

SEARCHING FOR GOLD

RESOURCES AND NETWORKS
IN THE BRONZE AGE OF THE EASTERN BALKANS

REINHARD JUNG
HRISTO POPOV (EDS.)



AUSTRIAN
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PRESS

Reinhard Jung – Hristo Popov (Eds.)

Searching for Gold

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First Golden Times: The ‘Treasures’ of Troy as an Indicator for Long-Distance Trade Networks in the 3rd Millennium BC

Christoph Schwall¹ – Barbara Horejs² – Moritz Numrich³ – Ernst Pernicka⁴

Abstract: The number of gold objects in the Aegean and Anatolia steadily increased from 3000 BC onwards and the use of gold became common after 2500 BC. In addition to this development, fortified settlements emerged in western Anatolia and on the East Aegean islands. This development indicates socio-cultural changes leading to proto-urban centres around 2500 BC. Besides the settlements, the practice of hoarding and, thus, the intentional removal of gold also appears in this region, impressively displayed by the gold ‘treasures’ of Troy in northwestern Anatolia. Particular gold items of this collection indicate far-ranging trade networks from the Aegean via Mesopotamia and the Iranian Plateau to the Indus region, revealing interactions between emerging elites in the Early Bronze Age. These new gold symbols, used to display social status, represent a new connectivity in the Early Bronze Age, which can also be described as the ‘first golden times’.

Keywords: Early Bronze Age, Aegean, Anatolia, gold jewellery, trade networks, elites

Introduction

In general, gold has been attracting people and communities for thousands of years and, basically, the value of gold has not changed drastically throughout this time. The significance of gold is strongly connected with cultural functions, representing a symbol of divinity, royalty, power, sun, light, and purity.⁵ Therefore, the appearance and distribution of gold objects within prehistoric societies allows us to recognize the possibility of connectivity and the degree of social dynamics within these societies.

Besides sporadic gold finds from the 5th and 4th millennia BC in the Aegean and Anatolia, evidence of gold increases during the Early Bronze Age 1 (3000–2700 BC). Together with gold objects, the appearance of fortified settlements in this period indicates socio-cultural changes in western Anatolia and on the East Aegean islands. This development seems to lead to the emergence of early hierarchical structures, eventually resulting in the first proto-urban centres in the developed Early Bronze Age 2 (around 2500 BC). In addition, this is accompanied by the first evidence of the practice of hoarding prestigious objects in the Aegean and in western Anatolia. Taking this into account, unavoidable questions arise: why do gold finds appear and increase in number during the 3rd millennium BC? Can the accumulation of precious gold objects be seen as an indicator for the emergence of elites, initiating the ‘first golden times’?

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⁵ Cf. Bernstein 2000.

Early Gold Finds during the 5th and 4th Millennium BC

To gain a deeper insight into the advent of gold finds and their socio-cultural relevance, it is worth taking a brief look at the socio-cultural developments since the 5th millennium BC in the Aegean and Anatolia in general. In this context, the eastern Balkans especially are of interest when considering the high number of exceptionally elaborated gold objects found in the necropolis of Varna I (Bulgaria) in the coastal region of the Black Sea, which are dated between 4600–4400 calBC.⁶ Despite the lack of comparable numbers of gold objects from settlements during this time, these finds clearly show that already during the 5th millennium BC, societies are traceable which were able to produce gold objects in a specialized and developed way. The technologically and technically advanced stage of metallurgical skills is proven by the use of the lost-wax casting technique and deliberate alloying.⁷ In this context, chemical analyses of the gold objects revealed that placer deposits were most likely used for their production.⁸ Hence, the gold objects from the Varna necropolis indicate the first, albeit short-term and unstable appearance of social inequality and are evidence of early elites.⁹

Subsequently, this development was not without impact on the neighbouring regions, as shown by the recently conducted studies regarding early metallurgy in the Aegean and Anatolia.¹⁰ Generally, in the late 5th and the 4th millennium BC, an intensification of metallurgy can be traced in the Aegean and western Anatolia which can be connected with the earlier development in the Balkans. This is clearly shown by genuine Balkan metal objects, so-called ‘ring idols’ made of gold, which were produced in this region especially in the 5th millennium BC.¹¹ In southern Greece, the Aegean and Anatolia, these idols are also well-known in the 4th and 3rd millennia, but the majority consist of different materials such as silver and lead. Nevertheless, a local production of ‘ring idols’ in Anatolia is attested by a casting mould found at Çamlıbel Tarlası III in northern Central Anatolia dating between 3590–3470 calBC.¹² Therefore, already during this period, it can be shown that there was extended contact between the Balkans, the Aegean and Anatolia. Although societies with permanent settlements can be traced during this time,¹³ except for the metal objects known from the Ilıpınar¹⁴ cemetery, no clear indications, such as exceptionally-equipped buildings and prestigious objects, for the formations of elites can be detected within the settlements.

Make Gold Great Again: The Significance of Early Bronze Age Gold Jewellery

From 3000 BC onwards, the number of recorded gold objects in Anatolia increased, with only a few scattered finds in the Aegean in settlement, burial or cave contexts. In Anatolia, jewellery such as gold beads, bracelets, necklaces, spiral rings, and earplugs are already known from Early Bronze Age 1 contexts.¹⁵ In addition to this, fortified settlements appear in the East Aegean and western Anatolia. Besides a presumable increasing need for protection, such labour-intensive building constructions show that the settlement was well organized; moreover, the increasing number of gold finds indicates socio-cultural changes. Hence, during the early 3rd millennium BC, societies of regional influence and power appear and they provided the essential requirements

⁶ Krauß et al. 2014a; Krauß et al. 2014b.

⁷ Leusch et al. 2014, 174–177.

⁸ Leusch et al. 2014; Leusch et al. 2015.

⁹ Cf. Renfrew 1978; Hansen 2018, 223–224.

¹⁰ Mehofer 2014.

¹¹ Atram-Stern 2014, 317–319; Mehofer 2014, 470, 488–490.

¹² Schoop 2009, 65–67; Schoop et al. 2009.

¹³ Cf. Schwall 2018, 277–284.

¹⁴ Roodenberg 2008; cf. Horejs 2014, 35.

¹⁵ Cf. Schwall – Horejs 2020; Horejs – Schwall 2023.

for a gradual formation of elites. Nevertheless, the abandonment of settlements within the Early Bronze Age 1 period clearly shows that these structures were not at all stable.

With the formation of extended proto-urban centres surrounded by impressive fortification systems in the Aegean and Anatolia around 2500 BC, such as Troy,¹⁶ substantial changes become recognizable in the structural basis of the settlements.¹⁷ Together with the emergence of these centres showing a clear inner organization, as indicated by the communal buildings and sophisticated defence systems with bastions, a significantly higher number of gold finds in settlements and burials is recorded and seems to correlate with a changing socio-cultural organization.¹⁸ Likewise, it is notable that a new habit of hoarding precious objects emerges in the Aegean and Anatolia. Due to the lack of clearly related destruction horizons for the majority of the hoards, it is unlikely that the motive was simply to hide items. Instead, this custom shows that there was an intentional removal of accumulated precious metal within the settlement. The question is whether there is any relationship between the changing settlement structure and the appearance of gold finds, and whether these objects can be taken as an indicator for an emerging social inequality?

For this purpose, the famous gold accumulations – so-called ‘treasures’ – of Troy discovered by Heinrich Schliemann in the second half of the 19th century offer a good opportunity to analyse the gold objects in detail.¹⁹ The locations and, thus, the exact allocation of each ‘treasure’ to a specific settlement phase were difficult to determine from the available information. The studies conducted by Donald Easton and his precise review and assessment of Schliemann’s publications and notes allow us to assign the majority of the find complexes to the settlements Troy II and III, dated to the second half of the 3rd millennium BC.²⁰ The ‘treasures’ themselves consist of various groups of objects such as vessels, weapons, raw material, and semi-finished products made of different materials. However, gold jewellery in particular, such as necklaces, diadems, earrings, pins, and bracelets, represents a large quantity among the finds that have partially fine filigree applications.²¹ By looking more closely at the individual items of the gold accumulations, it is noticeable that particular pieces of jewellery, such as hair-rings, so-called *Lockenringe*, basket-shaped earrings with pendant chains, quadruple spiral beads, and flat-winged disc beads,²² are included in several accumulations – a fact that is important for the relationship between the ‘treasures’ themselves as well as with external finds. Regarding the astonishing wealth of the gold objects, it is conspicuous that all gold accumulations have been found within or close to the citadel of Troy. Consequently, the gold accumulations of Troy seem to be connected with the community living or practising within this area and to indicate a possible social differentiation. The question therefore arises as to whether the finds could presumably be seen as an indicator for the formation and consolidation of hierarchical structures in Troy?

That this development of a social stratification was not only restricted to Troy is underlined by further gold hoards showing remarkable similarities with the objects of Troy which were found in Anatolian and East Aegean settlements. At Poliochni on Lemnos, a hoard containing more than 300 gold objects placed in a ceramic vessel was discovered in a storage room and dates to the second half of the 3rd millennium BC.²³ Interestingly, the items found at Poliochni offer almost perfect parallels with several gold objects from Troy, such as quadruple spiral beads, flat-winged disc beads, and *Lockenringe*.²⁴ Also striking are the similarities between the basket-shaped

¹⁶ Cf. Ünlüsoy 2006, 136–142.

¹⁷ Cf. Renfrew 1972, 225–264; Kouka 2008, 276–279.

¹⁸ Cf. Reinholdt 2008; for a compilation of increasing gold finds in the southern Aegean during the EBA see also Legarra Herrero 2014.

¹⁹ Schliemann 1881; cf. Trejster 1996; Treister 2013; Sazcı 2007.

²⁰ Easton 1997; Easton 2014, 79–89.

²¹ E.g. Sazcı 2007, 243, 297.

²² E.g. Sazcı 2007, 181, 184, 193–194, 227.

²³ Bernabò-Brea 1976, pls. 240–252.

²⁴ Bernabò-Brea 1976, pls. 246–247; 250.17.

earrings with pendant chains,²⁵ whereby the question was raised as to whether these objects were possibly produced in the same workshop.²⁶ In addition to Poliochni, comparable objects are also known from the Eskiyağar ‘treasure’ in central Anatolia.²⁷ This hoard was also placed in a ceramic vessel, and the inventory includes comparable finds of basket-shaped earrings (however, without pendant chains), quadruple spiral beads, and flat-winged disc beads as well as *Lockenringe* of the Troy type.²⁸ In general, taking a closer look at the components of the hoards, it becomes obvious that the majority of the gold objects represent personal adornments. This fact is striking, and not all of the settlements’ inhabitants can be expected to have been wearing gold jewellery. Hence, the jewellery gives us a strong indication that a kind of vertical social stratification within the society must have existed. Moreover, the commonalities of specific adornments found in all three hoards show specific types of jewellery that were used by the rising elites from the Early Bronze Age 2. Taking this into account, the connection ranging from the East Aegean via western to central Anatolia gives a brief insight into the important nodes of an extended interaction sphere during the second half of the 3rd millennium BC.

From the Aegean to the Indus: Gold Jewellery as an Indicator of a Far-reaching Trade Network

Focusing on further interrelations based on jewellery from Troy, additional evidence is provided from the western and the more eastern regions by taking a look at ring disc beads, quadruple spiral motifs, and flat-winged disc beads.

Ring Disc Beads

Interaction between the Greek mainland (‘Thyreatis’ hoard,²⁹ Kolonna on Aegina³⁰), Crete (Archanes³¹), and western Anatolia (Troy,³² Seyitömer Höyük³³) during the second half of the 3rd millennium BC is attested by so-called ‘ring disc beads’ made of gold.³⁴ The shape of the beads is unique and it seems to be unlikely that this bead type originated independently in three different regions.

Quadruple Spiral Motifs

Aside from ring disc beads, extensive, far-reaching connections are indicated by adornments with quadruple spiral motifs. Besides beads of this type from Troy, four gold pendants with attached quadruple spirals have been assigned to the Troad, most probably from Troy.³⁵ Remarkably, nearly identical gold objects were found in the royal tombs of Ur, Iraq.³⁶ Due to the similarities of the motifs and the pendants’ composition, it is assumed that the objects assigned to the Troad represent imitations of the Middle Eastern motifs or even imports.³⁷ More evidence for contact between the Troad and the Middle East is attested by gold quadruple spiral beads discovered in the tombs

²⁵ Bernabò-Brea 1976, pls. 241–244.

²⁶ Cf. Trejster 1996, 231.

²⁷ Özgüç – Temizer 1993.

²⁸ Özgüç – Temizer 1993, pls. 106.2–5; 107.1–8; 112.1c; 115.2b.

²⁹ Reinholdt 1993, 6–7, figs. 5–7.

³⁰ Reinholdt 2008, 125, pl. 11.3.

³¹ Sakellarakis – Sapouna-Sakellarakis 1997, 619, fig. 656.

³² Sazcı 2007, 194.

³³ Bilgen et al. 2015, 145, fig. 159.

³⁴ Reinholdt 2008, 26–27.

³⁵ Bass 1966, 37; Bass 1970, pl. 86.20–23.

³⁶ Woolley 1934, pls. 134.U.9656; 220; cf. Armbruster 2016, 130, fig. 14.

³⁷ Bass 1966, 37; cf. Maxwell-Hyslop 1971, 35; Hauptmann et al. 2018, 101.

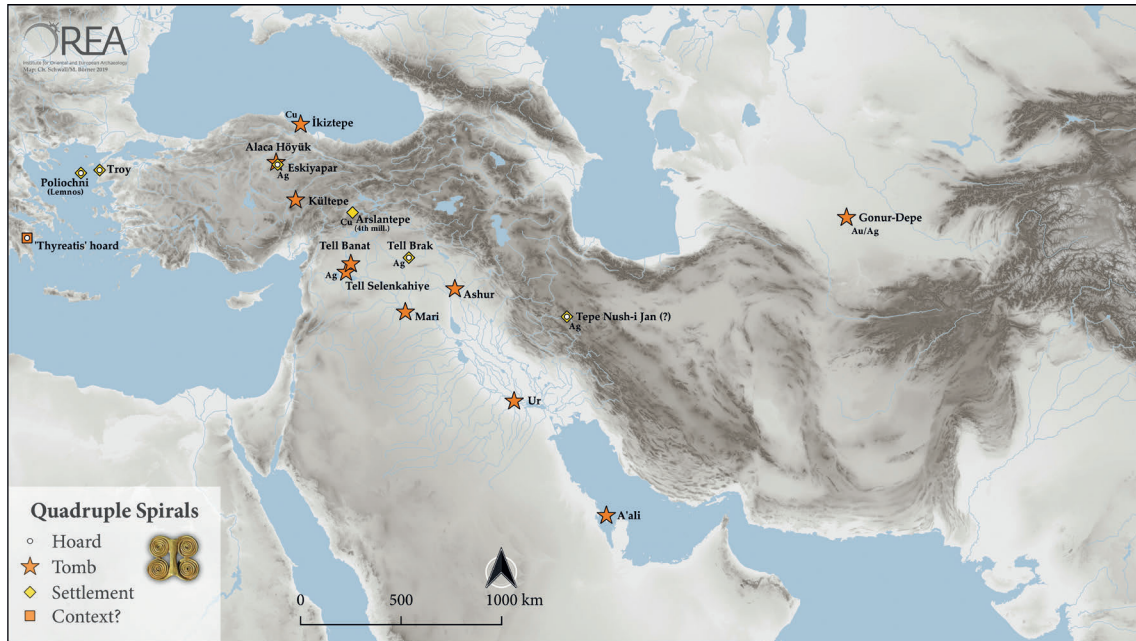


Fig. 1 Distribution of quadruple spiral motifs made of gold (Cu=copper, Ag=silver, Au/Ag=gold & silver; map: M. Börner, Ch. Schwall/OREA; quadruple spiral: after Højlund 2007, 75, fig. 131)

of Tell Banat in Syria.³⁸ Besides rod-shaped objects with perforations and pendants – quite similar to the pendants of the basket-shaped earrings from Troy – the occurrence of quadruple spiral beads is striking. Taking a closer look at metal objects with a quadruple spiral motif, it is apparent that they are quite common in Anatolia (Alaca Höyük, Eskişehir, İkiztepe, Kültepe, Troy) in the 3rd millennium BC but also known from the Aegean as well as the Greek mainland, as shown by the examples from the Poliochni ‘treasure’ and the ‘Thyreatis’ hoard (Fig. 1; for references see Tab. 1). Moreover, the exceptional quadruple spiral plaque made of arsenical bronze from Arslantepe level VI A (Late Chalcolithic) indicates an occurrence in Anatolia from as early as the late 4th millennium BC.³⁹ The significance of the quadruple spiral motif has already been discussed.⁴⁰ Nevertheless, it is worth highlighting the far-reaching distribution in detail. Comparable quadruple spiral motifs made of precious metal are widely distributed in the Middle East, as seen in examples from Syria (Mari, Tell Banat, Tell Brak, Tell Selenkahiye), Iraq (Ashur, Ur), Iran (Tepe Nush-i Jan), Bahrain (A’ali), and Turkmenistan (Gonur-Depe).

The distribution of quadruple spiral motifs clearly emphasizes the appearance of such objects at sites of supra-regional relevance which are situated at important junctions of routes on water or land. However, the archaeological contexts in which the quadruple spiral motifs were discovered seem to differ. In the Aegean region, these items derived exclusively from hoards, whereas the Middle Eastern objects are assigned to tombs. This fact seems to indicate that the hoarding practice within the settlement context in the Aegean can be seen as a counterpart to the graves in central Anatolia and Mesopotamia, thus expressing different regional customs. Regarding the quadruple spirals from Turkmenistan, the occurrence of these remote finds in Central Asia seems to be unusual.

³⁸ Porter – McClellan 2003, 185.

³⁹ Cf. Maxwell-Hyslop 1989, 216.

⁴⁰ Cf. Maxwell-Hyslop 1971, 34–37; Maxwell-Hyslop 1989; Huot et al. 1980; Aruz 2003b; Rahmstorf 2011, 147.

Tab. 1 Early Bronze Age metal quadruple spiral objects (cf. Fig. 1)

Site	Object – Material (Reference)	Dating (Reference)
A'ali (BH)	bead – gold (Højlund 2007, 75, fig. 131)	c. 2000–1750 BC (Højlund 2007, 120–121)
Alaca Höyük (TR)	beads – gold (Arık 1937, pl. 249)	c. 2300–2000 BC (Zimmermann 2009, 14; Yalçın – Yalçın 2018, 93–94)
Arslantepe (TR)	plaque – arsenical bronze (Palmieri 1981, 107, fig. 3.5)	Arslantepe VI A – late 4 th millennium BC (Palmieri 1981, 102, tab. 1)
Ashur (IQ)	beads – gold (Aruz 1995, 50–51)	late 3 rd /early 2 nd millennium BC (Aruz 1995, 51)
Eskiyapar (TR)	beads – silver (Özgüç – Temizer 1993, pl. 115.2b)	c. 2200–2000 BC (Özgüç – Temizer 1993, 628)
Gonur-Depe (TM)	pendants – gold & lazurite (Sarianidi 2007, 97); rings with attached quadruple spiral – gold & silver (Sarianidi 2007, 98, figs. 143, 146)	c. 2400–1600 calBC (Jungner 2007)
İkiztepe (TR)	plaques – bronze (Bilgi 1990, 218, figs. 19.439–445; cf. Aruz 2003a)	EBA III – late 3 rd millennium BC (Bilgi 1990, 164; Aruz 2003a)
Kültepe (TR)	bead – gold (Özgüç – Akok 1958, pl. 19.8)	Kanish Karum II – late 3 rd /early 2 nd millennium BC (Özgüç – Akok 1958, 58)
Mari (SY)	beads – gold (Nicolini 2010, 302, pls. 480–481)	presumably second half of the 3 rd millennium BC; found in a Middle Assyrian tomb (Nicolini 2010, 249–250)
Poliochni (GR)	bead – gold (Bernabò-Brea 1976, pl. 250.17)	Poliochni yellow – second half of the 3 rd millennium BC (Alram-Stern 2014, 306, fig. 1)
Tell Banat (SY)	beads – gold (Porter – McClellan 2003, 185)	mid- to late 3 rd millennium BC (Porter – McClellan 2003, 185)
Tell Brak (SY)	beads – silver (Mallowan 1947, pl. 32.8; Collins 2003c)	c. 2300–2160 BC (Mallowan 1947, 73–74, 171; Collins 2003c)
Tell Selenkahiye (SY)	bead – silver (van Loon 2001a, pl. 8.11c)	Selenkahiye IV – second half of the 3 rd millennium BC (Huot et al. 1980, 124; van Loon 1979, 101; van Loon 2001b, 17.604–17.606)
Tepe Nush-i Jan (IR)	beads – silver (Stronach 1969, pl. 9a)	possibly late 3 rd /early 2 nd millennium BC; belonging to a later hoard (Stronach 1969, 15–16; Curtis 1984, 6)
‘Thyreatis’ hoard (GR)	pendant – gold (Reinholdt 1993, 9, fig. 12.B4)	second half of the 3 rd millennium BC (Reinholdt 1993, 33)
Troy (TR)	beads – gold (Sazcı 2007, 227, 269); pendants assigned to Troy (Bass 1966, 37; 1970, pl. 86.20–23; cf. Born 2016, 467, fig. 13)	Troy II–III – c. 2550–2200 BC (Easton 2014, 79–89; Weninger – Easton 2014, 183)
Ur (IQ)	pendants with attached quadruple spiral – gold (Woolley 1934, pls. 134.U.9656; 220; cf. Armbruster 2016, 130, fig. 14)	ED IIIA – c. 2550–2400 BC (Woolley 1934, 227; Collins 2003a)

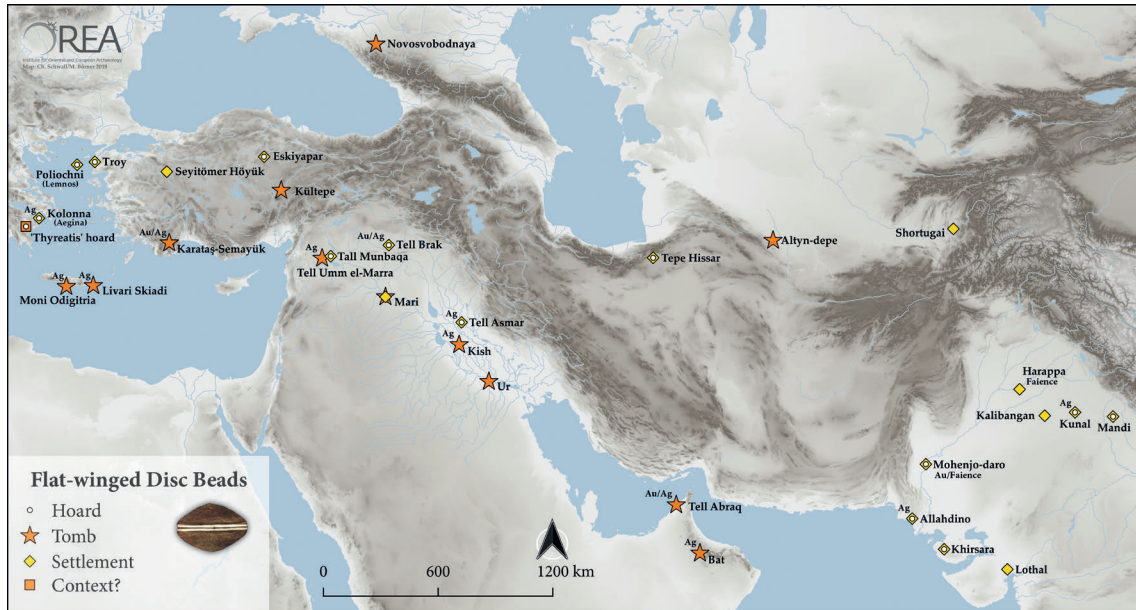


Fig. 2 Distribution of flat-winged disc beads made of gold (Ag=silver, Au/Ag=gold & silver; map: M. Börner, Ch. Schwall/OREA; flat-winged disc bead: after Collins 2003b, 232, fig. 158d)

Flat-Winged Disc Beads

To understand the objects found in Turkmenistan, it is necessary to add another category of precious metal beads which also has a far-reaching distribution, as has already been noticed by several authors.⁴¹

Flat-winged disc beads also clearly show these relations between west and east (Fig. 2; for references see Tab. 2). They are known from the Greek mainland ('Thyreatis' hoard), the Saronic Gulf (Kolonna on Aegina), the Aegean (Livari Skiadi and Moni Odigitria on Crete, Poliochni on Lemnos), and Anatolia (Eskiyaar, Karataş-Semayük, Kültepe, Seyitömer Höyük, Troy). In this region, the beads are mainly round and oval-shaped. Only a few objects have a different shape, such as the rhombic examples from Troy or the double-axe-shaped beads from Eskiyaar. With regard to the Middle East, flat-winged disc beads were found at different sites in Mesopotamia (Mari, Tall Munbaqa, Tell Asmar, Tell Brak, Tell Umm el-Marra, Kish, Ur), Iran (Tepe Hissar), the Gulf region (Tell Abraq), and in Oman (Bat). Their shape is mainly oval and rhombic, with unusual rectangular and elongated oval gold beads found at Mari. Additionally, finds that were discovered in more northerly areas than the Middle East and have a round to oval shape are known from a kurgan in Russia (Novosvobodnaya) as well as sites in Turkmenistan (Altyn-Depe) and Afghanistan (Shortugai) in southern Asia. Likewise, in the case of the quadruple spiral from Gonur-Depe, and especially the more distant objects found in northern Iran, Turkmenistan, and Afghanistan, the distribution seems unusual at first glance. However, the distribution becomes comprehensible when the Indus region is looked at in detail. In the Harappa Culture of India, flat-winged disc beads made of gold and silver are known from several sites close to the sea (Allahdino, Khirsara, Lothal) as well as in the catchment area (Kalibangan, Kunal, Mandi, Mohenjo-daro) of the Indus River.⁴² The majority of these beads have a large round form, date to the Mature

⁴¹ Cf. Maxwell-Hyslop 1971, 34–37; Aruz 2003b; Rahmstorf 2011, 149; Döpper – Schmidt 2013, 33.

⁴² Cf. Ray 2013, 541.

Tab. 2 Early Bronze Age flat-winged disc beads (cf. Fig. 2)

Site	Object – Material (Reference)	Dating (Reference)
Allahdino (PK)	beads – silver – large round, rhombic (Fairervis 1982, 109; Kenoyer 1998, 138, fig. 7.30; Law 2011, 438, fig. 12.40)	Harappa Culture – second half of the 3 rd millennium BC (Kenoyer 1991a, tab. 3)
Altyn-Depe (TM)	bead – gold – oval (Masson 1988, pl. 22.2)	Namazga V – c. 2300–1850 BC (Masson 1988, 96)
Eskiyapar (TR)	beads – gold – double-axe-shaped (Özgüç – Temizer 1993, pl. 112)	c. 2200–2000 BC (Özgüç – Temizer 1993, 628)
Bat (OM)	bead – silver – rhombic (Döpfer – Schmidt 2013, 32, fig. 8c; Schmidt – Döpfer 2014, 209, fig. 11h)	Umm an-Nar period – c. 2800–2000 BC (Schmidt – Döpfer 2014, 205)
Harappa (IN)	beads – faience – (large) round, oval & rhombic (Beck 1940, pls. 130; 133.3; Vats 1940, pl. 128.13)	Mound F, Stratum I, III–IV (Beck 1940, 416–417; Vats 1940, 435); Period 3A–C – c. 2600–1900 BC (Kenoyer 1991b, 38–40)
Kalibangan (IN)	bead – gold – large round (Bala 2003, 230, pl. 39.4; Bala 2004, 37, fig. 8)	Period I – c. 3000–2700 BC (Bala 2003, 229; Lal 2003)
Karataş-Semayük (TR)	beads – gold & silver – round & oval (Mellink 1969, pl. 74.15, 17)	EBA III (Mellink 1969, 322)
Khirsara (IN)	beads – gold – large round (Nath et al. 2013, 433, fig. 9A; Nath – Kumaran 2017, 553, fig. 6; Pokharia et al. 2017, 5, fig. 2c)	Mature Harappa Culture – c. 2600–1900 BC (Nath – Kumaran 2017, 554; Pokharia et al. 2017, 14)
Kish (IQ)	bead – silver – rectangular (Mackay 1929, pl. 60.44)	ED III – c. 2400–2300 BC (Moorey 1970, 104)
Kolonna (GR)	beads – silver – oval (Reinholdt 2008, 126, pl. 12.4)	Kolonna V – EH III (Reinholdt 2008, 71); for a late EH III/early MH context (Gauss 2010, 743)
Kültepe (TR)	beads – gold – oval (Özgüç 1986, 43, fig. 3.39c–d)	Kültepe level 13.1 – EBA III (Özgüç 1986, 31)
Kunal (IN)	beads – silver – large round (Khatri – Acharya 1994/95, 86)	Phase IC – transition early/mature Harappan Culture (Khatri – Acharya 1994/95, 85–86)
Livari Skiadi (GR)	bead – silver – round (Papadatos 2015, pl. 35.J72)	EM I–III (Papadatos 2015, 105)
Lothal (IN)	beads – gold – large round (Rao 1973, pl. 29b)	Period A – c. 2500–1900 BC (Rao 1973, fig. 40)
Mandi (IN)	beads – gold – bell-shaped (Sharma et al. 2000, pl. 5; Tewari 2004, 61, fig. 7)	around 2000 BC (Sharma et al. 2000, 37; Tewari 2004, 62)
Mari (SY)	beads – gold – rectangular (late Mari I), rhombic (Mari II), elongated oval (Mari III) (Nicolini 2010, 254, pls. 314–315; 257–258, pls. 324–330; 281, pls. 405–406)	late Mari I – c. 2700 BC; Mari II – c. 2500 BC; Mari III – c. 2300–2000 BC (Nicolini 2010, 224–225)
Mohenjo-daro (IN)	beads – gold – round to oval (Mackay 1931, pls. 146.34; 149.5, 7; Aruz 2003c); bead – faience – rhombic (Mackay 1931, pl. 146.38)	Intermediate period – c. 2600–1900 BC (cf. Mackay 1931, 515; Aruz 2003c)
Moni Odigitria (GR)	bead – silver – round (Michelaki – Vasilakis 2010, fig. 78.J41)	EM II–MM IIA (Michelaki – Vasilakis 2010, 198)
Novosvobodnaya (RU)	beads – gold – approx. oval (Collins 2003d)	mid-3 rd millennium BC (Collins 2003d)
Poliochni (GR)	beads – gold – round to oval (Bernabò-Brea 1976, pl. 247c)	Poliochni yellow – second half of the 3 rd millennium BC (Kouka 2009, 142, tab. 9)
Seyitömer Höyük (TR)	beads – gold – round to oval (Bilgen et al. 2015, 145, fig. 159)	Phase V-B (EBA III) – c. 2300–2220 calBC (Harrison 2017; Harrison 2021, 166, fig. 12.1B)

Site	Object – Material (Reference)	Dating (Reference)
Shortugai (AF)	beads – gold & terracotta – round (Frankfort 1989, pl. 34.5)	Period II – c. 2200–1700 BC (Frankfort 1989, 242)
Tall Munbaqa (SY)	‘pendant’ – gold – oval (Karras 1998, pl. 128.1894)	IV-Ku-1 – c. 2400–2100 BC (Karras 1998, 180–181; Werner 1998, 37)
Tell Abraq (AE)	beads – gold & silver – oval (Potts 2000, 54; Potts 2003)	late 3 rd millennium BC (Potts 2003)
Tell Asmar (IQ)	bead – silver – rhombic (Frankfort 1933, 49, fig. 31)	Akkadian period – c. 2350–2150 BC (Frankfort 1933, 56–57)
Tell Brak (SY)	beads – gold & silver – oval & rhombic (Mallowan 1947, pl. 33.14; Collins 2003b; 2003c)	c. 2300–2160 BC (Mallowan 1947, 73–74, 171; Collins 2003b; Collins 2003c)
Tell Umm el-Marra (SY)	beads – silver – rhombic (Dunham 2003)	c. 2300 BC (Dunham 2003)
Tepe Hissar (IR)	beads – gold – round to oval (Schmidt 1937, fig 138; Gürsan-Salzmann 2016, 262, fig. 5.36)	Hissar IIIC – c. 2200–1800 BC (Gürsan-Salzmann 2016, 261)
‘Thyreatis’ hoard (GR)	bead – gold – round (Reinholdt 1993, 4, fig. 3a)	second half of the 3 rd millennium BC (Reinholdt 1993, 33)
Troy (TR)	beads – gold – oval & rhombic (Sazcı 2007, 174–175, 193)	Troy II–III – c. 2550–2200 BC (Easton 2014, 79–89; Weninger – Easton 2014, 183)
Ur (IQ)	beads – gold – round & rhombic (Woolley 1934, 366, fig. 70.16, 19; cf. Maxwell-Hyslop 1971, pls. 6a, 17a, 19a; Armbruster 2016, 122, fig. 7)	Starting in the ED period; common in the Akkadian and Ur III dynasty – c. 2300–2000 BC (Woolley 1934, 371; Maxwell-Hyslop 1971, 10)

Harappan Culture (c. 2600–1900/1800 BC⁴³) and derive from hoards found within the settlements.⁴⁴ Thus, these are contemporary with the beads found in the more western regions. Besides beads made of gold and silver, (large) round, oval and rhombic faience beads from Mohenjo-daro and Harappa most likely resemble the metal objects.

Regarding the shape in general, distinct forms seem to be predominant in certain regions. Whereas the oval and round shapes prevail in the Aegean and Anatolia, oval and rhombic beads are more frequently found in Mesopotamia, and the large round beads are common in the Indus region. The regional differentiation by shape is to some extent also seen in the deposition custom in hoards or burials. As in the case of the quadruple spiral motifs, flat-winged disc beads derive more frequently from hoards in the Aegean and, furthermore, in the Indus region. In central Anatolia and Mesopotamia, the number of objects found in burial contexts is still large and supports the assumption of different regional customs. Moreover, exceptions such as rhombic shapes are known from western and eastern regions and have been found at Troy and Harappa. The appearance of ‘foreign’ types in this region indicates an interaction sphere and possible trade routes by sea or land. In the case of the rhombic types, a distribution via seaways is more likely. Evidence for possible caravan routes is presented by the round to oval bead shapes found in northern Iran, Turkmenistan, and Afghanistan. Despite the influence of the Harappa Culture, especially in the case of Shortugai in Afghanistan, these finds suggest a stronger relation to the shapes found in Anatolia possibly triggered by contacts via caravan transport routes.

⁴³ Cf. Kenoyer 1991a, 334; McIntosh 2008, 83.

⁴⁴ McIntosh 2008, 319–320; Manuel 2010; Mahapatra – Ansari 2016, 745–746.

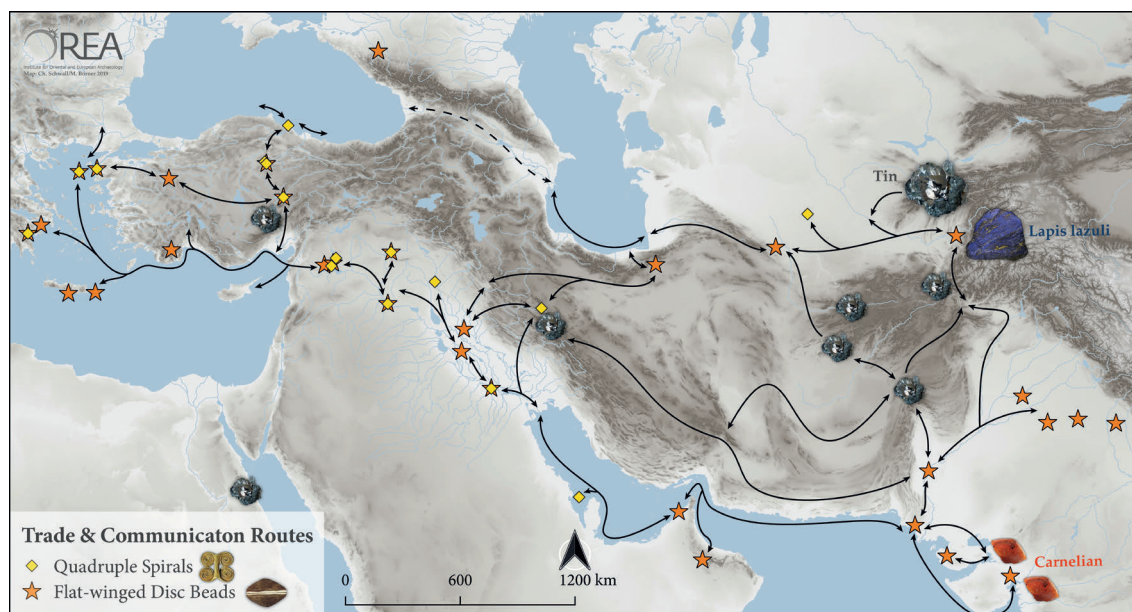


Fig. 3 Assumed routes of the far-reaching trade network based on the distribution of quadruple spiral objects and flat-winged disc beads made mainly of gold and silver, together with lapis lazuli, tin, and major carnelian raw material sources (map: M. Börner, Ch. Schwall/OREA; quadruple spiral and flat-winged disc bead: see Figs. 1–2)

Conclusion

The distribution of quadruple spiral motifs and flat-winged disc beads clearly shows that these objects are attested in different regions from the Aegean to the Indus Valley and mainly date to the second half of the 3rd millennium BC. Together with the flat-winged disc beads, even though the shape of the beads varies in the different regions, the quadruple spiral motifs indicate a ‘specific type of jewellery’ as code used only by elites and a far-reaching communication network by which prestige objects were also distributed. But what is the motivation for these far-reaching contacts within the ‘first golden times’ in the 3rd millennium BC? To answer this question, the gold ‘treasures’ of Troy provide a possible explanation for the motivation: axes made of jadeite and lapis lazuli.⁴⁵ The decorated axes especially, made of the rare mineral lapis lazuli, clearly have to be interpreted as prestige objects and are evidence of the procurement of finished goods or raw material from regions that are more distant. The closest lapis lazuli sources are situated in northern Afghanistan (Badakhshan) and more than 3500km away from Troy.⁴⁶ Recently compiled geological analyses revealed that the Harappa Culture already had access to the rare blue mineral from Afghanistan and possibly exchanged it with the western regions.⁴⁷ Beside lapis lazuli, tin sources from central Asia (Afghanistan, Tajikistan, and Uzbekistan⁴⁸), which are important for the production of bronze, could have been a trigger for the development of a far-reaching trading network in the 3rd millennium BC.⁴⁹ In this context especially, recently conducted analyses of gold artefacts from the royal tombs at Ur are interesting, claiming the use of placer deposits from Iran and Afghanistan, based on calculated ages from the isotope ratios of osmium in platinum group inclusions in the gold objects and relating them to known geological ages of gold deposits. However, the observed isotope ratios are largely similar in platinum group

⁴⁵ Sazcı 2007, 279, 283.

⁴⁶ Cf. Zöldföldi et al. 2006.

⁴⁷ Law 2011, 80, 528–543.

⁴⁸ Cf. Berger et al. 2014, 76, 80.

⁴⁹ Cf. Muhly 1973, 337–338.

minerals from many different occurrences worldwide,⁵⁰ which is interpreted as indicative of a mantle origin, with little influence of crustal material,⁵¹ and can thus not be related to crustal ore deposits. Accordingly, the provenance of the gold from the Royal Cemetery of Ur must as yet be considered as unknown.⁵²

Moreover, the importance of precious and exotic materials as symbols of social status becomes obvious with regard to carnelian beads. Elongated and etched carnelian beads are typical in the Indus region and have also been found at numerous sites in Mesopotamia.⁵³ The main carnelian sources are situated in the province of Gujarat in northwestern India; additional sources are, moreover, known from Iran, the Arabian Peninsula, and southern Egypt.⁵⁴ Interestingly, the carnelian beads show a comparable distribution pattern to the flat-winged disc beads from the Aegean to the Indus region. In general, the appearance of precious objects such as carnelian or gold beads in different regions must be seen within the context of the development of a far-reaching trading network during the 3rd millennium BC. Mapping the evidence of flat-winged disc beads and quadruple spiral objects together with the raw material sources of lapis lazuli, tin, and carnelian, the distribution clearly shows that these objects occur at sites close to raw material sources or important junctions of assumed routes by land or sea (Fig. 3).⁵⁵ Therefore, the gold treasures from Troy and related finds dating to the second half of the 3rd millennium BC can presumably be seen within the context of the emergence and consolidation of elites situated close to important sections of the trading routes.

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⁵⁰ E.g. Junk – Pernicka 2003.

⁵¹ Cabri et al. 2022.

⁵² Jansen et al. 2016a; Jansen et al. 2016b; Jansen et al. 2018, 131–135.

⁵³ Cf. Rahmstorf 2015, 162–163, figs. 9–10.

⁵⁴ E.g. de Waele – Haerincx 2006, 32; Harrell – Storemyr 2009, 42, fig. 30; Law 2011, 266–278.

⁵⁵ Cf. routes: Kenoyer 1998, 91–98; Şahoğlu 2005, 342–343, fig. 1; Singh 2008, 164–169; Law 2011, 462–499, fig. 13.12; Chakrabarti 2014.

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