

# EARLY COMPLEXITY IN HIGHLAND IRAN: RECENT ARCHAEOLOGICAL RESEARCH INTO THE CHALCOLITHIC OF IRAN

## İRAN YAYLASININ İLK BİLEŞİK TOPLUMLARI: İRAN'DA KALKOLİTİK DEVİRE AİT YENİ ARKEOLOJİK ARAŞTIRMALAR

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*İran'da İlk Bileşik Toplumların gelişimi ile ilgili araştırmalarda, başından itibaren daha çok kuramsal görüşler benimsenmiş ve Güneydoğu Türkiye ve Kuzey Suriye'den elde edilen benzer verilerle karşılaştırmalar kabul görmüştür. Oysa, İran'daki arazi çalışmalarının noksanlığından kaynaklanan bu görüşler son yirmi sene içerisinde önemini yitirmiştir.*

*Bu yazı, Orta İran'daki Kalkolitik yerleşmelerle, aynı zamanda yeni arazi çalışmalarına ait verileri ve bu araştırmaların güncel durumu hakkındaki bir genel görüşü sunmaktadır. Bu yazıyla elde edilen verilerle geçerli kuramsal yaklaşımlar tartışılarak, benzer toplumların karşılaştırılmaları hakkında fikir oluşturmak, buradan da, özellikle güneydoğu Türkiye ve kuzey Suriye'deki benzer gelişimlerle İran verilerinin karşılaştırılması amaçlanmaktadır.*

### 1. Introduction

Research into the development of early complex societies during the fourth millennium BC has been one of the main interests of Near Eastern Archaeology over the last decades. The emergence of early states in the plains of lowland Mesopotamia is a phenomenon known since long, symbolized best by the center of this development, the city of Uruk (H.J.Nissen 2002) with its large city quarters, its various temples, its city wall and numerous indications for the existence of an elite or ruling class. Uruk represents the paramount center of the time, and has at the same time shaped our expectations on

how such an early center should look like. Triggered by the discovery of the further fourth millennium centers along the middle Euphrates such as the settlement cluster Habuba Kabira South - Jebel Aruda - Tall Qannas, various hypothesis have been formulated that dwell on the idea that the early complexity first recognized in Uruk was later exported to the periphery where it set off a process of secondary state formations. Among the various models proposed to describe this process are colonization models (E.Strommenger 1970, 70; A.Finet 1975, 173-174; 1980, 114) and more sophisticated cen-

ter-periphery systems such as the world system model adopted by some scholars (G.Algaze 1993). Since the early days of applying the world system idea to the greater Uruk world, the model has been refined on the one side (G.Algaze 2001b, a), and been criticized (P.Butterlin 1999) on the other side. At the same time, much new and data-oriented research has been carried out, especially in Eastern and Southeastern Turkey and in Northern Syria. From this, the long extension of a local development of relationship between the Northern periphery and lowland Mesopotamia became evident.<sup>1</sup> It could be proved that fourth millennium BC cities flourished in Northern Syria before Uruk reached its paramount position in the south.<sup>2</sup> Following the recognition of the long time span covered by these developments, much more emphasis was put on an understanding of the dynamics of local developments.<sup>3</sup> Continued long-term fieldwork has thus further highlighted the deep local roots of fourth millennium complexity in the Anatolian highlands, and the variety of contact, influence and trade between the highland communities and Mesopotamia (M.Frangipane 2000, 2001).

This very brief summary shows how the combination of continued fieldwork and theory-building has continuously modified our understanding of the emergence of early complex societies in the Northern Mesopotamian periphery - Syro-Anatolia - over the last decades.<sup>4</sup> In contrast to this, interpretations of contemporary developments on the Eastern periphery of Mesopotamia, that is, the Zagros mountains and the Iranian highlands, has followed a different and, from the beginning, more differentiated approach. However, following the interruption of fieldwork since 1979, the discussion has lost much of its original dynamic. Instead, models developed from observations obtained in the Northern Mesopotamian periphery were exported and applied to the Iranian data such as they were known by then (G.Algaze 1989, 1993), thereby partly obscuring the patterning of early complexity in Iran.

Over the last few years, however, the situation has improved considerably: Resumed archaeological fieldwork in Iran provides us with a broader set of data (see below), several important material assemblages from pre-1979 research have finally been published, and last but not least the on-going discussion on Uruk expansion continues to contribute intriguing new perspectives.<sup>5</sup> A reconsideration of our knowledge on early complex societies in highland Iran is therefore more than overdue, and is the first aim of this paper. The second objective is a comparison of interpretations based on Iranian data with the current approaches towards fourth millennium BC complexity in Syro-Anatolia.

## 2. The natural stage

Iran comprises several distinct landscapes of various suitability for human settlement that therefore require individual discussion (fig. 1). In the southwest, the lowland plain of Khuzestan, ancient Susiana, separated from Mesopotamia through the swamps of the Shatt-el Arab, remains the archaeologically best-investigated area.<sup>6</sup> A long stratigraphical sequence covering the fifth and fourth millennium BC has been documented there at Susa (A.Le Brun 1971, 1978b), and two further contemporary central places are known at Choga Mish (P.Delougaz, et al. 1996; A. Alizadeh in press) and Abu Fanduweh (G.A. Johnson 1973). Despite fundamental controversies concerning the mechanism at work behind the development towards complexity in Khuzestan, it seems that the cultural development in Khuzestan generally parallels the emergence of the Mesopotamian centers.

Beyond Khuzestan, the rugged summits of the Zagros mountain form not only a natural barrier before the plateau, but are characterized by high intermontane plains and valleys that provide unique opportunities for the establishing of human settlements and that served as routes of communication since prehistory. Among the archaeologically best-known of these high

plains are the Marv-Dasht in the Southern Zagros with the prehistoric centers Tall-i Bakun during the fifth millennium BC (A.Langsdorff, D.E. McCown 1942; A.Alizadeh 1988a) and Tall-i Garib and later Tall-i Malyan since the fourth millennium BC (I.M.Nicholas 1990; W.M.Sumner 2003). In the Central Zagros, several high plains have been thoroughly surveyed, especially the Kangavar valley (E.F. Henrickson 1994; T.C.Young Jr. 2004), the Mahi-Dasht (L.D.Levine, M.M.A.McDonald 1977) and the Hulailan valley (P.Mortensen 1974, 1976). The Kangavar valley formed part of the Great Khorassan road in historical times, but was used as a long-distance route long before that as is evident from the distribution of sites in the valley (T.C.Young 1975; L.D.Levine, M.M.A. McDonald 1977; L.D.Levine, T.C. Young Jr. 1987; T.C.Young Jr. 2004). The famous "outpost of the Susa merchants" at the major site Godin Tappeh (T.C.J.Young 1969; T.C.Young, L.D. Levine 1974; H.Weiss, T.C. Young 1975; G. Algaze 1993) in the Kangavar valley gained its importance from its position as a gateway site since prehistory.

On the central plateau (O.G. Meder 1979), the western part forms a high plain with conditions suitable for dry farming, and favourable locations around springs are dotted with prehistoric mounds. Fourth millennium sites exist there, with evidence for specialized craftsmanship for example at Tappeh Ghabrestan (Y. Majidzadeh 1976a; E.O. Negahban 1977) and with indications for Mesopotamian contact. Further to the east conditions become more arid and the heart of the plateau is covered by desert dunes and saline areas. Human settlements there are restricted to a narrow corridor of fertile land along the edge of the desert, dependent on springs that occur along the mountain bases, forming oasis-like locations. In this corridor, a few large prehistoric sites are known that seem to have formed regional centers early on. Tappeh Sialk (R. Ghirshman 1938) is one such center on the southern edge of the Dasht-e Kavir, while Tappeh Hesar in Dhamghan (E.F.

Schmidt 1937; R.H.Dyson Jr., S.M. Howard 1989) forms its counterpart on the northern side of the desert.

This circum-desert interaction sphere<sup>7</sup> includes from the late fourth millennium BC onwards several major urban centers southeast and east of the desert, at Shahdad (A. Hakemi 1997) and Shahr-i Sukhte (M.Tosi 1983). These urban centers each developed strong specializations in handicrafts and controlled the trade of semi precious stones and metals on the plateau.

### 3. Chronology

Scholars discussing the interaction of fourth millennium BC Iranian sites with the Mesopotamian Uruk culture had from the beginning assumed a longer period of development for this contact. The re-calibration of all known radiocarbon dates (H.T.Wright 2001a) corroborates this chronological positioning and new data of recently investigated sites in the Iranian highlands further add to our knowledge (J. Görzsdorf 2003; H. Fazeli, et al. 2004). The period of interaction and contact between lowland Uruk communities - probably in Susiana and possibly also in Mesopotamia - began at least in the Middle Uruk period<sup>8</sup> and lasted for half a millennium or more, thus extending over the Late Uruk period as well. The subsequent formation of the Protoelamite culture towards the end of the fourth millennium BC (T.Cuyler Young Jr. 1986; R.Dittmann 1986b; W.M. Sumner 1986; W.M. Sumner 1988) occurs at the time when in the Northern Mesopotamian peripheries the Late Uruk complex suddenly disappeared, and when in the heartland proper Gamdat Nasr assemblages replaced them.

We can therefore discuss the development of early complexity on the Iranian plateau and the interaction of those highland communities with the Uruk world before a chronological background distinguished into four stages<sup>9</sup>:

**Phase 1** (SAR: LC2; Middle Chalcolithic on

Iranian Plateau): The earlier part of the fourth millennium BC, when village communities flourished on the central plateau and in some intermontane valleys of the Central Zagros, while in Southern Iran a strong nomadic component can be assumed. In archaeological terminology, this corresponds to the Sialk III4-5, Ghabrestan II, Hesar IA/B, Phase VII/VI in the Kangavar valley survey (=Seh Gabi for VII; Godin VI) and the Lapui phase in the Kur River Basin in Fars.

**Phase 2** (SAR: LC3-4; Earlier Late Chalcolithic on Iranian Plateau): The middle centuries of the fourth millennium BC, when first markers of contacts with the lowland Uruk world occur within the highland assemblages. This phase comprises Sialk III6-7, Hesar IC/II, Kangavar valley/Godin Tappeh VI/V, the early Banesh phase in Fars (not known from Malyan but only from Tal-i Garib) and the Middle Uruk occupation of level 18 at Susa acropolis.

**Phase 3** (SAR: LC5; Later Late Chalcolithic on Iranian Plateau): The late fourth millennium BC, corresponding to the Late Uruk period in Mesopotamia, or level 17 at Susa acropolis. During this period, it seems that the excavated sites, from Susiana until the plateau, all experience a temporary interruption of settlement activities: stratigraphical gaps follow the level 17 occupation at Susa acropolis and are observed in the sequence from Tal-i Ghazir, as well as at Tappeh Sialk where this represents the interface between phase III and phase IV. Whether Tappeh Hesar is occupied throughout this period, or only again since the following phase 4, is difficult to judge.<sup>10</sup> Tappeh Yahya is not occupied at all, and settlement at Tal-i Malyan is in its initial stage.

**Phase 4** (SAR: LC5 final; Early Bronze Age): The centuries around 3000 BC, corresponding to the Gamdat Nasr period and ED I. Highland Iran witnesses the formation of the Protoelamite complex that brings the estab-

lishing of early urban settlements on formerly abandoned sites, or new settlements in pristine areas. Administrative devices derived from earlier Uruk prototypes - tablets and seals - make their appearance and attest the close relations between the highland sites and the lowlands. In terms of archaeological sequencing, this corresponds to the resettling of Sialk in phase IV, to Ghabrestan I and Hesar II on the Central Plateau, to the Middle Banesh phase in Fars and to Yahya IVC. The earliest occupations at Shahdad and Shahr-i Sukhte correlate to this phase. The central Zagros, however, undergoes a different track of development that rather corresponds to the observations on the end of the "Uruk expansion" in the North. The occupation of Godin IV closely relates to the Early Transcaucasian culture, and all exchange with the lowlands seems to be interrupted for some time.

#### 4. Theoretical approaches to fourth millennium BC highland/lowland interaction in Iran

Most attempts at interpreting early complexity in highland Iran are based on the observation of a strong dichotomy between highland and lowland. This implies contrasts in many aspects, as there are climatic and geographical constraints and consequential developments such as the establishing of irrigation agriculture in the lowlands, the distribution of various raw material sources that can be controlled by the one or other group, but also an unequal status of "civilizational advantage" as prime movers behind the process of contact and interaction, and this is in turn considered the fuel for the formation of complex social communities in the highlands.<sup>11</sup> Most authors hence emphasize trade as one of the prime movers in the highland/lowland interaction (H.Weiss, T.C.Young 1975; J.R. Alden 1982; P.Amiet 1985, 1986; G.Algaze 1993; E.F. Henrickson 1994). World system advocates usually emphasize the extent of political control exacted with this interaction (T. Potts

1994; G. Algaze 2001b, a), while others consider the cultural and political impact as less significant (P. Amiet 1986; E.F. Henrickson 1994). Detailed research on specific settlement areas in the Zagros mountains has also led to the formulation of opinions that strong local dynamics can be observed in the formation of highland complex communities (W.M. Sumner 1986; W.M. Sumner 1988; E.F. Henrickson 1994; W.M. Sumner 1994, 2003) long before similar trends were identified in the North Mesopotamian periphery (B. Helwing 1999; G.J. Stein, C. Edens 1999; B. Helwing 2000; G.J. Stein 2001).

There are two peculiarities in the discussion of Iranian data that find no direct counterpart in the discussion on the North Mesopotamian periphery: one is the acknowledgment that nomadic groups existed in the Zagros mountains during the fourth millennium BC<sup>12</sup> and had a considerable impact on the history of the region (P. Amiet 1986; W.M. Sumner 1986; W.M. Sumner 1988, 1994). The second comprises several hypothesis on the nature of the Uruk expansion as being not a matter of cultural or political advantage, but as the result of the forced movement of Uruk population groups out of the heartland, in the sense of refugees from ecological hazard, political conflicts or economic oppression (A. Zagarell 1982; G.A. Johnson 1989; F. Hole 1994; S. Pollock 2001). In a way, the Protoelamite settlements in Southern Iran are also understood by some as refugee settlements (J.R. Alden 1982).

## 5. Archaeological data - introduction of sites

The following discussion of the actually available archaeological data from highland Iran<sup>13</sup> does not dwell on the one or other specific theoretical approach. It is rather designed to integrate the information available to date into a larger and chronologically sorted frame so that questions related to the emergence of early complex communities can then be brought forward in a more systematic manner. In a second

step, archaeological markers of early complexity - distinct architectural features, trade-related items and administrative devices, specialized craftsmanship - will be discussed within this larger frame.

### 5.1. Khuzestan

This brief summary of the known archaeological data begins in Khuzestan where a solid Middle Uruk occupation is documented at Susa in layer 18 of the acropolis excavation (A. Le Brun 1971, 1978a), followed by Late Uruk in layers 17B2/1 and a levelling debris layer 17A. After a hiatus, layers 16-13 represent a different cultural set, the Protoelamite culture, respectively the beginning of the third millennium BC, contemporary with the Gamdat Nasr and ED I period in Mesopotamia. Cultural deposits immediately preceding layer 18 could only be documented on a very small area so that there is no good evidence on the layers covering the transition from the Middle Chalcolithic (Susa I, layers 27-23) to the Late Chalcolithic (layers 18-17A). The excavated area on the acropolis yielded three architectural layers (18-17B2/1). From layer 18 onwards, rectangular *riemchen*-like bricks are the standard building material. Layer 18 and 17B2/1 all consist of a multiple-room buildings, with larger rectangular rooms in the upper layer 17B. Following after a hiatus, layer 16 then displays a complete change in architecture, with a multiple room-building of different orientation, constructed from mudbrick (A. Le Brun 1978b, 183-190, for plans see fig. 131, 133, 135).

The ceramic material from layers 18 to 17 can be described as Middle and Late Uruk pottery, comparable to material from the Uruk-Eanna sounding levels VI-IV. A development of an accounting system, using calculi and bullae in layer 18 and sealed counting tablets in layer 17 is attested, followed by the first pictographic signs on tablets from the Protoelamite layer 16 (F. Vallat 1978).

A second regional center during the protoliterate period was Choga Mish (P. Delougaz, et al. 1996;

A. Alizadeh 2004a, in press), while a third center only known from surveys existed at Abu Fanduwah (G.A. Johnson 1973). Choga Mish has been excavated at larger scale than the stratigraphic trenches at Susa, and thus there is clear evidence for an urban settlement with regular streets and a canalisation system (P. Delougaz, et al. 1996, 27-35 pl. 260-264). The buildings in the East area consist of rectangular rooms, although no clear architectural layout can be distinguished. An extension of the excavation in the East area of the Lower Town then brought the discovery of a true monumental or public building (A. Alizadeh 2004a, fig. 7; in press). The representative function of those is attested by the layout that follows the well-known middle hall type (Heinrich 1971, 1982), and by numerous wall cones such as they have been used in Uruk for the decoration of temple facades (M.A. Brandes 1968). The ceramic and glyptic evidence clearly shows that Choga Mish, as Susa, fully shares the distinctive traits of the Mesopotamian Uruk culture, firmly dwelling on shared developments over more than a millennium before the beginning of the Uruk culture.

## 5.2. Zagros mountains

This pattern changes immediately once one leaves the lowlands. Here, the first site is Godin Tappeh in the Kangavar valley, considered a gateway community in a crucial geostrategical position. On the summit of Godin Tappeh sits a fortified enclosure with several buildings inside. The material from inside the enclosure consists of Uruk-related material (=Godin V). An interpretation of the culturally distinct Godin V fortress as an outpost of the "merchants of Susa" (H. Weiss, T.C. Young 1975) has found wide acceptance (but is not unequivocal, compare P. Amiet 1986, 72). This fortified building has been constructed on top of an older village settlement with characteristic painted pottery of the Sialk III tradition (=Godin VI). This settlement is thought to have continued during the lifetime of the fortress, and the two culturally distinct entities might have co-existed until the end of the fourth millennium (T.C.J. Young 1986, 212).

Other sites in the Kangavar valley are said to have kept a conservative assemblage of "Kangavar period VI" material (E.F. Henrickson 1994).

The Godin Tappeh preliminary reports (Young 1969; Young and Levine 1974), however, considered these two distinct assemblages to represent successive chronological stages, equating Godin VI with the middle and Godin V with the late fourth millennium. Comparisons with the plateau sites such as Tappeh Sialk (period III 6-7) and the radiocarbon dated evidence from Arisman (see below, radiocarbon dating provided by J. Görsdorf 2003, 361) indicate that this original dating of Godin VI to the mid fourth millennium BC was correct, while Godin V comprises more than one chronological stage, extending through the complete second half of the fourth millennium BC. Judging from the pottery assemblage, both Middle Uruk and Late Uruk types occur within Godin V (V.R. Badler 2002; for a discussion, see B. Helwing in press-c), while epigraphic and glyptic evidence allows comparisons with Late Uruk and early Protoelamite. The end of Godin V was a hasty abandonment, followed by a culturally different occupation (=Godin IV) with relations to the Transcaucasian Kura Araxes culture.

In the Bakhtiari mountains, we rely mostly on survey data (A. Zagarell 1982), and the only excavated site, Tal-i Ghazir in the Izeh plain, remains poorly published (J. Caldwell 1968). According to the survey data, a dense occupation during the Middle Chalcolithic period is followed by a period of decrease in site numbers and densities during the Late Chalcolithic (Bargui phase in the local terminology, see A. Zagarell 1982, 62) and a shift in preferred site locations, a change that is interpreted to reflect a shift towards nomadic lifestyle (A. Zagarell 1982, 62).

A similar pattern is observed in the southern Zagros, where the earlier half of the fourth millennium - the Lapui phase in the local termi-

nology of Fars (W.M. Sumner 1988) - is attested only on a limited number of sites, much less than had been the case for the previous periods. This trend of limited settlement activity continued into the later fourth millennium BC with the Early Banesh phase when only a small craftsmen center and market town seems to have existed at Tal-i Gharib (For the most up-to-date summary, see W.M. Sumner 2003). During the middle Banesh phase in the second half of the fourth millennium BC the later regional center Tal-i Malyan developed into a small town, and began to compete Tal-i Gharib with the beginning of the third millennium BC or the Late Banesh phase. Various factors have been considered to explain this pattern of site distribution, foremost the existence of a strong nomadic component (Sumner 1986; Sumner 1988). The architecture exposed on the mounds of Malyan, in the TUV and the ABC area (L.M. Nicholas 1990; W.M. Sumner 2003), consists of regular multiple-room buildings constructed from rectangular mudbricks arranged in a header-binder system. From the material collected in these rooms, various craft activity areas could be recognized and indicate different crafts, such as copper casting, lapislazuli working, flint knapping and others. Throughout the Banesh sequence, there is hardly any evidence for contacts with Khuzestan or Mesopotamia in the material culture except for trade-related items, tablets and seals/sealings that belong into the Protoelamite sphere.

Further east, the recently published Tappeh Yahya third millennium BC sequence (D.T. Potts 2001) comprises a Protoelamite occupation in period IVC that was established on the mound after a period of abandonment. This is considered a rather short-lived event of 150 years or so, contemporary with the Gamdat Nasr/ED I in Mesopotamia.<sup>14</sup> The exposed part of the settlement consists of a strictly regular building, constructed from rectangular bricks in a header-binder system, and containing numerous administrative devices, seals and sealings, tablets and token, indicating a complex administrative sys-

tem in operation. At the same time, material culture links to the west are rather weak and the pottery assemblage has a strong local component.

### 5.3. Central Plateau

On the central plateau, two large settlement mounds form the cornerstones of chronology for the fourth millennium BC. One is the sequence from the South Mound of Tappeh Sialk, defined originally in the 1930's by Roman Ghirshman, where phases III and IV represent the period of developing complexity, from the late fifth to the early third millennium BC. Contacts with the southwestern lowlands are attested from the middle of the fourth millennium BC onwards, when nose lugged jars and beveled rim bowls appear within the assemblages of phase III6-7. Period IV that followed after a burnt layer clearly belongs into the Protoelamite realm, indicated by pottery closely comparable to Tal-i Malyan, and by tablets and seals. From the original publication (R. Ghirshman 1938) it had not been clear that Uruk-related materials were found already in the period III layers at Sialk. Only a reconsideration of some burial assemblages shed new light on the transition between Sialk III and IV, by drawing attention to the existence of possible Middle Uruk pottery vessels in Sialk III contexts and by indicating some transitional forms (P. Amiet 1985). Resumed investigations at Tappeh Sialk, especially the cleaning of an exemplary section of Ghirshman's trench 1 in the South Mound, clearly confirmed the stratigraphic sequence that had been defined originally, and provided stratified examples of bevelled rim bowls and spouted vessels from Sialk III contexts (J. Nokandeh 2002). About 40 m to the northwest of Ghirshman's trench 1, a copper workshop area of the Sialk III period was found (J. Nokandeh, H. Fahimi 2003 (1382)).

Important new data derive from the copper smiths' settlement of Arisman, about 60 km southeast of Tappeh Sialk, excavated since 2000 by a joint German-Iranian expedition (N.N.

Chegini, et al. 2000; A. Vatandoust, et al. 2003; N.N. Chegini, et al. 2004). The results obtained so far corroborate some of the hypothesis formulated on the Sialk material. In contrast to Tappeh Sialk, Arisman is a flat but extended settlement that seems to have shifted over time. Remains of a Sialk III6-7 period village are found in an area (area B) in the southern part of the site. Shortly after the abandonment of the village house, the area was turned into a workshop area with pottery kilns (Boroffka and Becker 2004) (fig. 2) and probably also metal workshops processing copper and silver in the vicinity. During the Sialk IV period, a domestic and workshop quarter of true urban layout existed in the northern part of the site (area C) (fig. 3). Copper casting (fig. 4) took place inside the buildings, in simple installations within the open courtyards, and contemporary smelting places where tens of tons of copper ore were processed were located outside the settlement. Radiocarbon dating assigns the Sialk III6-7 layers in area B to the middle of the fourth millennium BC and a Sialk IV smelting site to around 3000 BC (J. Görsdorf 2003, 361). These datings are in line with the results from pottery analysis that allow to correlate the assemblage from the southern area B with Sialk III6-7 and with Godin VI. The ceramic material from the northern settlement in area C shows best relations with Sialk IV1, but also indicates strong ties with Middle Banesh Tali Malyan (B. Helwing in press-b). Due to the nature of the site Arisman as a flat settlement, a clear chronological patterning can hence be discerned that can also contribute to the understanding of sites with a more complicated stratigraphy, such as Tappeh Sialk and Godin Tappeh.

In the western half of the plateau, the large settlement mound Tappeh Ghabrestan was occupied at the same time as Sialk III (Y. Majidzadeh 1976b), respectively the Uruk period in Mesopotamia. The cultural sequence is distinguished into four major phases, I-IV. The best known is phase II, contemporary with Sialk III4-5. The phase II settlement consisted of densely packed two-room houses arranged into larger

quarter. These quarters are separated by streets (Y. Majidzadeh 1976b, fig. 136; Y. Majidzadeh 1977, 50-52) that seem to radiate from a center, next to one building that differs in wall thickness and room dimensions from the standard and is considered an elite residence or a public building (Y. Majidzadeh 1976b, 127-128). A coppersmith workshop (Y. Majidzadeh 1979) and potters shops (Y. Majidzadeh 1975-77) from the phase II settlement attest specialized handicraft in Ghabrestan during the earlier fourth millennium BC. From the latest occupation phase at Ghabrestan, phase IV, derive several beveled rim bowls (Y. Majidzadeh 1977, 60-61 pl. 96, 66-67), indicating contact with the southwestern lowlands towards the end of the fourth millennium BC. The Ghabrestan site is, according to the ceramic material studied, contemporary to another prehistoric mound of major importance, Tappeh Morteza Gird in the vicinity of Rey, close to Tehran. Morteza Gird is considered the successor of Tappeh Chashmah 'Ali and it remains much regretted that the results of these excavations, carried out by the Rey Expedition in the 1930's, remain unpublished (Majidzadeh 1976b, 21). The same applies to the site of Tappeh Ma'morin, where copper workshops comparable to the Ghabrestan II type must have existed<sup>15</sup>.

One of the seven small mounds that today form the site of Tappeh Ozbaki in the district of Savoujbolaq provides evidence for a Late Chalcolithic occupation (Y. Majidzadeh 2000; Y. Majidzadeh 2001, 2003). Due to the restricted exposure, no coherent architectural plan has been obtained yet, but a mudbrick platform with several beveled rim bowls was found (Y. Majidzadeh 2003, 7 fig. 53). The Sialk IV period is represented by a few pithos burials (Y. Majidzadeh 2003, fig. 47-48) covered with a bowl, comparable to the graves defining sub-phase 2 of Sialk IV at the Tappeh Sialk, and occurring also in Arisman. One numerical tablet found in a sounding (trench C) close to the high mound is noteworthy (Y. Majidzadeh 2000, fig. 14). Surveying work during the last years in the



Qazvin and Tehran plain has resulted in the discovery of further Late Chalcolithic sites (H. Fazeli, et al. 2001; H. Fazeli, et al. 2002; R.A.E. Coningham, et al. 2004; H. Fazeli 2004), some of which yielded bevelled rim bowl fragments.

Tappeh Hesar in Dhamghan is the second pre-historic key site on the central plateau (E.F. Schmidt 1937; R.H. Dyson, S.M. Howard 1989). The site extends over a large area and consists of several mounds, apparently with settlement remains of buildings with different and partly specialized functions during the later fourth and early third millennium BC. The occupation here began later than at Sialk with Hesar IA/B that can be correlated to the earlier part of Sialk III,1-5 (R.H. Dyson 1987; M. Voigt, R.H. Dyson 1992, 170-171). Hesar IC/IIA relates to Sialk III6-7 and to the material from Arisman area B, although the technique of pottery manufacture is different, resulting in a mostly buff ware at Sialk while the Hesar ceramics tend to be red. Towards the end of this period, first indicators of specialized handicraft, such as the processing of lapis lazuli, are attested. Hesar II can be linked to Sialk IV on the basis of glyptic evidence and metal and stone objects while the pottery assemblage displays a different manufacture tradition. The Hesar II settlement was exposed at larger scale on the main mound and the south hill, and consists of multi-room architecture, some with characteristic buttressed walls. A specialized copper industry is attested for this period (V.C. Pigott, et al. 1982; V.C. Pigott 1989), while workshops processing precious stones are already operating during period IIB.

## 6. Steps towards complexity in chronological order

### 6.1. Phase 1: first half of fourth millennium BC

In the central and southern Zagros high plains, the earlier half of the fourth millennium BC is characterized by a dichotomy between small village communities settled in the plains and pastoralist nomads that made use of the higher elevations. While in the Kangavar valley in phase

VII, this complementary system seems to have been fairly balanced, southern Iran experienced a marked decrease in sedentary sites during the Lapui phase (W.M. Sumner 1988, 2003). This development is hence fairly different from the evidence from the Central Plateau, where Ghabrestan II, Sialk III4-5 and Hesar IA/B all provide evidence for sedentary village life. The Ghabrestan main building attests the existence of architectural differentiation although we lack all evidence on the elite or public function of the building. Ghabrestan II also yielded evidence for a copper processing cottage industry aiming at the production of copper ingots and axes.

Indications for lowland contact are tentative at best. No ceramic parallels can be found, and the only hint are possible trade items, especially the double axes that must have been cast in the moulds from the Ghabrestan II workshop (Y. Majidzadeh 1976a, fig. 138,132, 139,132). Double axes are rarely preserved in the archaeological record, possibly because they seem to represent not only implements but rather a storage of value, in the sense that they can be molten down in order to produce other artefacts at any given time. Nevertheless, double axes of the type attested at Ghabrestan have been found in Susa in Mecquenem's sounding 1 (F. Tallon 1987, 96-99 no. 74; A. Benoit 2004, fig. 3), where they may have reached via trade.

To summarize the evidence for phase 1, indicators for early complexity exist in the form of distinguished buildings at Ghabrestan, and a specialized copper industry is attested. Whether this material was consumed locally or was exchanged with the lowlands by way of trade contacts remains a question that cannot be answered without more secure and dated evidence.

### 6.2. Phase 2: middle of the fourth millennium BC

For the centuries around the middle of the fourth millennium BC, there is so far no evidence for distinct elite or public architecture. The excavated settlements on the plateau - the

upper Sialk III6-7 layers at Sialk (R. Ghirshman 1938, 60-61) and the buildings on the south hill of Tappeh Hesar consist of multiple-room buildings of irregular layout, constructed in an agglutinative way. The house in Arisman area B is constructed probably as a single room large house. Evidence for specialized craftsmanship increases considerably: A copper industry flourished at Tappeh Sialk and in Arisman area B, and at the same time first experiments with the extraction of silver through cupellation were carried out.<sup>16</sup> More sites with considerable copper industry, such as Tappeh Ma'morin, indicate that in the middle of the fourth millennium BC, a specialized copper industry existed in several sites on the Central Plateau, and professional pottery production is attested at Arisman and Ghabrestan.

At the same time, the Central Zagros area seems to lag behind in this development. Kangavar valley period VI, and with it the main settlement Godin Tappeh VI, can be considered sedentary farming communities of village level that in terms of material culture share many aspects with the Plateau Sialk III tradition (E.F. Henrickson 1994, 92). Further south, the largely nomadic lifestyle attested in the Bakhtiari mountains (A. Zagarell 1982, 65) and in Fars continues while a specialized handicraft developed in specific central sites such as Tal-i Garib (W.M. Sumner 2003). During phase 2, an increase in highland/lowland relations can be stated. Pottery assemblages from sites on the plateau occasionally include Uruk culture prototypes, such as bevelled rim bowls<sup>17</sup> and nose lugged jars. According to fabric, however, these cannot be considered imports but must be local products that form a regular part of the indigenous assemblage (B. Helwing in press-b). Among the trade commodities that would have been available, there are still copper implements such as the double axes produced in the Arisman workshops.

### 6.3. Phase 3: Late fourth millennium BC

During this period that corresponds to the Late Uruk phase in the Mesopotamian scheme, it

seems that the excavated highland sites all experience a temporary interruption of settlement activities: stratigraphical gaps were observed at Tappeh Sialk where period III ended in a conflagration layer. At Arisman, respective layers have not been encountered yet. At Tappeh Hesar, the sequence is difficult to judge<sup>18</sup> but it is possible that a gap occurred there as well. In the Central Zagros, the Uruk-related assemblage of Godin V probably represents this stage although the full chronological range of Godin V remains obscure. The settlement of Godin V with its marked oval enclosure is considered a culturally distinct, intrusive element in the Kangavar valley.

In the Southern Zagros, settlement at Tal-i Malyan is still in its initial stage during the early Banesh phase (W.M. Sumner 2003), although indications for specialized craft activities exist (I.M. Nicholas 1990). In Southeastern Iran, Tappeh Yahya was not occupied at all. Since we still lack reliable dating for most sites it cannot be established at this moment whether the foundation of new urban sites around 3200 BC, such as Shahdad and Shahr-i Sukhte, can be ascribed to phase 3 or 4.

This apparent lack of evidence for phase 3 occupations in the highlands parallels observations made on LC5 (in SAR terminology) material in the North Syrian Jazirah (G.P. Stein, P. Wattenmaker 1988; T.J. Wilkinson 2000; T.J. Wilkinson 2003; B. Helwing in press-a; T.J. Wilkinson in press). This phenomenon has so far not found any satisfactory explanation<sup>19</sup>.

### 6.4. Phase 4: centuries around 3000 BC or beginning of the Protoelamite Period

Around 3000 BC, highland Iran witnesses the formation of the Protoelamite complex. Formerly abandoned sites, such as Tappeh Sialk (Sialk IV) and possibly Tappeh Ozbaki, Tappeh Hesar II and Tappeh Yahya (Yahya IVC), are settled anew, and new settlements - Shahdad and Shahr-i Sukhte - are founded in favorable locations.

Settlement occupations now follow a full urban layout. Large scale multiple-room building compounds, constructed from standardized rectangular mudbricks, were excavated at Arisman in area C, in middle Banesh Malyan, at Tappeh Yahya IVC, and must have existed in other sites as well. The Sialk IV architecture is difficult to judge but seems to imply a certain standardization of layout and a considerable size of building. The Ghabrestan I occupation was badly damaged and does therefore not provide any evidence on distinctive architectural features. The lowlands share this development towards the Protoelamite complex. Susa III, represented best by levels 16-14 on the acropolis, also consists of building layers of planned urban layout, and the same can be assumed for the respective levels at Tal-i Ghazir.

There is now ample evidence for craft specialization on a wide array of materials. Lapis lazuli, agate and turquoise were processed in workshops at Shahr-i Sukhte, Tappeh Hesar and Shahdad, as were alabaster and marble vessels. Copper was smelted at large scale in Arisman, where more than 120 tons of copper slags accumulated during this period. Silver was also extracted and worked into decorative/prestigious items at Arisman and at Sialk.

Administrative devices derived from earlier Uruk prototypes - tablets, token and cylinder seals (fig. 5) - make their appearance during phase 4 and attest the close relations between the highland sites and the lowlands.

The Central Zagros, however, undergoes a different track of development that rather corresponds to the observations on the end of the "Uruk expansion" in the North Mesopotamian periphery. Godin V ends in a hasty abandonment, with much material left inside the oval enclosure buildings, and the following occupation of Godin IV closely relates to the Early Transcaucasian culture.

## 7. Summary of the data

As this brief survey shows, a multi-strand development towards complexity can be observed in the Iranian highlands, with strong regional particularities. In adopting a highland perspective from the Central Plateau, the existence of a cultural sphere (as defined by shared pottery styles) encompassing the plateau sites and the Zagros mountains during the Middle Chalcolithic can be stated. Already during this period exist indications for a differentiation within the communities in the form of distinct buildings, for example the main building at Ghabrestan II. Various experiments with new materials were carried out, and especially copper processing developed into a regular activity in these sites. Whether contacts with the lowlands existed at that time remains uncertain. The Central Zagros mountains that belong into the same cultural realm provide no evidence for internal differentiation, while the Southern Zagros undergoes a period of decreased settlement activity, countered by a considerable nomadic component.

Phase 2 brings the regular establishing of cottage industries in the Plateau sites and the first securely attested lowland contacts in the form of some distinctive pottery shapes whose prototypes are thought to originate in the lowlands. The Zagros mountains apparently now form a gateway between the Plateau and the Susiana, the result of which is the establishing of a possible trading post in the Kangavar valley, while the southern Zagros seems to have remained outside the realm of the lowland contacts.

Phase 3 - corresponding to the period of most intensive long distance relations between the Mesopotamian lowland and the Syrian and Anatolian sites - is poorly attested on the plateau, a phenomenon that is also paralleled in those areas of the Northern periphery that are not located in the immediate vicinity of the major overland routes. Phase 3 occupation seems to be restricted to the former trading posts, such as Godin V in the Kangavar valley.

The establishing of new sites on the eastern edge of the desert, at Shahdad and Shahr-i Sukhte that soon develop into major craft production and trade centers, seems to have happened during phase 3.

Following the occupation gap of phase 3, phase 4 brings finally the formation of the Protoelamite culture in the Eastern part of the Iranian highlands, while the western part of the plateau is apparently occupied by the Transcaucasian-related Yanik culture. In the eastern part of the highlands, however, this period is characterized by settlements of true urban layout and a fully specialized craftsmanship, and by the establishing of regular and well controlled long distance trade. A general prosperity, and a considerable social differentiation is soon evident from the variety of rich burial assemblages, especially from the large graveyards in Shahdad and Shahr-i Sukhte, and also from the recently discovered Halilrud graveyards.

## 8. Discussion

The projection of available archaeological evidence on the fourth millennium BC in the Iranian highland onto a stringent chronological scheme highlights several important points:

There is evidence for developments towards increasing social differentiation already during the Middle Chalcolithic period, before any long distance contacts are attested.

The development of specialized craftsmanship during the earlier part of the fourth millennium BC predates the establishing of regular long distance contacts with the lowlands.

The cultural *koiné* flourishing on the central Iranian plateau is separated from the lowland developments through the Zagros mountains. These seem to have been occupied to a considerable extent by nomadic groups.

Contacts between the Plateau and the lowlands

are attested since the middle of the fourth millennium BC and must have been mediated through gateway communities, such as Godin Tappeh.

The final phases of the Mesopotamian Uruk culture are characterized by strong contacts with the Middle Euphrates communities, while other areas such as the Jazirah seem to have been bypassed by these relations. The same gap is observed on the Iranian Plateau, but no reasonable explanations have been suggested yet.

With the establishing of the Protoelamite complex in highland Eastern Iran, for the first time a cultural entity is visible that may represent a historical or political unit. This Protoelamite culture makes extensive use of administrative devices and of ceramic prototypes derived from the earlier Uruk culture, one reason why this process has been considered a secondary state formation by many scholars. The center of this development seems to be the Southern Zagros, but the Protoelamite incorporates some of the formerly Uruk-bound areas such as Khuzestan.

The development of the Protoelamite phenomenon paves the way to the establishing of specialized industrial sites and of true urban settlements. Arisman was such a specialized copper processing site, while the procurement of lapis lazuli and other semi-precious stones at Shahr-i Sukhte and Tappeh Hesar is part of a urban style internal differentiation of craftsmanship. Later, in the mid-third millennium BC, the Halilrud settlements and Tappeh Yahya form centers of the chlorite carving industry. This marks a fundamental difference from the development in the North Mesopotamian periphery where the collapse of the Late Uruk network is followed by a strong tendency towards small-scale regional re-structuring, even in the productive sphere.

Western highland Iran undergoes a different line of development due to the extension of the Transcaucasian Yanik culture over the western

part of the plateau, that ties in with parallel developments in Eastern Anatolia. The contemporary emergence of town in Eastern Iran around the desert, and the apparent North-South relations established there during the third millennium BC between Shahr-i Sukhte, Shahdad and the Halilrud civilization may illustrate the existence of a void between these two large complexes.

### 8.1. Comparison with the Syro-Anatolian evidence

This cultural process just described for the Iranian highlands differs in many aspects from contemporary developments in Syro-Anatolia<sup>20</sup>, as a brief comparison can demonstrate (for a chart, see Rothman 2001a, 7 tab. 1.1): Phase 1 in this study corresponds to LC2/3 in the SAR system, hence to type sites such as Tall Brak TW 19/18 (G.H. Emberling, et al. 1999), Hammam et-Turkman VA (P.M.M.G. Akkermans 1988), Gawra XI-IX (M.S. Rothman 2002), Hacinebi A (G.J. Stein 2001) and Arslantepe VIII/and early VII (M. Frangipane, et al. 1993; M. Frangipane 2000). During this period, the first cities flourish in the North Syrian plains, and the Upper Euphrates valley sees the emergence of local centers such as Arslantepe, all indicating a strong local dynamic towards complexity. The area outside the boundaries of dry-farming land seems to be not or only scarcely occupied. Compared to highland Iran, the Syro-Anatolian area seems to be more advanced towards complexity. However, the poor status of research in Iran may overemphasize the differences, and it should be recalled that a trend towards differentiation has also been stated for the Plateau sites. At the same time, the Zagros mountains seem to have been largely occupied by nomadic tribes.

During phase 2 (SAR: LC4), this trend towards increasing complexity continues in the dry-farming zone, while Uruk settlements such as Tall Sheikh Hassan (J. Boese 1995) appear in the formerly un-occupied areas (H.J. Nissen 1995), especially along the Euphrates. Trade stations

are established along major routes, such as al-Kowm in the Palmyra oasis (J. Cauvin, D. Stordeur 1985). Some of the North Syrian local centers, such as Brak, adopt Uruk style material culture. This corresponds in the Iranian development to the first clearly attested contacts to the lowlands, most probably mediated through gateway sites such as Godin Tappeh. The reasons seems to have been a quest for some commodities produced on the Plateau, especially copper.

Phase 3 (SAR: LC5) finally sees to full blossoming of Uruk cities along the Euphrates where the complex Habuba Kabira south - Jebel Aruda - Tell Qannas (E. Strommenger 1980) provides the best example. The Anatolian sites equally proceed towards complexity, as is best illustrated at Arslantepe VIA. The only area that seems to have taken a different turn is the Syrian Jazirah, where LC5 assemblages occur only rarely and then mostly either on sites of major importance, or on newly established locations (B. Helwing in press-a). This gap during LC5 can equally be observed on the Iranian plateau and still lacks reasonable explanation. At the same time, the Zagros mountains see the establishing of first craftsmen settlements in Fars.

Finally, the Syro-Anatolian Uruk network collapses around 3000 BC. The subsequent development is characterized by a strong tendency towards regionalism, and only around the middle of the third millennium BC are complex cities back on the historical stage. The western Iranian Plateau shares this development, but the whole eastern part of the highlands sees the emergence of a cultural complex of great uniformity and strong dynamics towards centralization, the Protoelamite culture. In terms of craft specialization, an industrial scale production of copper and other items is established.

From this comparison of Syro-Anatolian data with the Iranian highland evidence some parallel and some different strands of development can be discerned. Probably the most important difference is that the Iranian plateau formed a

coherent geographical unit separated from the developing polities of the lowlands by the Zagros mountains. The Zagros formed indeed a strong barrier, not only because of its limited accessibility, but possibly also because a diversity of mobile groups seem to have existed there, so that it may have been difficult to establish secure travelling and reliable contacts. The Taurus foothills, on the other hand, are in themselves the stage where older village communities grew into more complex entities that would then represent partners in economic transactions with the lowland communities.

If one now tries to match these observations with any of the current models (see above) on fourth millennium BC development towards complexity it is fairly obvious that none really is suited to provide a reasonable meaning to the data patterning. All models drawing on an alleged "Mesopotamian advantage" and possibly even a political domination (G. Algaze 2001b), including the world system's model, start on false assumptions when chronology is considered, since trends towards specialized craftsmanship and increasing complexity are evident in the Iranian highlands (and in Syro-Anatolia) parallel to the rise of the Uruk culture in Mesopotamia. Geographical factors, especially the mountain barrier of the Zagros, form a second obstacle to a Mesopotamian dominance, since it prevents efficient control of the highland communities (following here the argumentation of the "distance-parity-model", see G.J. Stein 1999). Models emphasizing a strong local component are better suited to describe developments in the Iranian highlands (E.F. Henrickson 1994) or in the Upper Euphrates valley (B. Helwing 1999; Rothman 2001b), but tend to neglect the dynamic impact of intercultural interaction. And finally, catastrophic scenarios that emphasize the displacement of complete populations for various reasons (G.A. Johnson 1973; J.R. Alden 1982; A. Zagarell 1982; P. Amiet 1986; S. Pollock 2001) find no repercussion in the available data.

Further research, both in the field and in theory-

building, is thus required. Recent attempts at investigating the dynamics leading to increased differentiation within the Plateau communities have demonstrated the strong local dynamics in technological advance observed in the Plateau communities, especially the development of an industrial scale copper industry, and have emphasized the role of trade on such commodities as one of the major mechanisms of interaction (M.H. Matthews, H. Fazeli 2004). These considerations certainly point into the right direction, but two other aspects should be investigated in the future:

One important aspect concerns the Zagros mountains that not only form a physical barrier between the Plateau and the lowlands, but that at the same time host a variety of mobile pastoralist groups that must have formed more or less independent (and thus difficult to control) polities at the same time.<sup>21</sup> Both factors have strong repercussions on the nature of trade: organized trade in bulk commodities relies on efficient and low-cost transportation, such as is the case in lowland Mesopotamia that has access major waterways (G. Algaze 2004). Overland trade crossing the Zagros Mountains is certainly less efficient although possible as soon as pack animals in the form of domesticated donkeys and of mules (N. Benecke 1994, 310, 318-319) were available. The role of mobile groups inhabiting the mountainous zones is far from clear and only future research into the dynamics at work within the Zagros nomadic populations and their interaction with the sedentary communities may shed some light on this un-explored aspect of highland diversity. It may, however, be assumed that these groups easily escaped any central control, and may thus have presented a constant threat to the security of the overland routes. It is also possible that those nomadic groups were among the first agents of trade (B. Helwing in press-c).

A second aspect is the understanding of the highland cultures as coherent and interconnected entities, best described as "interaction

spheres" (C.C. Lamberg-Karlovsky, M. Tosi 1973), that form modules within a larger network of interconnected units, instead of perceiving of them as the backwaters of an advanced civilization within a centre-periphery model. Contacts of the Iranian highland sites were not only oriented towards the lowlands, but extended also to Turkmenia and Afghanistan, as is clearly evident from shared traditions in material culture. In this specific case, the fourth millennium BC Plateau sites characterized by a painted pottery tradition generally described as the "Late Sialk III tradition" should be considered within a larger mosaic of cultures on the Iranian Plateau and in the Turkmen steppes that share a pottery style

based on painted pottery. These are at the same time those areas that gain an increasing importance as raw material sources in lapis lazuli and tin in the third millennium BC. It is certainly no coincidence that the emergence of urban centers of the third millennium BC, such as Shahr-i Sukhteh and Shahdad concentrated in the Eastern part of the Plateau in close proximity to the mineral sources. This only could happen at a time when transportation became more efficient, for instance through the use of domesticated camels in overland trade (N. Benecke 1994, 326-327), and through the connection with seafaring merchants operating on the Persian Gulf (T.F. Potts 2003) at the same time.

#### NOTES:

- 1 Relations between Uruk Mesopotamia and the Middle Euphrates had already been established during the middle of the fourth millennium BC, as is illustrated from sites such as Tall Brak (Oates and Oates 1991, 1993, 1994; Emberling, et al. 1999; Emberling and McDonald 2001) and Tall Sheikh Hassan (Boese 1995).
- 2 Besides Tall Brak, two more urban-scale centers can be mentioned in the Jazirah at Tall al-Hawa (Wilkinson and Tucker 1995) and Tall Hamoukar (Gibson and Maktash 2000; Gibson, et al. 2002), both much larger than Uruk during the earlier fourth millennium and with all markers of developing complexity such as specialized craftsmanship and organized trade (Reichel 2002).
- 3 A general trend towards acknowledging local developments can be stated throughout the later 1990's, see for example (Butterlin 1999; Emberling and Yoffee 1999; Helwing 1999; Butterlin 2000; Helwing 2000; Rothman 2001b, 2003).
- 4 For a discussion of the various theoretical approaches towards the phenomenon of the "Uruk expansion" in Syria-Anatolia, Iran and Egypt, see (Butterlin 2003, 97-158).
- 5 Two major conferences on the "Uruk expansion" (Rothman 2001c; Postgate and Campbell 2002) contribute only little to the interpretation of Iranian data except for some site reports, see (Wright 2001b; Badler 2002).
- 6 The alleged proximity of Khuzestan to the Mesopotamian "cradle of civilization" has shaped research strategies in Iran early on. The French mission in Iran explicitly focussed on Susa although Jacques de Morgan acknowledged the importance of other parts of the country (Boucharlat 2005, 434-436). During the 1960's to 70's, American archaeological expeditions investigating the neolithisation or the emergence of early states equally restricted their perspective to areas neighbouring the various "points of origin" (for an overview on the status of research in Southwestern Iran until 1979, see Hole 1987).
- 7 The concept of "interaction spheres" was first suggested by Lamberg-Karlovsky (Lamberg-Karlovsky and Tosi 1973) and has since never gained the attention it deserves (for a discussion of the concept, see Wright 2002).
- 8 "Middle Uruk" is used here synonymously to denominate assemblages comparable to Uruk Eanna layers IX-VII (Sürenhagen 1986a) and related material in the Northern Uruk sites like Tall Shaikh Hassan (Boese 1995) and Tall Brak, TW layer 13 (Oates and Oates 1993).
- 9 The recently suggested five-stage chronological chart of the Santa Fe conference (Rothman 2001a, 7 tab. 1.1) remains essentially weak with regard to the Iranian data so that this chart will not be applied here directly to the data, but parallels are shown (=SAR). New radiocarbon datings have recently become available for some sites on the Central Plateau (Mashkour, et al. 1999, tab. 1.1, based on data from Zagheh, Ghalvestan and Sagzabad, but with weak stratigraphic control; Fazeli, et al. 2004, based on stratified samples from a cleaned section at Tappeh Cheshmeh 'Ali, with data mostly from older layers. ).
- 10 A discussion of the Tappeh Hesar stratigraphical sequence is beyond the scope of this paper. Suffice to note that the original sequence established by Schmidt (Schmidt 1957) is largely based on burial data. The 1976 re-study project has allowed to tie in some of the architectural remains originally exposed during the Schmidt excavations (Dyson and Howard 1989) and to modify the original sequence by means of stratigraphical correlations and radiocarbon dating. For thorough discussion, see (Dyson 1987).
- 11 It is not the aim of this paper to discuss the many theoretical approaches towards Mesopotamian-Iranian relations in detail, but rather to give an outline of current opinions. For detailed discussions, see (various papers in Stein and Rothmann 1994; Butterlin 2003, 139-151).
- 12 Judging from patterns of settlement distribution (Henrickson 1985) and from the existence of local trade centers (Alizadeh 1988b; Alizadeh 1988a) and possible tribal graveyards (Haerincx and Overlaet 1996) it is assumed that the establishing of a nomadic way of life in highland Iran occurred most probably during the fifth millennium BC. Archaeological evidence of nomadic campsites is still scanty, but a few recent excavations have focussed on possible pastoralist campsites (Abdi, et al. 2002; Alizadeh 2003, 2004b).
- 13 In the Khuzestan plain as well as in the Deh Luran, fourth millennium BC cultural development unfolded in lockstep with the developments in Mesopotamia, as had been the case in earlier periods (Alizadeh 1992). Within the following discussion, the Susa II- or protoliterate period is therefore considered a genuine development forming part of the larger lowlands Uruk coiné (Le Brun 1971; Alizadeh in press) and not a colonization phenomenon (Nissen 1983; Sürenhagen 1986b). For details on the cultural sequencing, compare (Le Brun 1971, 1978b, a; Dittmann 1986a, b).
- 14 The dating of the third millennium material from Yahya has been

subject to a controversial discussion (compare Lamberg-Karlovsky 2001, 269-276; Potts 2001, 195-208), but there is reasonable agreement on correlating Yahya IVC with the Gamdat Nasr and ED I period.

- 15 Information deriving from a lecture by the excavator, Jafar Mehr Kian, at the "World Conference on Middle Eastern Studies" in Mainz, 2001.
- 16 Silver cupellation residues - litharge - are found in Arisman area B and in the craftsmen's quarter at Tappeh Sialk (Pernicka 2004a, b), attesting the processing of lead-silver ores on a regular base during the middle of the fourth millennium BC. The amount of litharge attested at the Iranian sites is much larger than contemporary finds from Anatolia or Syria, where litharge is attested at Fatmalı Kalecik (Hess, et al. 1998) and later at Habuba Kabira south (Kohlmeyer 1994; Pernicka, et al. 1998). The Iranian plateau is thus one of the most dynamic foci of early silver processing.
- 17 Bevelled rim bowls have long been considered a marker for the Uruk culture, until closer examination of assemblages from Northern Syria and Southeastern Turkey revealed that BRBs can occur alongside otherwise clearly indigenous assemblages (Helwing in press-a), and they equally can occur on the Iranian plateau within strictly indigenous assemblages. BRBs have been found on several sites on the western plateau, on survey sites in the Qazvin and Tehran plain (Coningham, et al. 2004), at

Ghabrestan I (Majidzadeh 1977, 60-61), in Tappeh Sialk in phases IIIb-7 and IV (Nokandeh 2002), in the older and the later settlement area at Arisman (Helwing in press-b). A clear typological distinction between early shallow forms that tend to be made from a loamy chaff tempered clay, and of a later high, narrow conical form made from a clay with chaff-and-grit temper is possible and chronologically significant.

- 18 Compare footnote 10.
- 19 Several possible explanations have been brought forward: possibly, sites of this period had a preference for other settlement locations and are therefore not present on the high mounds that have usually been surveyed (Akkermans 1984; Wilkinson in press). A second obstacle in site identification is our ignorance of respective type assemblages as long as these are not distinctive Uruk assemblages, thus implying a heavy danger of circular reasoning.
- 20 Fourth millennium BC developments in Syro-Anatolia have been subject to intensive research and discussion that will not be repeated here. For overviews, naturally presenting differing interpretations, see contributions in (Marro and Hauptmann 2000) and *Paléorient* 25/1, 1999.
- 21 (Alizadeh 2003, 2004b) provides a brief outline of modern interaction between central institutions and nomadic communities in Fars, emphasizing the strong independent character of these groups.

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Fig. 1: Map showing location of the major sites discussed in the text.



Fig. 2: Arisman, area B: pottery kiln (mid 4th mill. BC).



Fig. 3: Arisman, area C: mudbrick building (c. 3000 BC).



Fig. 4: Arisman, clay moulds for casting of a shaft-hole axe and a flat axe.



Fig. 5: Arisman, area C: seals and token, Protoclamite.