux empruntés non à la réalité visuelle,

[272] ZEKI 1999, p. 100.
[273] ZEKI 1999, p. 101.
[274] ZEKI 1999, pp. 101-102.
[275] ZEKI 1999, p. 104.

mais à celle que suggèrent à l'artiste, l'instinct et l'intuition…"[276]. This quest for the essential and universal features that constitute all forms led modern art to the line, which quickly became dominant. Cézanne, for example, reached the cone, sphere and cube as the few essential elements of form. As such, his *Rochers prés des grottes au dessus de Château Noir* is a good example of how the line became a prominent feature of his works. But perhaps the best examples of artists that exemplify our line of enquiry are, amongst others, Malevich and Mondrian. The former emphasized the line, the square, the rectangle, the cross and the circle and, when viewed from a distance, the rectangles become lines, the essential and constant element of form. Using Mondrian's words, Zeki writes that "Art, he believed, 'shows us that there are also constant truths concerning forms' and it was the aim of objective art, as he saw it, to reduce all complex forms in this world to one or a few universal forms, the constant elements which would be the constituent of all forms, to 'discover consciously or unconsciously the fundamental laws hidden in reality'. He had started with naturalistic painting and had been much attracted to Cubism. But 'Cubism did not accept the logical consequences of its own discoveries; it was not developing abstraction towards its ultimate goal, the expression of pure reality … To create pure reality plastically it is necessary to reduce natural forms to the *constant elements*' which, in the case of form, led to the vertical and horizontal lines, or so he believed. These 'exist everywhere and dominate everything"[277]. In the quest to modernize and simplify art, other artists reached the same result of emphasizing the line, such as Barnett Newman, Ellsworth Kelly, Ad Reinhardt, or Franz Kline, to cite just a few. But is there any relationship between the lines of the artists and the neurophysiology of the visual cortex, where orientation selective cells are present? "The discovery that a large group of cells respond selectively to lines of specific orientation was a milestone in the study of the visual brain. Even today, after having seen thousands of orientation selective cells in the cortex over a very long period of time, I cannot cease to be fascinated when I watch a single cell, among billions of cells in the cortex, respond with such precision, regularity and predictability to a line of a given orientation, and also watch its responsiveness diminish progressively as one changes the orientation from the optimal one until, at the orthogonal orientation, there is no response at all"[278], writes Zeki. It seems it is no accident, then, that Mondrian, Malevich, and others considered the lines to be universal forms, since, physiologically, the cells responding

[276] APOLLINAIRE 1913, p. 25. "The art of painting new ensembles borrowed not from the visual reality but from what is suggested to the artist by instinct and intuition".
[277] ZEKI 1999, pp. 110-111.
[278] ZEKI 1999, p. 113.

to these 'universal forms' constitute "the building blocks which allow the nervous system to represent more complex forms"[279]. A large number of orientation selective cells is found in area V1, but they also constitute the majority of cells also in V2 and the V3 complex. These cells have been found not to be randomly dispersed with respect to their preferred orientation across the visual areas, but are found to be very orderly: "If one looks in a direction that is perpendicular to the cortical surface, one finds that the successive cells, ones that are stacked upon each other in a sort of column that extends from cortical surface to white matter, all respond to a line of the same orientation. If instead one looks in a direction that is at an angle of 45° to the cortical surface, one finds that the preferred orientation of the lines that cells are selective to changes gradually. Orientation selective cells, in other words, are not haphazardly and randomly distributed in the cortex, but are strongly organised according to common preferences"[280]. And it is this vigorous response, this excitement of these cells, that are at the base of aesthetic pleasure when viewing types of art such as those of Mondrian or Malevich.

Indeed, through his work, Mondrian got close to expressing a neurophysiological truth. The intersection of straight, vertical, and horizontal lines leads to the creation of squares and rectangles. "I found that the right angle is the only constant relationship, and that, through the proportions of dimension, its constant expression can be given movement, that is, made *living*"[281], wrote Mondrian. Through different perspectives, Malevich reached the same outcome, along with others. The interesting part lies in the fact that the receptive fields of single cells located in V1 and, especially V4, are "usually square or rectangular in shape"[282]. So, are these actually 'new forms', is this the "pure reality"[283], or "are they more properly the 'pre-existent idea which is within us' that Gleizes and Metzinger, with greater neurological insight, believed? The fact is that the new forms, consisting largely of lines, squares and rectangles, are admirably suited to stimulate cells in the visual cortex, and the properties of these cells are, to an extent, the pre-existing 'idea' within us"[284]. It is due to the existence of these cells not only that the creation of this art was possible, but also its enjoyment. The search for the constants and new forms was conditioned by the source of constants and new forms itself, the visual brain, and one could not exist without the other.

[279] *Idem.*
[280] ZEKI 1999, p. 114.
[281] MONDRIAN 1941, p. 339.
[282] ZEKI 1999, p. 119.
[283] MONDRIAN 1941, p. 338.
[284] ZEKI 1999, p. 124.

Of course, this is not an attempt in appropriating the works of Mondrian or Malevich to the Neolithic figures engraved in Valcamonica, or vice-versa. It is not an attempt to classify them as abstract art. Nor am I trying to imply that the Neolithic Camunians tried to find the "constant elements" and the "pure reality" and depict them. Such a task would be impossible since we are, most probably, not dealing with art *per se*. It is our Western way of thinking that has imposed, perhaps wrongly, the term 'art' upon very ancient depictions of extinct societies: "Hunters and gatherers of the past were painting and carving, but they were not 'producing art'. To understand the original significance of what they were doing, I contend, we must cease thinking of painting and carving as modalities of the production of art, and view art instead as one rather peculiar, and historically very specific objectification of the activities of painting and carving"[285]. The same argument can be brought forward in the case of agro-pastoralist societies for which the production of 'art', or symbol-making, was surely an integral activity with concrete results. What seems clear is that the Camunians have, unawares, produced a type of 'art' very similar to the physiology of the visual areas and figures which are specialised in triggering and pleasing a very specific type of visual cells. They are figures suggested by instinct and intuition, therefore, by the workings of the brain. The brain is not only designed geometrically but also thinks geometrically. In his seminal work, Cauvin has managed to catch this very subtlety: "Geometric forms have a deep significance in the human mind, and we should not forget that fact, even though other considerations, whether technical, ecological or sociological, are also pertinent. From the Natufian, and throughout the Neolithic period, these forms are present not only in personal adornment, where beads are among the first human products to be given geometric forms, but also in small objects, which are frequently found in excavations and often thought enigmatic. These spheres, cylinders, discs, cones or parallelipeds, sometimes in semiprecious materials and often enhanced with incised signs or more complex geometric motifs, for the present lend themselves poorly to any precise interpretation. However they are the evidence for a very precocious vocabulary of fundamental shapes that prehistoric people had not elaborated for utilitarian reasons, at least at this first stage. This 'language' of geometric shapes certainly in part intersects with certain symmetries observable in nature (stars, flowers, shells, constellations), but we find it from the start at a high level of abstraction, independent of all figurative intent. And above all, contrary to what is usually supposed, this geometry does not appear to be derived from the practical activities

[285] INGOLD 2000, p. 131.

of people in their everyday environment, such as for example methods of surveying or measurement[286].

Much can also be said about how we view art from a neurological perspective. Solso[287], himself a cognitive scientist, has found two ways of viewing art which he considered to be most instructive. The first one is the "*nativistic perception*"[288] (called "bottom-up" processing by cognitive scientists, since it begins with the basic physical stimuli), and it relates to the synchronous workings of the eye and the brain. In scientific terms, it is the transformation of "electromagnetic energy into neurochemical codes"[289]. The nativistic perception of visual events, including art, is the means in which inborn ways of seeing visual stimuli are initially organized and perceived (a perception that is 'hard-wired' into our sensory-cognitive system). During this stage of looking at art, we all 'see' the same things, the same colours, shapes, figures, and we all organize the visual stimuli in pretty much the same way, since the eye and the brain carry out the same processing operations in all individuals. If this first stage is somewhat mechanical and happens without a conscious effort on our part, the second stage of viewing art called *directed perception* is a lot more personal since it "refers to perception based on one's personal history and knowledge"[290], meaning that the way you 'see' a work of art is unlike anyone else. "We focus (or direct our perception) on parts of a painting that are interesting, worthwhile, or about which we have past knowledge. You, for example, may ponder the meaning of the piece because of your personal curiosity. Another person may be interested in the types of paint used, while another may attend to the naked bodies. One's past knowledge and interest direct one's attention. Each of us brings to the viewing of art an entire set of past experiences and expectations that largely influences what we perceive and how we interpret what we see"[291] (Solso 2003, 3). There are four types of visual elements which are first perceived during nativistic perception: sensation, form, colour and Gestalt organization. The author uses Théodore Géricault's *The Raft of the Medusa* as an example, starting with sensation. The most interesting aspect of sensation is its multimodality, the phenomenon called *synesthesia* which "is defined as a condition in which sensory information from one mode (such as a visual sensation) psychologically activates another modality (such as an auditory sensation). As we look at the *Raft*, sight is primary but all other senses are psychologically

[286] CAUVIN 2000, p. 130; my emphasis.
[287] SOLSO 2003.
[288] SOLSO 2003, p. 2.
[289] *Idem.*
[290] *Idem.*
[291] SOLSO 2003, p. 3.

active"[292]. What this means is that, although we do not hear the wind and the cries for help, taste the saltiness of the sea or smell the air, the psychological modalities of our brain which are pertinent to these stimuli are activated, conferring extra depth to our perception and understanding of visual stimuli. Regarding form, the brain automatically distinguishes between unitary elements, like distinguishing between the raft full of people and the background. This process is called "figure-ground" perception. Lastly, the Gestalt organization means that the brain naturally organizes "a visual scene into stable patterns of perception"[293]. In Géricault's *Raft*, the composition is defined and divided by two triangles (Fig. 99).

Figure 99. Théodore Géricault: The Raft of the Medusa (1818-1819); Source: Wikipedia.com

Indeed, in his 1999 study, V.S. Ramachandran set out on a "quest for artistic universals"[294] and the resulting paper "proposes a list of 'Eight laws of artistic experience' – a set of heuristics that artists either consciously or unconsciously deploy to optimally titillate the visual areas of the brain"[295]. The first principle, or law, can be well related to Malevich's and Mondrian's quest for the constants and essential forms, a quest for "pure reality" which can

[292] SOLSO 2003, p. 4.
[293] SOLSO 2003, p. 5.
[294] RAMACHANDRAN & HIRSTEIN 1999, p. 15.
[295] *Idem.*

only be achieved through the "*purely plastic*"[296]. It is called the "peak shift effect" and it is a bit of a twist on the artists' mission of capturing the very essence of things. The peak shift principle states that "what the artist tries to do (either consciously or unconsciously) is to not only capture the essence of something but also to amplify it in order to more powerfully activate the same neural mechanisms that would be activated by the original object"[297]. The peak shift effect is well known in animal discrimination learning and can be well demonstrated by teaching a rat to discriminate between a square and a rectangle: "If a rat is taught to discriminate a square from a rectangle (of say, 3:2 aspect ratio) and rewarded for the rectangle, it will soon learn to respond more frequently to the rectangle. Paradoxically, however, the rat's response to a rectangle that is even longer and skinnier (say, of aspect ratio 4:1) is even greater than it was to the original prototype on which it was trained. This curious result implies that what the rat is learning is not a prototype but a rule, i.e. *rectangularity*"[298]. This principle can be very well observed when looking at a so-called "Venus" statue. Even when represented schematically, the bodily features of the female figure which are always emphasized and exaggerated are the breast and hips, whereas the head lacks any significant details, and the hands can very well be absent, just as the legs. In capturing the very essence of femininity and fertility, thus, reducing the female body to the constants, the essential forms that define it, the ancient artists ended up emphasizing them while reducing the other non-essential traits. The female body representation was pushed on the far side of the female/male spectrum, resulting in a 'super-stimulus'.

The second principle is that of perceptual grouping and binding, defined as *directly reinforcing*. What this translates to is that the "very process of discovering correlations and of 'binding' correlated features to create unitary objects or events must be *reinforcing* for the organism — in order to provide incentive for discovering such correlations"[299]. To achieve this, the visual brain has to segment a scene, extracting figures and recognizing objects in noisy environments (mechanism used in defeating camouflage, for example), and this happens at the level of each visual area, which extracts its essential elements (colour, form, motion, etc.). After each visual module has done its job, they then hold on to those particularities and all at once send signals to reinforce that and to not lose track of the image formed.

[296] MONDRIAN 1941, p. 338.
[297] RAMACHANDRAN & HIRSTEIN 1999, p. 17.
[298] RAMACHANDRAN & HIRSTEIN 1999, p. 18.
[299] RAMACHANDRAN & HIRSTEIN 1999, p. 21.

The third principle is "the need to *isolate* a single visual modality before you amplify the signal in that modality"[300]. This is why, from a neurological standpoint, an outline drawing or sketch is more effective as 'art'. It is a principle that deals with the allocation of attentional resources and the dismissal of additional redundant information which is unnecessary for understanding a visual scene. The visual brain isolates a single area for which a visual module is responsible (colour, shape, or depth for example) and focuses its attention on it. As such, visual scenes which capture the attention of a certain visual module are more 'efficient' and convey more essential information, as opposed to a visual scene full of visual cues which are unnecessary and contain redundant information which will distract the attention of the viewer away from the essential elements.

The fourth principle, contrast extraction, may come off as one which opposes the grouping one, but these are, nonetheless, the way in which our brain works. Before grouping, the brain has to extract information, also in order to understand what to group, and it does that by getting rid of redundant information and by extracting contrasts. "Cells located in the retina, lateral geniculate body and in the visual cortex have been found to respond very well to edges (step changes in luminance, more scientifically), as opposed to homogenous surface colours"[301]. This is based on the fact that information is to be found predominantly in such regions of change (such as edges), regions that will grab the attention of the brain. Although the two principles may seem to be rather opposite, they complement each other in the brain's mission of discovering objects and, thus, acquiring knowledge. So, "grouping can occur between similar features (e.g. colour or motion) even if they are far apart in space (e.g., the spots on the nose and tail of a leopard). Contrast, on the other hand, usually occurs between dissimilar features that are physically close together"[302]. One deals with understanding the boundaries of an object, while the other with recognizing its surface, thus creating a unitary image.

The fifth, symmetry, is quite self-explicit. Being believed to be extracted rather early during visual processing, it serves as a first warning and defence mechanism, since "most biologically important objects — such as predator, prey or mate are symmetrical"[303] (*Idem.*). The last are related to the generic viewpoint and the Bayesian Logic of Perception, and the Art as Metaphor.

[300] RAMACHANDRAN & HIRSTEIN 1999, p. 24.
[301] RAMACHANDRAN & HIRSTEIN 1999, p. 25.
[302] RAMACHANDRAN & HIRSTEIN 1999, p. 27.
[303] *Idem.*

a) b) c)

Figure 100. Different compositions by Piet Mondrian; a) Tableau I (1921) (wikiart.org); b) Composition with Oval in Color Planes II (1914) (wikiart.org); c) The Tree A (1913) (tate.org.uk).

a) b) c)

Figure 101. a) Olga Rozanova: Color Painting (Non-Objective Composition), (1917), (wikiart.org); b) Kazimir Malevich: Suprematist Composition: Airplane Flying (1915), (wikiart.org); c) Kazimir Malevich: Untitled (Suprematist Composition), (1919), (wikiart.org).

VIII.3: From neuroaesthetics to "experimental aesthetics": the Embodied Simulation theory

Of course, other areas of research have benefitted from a massive boost in funding and interest which, in turn, lead to new discoveries and advances. As such, we now know a great deal more about key aspects of cognition and the body. There is now a whole field of research dedicated to performativity and embodied simulation, a bodily take on aesthetics[304]. The first and most important step was the discovery of mirror neurons in the brains of macaque monkeys[305] which led to the subsequent discovery of mirroring mechanisms in the human brain as well. "Mirror neurons shed light on a new empirically founded notion of intersubjectivity connoted first and foremost as intercorporeality – the mutual resonance of intentionally meaningful sensorimotor behaviors: it is possible to directly understand others' basic actions by means of the motor equivalence between what others do and what the observer can do. Thus, intercorporeality becomes the primordial source of knowledge that we have of others"[306]. The mirroring capabilities are not limited to only the bodily dimension but are tuned also to emotions and sensations: "the very same nervous structures involved in the subjective experience of emotions and sensations are also active when such emotions and sensations are recognized in others. For example, witnessing someone expressing a given emotion (e.g. disgust, pain, etc.) or undergoing a given sensation (e.g. touch) recruits some of the viscero-motor (e.g. anterior insula) and sensori-motor (e.g. SII, ventral premotor cortex) brain areas activated when one experiences the same emotion or sensation, respectively"[307]. These premises lead to the Embodied Simulation theory. The theory states that the mirror mechanisms facilitate mental simulation processes by repurposing brain and cognitive resources originally intended for one function to serve another function. For example, the activation of the parieto-premotor cortical networks, typically responsible for mapping and guiding the execution of motor actions, also serves to attribute the same motor goals or intentions to others. This principle extends to emotions and sensations as well. The activation of embodied simulation involves recalling and leveraging the underlying bodily knowledge and experiences. The past bodily knowledge is used in a vast array of situations, such as witnessing actions, emotions, sensory experiences, and sensations or when imagining actions and thoughts. It is a form of

[304] FREEDBERG & GALLESE 2007; GALLESE & SINIGAGLIA 2018; GALLESE 2019.
[305] GALLESE *et alii* 1996.
[306] GALLESE 2020, p. 140.
[307] *Idem.*

"neural reuse"[308]. What is fascinating is the occurrence of the embodied simulation when imagining either doing something or perceiving something: "When we imagine a visual scene, we activate the same cortical visual areas of our brain normally active when we do perceive the same visual scene. Similarly, mental motor imagery and real action both activate a common network of cortical and sub-cortical motor centers such as the primary motor cortex, the premotor cortex, the supplementary motor area (SMA), the basal ganglia and the cerebellum. A recent high-density EEG study showed that the brain circuits that inhibit action execution are partly those that allow us to imagine to act"[309]. Purely visual and motor imaginations depend upon the activation of the sensory-motor brain areas in order to happen. Therefore, a visual imagination is just the same as a real visual scene, and a motor imagination is the same as an actual action. This means that, mentally, imagining running is the same as actually running. The brain activates the same neural pathways for performing an action when imagining that action but suppresses the actual use of the muscles. Therefore, the Embodied Simulation becomes a central aspect of narratives, fiction, performativity, art, and aesthetics (including aesthetic experience). The neurobiological mechanisms (the brain-body ensemble) which deal with the real, physical world are partly the same ones used when imagining fictional worlds, whether through images or words. When reading or listening to stories, there is an active process of embodiment taking place because of the activation of the sensory-motor system: "Hence, embodied simulation theory can be used both to account for how we perceive the world and how we imagine it, or build a world of fiction and experience it. Basically, my hypothesis is that the world of cultural artifacts is 'felt' not too differently from how we feel the more prosaic world of our daily life. We feel for and empathize with fictional images and characters in ways that are similar to how we feel for our real social partners, although with qualifying differences"[310]. In the context of the embodied simulation, aesthetic experience is put into connection with performativity, seen as a key player in cultural evolution. Cultural artefacts are seen as the result of the ritualization of utilitarian behaviour. In this instance, ritualization is seen from a zoological perspective: "the evolutionary process by which an action or behavior pattern in an animal loses its original function but is retained for its role in display or other social interaction. I submit that the ritualization of utilitarian behaviors might have sparked the creation, development and evolution of what today we designate -broadly

[308] GALLESE 2020, p. 141.
[309] *Idem.*
[310] GALLESE 2020, p. 143.

speaking- as cultural artifacts"[311]. In any case, part of the value of a piece of art is to be found in its ability "to establish a relationship between the artist's intention and the observer's reconstruction of it, thus establishing a direct relationship between the creation of the object and the artistic pleasure it produces"[312]. In order to know an object, one must know how it was created. The embodied simulation steps in once again, as "our experience of observed images has fundamental connotations in motor terms"[313]. Experiments have shown that the motor representation of the hand of people who observe Roman numerals, Chinese symbols, or meaningless scribbles, is activated. Similarly, the brain produces a motor stimulation of the hand gestures implied when observing, for example, the heavy and dynamic brushstrokes of Franz Kline[314]. "The visible traces of the creative gestures activate in the observer the specific motor areas controlling the execution of the same gestures [which are made available through neural reuse, depending on the personal knowledge and experience of each]. Beholders' eyes catch not only information about the shape, direction and texture of the cuts or strokes; by means of embodied simulation they breach into the actual motor expression of the artist when creating the artwork. The sensory-motor component of image perception, together with the jointly-evoked sensory and emotional reactions, allow beholders to feel the artwork in an embodied manner"[315] (in square brackets my emphasis). This is absolutely crucial and opens up an incredibly lucrative way of looking at rock art. The case of rock engravings, specifically, is particularly evocative. At a basic level, a person observing the engravings is not just a passive onlooker, but at a neuronal level, that person is actively replicating the act of engraving while also, by use of neural reuse, implicating all of the past experiences and sensations linked to the act of engraving. This pledges in the direction of a reuse potential of the figures, not just from a visual perspective but also affective and intellectual. The engravings don't cease to be, instead, they remain an active component. If an artistic product (such as a rectangular *macula*) has, as part of its creation evident movements of the body, (which it does, the repeated act of pecking at the rock with a tool) "the implied dynamics resonate in our brain via a particular class of neurons, *mirror neurons*, so called because they are activated when we observe another person's actions as well as well as when we ourselves act"[316]. This resonation is not purely mechanical, at the level of movements, but also at the level of feelings, as our mind and body

[311] *Idem.*; see also GALLESE 2021, p. 390.
[312] GALLESE 2020, p. 144.
[313] *Idem.*
[314] SBRISCIA-FIORETTI *et alii* 2013; GALLESE 2018.
[315] GALLESE 2020, p. 144.
[316] DI DIO & GALLESE 2022, p. 24; see also GALLESE 2018.

replicate those of the engraver, for example. By means of embodied simulation, we are experiencing the behaviour of others. This is highly significant in the context of *macule* as a performance with religious intent, as it enables the participants to actively simulate the ritual act and the feelings and sensations involved. Just as significant is the still active role such a figure will have when being looked at again as it will subconsciously trigger the same movements and experience as when the ritual was performed, by use of neural reuse: "When observing someone performing an action, expressing an emotion, or undergoing a somatosensory stimulation, mirror mechanisms are activated and trigger an embodied simulation of that experience"[317].

All things considered, in light of the approaches and theories presented above, a new and unitary interpretative framework can be formulated for the "topographic" figures of the Neolithic period in Valcamonica. The irregular and shapeless figures called *macule* should be seen as a ritually performative act with abstract symbolic connotations, most probably part of a shamanic-ecstatic religious system with an animist ontology. This interpretation puts the value of the *macule* in the act of engraving itself, which can also have the added function and value of 'humanising' sites, therefore setting meaningful boundaries between initiated/non-initiated, sacred/profane, and natural/anthropic. The act of engraving fits neatly into the diversity of rituals and acts that can induce altered states of consciousness due to the repetitive character of the action, the physical stress it induces, the time it takes to be realised, coupled with tiredness, hunger, thirst, the difficult position of engraving, and prolonged exposure to the elements. The geometric compositions and figures can be seen as the 'result' of altered states of consciousness, particularly of the first stage of the Lewis-Williams model. Therefore, they can fit into the 'entoptic phenomena' category. The lack of certain figures specific of the first stage may be explained by specific cultural preferences which place an emphasis on the given repertoire. This strongly appears to be the case with the 'grill' figures, whether engraved (as at Vite) or painted (as at *Balma 'd Mondon*). Not only do they generally fit into the entoptic phenomena repertoire, but they are also recurrent figures in all the proven shamanic contexts (also painted) presented in Chapter IV. The strong performative character of engraving can be further emphasised by the latest discoveries in neuroscience. The discovery of Mirroring Mechanisms, which led to the theory of Embodied Simulation, offers a new perspective on the

[317] GALLESE *et alii* 2022, p. 88.

act of creation and how the figures might have been received during the act of engraving itself and afterwards. Thus, a re-use cycle of the figures can be speculated due to the Embodied Simulation theory and the process of neural re-use which proves that the figures remain an active component, not just marks on a rock.

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