Research Article

Cristiana Petrinelli Pannocchia*, Alice Vassanelli

The First Italian Farmers: The Role of Stone Ornaments in Tradition, Innovation, and Cultural Change

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Abstract: When the first farmers landed on the eastern coast of the Italian peninsula (end of seventh millennium cal BC), they brought with them a system of knowledge and technologies that quickly spread along both the Tyrrhenian and Adriatic coasts. The study of the material culture, therefore, assumes an important role in understanding the social and cultural identity of these incoming groups. Analyses of ornament production – involving manufacture technology, raw materials, and stylistic choices – may supply information about the cultural choices and the technical skills of human groups and shed light on the social and symbolic system of these ancient populations. Data obtained from this work show that the ornaments became symbols of a growing cultural identity, which began to be developed within Italian territory. In the ornamental assemblages of the newcomers, the relevance of shaped lithic items is clearly visible, and there was the development of types that will become more and more standardized during the Neolithic period. However, elements in the symbolic culture of these first settlers, such as the use of *Columbella rustica* and the exclusive production of hard animal matter ornaments in some sites, recall previous traditions. This study intends to extend our knowledge on the ornamental customs of the first Italian Neolithic communities. It will attempt to establish if the chronological and the geographical differences that emerge from our analyses reflect diversities in the cultural and symbolic systems of the incoming farmers and different possible interactions with the native population.

Keywords: Early Neolithic, identity, Italy, stone beads, bracelet

1 Introduction

In Europe, the transition to farming was not a linear process (Manen et al., 2019; Shennan, Downey, & Timpson, 2013), and in many regions, the question remains as to the relationship between the newcomers and the indigenous inhabitants.

The spread of the Neolithic culture throughout the Mediterranean area was facilitated by human groups that brought with them innovative technologies and new artifacts as part of the "Neolithic package."

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*** Corresponding author: Cristiana Petrinelli Pannocchia,** Department of Civilisations and Forms of Knowledge, University of Pisa, Via dei Mille 19, 56126 Pisa, Italy, e-mail: cristiana.petrinelli@unipi.it
Alice Vassanelli: Department of Civilisations and Forms of Knowledge, University of Pisa, Via dei Mille 19, 56126 Pisa, Italy, e-mail: alice.vassanelli@cfs.unipi.it

The passage from foraging to a production economy had an impact not only on different aspects of the daily life of the human groups but also on their symbolic codes.

When the first farmers reached the south-eastern coasts of the Italian peninsula (end of seven millennium cal BC), new systems of knowledge and technologies quickly spread along both coasts and then carried on through to the north.

As many authors claim, a holistic approach to the personal ornament production – involving manufacture technology, raw materials, and stylistic choices – supplies information about the cultural choices and the technical skills of human groups, but it can also shed light on the role these objects played in the social and symbolic system of the ancient populations (Vanhaeren & D'Errico, 2006).

Data provided from the study of early Neolithic ornamental assemblage show the presence of new highly elaborated items and the progressive development of local customs and behavior patterns due to the progressive formation and stabilization of new communities (Pessina & Tiné, 2008).

However, some elements reveal that these incoming farmers also adopted some features of the previous local traditions, such as the use of *Columbella rustica* and perforated teeth. The kind of interaction they had with the local hunter-gatherer communities, especially in the central-southern part of the Italian peninsula, remains a widely debated issue due to the scarcity of Late Mesolithic sites (Franco, 2011; Radi & Petrinelli Pannocchia, 2018). Data do not allow for the exclusion that some elements were already part of the traditional heritage of the newcomers (Tozzi, 1996).

In Italy, detailed studies on the prehistoric personal body adornments to date has been focused on northern regions and on specific cultural groups (Bernabò Brea, Maffi, Mazzieri, & Salvadei, 2010; Micheli, 2012) or raw materials (Borrello & Micheli, 2005; Borrello & Rossi, 2005), so that the picture we have remains very limited.

This article intends to review the evidence relating to the production of Neolithic personal ornaments relating to the whole Italian peninsula through the analyses of the main stone elements: pendants, shaped beads, and bracelets.

The evidence provided is collected from published sources, so it may not fully represent the actual composition of the Neolithic repertoire. Publications, especially the older ones, often omit the presence of ornaments in the sites or provide only a hint to their presence. Moreover, during the past excavations, their number could have been, at times, underestimated due to inadequate recovery techniques employed.

A brief overview of the pre-Neolithic ornamental assemblages is followed by an analysis about how and where new Neolithic stone ornaments spread in the Italian peninsula, underlining the eventual differences in their production and geographical distribution. To complete the picture of early Neolithic adornments customs, a synthesis of nonlithic items will also be presented.

The chronological and the geographical differences are examined to understand more fully if they reflect diversities in the cultural and symbolic systems of the incoming groups, as well as suggest potential interrelations among the newcomers and the native population.

2 The Neolithization of Italy: A Brief Overview

Guilaine (2018) remarked that "the early Neolithic of the Central Mediterranean is a real kaleidoscope and, beyond distinct common basic denominators, it exhibits strong ceramic and lithic variability". The framework at our disposal for the early Italian Neolithic period is continuously refined by new data (Biagi & Starnini, 2021; Binder et al., 2017; Delpino, 2020). The first farmers arrived in south-eastern Italy (Apulia) around the end of seventh millennium cal BC (i.e., Pulo di Molfetta: LTL-142A 7130 ± 60 BP, Binder et al., 2017; Ripa Tetta: Beta-47808 6988 ± 45 BP, Binder et al., 2017; Favella: LTL-778A 7003 ± 55 BP, Tiné, 2009; Table 1). They rapidly penetrated to the hinterland, into the Ionic area and along the Tyrrhenian coast, as shown by the impressed-ceramic levels discovered at the Arene Candide Cave (Beta-66553 6880 ± 60 BP, Bernabò Brea, 1946, 1956; Binder & Maggi, 2001; Maggi, 1997). The early Neolithic of southern Italy, in relation to the Impressed Ware groups, shows a regional variability in the morphological and decorative

Table 1: ^{14}C Dates of the Italian early Neolithic settlements mentioned in the text (calibration with OxCal v4.4.2 using IntCal20, Reimer et al., 2020; "?": data not available)

Site	Lab code	Uncal BP	Cal BC		Culture	Context	Sample	References
			1 б	2 б				
Favella della Corte (CS)	LTL-778A	7003 ± 55	5981–5806	5989–5750	Impressa (Archaic)	Structure D	Bone collagen	Tiné, 2009
Favella della Corte (CS)	LTL-202A	6956 ± 75	5963–5745	5991–5676	Impressa (Archaic)	Structure E	Cerealia charred seeds	Tiné, 2009
Favella della Corte (CS)	Beta-165482	6940 ± 40	5878–5752	5968–5729	Impressa (Archaic)	Structure A	Cerealia charred seeds	Tiné, 2009
Favella della Corte (CS)	Beta-71633	6910 ± 60	5876–5728	5973–5669	Impressa (Archaic)	Structure E	Cerealia charred seeds	Tiné, 2009
Favella della Corte (CS)	LTL-203A	6890 ± 50	5831–5724	5889–5667	Impressa (Archaic)	Structure D	Cerealia charred seeds	Tiné, 2009
Favella della Corte (CS)	LTL-204A	6793 ± 40	5722–5658	5737–5626	Impressa (Archaic)	Structure G	Bone collagen	Tiné, 2009
Torre Sabea (LE)	OxA-1448	6860 ± 45	5794–5672	5842–5655	Impressa (Archaic)	Layer 2, Pit T-U/11-12	Cerealia charred seeds	Guilaine, Gasco, Evin, & Valladas, 2003
Ripatetta (FG)	Beta-47808	6988 ± 45	5973–5805	5983–5750	Impressa (Guadone)	Cobble paved area	Cerealia charred seeds	Binder et al., 2017
Ripatetta (FG)	LTL-16676A	6910 ± 40	5832–5736	5889–5719	Impressa (Guadone)	Cobble paved area	Cerealia charred seeds	Binder et al., 2017
Ripatetta (FG)	LTL-16677A	6890 ± 60	5841–5719	5968–5659	Impressa (Guadone)	Cobble paved area	Cerealia charred seeds	Costantini & Stancanelli, 1994
Coppa Nevigata (FG)	OxA-1475	6880 ± 90	5878–5669	5979–5627	Impressa (Archaic)	Phase II–III	?	Skeates, 1994
Coppa Nevigata (FG)	OxA-1474	6850 ± 80	5829–5659	5968–5622	Impressa (Archaic)	Phase II–III	Cerealia charred seeds	Skeates, 1994
Le Secche-Giglio Island (GR)	LTL-16672A	6769 ± 45	5712–5635	5733–5571	Impressa/cardial	Brown sediment	Charcoal	Binder et al., 2017
Le Secche-Giglio Island (GR)	LTL-16671A	6637 ± 45	5622–5531	5629–5482	Impressa/cardial	Grey sediment	Bone collagen	Binder et al., 2017
Le Secche-Giglio Island (GR)	LTL-16673A	6492 ± 65	5518–5374	5611–5322	Impressa/cardial	Brown sediment	Charcoal	Binder et al., 2017
Cala Giovanna Piano-Pianosa Island (LI)	LTL-1468A	6222 ± 60	5296–5066	5313–5011	Late cardial/linear pottery	Cut 14A, Sq. M20	Charcoal	Colombo & Tozzi, 2007
Cala Giovanna Piano-Pianosa Island (LI)	LTL-1153A	6200 ± 70	5292–5047	5315–4954	Late cardial/linear Pottery	Fire pit in O/P-20/21	Soil organic matter	Boschian, Caponi, Colombo, & Gabriele, 2005
Cala Giovanna Piano-Pianosa Island (LI)	Beta-181546	6090 ± 40	5200–4941	5208–4849	Late cardial/linear pottery	Fire pit north	Charcoal	Colombo & Tozzi, 2007
Cala Giovanna Piano-Pianosa Island (LI)	LTL-1778A	5877 ± 55	4832–4688	4899–4556	Linear pottery	Fire pit in MN 22/23	Charcoal	Colombo & Tozzi, 2007
Cala Giovanna Piano-Pianosa Island (LI)	GrA-13474	5680 ± 40	4546–4454	4656–4371	Linear pottery	?	Bone collagen	Colombo & Tozzi, 2007

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Table 1: *Continued*

Site	Lab code	Uncal BP	Cal BC		Culture	Context	Sample	References
			1 б	2 б				
Casa Querciolaia (LI)	GrN-13891	6040 ± 50	5000–4847	5201–4796	Fiorano	AA2-T1	Charcoal	Iacopini, 2000
Arene Candide Cave (SV)	Beta-66553	6880 ± 60	5838–5715	5893–5641	Impressa/cardial	Phase AC1?	Charcoal	Maggi, 1997
Arene Candide Cave (SV)	Beta-170557	6870 ± 40	5801–5714	5842–5665	Impressa	Phase AC1	Cerealia charred seeds	Binder et al., 2017
Arene Candide Cave (SV)	LTL-15944A	6864 ± 45	5797–5673	5877–5657	Impressa	Phase AC1	Bone collagen	Binder et al., 2017
Arene Candide Cave (SV)	LTL-259407A	6861 ± 45	5795–5672	5874–5655	Impressa	Phase AC2	Bone Collagen	Binder et al., 2017
Arene Candide Cave (SV)	Beta-170558	6860 ± 40	5791–5674	5839–5661	Impressa	Phase AC1	Cornus charred seeds	Binder et al., 2017
Arene Candide Cave (SV)	LTL-15943	6834 ± 45	5748–5662	5829–5631	Impressa	Phase AC1	Bone collagen	Binder et al., 2017
Arene Candide Cave (SV)	Beta-110542	6830 ± 40	5738–5666	5793–5633	Impressa	Phase AC1	Cerealia charred seeds	Binder et al., 2017
Arene Candide Cave (SV)	OxA-23072	6778 ± 39	5714–5643	5730–5625	Impressa	Phase AC1	Cerealia charred seeds	Biagi & Starnini, 2021
Arene Candide Cave (SV)	LTL-16678A	6751 ± 45	5711–5626	5729–5566	Cardial	Phase AC3	Bone collagen	Binder et al., 2017
Arene Candide Cave (SV)	LTL-159446A	6750 ± 45	5711–5626	5728–5566	Impressa	Phase AC1	Vitis charred seeds	Binder et al., 2017
Arene Candide Cave (SV)	Beta-170555	6700 ± 40	5656–5565	5713–5536	Impressa	Phase AC1	Charcoal	Binder et al., 2017
Arene Candide Cave (SV)	LTL-16678A	6623 ± 45	5618–5485	5623–5481	Cardial	Phase AC3	Bone collagen	Binder et al., 2017
Arene Candide Cave (SV)	LTL-6004A	6446 ± 45	5473–5376	5479–5325	Cardial	?	Cerealia charred seeds	Arobba, Panelli, Caramiello, Gabriele, & Maggi, 2017
Arene Candide Cave (SV)	Beta-19619	6370 ± 50	5467–5229	5474–5218	Cardial	Phase AC1	Charcoal	Binder et al., 2017
Arene Candide Cave (SV)	LTL-16680A	6271 ± 40	5307–5213	5324–5071	Cardial	Phase AC3	Bone collagen	Binder et al., 2017
Arene Candide Cave (SV)	Beta-66552	6150 ± 70	5208–5008	5300–4856	Impressa/cardial	Phase AC4?	Charcoal	Maggi, 1997
Pollera Cave (SV)	MC-756	6950 ± 100	5969–5736	6015–5662	Impressa (sillon d'impressions)	Cut XXIV	Charcoal	Tiné, 1974
Pollera Cave (SV)	MC-1148	6880 ± 100	5881–5667	5984–5622	Impressa (sillon d'impressions)	Cut XXI	Charcoal	Odetti, 1990
Pollera Cave (SV)	MC-757	6580 ± 100	5625–5418	5707–5331	Cardial	Cut XXIII	Charcoal	Tiné, 1974
La Marmotta (RM)	R-2360	6855 ± 65	5798–5666	5887–5629	Impressa	Pole	Wood	Fugazzola Delpino, 2002
La Marmotta (RM)	?	6622 ± 64	5620–5483	5658–5475	Cardial	Pole	Wood	Fugazzola Delpino, 2002
La Marmotta (RM)	?	6564 ± 66	5612–5476	5626–5379	Cardial	Pole	Wood	Fugazzola Delpino, 2002

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Table 1: *Continued*

Site	Lab code	Uncal BP	Cal BC		Culture	Context	Sample	References
			1 б	2 б				
La Marmotta (RM)	HD-20466	6474 ± 20	5434–5388	5480–5377	Cardial	Pole	Wood	Fugazzola Delpino, 2002
La Marmotta (RM)	R-3193	6389 ± 52	5471–5311	5475–5222	Linear pottery	Pole	Wood	Fugazzola Delpino, 2002
La Marmotta (RM)	?	6189 ± 43	5212–5061	5295–5006	Linear pottery	Pole	Wood	Fugazzola Delpino, 2002
Mora Cavorso Cave (RM)	LTL-6124A	6505 ± 50	5522–5380	5611–5365	Early Neolithic	B1/d8SU300	Charcoal	Silvestri, Achino, Gatta, Rolfo, & Salari, 2020
Mora Cavorso Cave (RM)	Ly-3504	6405 ± 35	5470–5324	5474–5314	Early Neolithic	URSU1	Human bone	Silvestri et al., 2020
Mora Cavorso Cave (RM)	Ly-5202	6275 ± 45	5307–5214	5357–5070	Early Neolithic	LW	Charcoal	Silvestri et al., 2020
Mora Cavorso Cave (RM)	LTL-6123A	6000 ± 45	4946–4801	5008–4733	Early Neolithic	C/A2SU22	Charcoal	Silvestri et al., 2020
Colle Santo Stefano (AQ)	LTL-60A	6843 ± 40	5753–5667	5830–5638	Impressa (Guadone)	Cut 13, Sq. I17	Charcoal	Fabbri & Angeli, 2010
Colle Santo Stefano (AQ)	LTL-526A	6823 ± 55	5743–5643	5831–5626	Impressa (Guadone)	Cobbled paved area	Charcoal	Fabbri & Angeli, 2010
Colle Santo Stefano (AQ)	LTL-15952A	6809 ± 45	5730–5658	5775–5626	Impressa (Guadone)	Cobbled paved area	Cerealia charred seeds	Binder et al., 2017
Colle Santo Stefano (AQ)	LTL-15953A	6770 ± 45	5712–5635	5733–5571	Impressa (Guadone)	Cobbled paved area	Cerealia charred seeds	Binder et al., 2017
Colle Santo Stefano (AQ)	LTL-58A	6727 ± 75	5715–5566	5743–5482	Impressa (Guadone)	Cut 6, Sq. I19	Charcoal	Fabbri & Angeli, 2010
Colle Santo Stefano (AQ)	LTL-59A	6718 ± 40	5668–5566	5719–5560	Impressa (Guadone/ Middle Adriatic)	Cut 9, Sq. M21	Charcoal	Fabbri & Angeli, 2010
Colle Santo Stefano (AQ)	LTL-61A	6688 ± 110	5711–5485	5802–5386	Impressa (Guadone)	Cut 15, Sq. I19	Charcoal	Fabbri & Angeli, 2010
Colle Santo Stefano (AQ)	LTL-525A	6651 ± 60	5627–5530	5665–5478	Impressa (Guadone/ Middle Adriatic)	Cut 1, Sq. O26	Charcoal	Fabbri & Angeli, 2010
Colle Santo Stefano (AQ)	LTL-57A	6570 ± 60	5610–5478	5625–5386	Impressa (middle Adriatic)	Cut 3, Sq. X21	Charcoal	Fabbri & Angeli, 2010
Colle Santo Stefano (AQ)	Rome-468	6575 ± 80	5617–5476	5641–5371	Impressa (middle Adriatic)	Cut 7–8, Sq. M22	Charcoal	Radi, Boschian, Calani, Pistoia, & Zamagni, 2001
Continenza Cave (AQ)	R-1411	6590 ± 75	5616–5479	5656–5380	Impressa (Guadone)	Cut 20	?	Grifoni Cremonesi et al., 2011
Continenza Cave (AQ)	R-2938	6570 ± 63	5611–5478	5626–5382	Impressa (Guadone)	Cut?	?	Grifoni Cremonesi et al., 2011
Continenza Cave (AQ)	R-1410	6170 ± 75	5213–5011	5308–4913	Impressa	Cut 7	?	Grifoni Cremonesi et al., 2011
Marcianese-Villaggio Rossi (CH)	BM-2250R	6590 ± 130	5634–5385	5736–5231	Impressa (Guadone)	Str.3, Layer5	Charcoal	Skeates, 1994
Marcianese-Villaggio Rossi (CH)	BM-2251R	6570 ± 140	5629–5377	5736–5219	Impressa (Guadone)	Str.1, Layer 2	Charcoal	Skeates, 1994
Marcianese-Villaggio Rossi (CH)	BM-2252R	6300 ± 170	5472–5055	5611–4847	Impressa (Guadone)	Str.?	Bone collagen	Skeates, 1994

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Table 1: *Continued*

Site	Lab code	Uncal BP	Cal BC		Culture	Context	Sample	References
			1 б	2 б				
Ripabianca di Monterado (AN)	R-599	6260 ± 85	5472–5055	5469–4997	Impressa (middle Adriatic)	Structure-base	Charcoal	Alessio et al., 1970
Ripabianca di Monterado (AN)	R-598	6210 ± 75	5296–5052	5323–4952	Impressa (middle Adriatic)	Structure-higher levels	Charcoal	Alessio et al., 1970
Ripabianca di Monterado (AN)	R-598a	6140 ± 70	5208–4999	5297–4851	Impressa (middle Adriatic)	Structure-higher levels	Charcoal	Alessio et al., 1970
Edera Cave (TS)	GX-19569	6700 ± 130	5721–5484	5883–5378	Mesolithic + early Neolithic	Layer 3a	Charcoal	Biagi, Starnini, & Voytek, 1993
Edera Cave (TS)	GX-19568	6615 ± 390	5981–5126	6367–4720	Vlaska group	Layer 2a	Charcoal	Biagi et al., 1993
Edera Cave (TS)	?	6600 ± 100	5626–5476	5714–5371	Vlaska group	Layer 5B/1	Shell	Boschian, 1989
Edera Cave (TS)	GrN-23129	6590 ± 100	5721–5484	5713–5363	Vlaska group	Layer 2a	Charcoal	Skeates, 1994
Edera Cave (TS)	GX-19568	6445 ± 210	5622–5211	5751–4854	Vlaska group	?	Charcoal	Biagi et al., 1993
Edera Cave (TS)	GrN26795	6410 ± 50	5472–5325	5477–5231	Vlaska group	Layer 2a	?	Skeates, 2004
Edera Cave (TS)	GX-19022	6305 ± 285	5531–4935	5751–4553	Vlaska group	Layer 2a	Charcoal	Biagi et al., 1993
Sammardenchia (UD)	R-2547	6570 ± 74	5616–5475	5631–5375	Friulan groups	Trench 84	Charcoal	Alessio, Allegri, Ferrari, Improta, & Pessina, 1996
Sammardenchia (UD)	R-2545	6535 ± 75	5610–5388	5624–5336	Friulan groups	Str.101	Charcoal	Skeates & Whitehouse, 1999
Sammardenchia (UD)	R-2736	6170 ± 57	5210–5046	5298–4952	Friulan groups	Str.126	Charcoal	Pessina & Rottoli, 1996
Sammardenchia (UD)	Bln-3373	6120 ± 60	5207–4951	5215–4851	Friulan groups	Str.1	Charcoal	Skeates & Whitehouse, 1999
Sammardenchia (UD)	R-2733	6028 ± 46	4991–4848	5041–4796	Friulan groups	Str.117	Charcoal	Skeates & Whitehouse, 1999
Sammardenchia (UD)	R-3136	5993 ± 59	4947–4796	5027–4725	Friulan groups	Str.101	Charcoal	Skeates & Whitehouse, 1999
Sammardenchia (UD)	R-3142	5963 ± 76	4941–4728	5198–4681	Friulan groups	Str.3	Charcoal	Skeates & Whitehouse, 1999
Sammardenchia (UD)	R-2937	5867 ± 54	4828–4681	4884–4553	Friulan groups	Str.142	Charcoal	Skeates, 2004
Sammardenchia (UD)	R-2920	5797 ± 64	4717–4551	4795–4494	Friulan groups	Trench	Charcoal	Skeates, 2004
Sammardenchia (UD)	R-3141	5713 ± 54	4649–4459	4708–4446	Friulan groups	Str.126	Charcoal	Skeates & Whitehouse, 1999
Sammardenchia (UD)	R-2735	5684 ± 58	4602–4450	4681–4367	Friulan groups	Str.114	Charcoal	Pessina & Rottoli, 1996
Savignano (MO)	Teled. Isot.	6310 ± 210	5477–5032	5636–4735	Fiorano	?	Charcoal	Improta & Pessina, 1998
Savignano (MO)	Bln-2976	5880 ± 80	4845–4616	4947–4542	Fiorano	?	Charcoal	Biagi & Nisbet, 1987
Fiorano-Fornaci Carani (MO)	GrN-19838	6690 ± 180	5783–5420	5982–5311	Fiorano	Pit 2	Bone collagen	Improta & Pessina, 1998
Fiorano-Fornaci Carani (MO)	GrN-19839	6540 ± 60	5611–5413	5620–5374	Fiorano	Pit 5	Bone collagen	Improta & Pessina, 1998
Fiorano-Fornaci Carani (MO)	Bln-3137	5570 ± 50	4446–4357	4531–4335	Fiorano	Layer 4	Charcoal	Improta & Pessina, 1998

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Table 1: *Continued*

Site	Lab code	Uncal BP	Cal BC		Culture	Context	Sample	References
			1 б	2 б				
Isorella-Cascina Bocche (BS)	Oxa-35333	6290 ± 34	5308–5218	5359–5208	Vhò	Pit 1	Bone collagen	Biagi, Starnini, Boric, & Mazzucco, 2020
Isorella-Cascina Bocche (BS)	OxA-19737	6183 ± 33	5176–5069	5280–5012	Vhò	Pit 1	Cereal charred caryopsis	Starnini, Biagi, & Mazzucco, 2018
Isorella-Cascina Bocche (BS)	OxA-23133	5850 ± 34	4784–4685	4797–4609	Vhò	Pit 1	Cereal charred caryopsis	Starnini et al., 2018
Isorella-Cascina Bocche (BS)	GrN-23645	5850 ± 80	4830–4606	4932–4501	Vhò	Pit 1	Charcoal	Starnini, 1999
Vhò di Piadena-Campo Ceresole (CR)	GrM-15259	6190 ± 25	5173–5072	5216–5045	Vhò	Pit XXXII	Animal tooth	Biagi et al., 2020
Vhò di Piadena-Campo Ceresole (CR)	I-11445	6170 ± 110	5297–4988	5364–4838	Vhò	Pit XVIII	Charcoal	Biagi, 1979
Vhò di Piadena-Campo Ceresole (CR)	OxA-27418	6127 ± 35	5206–4995	5209–4953	Vhò	Pit XXIIB	Bone collagen	Biagi et al., 2020
Vhò di Piadena-Campo Ceresole (CR)	OxA-21358	6122 ± 38	5206–4991	5209–4947	Vhò	Pit XVIII	Cereal charred caryopsis	Biagi et al., 2020
Vhò di Piadena-Campo Ceresole (CR)	OxA-X-2504-57	6090 ± 55	5204–4906	5209–4847	Vhò	Pit XXIIB	Animal tooth	Biagi et al., 2020
Vhò di Piadena-Campo Ceresole (CR)	GrM-12418	6090 ± 18	5039–4954	5201–4940	Vhò	Pit XL	Animal tooth	Biagi et al., 2020
Vhò di Piadena-Campo Ceresole (CR)	Bln-3135	5930 ± 50	4846–4725	4942–4702	Vhò	Pit XXXII	Charcoal	Biagi & Nisbet, 1987
Vhò di Piadena-Campo Ceresole (CR)	GrM-12690	5895 ± 35	4796–4719	4846–4688	Vhò	Pit XXIX	Animal tooth	Biagi et al., 2020
Ostiano-Dugali Alti (CR)	GrM-12416	6184 ± 18	5173–5073	5213–5052	Vhò	Pit I	Bone collagen	Biagi et al., 2020
Ostiano-Dugali Alti (CR)	GrM-15257	6130 ± 25	5205–5000	5210–4991	Vhò	Pit III	Bone collagen	Biagi et al., 2020
Ostiano-Dugali Alti (CR)	Bln-2795	6090 ± 100	5207–4850	5300–4732	Vhò	Pit I	Charcoal	Biagi & Nisbet, 1987
Alba-Coop. Lav. (CN)	GX-20845	6030 ± 80	5030–4801	5208–4724	Vhò	SU72	Charcoal	Venturino Gambari & Motella De Carlo, 1995
Alba-Coop. Lav. (CN)	GX-20652	5880 ± 100	4892–4612	4996–4501	Vhò	SU72	Charcoal	Venturino Gambari & Motella De Carlo, 1995

pattern of the vessels, most likely influenced by the different origin of the first settlers and local evolution of their material culture.

The first pioneers on the Tyrrhenian coast, as mentioned earlier, were related to the archaic style of the impressed pottery but were rapidly replaced by the Cardial Ware groups, who spread as far as the Franco-Cantabrian area (Binder & Maggi, 2001; Binder et al., 2017; Guilaine & Manen, 2007).

The neolithization of the Adriatic coast occurred due to settlers coming from south Italy, linked to an evolved phase of the Impressed Ware Culture. At the beginning of sixth millennium cal BC, they reached the Abruzzi region and then spread to the northernmost area around the middle of the same millennium (Bagolini & Von Eles, 1978; Pessina, 2002; Radi, 2010, Table 1; Radmilli, 1974).

In northern Italy, apart from the western zones where the impressed ware mentioned earlier is documented, several early Neolithic groups have been recognized, different in geographical distribution and in some aspects of materials culture: Fiorano, Vhò, Isolino, Gaban, Friulani Groups, and Vlaška Group (Bagolini, 1980b; Pessina, 1998; Pessina & Tiné, 2008). To date, based on available new data, research strictly underlines affinities between some of these groups, the boundaries of which appear increasingly blur (Biagi et al., 2020; Perini, Starnini, D'Amico, & Ottomano, 2001; Perrin, 2006). Despite the evidence of regionalism, the whole peninsula was crossed by a wide exchange network permitting the circulations of artifacts, raw materials, as well as ideas.

This richness and variety of the cultural framework of the early Italian Neolithic are reflected in the personal adornment habits of the diverse human groups.

3 Pre-Neolithic Ornamental Tradition

At the end of the Pleistocene as well as during the early Holocene (Figure 1), despite significant cultural differences between these two periods, the largest part of ornament assemblages was composed of perforated shells, consisting mainly of marine gastropods and bivalves. These shells, often found in sites several kilometers distant from the coastline (Fumane Cave: Aurignacian levels OS-5872 37100 ± 240 BP, UtC-2045 32300 ± 400, Broglio, 1995; Gurioli, Cilli, Giacobini, & Broglio, 2005; Peresani et al., 2019; Figure 2a; Riparo Gaban: Castelnovian levels KIA-10365 8323 ± 63 BP, KIA-10363 6968 ± 41 BP, Bagolini, 1980a; Kozlowski & Dalmeri, 2002; Figure 2b; Riparo Tagliente: Epigravettian level LTL-4441A 13986 ± 60 BP, Broglio, 1984; Fontana et al., 2015; Continenza Cave: late Epigravettian levels from LTL-1250a 11983 ± 80 BP to Rome-557 10280 ± 110 BP, Astuti, Bisconti, Chiarenza, & Grifoni Cremonesi, 2006; Grifoni Cremonesi, Serradimigni, & Usala, 2011; Figure 2d(1–5)), prove the existence of long-distance mobility and exchange networks that promoted the penetration of these items into the Alpine and inland areas. The fact that only specific types of shells were selected is probably related to their peculiar ornamental use or symbolic significance (Baysal, 2013).

From the end of the late Epigravettian, the use of *Columbella rustica* and *Cyclope* sp. items increases, in particular *C. neritea* (i.e. Riparo Tagliente: Benini Accorsi, 1974; Settecannelle Cave: GrN-15977 10570 ± 260 BP, OZC-163 12700 ± 170 BP, Ucelli Gnesutta et al., 2006; Pozzo Cave: AA-78136 12820 ± 130 BP, GX-27906 12320 ± 50 BP, Mussi et al., 2000; Delle Mura Cave: Beta-142778 11420 ± 100 BP, Calattini, 2005). Nevertheless, other species of shells such as *Glycimeris*, *Mitra* sp., or even the rarer *Nassarius reticolata* and *Dentalium* sp. (*Antalis dentalis*) were collected with the same purpose.

Late Palaeolithic adornment assemblages revealed not only the presence of exchange networks but also the existence of a symbolic language shared or at least understood by the different human groups (Noble & Davidson, 1996; Roach-Higgins & Eicher, 1992; Stiner, Kuhn, & Güleç, 2013; Vanhaeren & D'Errico, 2006). With the emergence of the Holocene, this "language" undergoes changes. The environmental changes affected the relationship between humans and nature. The human communities had to adapt their daily life to these changes that also inevitably involved their spiritual and symbolic sphere.

During the Mesolithic, the use of *Columbella rustica* became more predominant (i.e., Romagnano Loc III: Sauveterrian phase from R-1147 9830 ± 90 BP to R-1139 8220 ± 70 BP, Castelnovian phase from R-1137 7850 ± 60 BP to R-1137B 7800 ± 80 BP, Alessio et al., 1984; Broglio, 1997; Riparo Gaban: Dalmeri &

Figure 1: Distribution map of the Italian Mesolithic and Palaeolithic sites mentioned in the text: (1) Riparo Bombrini-Balzi Rossi; (2) Fumane Cave; (3) Riparo Tagliente; (4) Riparo Gaban; (5) Riparo Romagnano; (6) Riparo Villa Bruna; (7) Riparo Biarzo; (8) Monterotondo; (9) Gavorrano; (10) Settecannelle Cave; (11) Polesini Cave; (12) Continenza Cave; (13) Pozzo Cave; (14) Fossellone Cave; (15) Paglicci Cave; and (16) Delle Mura Cave. (Map Data: Google Earth Pro 7.3, Data SIO, NOAA, U.S. Navy, NGA, GEBCO; Image Landsat/Copernicus, elaboration by A.Vassanelli).

Lanzinger, 1997; Figure 2b; Riparo Biarzo: Sauveterrian and Castelnovian levels, Bertolini, Cristiani, Modolo, Visentin, & Romandini, 2016; Cristiani, 2012), while among the other collected shells, the presence of *C. neritrea* seems to decrease, while the use of *Dentalium* sp. gains importance.

Other relevant items related to the adornment habit of pre-neolithic groups were modified mammals' bones and teeth. In particular, perforated red deer atrophic canines were widely spread (Riparo Tagliente: late Epigravettian; Riparo Villabruna: late Epigravettian levels from R-2023 12040 ± 150 BP to UtC-1771 11910 ± 160 BP, Bertola et al., 2007; Polesini Cave: late Epigravettian level R1265 10090 ± 80 BP, Belluomini, 1981; Cremonesi, 1987; Paglicci Cave: Gravettian level UTC-1412 26800 ± 300 BP, Mussi & Zampetti, 1993; Ronchitelli et al., 2015; Continenza Cave: Epigravettian levels, Sauveterrian levels from Rome-556 9680 ± 100 to Rome-552 9490 ± 100 and Castelnovian level, Grifoni Cremonesi et al., 2011; Figure 2d(6–8)).

Both in the late Palaeolithic and Mesolithic, the occurrence of ornamental artefacts made of stone is rare. The archeological records only document the following categories:

Figure 2: Selection of Italian pre-Neolithic ornaments. (a) Fumane Cave (Peresani et al., 2019); (b) Riparo Gaban (Borrello & Dalmeri, 2005; Cristiani, 2012); (c) Riparo Bombrini-Balzi Rossi (Bertola et al., 2013); (d) Continenza Cave (Colombo & Serradimigni, 2016); (e) Settecannelle Cave (photograph by P. Ucelli Gnesutta); (f) Polesini Cave (Mussi, 1991); (g) Fossellone Cave (Mussi, 1991); (h) Gavorrano (photograph by Museo Archeologico di Massa Marittima (Grosseto, Tuscany), CC BY-SA 4.0); and (i) Monterotondo (photograph by A. Vassanelli). Elaboration by A. Vassanelli.

– Simply perforated items. Small natural pebbles selected to be perforated, with the purpose of being worn or hung on to something (i.e., Monterotondo: late Epigravettian, Vassanelli, 2018; Figure 2i(1); Continenza Cave: late Epigravettian levels; Figure 2d(10); Polesini Cave: late Epigravettian level; Figure 2f).
– Slightly morphologically modified items. They were produced on pebbles, which were selected because their shape was similar to the final desired morphology. The human modification was focused mainly on the surface's treatment, richly decorated with linear carvings (i.e., Monterotondo: late Epigravettian; Figure 2i(2); Settecannelle Cave: late Epigravettian; Figure 2e; Gavorrano: Epigravettian, Lo Vetro, Balducci, & Volante, 2007; Figure 2h).
– Modified items. Some stones had undergone a more elaborate manufacturing process, where their natural shape was exploited to recreate some specific templates (Riparo Bombrini: proto–Aurignacian level Beta-204028 34.200 ± 500, Bertola et al., 2013; Figure 2c). These items often intentionally imitate the shape of a deer's atrophic canines (i.e., Continenza Cave: late Epigravettian level; Figure 2d(9); Fossellone Cave: Aurignacian level; Figure 2g).

4 Neolithic Personal Ornaments

With the neolithization, several changes related to raw material, shape, manufacture quality, and technology as well as the suspension mode occur in the ornamental repertoire of the Italian peninsula.

The exploitation of hard animal matter, recalling the previous tradition, continues alongside a significant increment in the use of stone materials, connected to an increase in manufacture complexity.

Data indicate the emergence of high-modified items' productions, with differences in geographical distribution and raw material selection (Figure 3).

These new stone ornament productions can be considered as a marker of the demic migrations who settled the peninsula and are therefore a representation of the new cultural aspects developing in the different areas (Pessina & Tiné, 2008).

The presence in the early Neolithic ornamental assemblage of new types along with pre-Neolithic ones reflects the ornamental trend observed in Southern and Central Europe (Rigaud, D'Errico, & Vanhaeren, 2015).

Among the stone ornaments, pendants are few and scattered throughout the peninsula. The use of the engraved decoration disappears completely, and their shape became more regular and well defined.

Ring bracelets and shaped beads, mainly the discoid one, appear for the first time in the ornamental repertoire. The former shows a particular geographical concentration, while shaped beads have a wider diffusion. The sources of lithic raw materials used were mainly local and were collected in outcrops or riverbanks. However, steatite, greenstone, and marble artifacts have been found in sites far from the outcrops, revealing the existence of a long-distance exchange system and the choice of hard materials for specific items. Shell and bone were also employed, in some cases preferred, to obtain these new shaped ornaments.

4.1 Stone Pendants

There is a scarce occurrence of lithic pendants dated to the beginning of the early Neolithic, mostly consisting of minimally processed items, obtained by local raw materials.

One of the earliest was found at Torre Sabea (OxA-3950 6860 ± 45 BP; Cremonesi et al., 1987; Guilaine & Cremonesi, 2003; Table 1). This pendant, in amber calcite, has a rough morphology and is broken at one end, where the trace of a little biconical perforation (Radi, 2003; Figure 4b) is clearly visible.

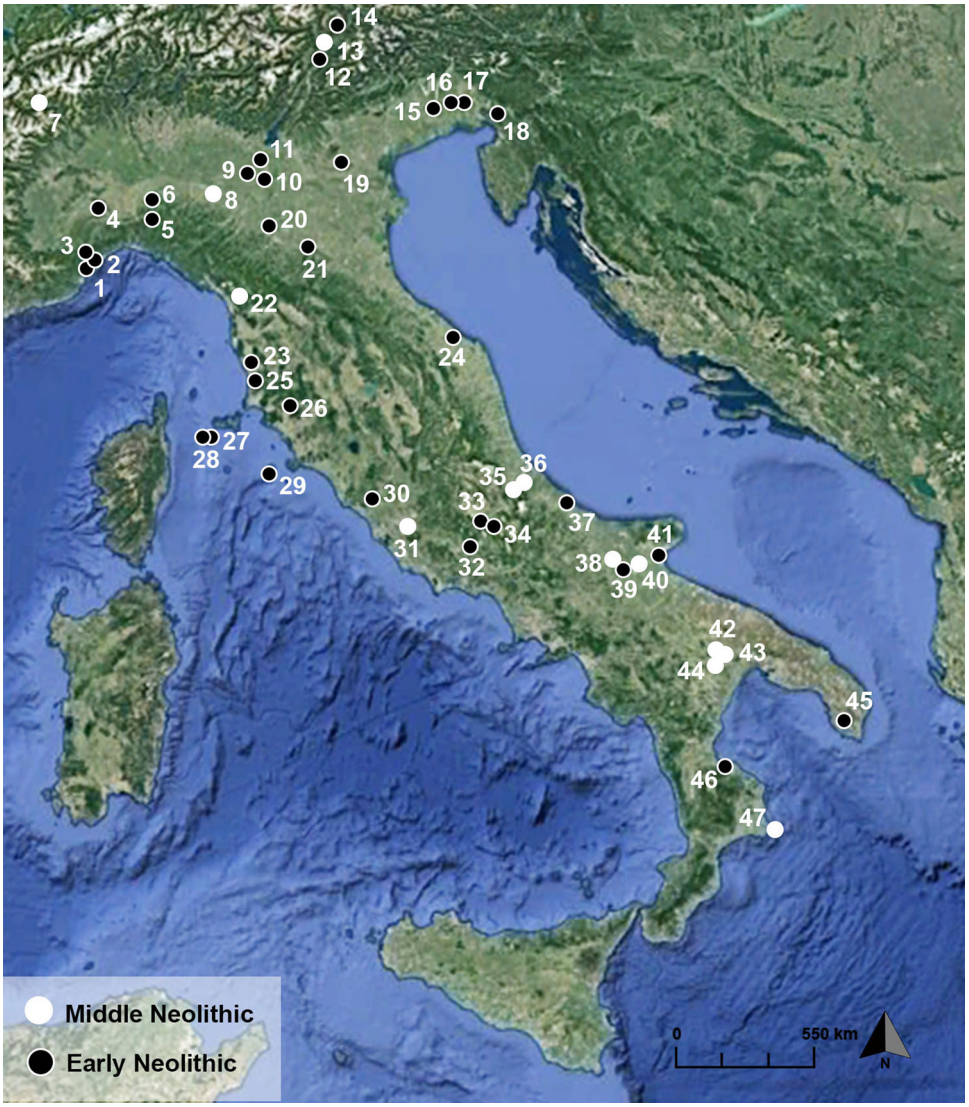

Figure 3: Distribution map of the Italian early and middle Neolithic sites mentioned in the text: (1) Arene Candide Cave; (2) Pollera Cave; (3) Arma delle Anime Cave; (4) Alba; (5) Brignano Frascata; (6) Monte Alfeo-Godiasco; (7) Vollein; (8) Sant'Andrea di Travo; (9) Ostiano-Dugali Alti; (10) Vhò di Piadena (Campo Ceresole and San Lorenzo); (11) Isorella-Cascina Bocche; (12) Riparo Gaban; (13) La Vela; (14) Riparo Plunacker; (15) Cesena di Azzano; (16) Buttrio; (17) Sammardenchia; (18) Edera Cave; (19) Ca' Bissara; (20) Fiorano-Fornaci Carani; (21) Savignano; (22) All'Onda Cave; (23) Casa Querciolaia; (24) Ripabianca di Monterado; (25) Castagneto Carducci; (26) Fontino Cave; (27) Cala Giovanna Piano-Pianosa Island; (28) La Scola-Pianosa Island; (29) Le Secche-Giglio Island; (30) La Marmotta; (31) Casali di Porta Medaglia; (32) Mora Cavorso Cave; (33) Continenza Cave; (34) Colle Santo Stefano; (35) Catignano; (36) Villa Badessa; (37) Villaggio Rossi di Marcianese; (38) Mulino da Basso; (39) Ripatetta; (40) Passo di Corvo; (41) Coppa Nevigata; (42) Tirlecchia; (43) Murgia Timone; (44) Malvezzi; (45) Torre Sabea; (46) Favella della Corte; and (47) Capo Alfiere. (Map Data: Google Earth Pro 7.3, Data SIO, NOAA, U.S. Navy, NGA, GEBCO; Image Landsat/Copernicus, elaboration by A. Vassanelli).

Related to the same period are two sub-rectangular pendants, fractured at the level of the hole, coming from the Arene Candide Cave (Traversone, 1999; Figure 4a). Moving on to the north-eastern side of the peninsula, some greenstone pendants have been found at the site of Sammardenchia (D'Amico, 1998; Figure 4c).

The only piece that indicates a more elaborate manufacturing process is the pendant of Colle Santo Stefano in Abruzzi (Petrinelli Pannocchia & Vassanelli, 2016; Figure 4d; Table 1). This elongated item, made in actinolite, has a plano-convex cross-section with extremely polished surfaces. To date, it is impossible to

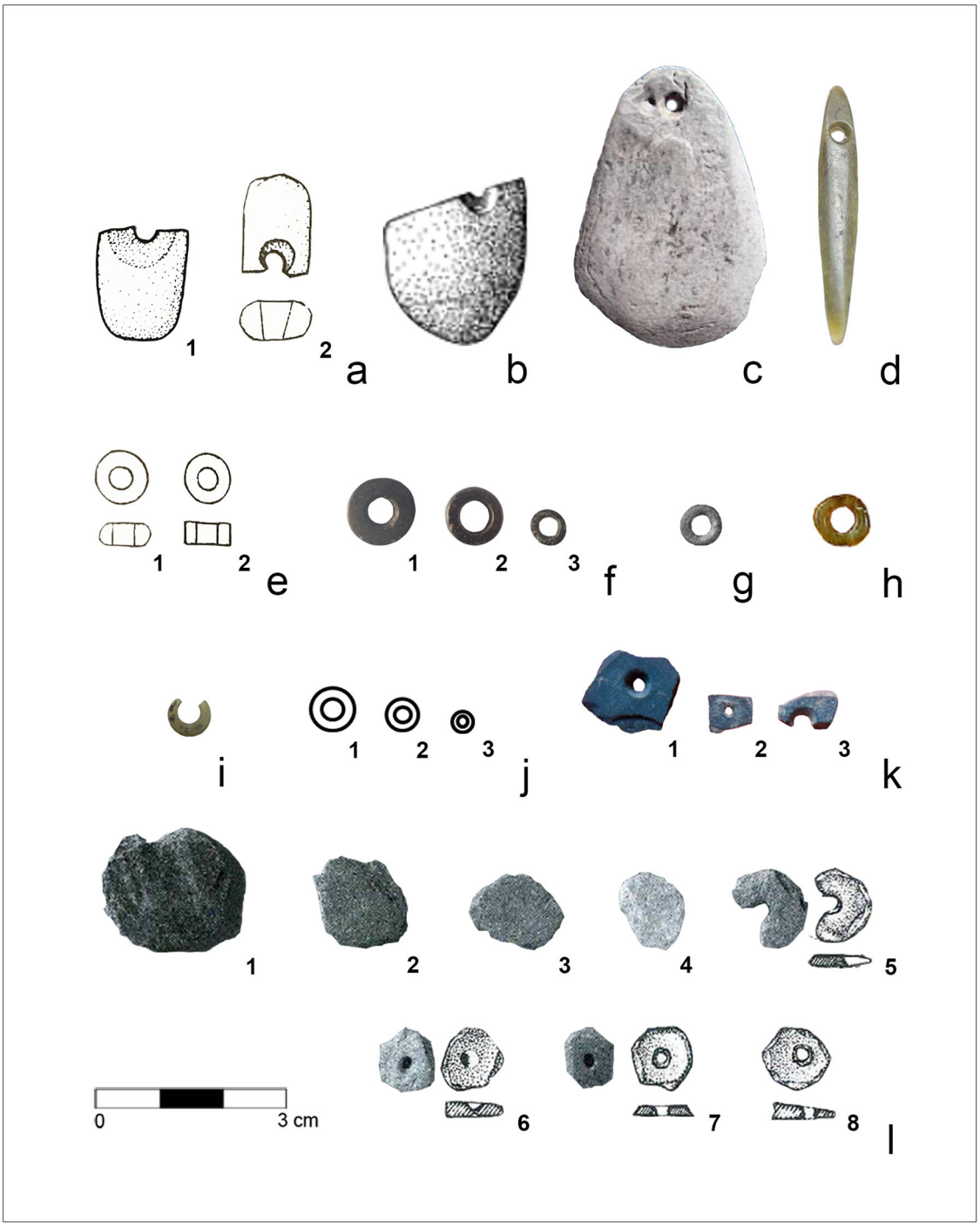

Figure 4: Selection of Italian early Neolithic stone pendants and shaped beads. (a) Arene Candide Cave (Traversone, 1999); (b) Torre Sabea (Radi, 2003); (c) Sammardenchia (D'Amico, 1998); (d) Colle Santo Stefano (Petrinelli Pannocchia & Vassanelli, 2016); (e) Arene Candide Cave (Traversone, 1999); (f) Cala Giovanna Piano-Pianosa Island (Bisconti & Zamagni, 2007); (g) Mora Cavorso Cave (Silvestri et al., 2020); (h) Ripabianca di Monterado (Lollini, 1991); (i) Pollera Cave (photograph by A. Vassanelli); (j) La Marmotta (Micheli, 2003); (k) Favella della Corte (Micheli, 2009); and (l) Le Secche-Giglio Island (Brandaglia, 1987). Elaboration by A. Vassanelli.

determine the specific supply area of the raw material. However, suitable sources have been identified in Calabria and in the northern Apennine (Mottana, Crespi, & Liborio, 2004). It is impossible to ascertain if the raw material or the finished object was imported.

At Piccioni Cave (Cremonesi, 1976), in a level dated to the end of the early Neolithic, an ovoid stone pendant was recovered, which had an engraved line encircling the middle of its surface.

From the end of the early and the beginning of the middle Neolithic, the shape of the pendants became more defined, tending toward a geometrical morphology, often trapezoidal or sub-rectangular, but not properly standardized. In the literature, the trapezoidal and thin elongated shaped ones are often defined as miniature axe-heads or chisels, probably with a ritual value (i.e., Passo di Corvo: Tiné, 1983; Capo Alfiere: Morter & Robb, 2010; Murgia Timone, Tirlecchia: Aurino & Mancusi, 2016).

It is interesting to observe that some geometric pendants found in Apulia were exclusively made of jadeite, very similar in color and translucency with the raw material used for the early Neolithic pendant of Colle Santo Stefano. Conversely, in central-northern Italy, the middle Neolithic stone ornaments show a preferential use of dark-colored soapstone. During the last phase of the Neolithic, pendants become more common (i.e., Mulino da Basso: Gravina, 2014; Casali di Porta Medaglia: Carboni & Anzidei, 2020; All' Onda Cave: Amadei & Grifoni Cremonesi, 1986–1987; Sant'Andrea di Travo, Vollein: Micheli, 2016), both in burials and settlements, mostly in north Italy.

4.2 Stone-Shaped Beads

With the advent of the Neolithic, the use of shaped beads spread throughout the Italian peninsula. Morphologically and technically different from the ornaments of the Palaeolithic and Mesolithic, these beads probably represent a new way in which the people adorned themselves.

The discoid type represents the most abundant category, and their simple shapes may recall the late Paleolithic and Mesolithic tradition of using fish vertebrae as necklace elements (i.e., Balzi Rossi: Gravettian burials BG2,3,5, Formicola, 1988; Polesini Cave, Epigravettian levels; Riparo Gaban, Castelnovian levels). The next most important is the cylindrical shape, usually the short type, while other forms are rarer: i.e., bottle, ovoid, and ring shape. Since, in general, they are recovered in smaller numbers, it can be suggested that they were worn as part of heterogenic compositions, as some finds in the Near East indicate (Baysal, 2019).

The distribution of this type of ornament highlights clearly the time and trajectories of the Neolithic penetration into central-south Italy. Unfortunately, the archeological evidence and the absolute dates at our disposal are extremely limited.

At Favella della Corte (Tiné, 2009), dated to the first centuries of sixth millennium cal BC, Micheli (2009) pointed out the presence of a beads workshop, which used radiolarite, ophiolite, and serpentine indifferently. The five unfinished beads recovered (Figure 4k) testify to a manufacture sequence starting from flakes, which were shaped by rough grinding, then perforated, and finally calibrated and polished. It is also important to underline the production of *terracotta* beads carried out on this site.

Another attestation in the south is the limestone bottle-shaped bead, found at Coppa Nevigata (Puglisi, 1955).

Along the Tyrrhenian coast, four preform beads, four shale beads, and one quartz bead have been discovered at Serotino-Le Secche (Giglio Island: Brandaglia, 1987; Figure 4l). These beads were shaped through a flaking retouch of the edges and only in a few cases show traces of grinding.

For this site, there are no radiocarbon dates, but the associated pottery allowed us to attribute Le Secche to the beginning of the early Neolithic.

Moving further north, three discoidal siltstone beads and a nonperforated steatite cylinder have been discovered in the Impressed Ware levels of the Arene Candide Cave, in Liguria (Traversone, 1999; Starnini & Voytek, 1997; Figure 4e and i).

The presence of preforms at Favella della Corte, Arene Candide Cave, and Le Secche points to a local production of beads, employing raw materials available in the immediate surroundings of the sites.

Along the same coastline, stone-shaped beads have been found in slightly later early Neolithic contexts.

At La Marmotta (Fugazzola Delpino, D'Eugenio, & Pessina, 1999; Table 1), numerous discoid and short cylindrical beads occur with different dimensions (Figure 4j). Despite the absence of a comprehensive study, it is possible to observe a certain standardization of these beads, showing calibrated perforations to the diameter and well-defined surfaces.

In the same region, one of the rare attestations of beads found within a burial context occurs, which dates to the second half of the sixth millennium cal BC. In the inner room sector of Mora Cavorso Cave (Silvestri et al., 2020; Table 1), about 28 burials associated with a few grave goods, composed of pottery, flint artifacts, as well as beads in shell and stone, have been found (Figure 4g).

Slightly more recent are the eight serpentinite and four steatite discoid beads found at Cala Giovanna Piano (Tuscan archipelago) (Bisconti & Zamagni, 2007; Figure 4f). Four of them, due to the width of the hole, can be better classified more specifically as ring beads. The raw materials used, not available on the island, as well as the absence of bead blanks, suggest their importation.

During several surveys in the Livorno's territory of Tuscany (Vassanelli, 2018), 119 pieces, including blanks and finished stone beads, were collected. Despite the absence of chronological information, the morphology and the manufacturing process suggest a Neolithic attribution of some of these items.

The evidence in the Northern area and along the Adriatic coast are even poorer.

At Monte Alfeo-Godiasco (Simone Zopfi, 2004), a site attributed to the Vhò culture one blank bead has been found, associated with one ring and one discoid steatite bead. Based on literature reports, similar findings are also testified at the sites of Riparo Gaban (Borrello & Dalmeri, 2005) and Sammardenchia (Micheli, 2009; Table 1). In the former, some short limestone cylindrical beads have been identified, and in the second, a few paragonite schist beads.

Belonging to the early Neolithic of the Istria region are four very small, perforated beads made of sandstone, discovered at the Edera Cave (Biagi, Starnini, & Voytek, 2008). These beads were found in a stratigraphic unit (3a) containing few potsherds and domesticated animal bones, dated to the first centuries of sixth millennium cal BC (Biagi, 2003).

At the Pollera Cave, one green steatite discoidal bead, referable to the end of the early Neolithic/beginning of the middle Neolithic, has been recovered (Odetti, 1990; Figure 4i).

The evidence of stone beads production in northern Italy increases from the fifth millennium cal BC with the spread of the Square Mouth Pottery culture (Mazzieri & Micheli, 2007, 2014). The use of the black steatite beads became almost exclusive.

On the Adriatic coast, a discoid steatite bead at Ripabianca di Monterado (Lollini, 1991; Figure 4h) and two beads, one globular and one long cylindrical, in the Villaggio Rossi of Marcianese (Geniola, 1982) have been discovered.

4.3 Stone Ring Bracelets

Contemporary to the neolithization of northern Italy, the use of ring stone bracelets spread (Pessina, 1998; Ribero, 2017; Tanda, 1977).

According to Micheli (2012), the distribution of these ornamental objects was "trans-cultural and had a long-lasting tradition as an important component of Neolithic costume." From the middle of sixth millennium cal BC, occurrences of these objects are numerous ranging from the Alpine region to the Emilia (i.e., Località Plunacker: Dal Ri, 1996; Isorella-Cascina Bocche: Starnini, 1998; Figure 5d; Vhò di Piadena-San Lorenzo, Vhò di Piadena-Campo Ceresole: Baioni & Starnini, 2008; Figure 5e; Sammardenchia, Cesena di Azzano Decimo, Buttrio: Pessina, 1993; Figure 5a; Savignano, Fiorano-Fornaci Carani: Laviosa Zambotti, 1943; Figure 5c). In Tuscany, of a slightly later date, evidence has been found at Castagneto Carducci (Sammartino, 2007) and Casa Querciolaia (Iacopini, 2000) in layers referred to the Fiorano Culture.

At Alba-Cooperativa Lavoratori (D'Amico & Ghedini, 1996) and Brignano Frascata (Zamagni, 1996; Figure 5b), numerous blanks at different stages of production were found, permitting the reconstruction of the whole manufacturing chain (D'Amico, 1998). In general, metamorphic rocks of the greenstone group

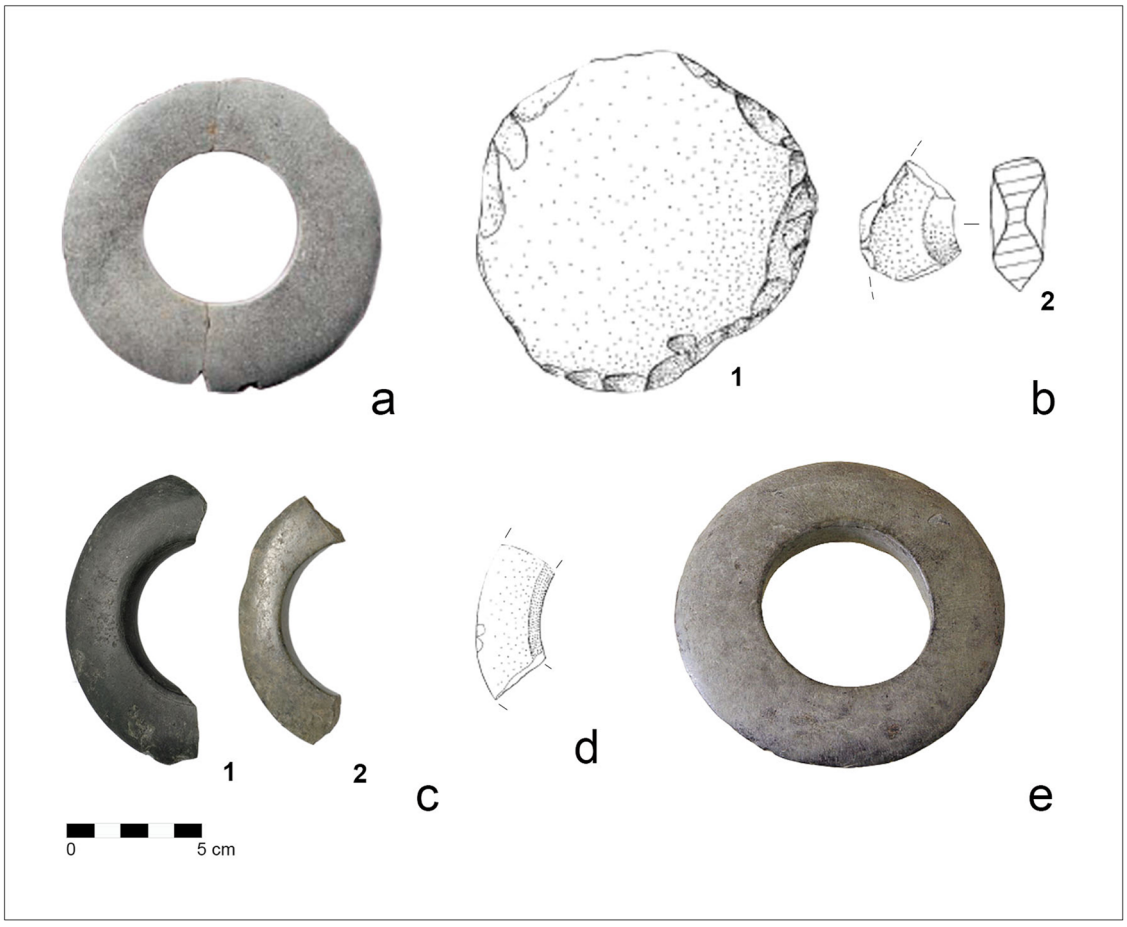

Figure 5: Selection of Italian early Neolithic stone ring bracelets. (a) Sammardenchia (Pessina, 1998); (b) Brignano Frascata (D'Amico, Starnini, & Voytek, 2000); (c) Fiorano-Fornaci Carani (photograph by Museo Civico di Modena (Emilia-Romagna)); (d) Isorella-Cascina Bocche (Starnini, 1998); and (e) Vhò di Piadena-San Lorenzo (Baioni & Starnini, 2008).

were those most largely employed in the manufacture of arm rings. However, differences have been recognized in the exploitation of raw materials within the different northern cultural groups, probably relating to the availability of the supplying area as well as the preference for peculiar raw materials.

During the middle and final Neolithic, this kind of ornament also spread to the remainder of the Peninsula, as shown by the numerous examples at Pollera and Arene Candide.

In the Adriatic area, two steatite bracelet fragments, probably arrived from the Tyrrhenian coast, have been found at Catignano (Zamagni, 2003) and Villa Badessa di Cepagatti (Radi, 1980). In the former, a fragment made in quartz was also collected. In the south, evidence of these objects is extremely rare (Picciano-Malvezzi in Basilicata: Cremonesi, 1976), suggesting occasional imports from external cultural spheres.

Evidence of repair on the broken items has been found, testifying the importance and the symbolic value of this type of ornaments.

4.4 Ornaments Made from Hard Animal Materials

Most of the data available relating to the Neolithic ornament repertories show the persistence of a widespread use of pierced animal tusks and teeth, fish-vertebrae, and processed bones (Figure 6).

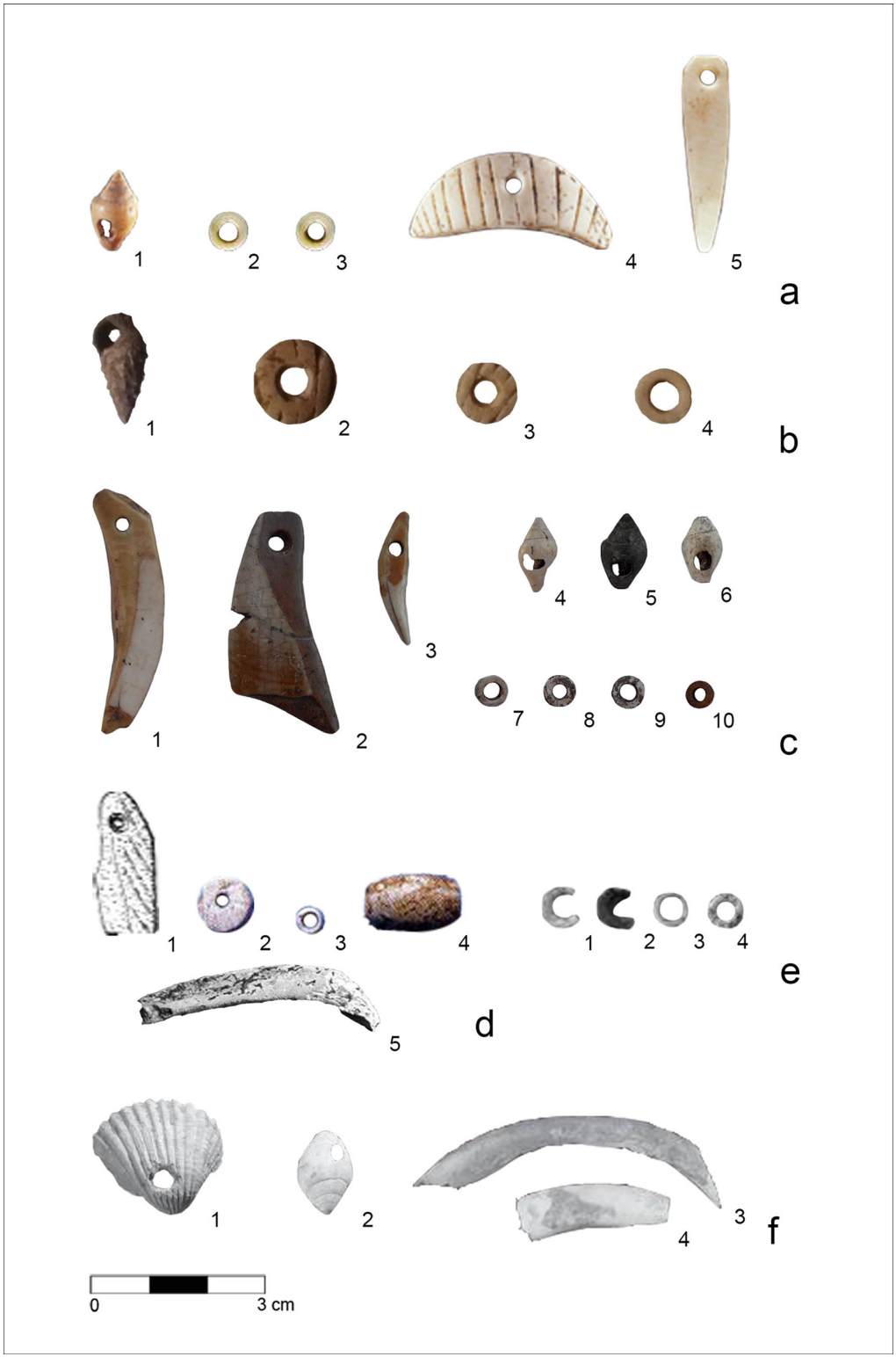

Figure 6: Selection of Italian early Neolithic hard animal matter ornaments. (a) Arene Candide Cave (Borrello, 2005; Micheli, Panelli, Rossi, & Maggi, 2018); (b) Cala Giovanna Piano-Pianosa Island (Bisconti & Zamagni, 2007); (c) Colle Santo Stefano (Graniti, 2008); (d) Torre Sabea (Micheli, 2003; Radi, 2003); (e) Mora Cavorso Cave (Silvestri et al., 2020); and (f) Ripatetta (Zamagni, 2006). Elaboration by A. Vassanelli.

In northern Italy, the presence of *Columbella rustica*, *Cyclope neritea*, *Cardium* (*Cerasoderma*), and *Dentalium* associated with limestone-shaped beads in the early Neolithic levels of Riparo Gaban (Borrello & Dalmeri, 2005) underline a clear continuity with the Castelnovian period. The same situation is shown by numerous sites of the central and south of the peninsula (i.e., Arene Candide Cave: Figure 6a(1); La Scola: Ducci, Guerrini, & Perazzi, 2000; Cala Giovanna Piano: Figure 6b(1); Mora Cavorso Cave; Ripatetta: Figure 6f(1 and 2); Torre Sabea: Radi, 2003).

At Colle Santo Stefano the majority of the 67 ornaments collected (Graniti, 2008) is represented by *Dentalium*, fragments of *Cardium*, and *Columbella rustica* (Figure 6c(4–6)). Some pendants were obtained from bone: three are on long bones and one *Ovis aries* phalanx. In addition, some *Sus scrofa* tusks and four perforated carnivores' teeth (*Felis silvestris* and *Martes*) were found (Figure 6c(1–3)).

Since the beginning of the Neolithic, the manufacturing of ornaments also involved the use of shells and bone to produce the shaped beads (i.e., Ostiano-Dugali Alti: Biagi, 1995; Pollera Cave).

At the Arene Candide Cave, among the early Neolithic ornament assemblage mentioned earlier, three discoid shell beads must be added (Figure 6a(2 and 3)). This production persists into subsequent Neolithic phases at the same site and in other northern contexts, such as the *Spondylus* cylindrical beads in the grave goods of la Vela di Trento prove (Bagolini, 1990; Micheli, 2012).

Along the Tyrrhenian coast examples of shaped organic beads have been found at Cala Giovanna Piano (Figure 6b(2–4)) and in the Mora Cavorso Cave (Figure 6e). Along the Adriatic coast, at Colle Santo Stefano (Figure 6c(7–10)) and at Torre Sabea, the only shaped beads recovered were made with hard animal matter (Figure 6d(2–4)). The shell was exploited the most (Colle Santo Stefano: 4; Torre Sabea: 3), and only one piece from Colle Santo Stefano was made from the bone.

Ring bracelets were also made from the bone (i.e., Isorella-Cascina Bocche) and, more commonly, in the shell. *Spondylus* and *Glycymeris* were the most suitable shells, but rare examples are also in *Charonia* sp. (Arene Candide Cave). The earliest evidence of shell ring bracelets come from southern Italy, at Ripatetta (Figure 6f(3 and 4)) and Torre Sabea (Figure 6d(5)). Most of the evidence, however, comes from northern Italy (i.e., Ca' Bissara, Isorella-Cascina Bocche: Micheli, 2005; Fiorano Modenese: Starnini, Ghisotti, Girod, & Nisbet, 2000), where these kinds of ornaments often accompany the stone ones.

At Arene Candide Cave, in a layer dated to the end of early Neolithic and mostly in the upper Square Mouth Pottery layers, numerous fragments of *Spondylus* were found, which probably can be interpreted as evidence of a ring bracelets workshop. Belonging to this same cultural horizon are other examples that have been found in Liguria, at Pollera Cave (Bernabò Brea, 1946) and Arma delle Anime Cave (Giuggiola, Imperiale, Lamberti, Piacentino, & Vicino, 1966).

5 Discussion and Final Remarks

During our overview, peculiar aspects emerged that deserve some evaluation and consideration.

Data at our disposal show that the stabilization and the social definition of the early Neolithic communities have been a slow and complex process that the study of the ornaments can help to identify. Throughout the whole peninsula, most production of personal ornaments was made using shells and hard animal matter. Therefore, the spread of new ornamental practices does not seem to have marked the end of the previous traditions.

From the beginning of the Neolithic, visible differences in both the types of ornament distribution and the use of specific raw materials testifies to the variety of the cultural traditions prevalent among the farmers spreading along the peninsula (Figure 7).

The earliest shaped stone beads are in the south and along the Tyrrhenian coast, clearly underlining the trajectory of the spread of the pioneers who first reached the southern regions of the peninsula and then quickly moved northward along the Tyrrhenian coast (Favella della Corte, Serotino-Giglio Island, Arene Candide Cave, Binder & Maggi, 2001; Binder et al., 2017; Guilaine & Manen, 2007; Guilaine, 2018; Figure 7a; Radi & Petrinelli Pannocchia, 2018). It is interesting to note, and maybe not by accident, that the pottery

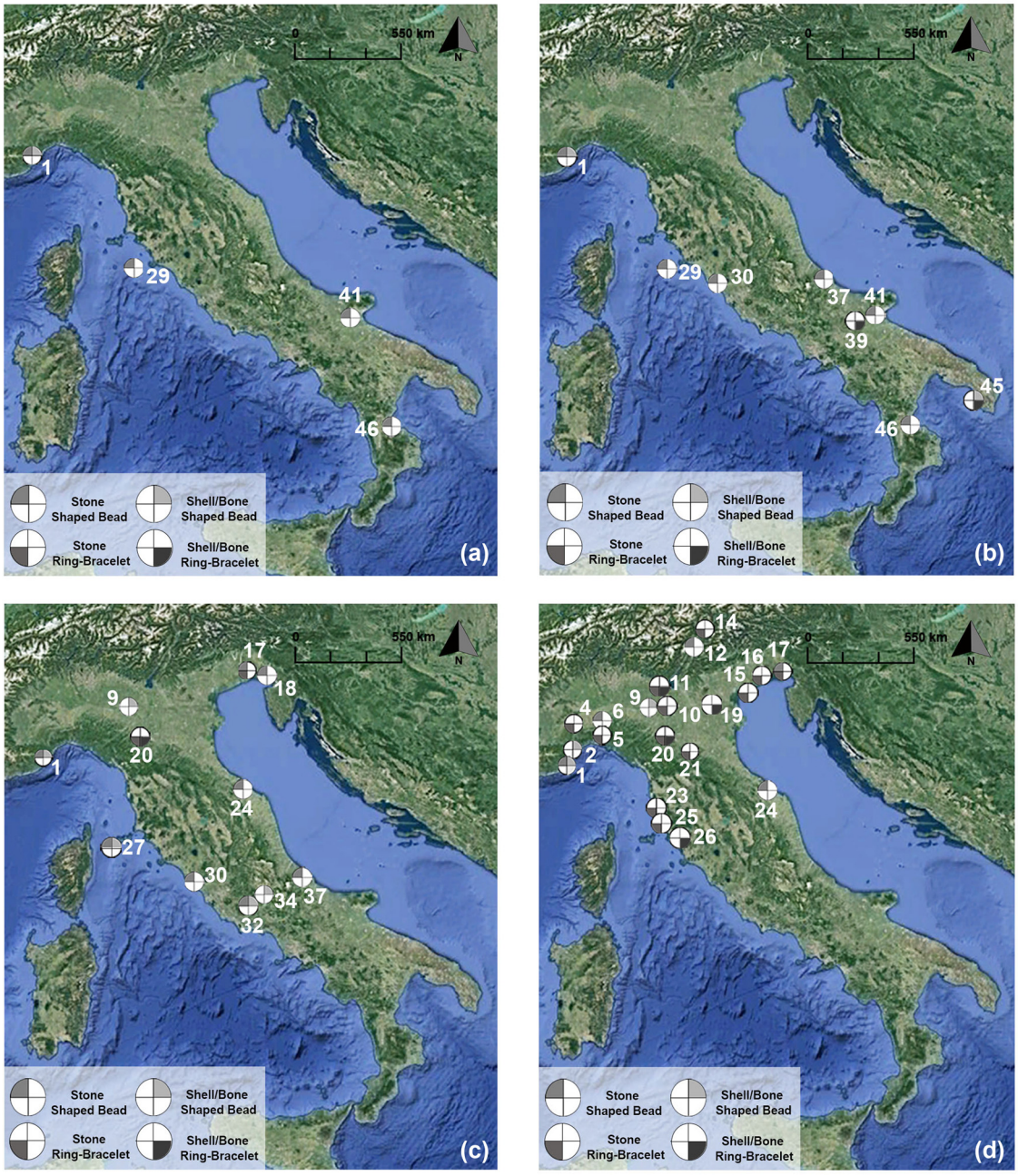

Figure 7: Spread of shaped beads and bracelets across the Italian peninsula during the early Neolithic, based on radiocarbon dates and excavation data: (a) 6000–5800 cal BC: (1) Arene Candide Cave; (29) Le Secche-Giglio Island; (41) Coppa Nevigata; and (46) Favella della Corte. (b) 5800–5600 cal BC: 1, Arene Candide Cave; (29) Le Secche-Giglio Island; (30) La Marmotta; (37) Villaggio Rossi di Marcianese; (39) Ripatetta; (41) Coppa Nevigata; (45) Torre Sabea; and (46) Favella della Corte. (c) 5600–5300 cal BC: (1) Arene Candide Cave; (9) Ostiano-Dugali Alti; (17) Sammardenchia; (18) Edera Cave; (20) Fiorano-Fornaci Carani; (24) Ripabianca di Monterado; (27) Cala Giovanna Piano-Pianosa Island; (30) La Marmotta; (32) Mora Cavorso Cave; (34) Colle Santo Stefano; and (37) Villaggio Rossi di Marcianese. (d) After 5300 cal BC: (1) Arene Candide Cave; (2) Pollera Cave; (4) Alba-Coop. Lav.; (5) Brignano Frascata; (6) Monte Alfeo-Godiasco; (9) Ostiano-Dugali Alti; (10) Vhò di Piadena (Campo Ceresole and San Lorenzo); (11) Isorella-Cascina Bocche; (12) Riparo Gaban; (14) Riparo Plunacker; (15) Cesena di Azzano; (16) Buttrio; (17) Sammardenchia; (19) Ca' Bissara; (20) Fiorano-Fornaci Carani; (21) Savignano; (23) Casa Querciolaia; (24) Ripabianca di Monterado; (25) Castagneto Carducci; and (26) Fontino Cave. (Map Data: Google Earth Pro 7.3, Data SIO, NOAA, U.S. Navy, NGA, GEBCO; Image Landsat/Copernicus, elaboration by A. Vassanelli).

productions of Favella della Corte, although part of the earliest Impressed Pottery Groups of the southeast, show the absence of some peculiar stylistic features in the decoration such as the rocker pattern. The latter is also missing in the archeological contexts of the Tyrrhenian coast.

Shaped beads in the central-Adriatic area are rare but are enough to underline a difference between the two sides of the Apennine. The earliest specimens, in fact, are made from the shell and bone (Torre Sabea and Colle Santo Stefano). The stone items of Villaggio Rossi are more recent, and the evidence at Ripabianca di Monterado must be referred to exchanges with the central-northern Tyrrhenian area. Significant steatite outcrops, in fact, are in the ophiolitic masses of the northern Apennines mountain range.

In the north of Italy, although scarce, the stone beads production (Monte Alfeo-Godiasco, Riparo Gaban, Sammardenchia, Edera Cave) seems to be attributable to local productions.

Shell and bone discoid and bottle beads are disseminated throughout the whole peninsula, but along the Tyrrhenian area, these items are always associated with the stone ones, while, as pointed earlier, right through the rest of the peninsula, they often represent the only shaped types.

The chronological and geographical framework presented above shows that with the neolithization the shaped beads spread throughout the peninsula as a new "model" of ornament, rich in significance. Possibly as a vehicle for communication: a symbol of identity or social status, or as a simple “modern way” used by people to adorn themselves. This model, over time, has been absorbed and reworked with different raw materials, probably most related to the local habits. Similar considerations can be offered for the bracelets, differently transposed in the Italian territory. The occurrences of stone ring bracelets are mainly distributed in the northern area of the peninsula; however, items in the south have been found that were made from the shell and bone (Ripatetta and Torre Sabea), with radiometric dates earlier than those of the stone ones found in the north. This leads us to consider the first arrival of this type of ornament in the south, where, however, it remains a sporadic presence. On the contrary from around 5700 cal BC (Figure 7, Table 1) onward, the item was largely employed in the north as indicated by the numerous bracelets made of stone and hard animal matter collected (Ca’ Bissara, Isorella-Cascina Bocche, Fiorano-Fornaci Carani; Figure 7c and d).

To date, the only elaborate pendant has been found at Colle Santo Stefano, and the other evidence consists of minimally processed items, obtained by local raw materials. Literature about symbolic values often points out the importance of color instead of the raw material. The choice to create this pendant with actinolite, perhaps accidentally recovered, was embedding not only an esthetic value but probably also a symbolic message that the maker intended to transmit. In northern Italy, a similar choice is inferred from the ring bracelets, mostly produced from green stones. Many ethnographic and anthropological studies suggest that in ancient times great importance could be attributed to green color and surfaces that shined. These characteristics could symbolize water, a fundamental nourishment element for plants and crops, hence a clear reminder of the fertility (Bar-Yosef Mayer & Porat, 2008; Bar-Yosef Mayer, 2019). Rituals recalling fertility at Colle Santo Stefano are distinctly shown by a circular pit surrounded by pebbles, containing a zoomorphic vase (Radi & Petrinelli Pannocchia, 2018). We might use this interpretative key to link the pendant from Colle Santo Stefano with the feminine sphere and extrapolate from this that it was designed for a female member of the group. In the Adriatic area, the choice of green color rocks for pendant production also seems to be prevalent during the middle Neolithic.

The middle Neolithic Square Mouth Pottery society of northern Italy (Bernabò Brea, 1946; Barfield, 1972; Bagolini & Biagi, 1977; Bernabò Brea et al., 2010; Del Lucchese & Starnini, 2015; Laviosa Zambotti, 1943; Maggi, Starnini, & Voytek, 1997) shows, on the contrary, a change in the conceptualization of personal ornaments in favor of shaped beads and pendants manufactured from black steatite, which become an identity element of distinction among these communities (Mazzieri & Micheli, 2014; Micheli, 2014). In the same period, in the central-Tyrrhenian area, the use of steatite ornaments increases, probably due to the influence of northern cultures, but without a specific color preference.

Data show that the ornamental items were important aspects of life in every early Neolithic community that spent time and energy producing non-utilitarian objects to materialize their social and ideological beliefs (Bains, 2012). The ornaments have been found almost exclusively in residential areas; burials from this period are scarcely attested and grave goods are poor or not properly linked with single inhumations

(Continenza Cave and Mora Cavorso Cave). Although this lack of information does not allow the reconstruction of an exhaustive framework about a possible division of the ornaments by gender or age, these items were clearly linked to the everyday life and status of the individuals. To wear an ornament was a way to emphasize their own uniqueness and identity (Hodder, 1986), as a single individual or part of a specific ethnicity. Results show that, from the beginning of the Neolithic, the sharing of similar choices between individuals and groups determined the emergence of symbolic languages having specific geographical distributions, almost in accordance with the results from lithic and pottery studies (Figure 7). The use of shaped beads seems to be principally related to Impressed and Cardial Groups, with significant differences in raw materials and quantity between the south-west (numerous and made principally in stone) and the south-east part of the peninsula (numerically scarce and made predominantly with hard animal materials). Considering the dense exchange network testified by other categories of artifacts, this difference cannot be attributed to the lack of raw materials but rather to specific cultural choices. Bracelets are a primary production of the north, a symbol shared between the different groups that constitute the articulate cultural picture of the earliest Neolithic of this area (Figure 7c and d). This shared symbol attests to a cohesion that perhaps can be seen as a precursor of a collective identity that will subsequently develop in the middle Neolithic.

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