

Phrygians – Tocharian  
– Baleful signs –  
Ebola – The Islamic  
Empire – The temple  
of Kellis – Buddhism  
in Gandhara – The  
Lost City of Salt –  
The Udruh Project

# A spects of globalisation

Mobility, exchange and the development  
of multi-cultural states

**Most people will consider globalization as a 20<sup>th</sup> and 21<sup>st</sup> century phenomenon. Today's world is one of unprecedented connectivity, trade and mobility. There is no doubt that globalization has made a significant impact on contemporary society, in both positive and negative ways. It has brought greater wealth to many countries and a far wider availability of foreign goods that were hitherto difficult to obtain. People have greater mobility and economic freedom than ever before, and the ability to seek out better job opportunities or living conditions in other parts of the world. But globalization and the increased entanglement of local economies, cultures and state institutions, has also resulted in an increased exposure to economic woes, social troubles, or state collapse elsewhere. The banking crisis, the current migrant crisis, a growing distrust in the capacity of political leaders and state institutions to deal with local or national problems, and a wide-spread sense of losing one's cultural identity and the ensuing need to 'take back control' (think of Brexit, or the election of Donald Trump in the USA) are all directly related to global connectivity; to globalization.**

All this, of course, is not new, and aspects of globalization have been extensively studied. What few people realize, however, is that many of the results of globalization and indeed the phenomenon itself are no recent developments but instead hark back to much earlier times. Economic crises engulfing vast parts of the world, massive population movements resulting from and leading to social unrest and even state collapse, civil wars and even a sense of 'taking back control'; it all happened before. Looking at the effects, benefits and drawbacks of connectivity – then and now – may provide us with some much needed references as to why things happened, where we come from, and where things may be heading to. By looking back, we may see the future, or at least may understand how to handle what is coming towards us.

Leiden University has an international – indeed, a global – reputation for excellent research in the Humanities. In this publication, some of the University's most promising scholars in the Humanities present their research into various aspects of the 'entangled' world. This booklet is divided into three sections, each highlighting distinct aspects of globalization.

Papers in part 1 focus on the mobility of people and the resulting spread of the most elementary identity markers of all; language and script. Even though many of us today may think of our language as something that belongs 'here' and that helps define who we are – Dutch, British, French, German, or even 'European', most of the languages that are spoken by the majority of people in the Netherlands and indeed, in Europe and America, did not in fact originate in those parts, but may well have come from the Russian steppe. Moreover, languages that are related to, say, English and Dutch, were for a long time spoken in western China, as well as in Turkey. How did these languages arrive here and there, where they spoken by people akin to us, or adopted by local societies? Similarly, the letters that are used in this book, although they are frequently described as the 'Roman' alphabet, have a far more complex and foreign pedigree than most of their users may think. Leiden-based research is now questioning old assumptions regarding the origin of our script, and may provide new answers to the questions how, why, when and where our script was first developed. But we are also investigating how that script is used in contemporary society, with the rise of new (social) media, such as Twitter.

## By looking back, we may see the future, or at least may understand how to handle what is coming towards us.

Part 2 includes two papers that highlight how some of the first empires dealt with multiculturalism, especially how various population groups, with their own traditions, histories, and religions could be accommodated within a single political body. One example comes from the Dakhla Oasis in Egypt, where Leiden-based researchers have uncovered the remains of a shrine dating to the Roman period, which incorporates Greek, Roman, and Egyptian architectural and pictorial elements – suggesting a flexible and inclusive approach to local faith and religion. The other case study also comes from Egypt, this time in the early Arab period. By analysing numerous 7<sup>th</sup> century AD papyri, this study highlights how the new Arab rulers and the local Greco-Roman-Egyptian populations communicated and (re)negotiated their respective positions within the newly formed Islamic Empire. The new overlords accommodated their subjects by, e.g. using Greek alongside Arabic in the administration, and by allowing many local customs and identities to endure, whilst at the same time stressing the authority of the new religion (Islam) over the realm. Under the Arabs, religious practice was perhaps less malleable than in previous eras, but its absorptive potential could (and did) serve as a unifying factor throughout the empire, conferring a common identity to all believers.

Religion did not only spread through conquest and empire building, but often spread – and still spreads – as a consequence of trade. Part 3 includes contributions that highlight the role of trade and trade routes in the spread of religions and cultures. Trading contacts were not only of pivotal importance for the spread of faiths, but often had an impact on their iconography and related rites. Buddhism, for example, spread as a consequence of early trade routes that connected India to the Far East, but many early depictions of the Buddha also betray early contacts with the Hellenized Kingdoms of Central Asia. We see similar patterns of cultural mingling as a result of trading contacts in other regions. In collaboration with local partners, archaeologists from Leiden University are uncovering the remains of important trading centres in Jordan and Saudi Arabia, bringing to light remarkably advanced, but culturally hybrid societies that thrived in seemingly uninhabitable landscapes. These remote places were inhabited not because of the local resources, but because they were part of a wider world; they connected different regions and were vital conduits, not only of goods, but also of ideas and people.

Connectivity, entangled worlds, globalization. These are buzzwords that have dominated political and academic discourse over the past decade. But they matter, because they provide us with a framework to better conceptualize the ways in which societies are shaped, how they rise and fall, change and endure. On behalf of Leiden University and its Knowledge Exchange Office, LURIS, we hope that the studies presented in this publication may inspire the reader to rethink aspects of our own society. Aspects that strike us as familiar and 'modern', but that are as ancient as human society itself.

**Ivo de Nooijer,  
Director of Luris**

*Luris is the Knowledge Exchange Office of Leiden University and Leiden University Medical Center (LUMC) and connects academics of both organisations with the market and society at large, in order to make the most of their scientific knowledge.*

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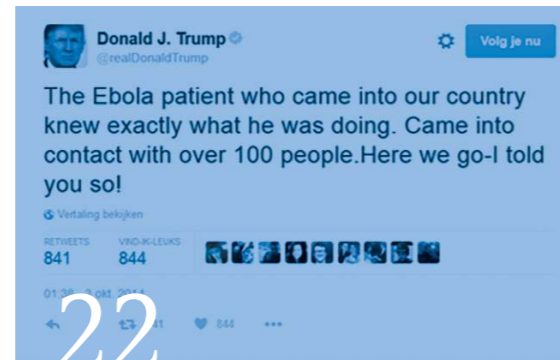
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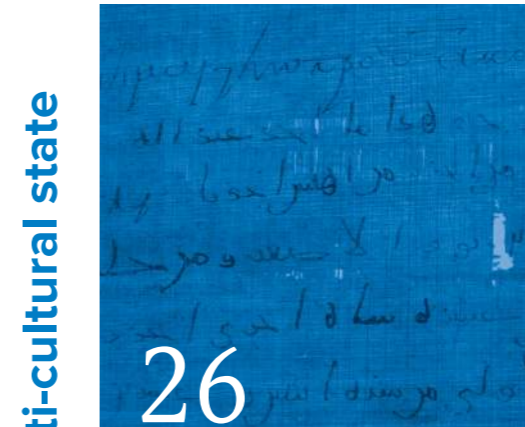
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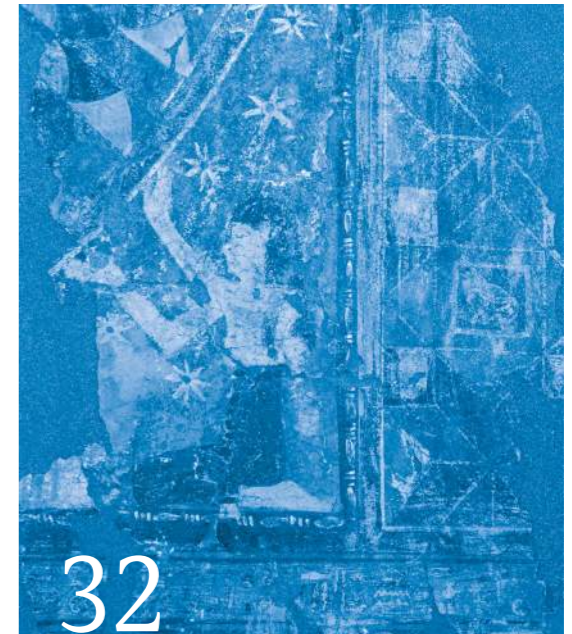
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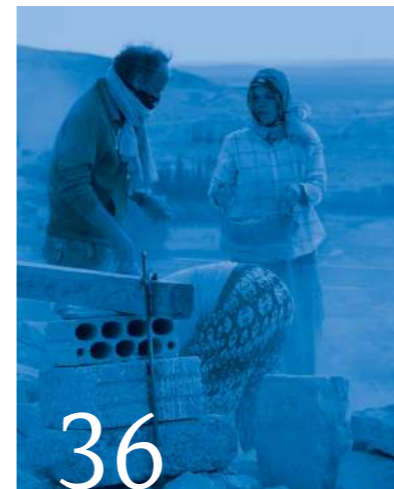
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# I In the footsteps of the Phrygians.

Understanding migrations and cross-cultural contacts in Iron Age Anatolia.

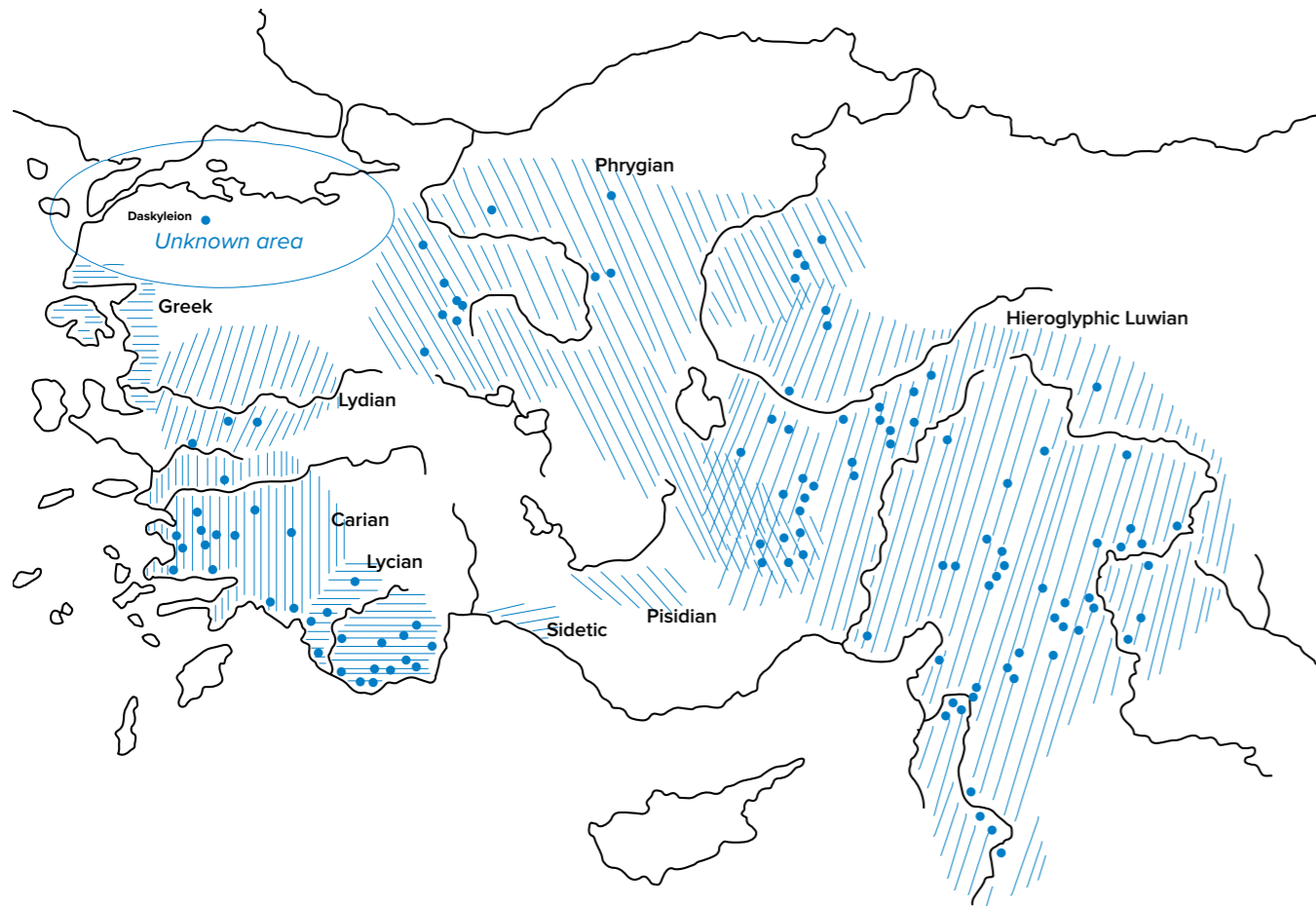
## Alwin Kloekhorst

studied Comparative Indo-European Linguistics at Leiden University and defended his PhD thesis in 2007 (published in 2008 as *Etymological Dictionary of the Hittite Inherited Lexicon* by Brill). In 2008, he was awarded with a VENI-grant by NWO for conducting a research project on the accent system of Hittite, resulting in the 2014 monograph *Accentuation in Hittite* (published by Harrassowitz Verlag). In 2012, Kloekhorst was appointed as assistant professor of Comparative Indo-European Linguistics at the Leiden University Centre for Linguistics. In 2015 he received a VIDI-grant from NWO for the research project *Splitting the mother tongue: the position of Anatolian within the Indo-European language family*. As part of a larger research consortium, he was awarded, together with Alexander Lubotsky, a HERA research grant from the European Research Council for conducting the project *The linguistic landscape of North West Anatolia in pre-Roman times*.

**Hundreds of people are gathering at the shores of the Aegean Sea; men, women and children alike. One by one, they get on board of small boats that will bring them across the waters to the lands on the other side. Lands that they have never set foot on before, but which, despite their anxiety about the journey, they are determined to reach. Because they know that these lands are prosperous and the people living there are wealthy. And because they hope that they will be able to share in that prosperity, so that their life there will be better than the one they had thus far. So much better that no boundary can stop them, not even large stretches of waters.**

This scene will in most readers undoubtedly bring up associations with recent news reports about Middle Eastern refugees that try to reach Europe by crossing in small rubber boats the water ways that divide the Greek islands from the Turkish coasts. The scene is also applicable to many other migration waves that throughout history have taken place across these waters, however. Since times immemorial the Aegean Sea, the Dardanelles, the Sea

of Marmara and the Bosphorus form the most important natural boundary between Europe and the Middle East, whereas Anatolia (the Asian part of Turkey) can be viewed as forming the bridge between these two regions. It has therefore always been this area where East and West collide, and through which populations groups had to pass in order to migrate from the one region into the other. To the modern mind it may seem obvious that these migrations would



Languages of 2nd and 1st millennium BC Anatolia. Hatched areas indicate the approximate distribution of the various languages. Dots designate findspots of relevant inscriptions.

take place from the Middle East into Europe, but this certainly has not always been the case. In fact, at the dawn of human civilization, it was Mesopotamia (modern-day Iraq) that was the most prosperous region in the world, and therefore many population groups from Europe tried to reach this mythically wealthy land by crossing the waterways that divided Europe from Anatolia. There is evidence that already in the third millennium BCE several population groups from Europe must have entered Anatolia in this way. One of these groups founded the Hittite Empire, which during the second millennium BCE dominated the Anatolian highlands for centuries, and which in the 16<sup>th</sup> century BC was even able to plunder Babylon, the most important city in the

world of that time. During the Hittite rule of Anatolia, there was little room for groups to enter Anatolia from Europe, but after the fall of the Hittite empire around 1200 BCE, we see a major increase of population groups crossing the seas from West to East: Mysians, Phrygians, Greeks, Celts, and possibly also Armenians, all migrate into Anatolia in search for a better life. Only when the power of Mesopotamia declined and larger civilizations arose in Europe, we see that the wave of migrations started to move the other way around. The Persians, for instance, made an attempt at conquering Greece, being warded off by the Greeks in several battles at sea. Later on, the Turks were more successful. After migrating into Anatolia from Central Asia, they were

in the 15<sup>th</sup> century able to conquer Byzantium and with it the Byzantine Empire, penetrating into Europe.

It may be clear that the modern-day migrations from Syria and Iraq into Europe through Turkey are no isolated case, but are part of a larger pattern that has existed for millennia. This everlasting going back and forth of different population groups through Anatolia has made this area home to intriguing places that show all kinds of ethnic mixtures. In Istanbul, for instance, Roman, Byzantine and Ottoman architecture stand side by side, and the city has been home to dozens of different ethnic groups, speaking a multitude of different languages.

The reason that we know so much about the ethnolinguistic history of Anatolia, is the fact that already very early on in history writing was being employed by the people living there. The earliest written texts from the area date to ca. 2000 BCE. Ever since that moment we have an ongoing documentation (of more than 4000 years!) on the history of Anatolia and the many different peoples that have dwelled there. Just like the peoples whose histories these documents describe, the texts themselves are very diverse, being written in all kinds of different languages and scripts. In the second millennium BC the majority of sources consist of clay tablets written on in the cuneiform script, which contain texts written in Old Assyrian, Hittite, Hattic, Hurrian, Luwian and Palaic. At the same time many rock inscriptions appeared in Anatolia that were written in an indigenous hieroglyphic script and contain texts in the Luwian language. From the beginning of the first

millennium BC alphabetic scripts are introduced into Anatolia. In the West and South languages are written in varieties of the Greek alphabet (Greek itself, but also Phrygian, Lydian, Carian, Lycian, Milyan and Sidetic), whereas in East Anatolia variants of the Phoenician alphabet are used to write Semitic languages like Phoenician, Sam'alic and Aramaic. Around the beginning of the common era Latin is introduced together with its script, and a few centuries later, when the Turks arrive, the Arabic script is used for writing Turkish, a situation that lasts until the beginning of the 20<sup>th</sup> century. All these documents tell the ethnolinguistic history of Anatolia, and therefore the history of the interaction between East and West.

**It may be clear that the modern-day migrations from Syria and Iraq into Europe through Turkey, are no isolated case, but are part of a larger pattern that has existed for millennia.**

However, not all parts of Anatolia are as well covered by written documents as others. The biggest gap in our knowledge of the ethnolinguistic map of Anatolia is its North-Western part: we have hardly any sources


that give us information about the peoples that lived there and the languages they spoke in the period before the Roman era, i.e. in the second and first millennium BC. This gap in our knowledge is unfortunate, since it is exactly this area that forms the narrowest part of the Anatolian 'bridge', through which all peoples migrating from East to West or vice versa must have crossed. Moreover, this area is home to Troy, the famous city that, according to the epics of Homer, was the scene of the Trojan war. Despite its global fame, we have no concrete evidence about the ethnicity of the people who lived in Troy during the times in which Homer's stories are set, nor about what language its inhabitants spoke. This unfortunate situation may completely change, however, because of exciting new discoveries from Daskyleion (30 km south of the Sea of Marmara).

At the time of the Persian reign of Anatolia (ca. 550-330 BC), Daskyleion was the seat of the satrap (governor) of the province Hellespontine Phrygia that controlled the Dardanelles, and it therefore was then the most important city in this region. During recent excavations at Daskyleion, executed by the University of Muğla under the direction of prof. Kaan İren, hundreds of potshards have been unearthed with graffiti on them. A preliminary study of a part of these graffiti, conducted by prof. Alexander Lubotsky and dr. Alwin Kloekhorst during a field trip to the site in the

summer of 2012, showed that in that sample at least three different languages could be identified, namely Greek, Phrygian, and Lydian. This indicates that in pre-Roman times also this area was home to a mixture of ethnicities, some of which at that moment in time had been present in Anatolia for more than two millennia (Lydians), whereas others had migrated into Anatolia only relatively recently (Greeks and Phrygians).

With the results of this 2012 preliminary research in hand, Lubotsky and Kloekhorst joined a larger, international research consortium, which in the summer of 2016 was awarded by the European Research Council with a large research grant to carry out the project *Multilingualism and Minority Languages in Ancient Europe*. This has allowed Lubotsky and Kloekhorst to enlarge their team with PhD-student Aljoša Šorgo. Together they will conduct the sub-project called *The linguistic landscape of North West Anatolia in the pre-Roman period*. The main bulk of the research will consist of producing a full description and analysis of all the graffiti that thus far have been excavated at Daskyleion. Over the course of several seasons at Daskyleion, each graffito will be extensively studied and published, detailing all relevant epigraphic, philological and linguistic aspects. This collection of graffiti will then serve as a basis from which to reconstruct the nature and origins of the Phrygian and other languages

of 1<sup>st</sup> millennium BC North-Western Anatolia. Additional information, from historical (2<sup>nd</sup> and 1<sup>st</sup> millennium BC) sources, archaeological data, and historical and contact linguistics, will be fed into this reconstruction and are expected to result in a better understanding of the origins of the Phrygian language (and its speakers) and its influence on other languages in the area. In this way, the project aims to paint a detailed picture and more complete understanding of the ethnolinguistic make-up of the border area between Europe and the Middle East in pre-Roman times and its development through time, filling an important gap in our knowledge. —



To the modern mind it may seem obvious that these migrations would take place from the Middle East into Europe, this certainly has not always been the case.

# T Tocharian: An Indo-European language from China.

Tocharian is a language that was spoken in the Tarim Basin in the Northwest of present-day China (Xīnjiāng region, north of Tibet). In the middle of the Tarim Basin there is a large desert, which is surrounded by several oases and enclosed by high mountain ranges. Tocharian is an Indo-European language, related to Latin, Greek, Celtic, and, among many others, English. A few examples suffice to illustrate this: *mātär* ‘mother’; *pātär* ‘father’; *protär* ‘brother’; *ñem* ‘name’; *ʃkas* ‘six’; *ke<sub>u</sub>* ‘cow’.

## Michaël Peyrot

studied Comparative Indo-European Linguistics and Dutch Language and Literature at Leiden University, where he also defended his PhD thesis *The Tocharian subjunctive* in 2010 (published 2013 with Brill). From 2011 to 2014, he worked at the University of Vienna for *A comprehensive edition of Tocharian manuscripts*. He then moved to Berlin for his Marie Curie project *Niya Tocharian: language contact and prehistory on the Silk Road* (2014–2016) at the Berlin-Brandenburg Academy of Sciences and Humanities. His NWO-funded VIDI project *Tracking the Tocharians from Europe to China: a linguistic reconstruction* at Leiden University runs from 2016 to 2021.

Today, the Tocharian language is extinct. How is it known altogether? It is attested in paper manuscripts that have been found on the northern edge of the Tarim Basin, in the territory of the former city-states Kuča, Yānqí and Turfan. These manuscripts, dating from 500–1000 BCE, could be preserved until the present day, thanks to the extremely arid desert climate in the region. Nevertheless, the pieces that survive are only fragments of a Tocharian literature that must once have been quite substantial. The number of manuscript fragments can be estimated at 9,000 for variety “B”, originally from Kuča, but also found in Yānqí and Turfan, and 2,000 for variety “A”, originally from Yānqí, but also found in Turfan. However, these are mainly small

pieces of larger leaves: the number of leaves that are completely preserved is only a couple of hundred, and these are mostly just a single leaf of a larger text.

In order to decipher the content of the fragmentary manuscripts, better-preserved parallels in other languages are crucial. Fortunately, these do in many cases exist: Tocharian literature is almost entirely Buddhist. Buddhism arose in what is today northern India and Nepal, in the 6<sup>th</sup> century BCE. When emperor Aśoka, who reigned over almost the entire Indian subcontinent, made Buddhism the state religion in the 3<sup>rd</sup> century BCE, it spread far beyond its place of origin. From Gandhāra in present-day northern Pakistan, it then expanded



northwest into Afghanistan, where it flourished in the Kushan empire, as well as north into the Tarim Basin, from where it spread further into central China. The fact that anything is known at all about Tocharian is due completely to the spread of Buddhism into the Tarim Basin. Not only can the texts be deciphered thanks to parallel texts in other languages, Buddhism was also the reason why Tocharian and several other languages of the region were written down in the first

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place. Initially, Buddhist literature was not written in the local languages, but only in the Middle Indian language of Gandhāra, Gāndhārī. The transmission of the texts must also, to a large part, have been oral. From the middle of the first millennium onwards, texts were written down in the local vernaculars. These were Tocharian A and B in the northeast of the Tarim Basin, the Iranian language Khotanese in the southwest of the Tarim Basin, and later also Tumšūqese, related to Khotanese, in the northwest. All four languages are written in a variety of Brāhmī, a family of Indian scripts. Parallel to texts in the local languages, Sanskrit Buddhist texts were produced, as Sanskrit had replaced Gāndhārī as the language of Buddhism in the region.

With all Tocharian Buddhist literature set in India, it comes as no surprise that the Tocharian language contains many words that are borrowed from Sanskrit. Almost the entire lexicon of religious terms is Sanskrit, and in most cases they are easily recognisable because they contain letters that otherwise do not occur in native Tocharian words, such as *th*, *d* and *dh*, which must in normal spoken Tocharian all have been pronounced as *t*. Words of this type are e.g. Tocharian B *bodhisātve* 'bodhisattva' (an enlightened being who is to become a Buddha) and *brāhmaṇe* 'brahmin' (a member of the class of priests). Only some of the basic religious concepts are expressed with indigenous terms, such as *pelaikne* 'law' (Sanskrit *dharma*) and *yāmor* 'act, fate' (Sanskrit *karma*). Some words cannot come from Sanskrit, but point to a Gāndhārī source. These were apparently borrowed before Sanskrit became dominant. An example is *šamāne* 'monk', which goes back to Gāndhārī *šamana*, not to Sanskrit *śramaṇa*.

Before the arrival of Buddhism and Indian culture, Tocharian was also influenced by other languages. The most important among these were Iranian. Iranian is a large language family that does not only comprise the Farsi language of Iran, but also, among others, Kurdish, Ossetic in the Caucasus, Pashto in Afghanistan and Pakistan, and smaller languages in Afghanistan, Tajikistan and western China. Some of the Iranian influence in Tocharian can be attributed to its two Iranian neighbours in the Tarim Basin: Khotanese in the southwest and Tumšūqese in the northwest. However, most must derive from several other Iranian varieties. Among these, a small group of words stands

out because they derive from an archaic form of Iranian and point to contacts in the 1<sup>st</sup> millennium BCE, long before the attestation of Tocharian. An example is Tocharian B *etswe* 'mule', which has been borrowed from Old Iranian *\*atswa-* 'horse', the source of e.g. Avestan (the language of Zoroaster) *aspa-* and Farsi *asb*. The Tocharian B word cannot be from Khotanese or Tumšūqese because the Khotanese word is *aśśa-*, whose *śś* could not have given Tocharian *tsw*.

Even though Tocharian is so heavily influenced by Sanskrit, Gāndhārī, and several Iranian languages, it is not

close at all to them within the Indo-European language family. This is shown, for instance, by the word for 'horse', which can be reconstructed as *\*h<sub>2</sub>ekuo-* (cf. Latin *equus*, Greek *hippos*). In Indian and Iranian, which together form the Indo-Iranian branch, the sound *\*k* is reflected as an s-sound: Avestan *aspa-*, Sanskrit *áśva-*, Khotanese *aśśa-*. However, in Tocharian it is reflected as a *k*: the inherited word for 'horse' is *yakwe* in Tocharian B. The common ancestor of the Indo-European languages, Proto-Indo-European, was spoken in the Eastern European steppe, probably approximately from 4500 to 3500 BCE. There is increasing consensus

that Indo-Iranian, together with other branches of Indo-European, descends from an Indo-European culture called Yamnaya, dated approximately from 3500 to 2500 BCE. From the Eastern European steppe, the Indo-Iranians moved east and then south through present-day Turkmenistan. The Indians moved southeast into India, while the Iranians remained to their north and moved west and east, into Iran and onto the Eurasian steppe.

With Indians south of the Tarim Basin, Iranians in the west of the Tarim Basin, and probably still more Iranians on the Kazakh steppe and possibly even north and partly east of the



Languages of the Tarim Basin around 500 CE (@ Michaël Peyrot)



Even though Tocharian is so heavily influenced by Sanskrit, Gāndhārī, and several Iranian languages, it is not close at all to them within the Indo-European language family.

Tarim Basin, it is highly remarkable that Tocharian does not show any closer resemblance to the Indo-Iranian languages: all influence, even though some is early, is from a later date. At present, the best explanation for this situation seems to be that the Tocharians moved east over the steppe before the Indo-Iranians started to spread. At the eastern end of the steppe, north of the Altai mountains, an archaeological culture is found that is termed “Afanas’evo”. This culture, close to and largely contemporary with Yamnaya (also 3500–2500 BCE), is often thought to represent a very early phase in the development of the Tocharians. Assuming that the Afanas’evo people, who have left no trace of their language, were early Tocharians, the main problem remaining is the enormous time gap of 3,000 years between the end of the Afanas’evo Culture and the attestation of the earliest manuscripts.

Possibly, the link between the Afanas’evo Culture and the Tarim Basin is formed by the so-called Tarim Mummies. The Tarim Mummies are not real mummies, but rather ancient humans that are surprisingly well preserved, due to the extremely arid and in winter very cold climate of the Tarim Basin. They are from several sites throughout the Tarim Basin, and from different periods. Most interesting are the oldest, which date from the early 2<sup>nd</sup> millennium BCE. They belong to the “Xiaohe Horizon”, which comprises the sites of Gümügōu / Qāwriḡul, Xiāohé / Ördek and Ayala Mazar, all of which are today in uninhabitable parts of the desert.

Chronologically, it makes perfect sense to connect the early Tarim Mummies with the Afanas’evo Culture on the one hand and with the Tocharian city-states on the other. However, there is no way to be certain of the language of either the Afanas’evo people or the Tarim Mummies given the total absence of written sources. But we can try to reconstruct the migration route of the Tocharians in order to see whether it is possible that Tocharian was spoken in the Tarim Basin already in the early 2<sup>nd</sup> millennium BCE.

In the NWO-funded VIDi project *Tracking the Tocharians from Europe to China* such a reconstruction is carried out based on linguistic evidence. The many layers of contact for which there is evidence in the Tocharian language will be used to establish where and when the Tocharians have been in contact with which other languages. —

The fact that anything is known at all about Tocharian is due completely to the spread of Buddhism into the Tarim Basin.



# I

## In search of the baleful signs:

rethinking the transmission of the  
alphabet to Greece.

### Willemijn Waal

is a classicist and Hittitologist working as university lecturer for the programme Classics and ancient Civilizations at Leiden University. Her research interests include early writing systems, orality and literacy in the ancient world and the interaction between the Aegean and the Near East in the Late Bronze Age. In 2015-2016, she received a research grant from INSTAP (Institute for Aegean Prehistory) for the project Bridging East and West: New Perspectives on the Rise of Early Writing Systems and Administrative Practices in the Aegean and Anatolia. This project entailed a comparative approach towards early writing in Anatolia and the Aegean, including the origins of the Greek alphabet.

**In the second millennium BCE, several syllabic writing systems were in use in the Aegean, notably the Cretan Hieroglyphs, Linear A and Linear B, of which only the latter has been deciphered. The surviving records are mainly administrative documents on clay and painted vase inscriptions, but there are good reasons to assume that these scripts were also used on perishable materials such as wood or palm leaves. Linear B was in use till the end of the Bronze Age (ca. 1180 BCE) after which a 'Dark Age' of some 300 years without any attested writing follows. Written texts re-appear again around 800 BCE, when the first alphabetic inscriptions on stone and pottery turn up in Greece. It is general agreed that the Greeks took over the alphabetic script used by the Phoenicians. This was a consonantal alphabetic writing system of which the origins can be traced back to at least the beginning of the second millennium BCE in Egypt. When the Greeks adopted this script, they are thought to have made some adjustments such as the addition of vowel signs.**

Though the Semitic background of the Greek alphabet is undisputed, the date of the transmission of the alphabet to Greece is controversial. Various proposals have been made, ranging from the 14<sup>th</sup> to the 8<sup>th</sup> or 7<sup>th</sup> century BCE. In classical studies the prevalent opinion is that the alphabet was introduced in, or shortly

before, the 8<sup>th</sup> century BCE. This point of view ultimately goes back to the influential article of Rhys Carpenter in 1933, who adduced his by now famous ‘argument from silence’: the fact that there are no surviving written sources from before 800 BCE (or, at the time he wrote the article, not before 700 BCE) proved that writing did not exist in Greece before that time. However, as has been pointed out by scholars such as Ullman, Naveh and Ruijgh, there are quite some indications that alphabetic writing was introduced to Greece much earlier – but that it was in first instance only written on perishable materials. As the dominant writing mediums for alphabetic scripts are generally ephemeral materials such as wood, leather or papyrus, this is quite conceivable. The emergence of new data over the last decades, which are hard to reconcile with the present model, makes it worthwhile to (re)explore the possibility that the alphabet was already introduced in the Aegean much earlier, around the 11<sup>th</sup> century BCE.

#### The pluriformity, diversity and spread of the Greek alphabets

As soon as the first Greek alphabetic inscriptions appear, they turn up regularly in a large area including the entire Greek mainland, the Aegean islands, Italy and Sicily. These inscriptions show significant regional variety; no less than 33(!) different versions of the Greek alphabet can be distinguished. Despite their obvious differences, these alphabets all share certain innovations, like the presence of vowel signs, which means that they must ultimately go back to the same source. As already observed by the Semitic epigrapher Ullman in 1934, if one assumes a late date

for the introduction of the alphabet, this would mean that the alphabet changed, developed and spread like wildfire throughout the Aegean at a tremendous speed, which would be all the more astonishing after such a long assumed preceding ‘Dark Age’ without any writing.

#### The archaic Greek writing habits

The writing habits of the archaic Greek alphabets are also of interest. The writing direction of the earliest Greek inscriptions is not yet fixed and the letters may be written from right to left, left to right, horizontally, vertically or boustrophedon (i.e. alternating between left-to-right and right-to-left). Only from ca. 500 BCE onwards the dextroverse (i.e. from left to right) writing became the norm. Further, in the early Greek alphabet the letterforms are unstable and vary greatly. This is all in sharp contrast to the Phoenician script, which at least from the 9<sup>th</sup> century onwards had a fixed writing direction (right to left) and stabilized and standardized lettershapes. In these respects, the archaic Greek script more resembles early West-Semitic inscriptions of before ca. 1050 BCE, which also do not have a fixed writing direction and show a great variety in letterforms. In addition, the early Greek inscriptions make use of the same type of word divisions (multiple dots or vertical strokes) that are also attested in early West-Semitic, but not in later Phoenician inscriptions. It is remarkable that the Greeks would have operated a less developed system if they had the standardized 9<sup>th</sup>-8<sup>th</sup> century retrograde Phoenician example at their disposal, and that this system coincidentally mimicked writing practices that existed much earlier. It is further telling that the

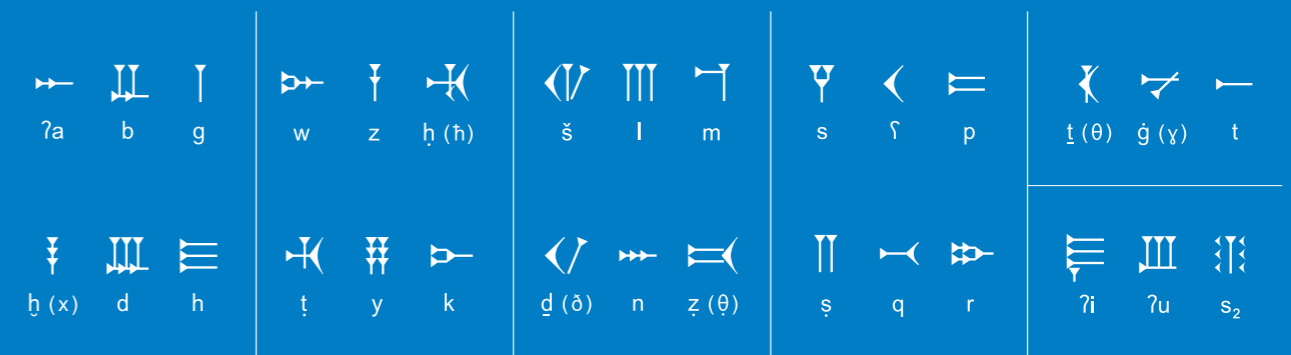
eventual writing direction of the Greek alphabet (left to right) is the complete opposite of that of Phoenician (right to left).

#### The contemporary, independent Etruscan and Phrygian alphabets

Due to some important redatings, the earliest Phrygian inscriptions in Anatolia can now be placed at around 800 BCE, which makes them contemporaneous with the oldest Greek inscriptions. Though the Phrygian alphabet is undoubtedly related to the Greek alphabet, it clearly underwent some independent developments. Similarly, the Etruscan alphabet is also clearly related to the Greek alphabets, but there are obvious differences already from the first attestations onwards. These dissimilarities can only be satisfactorily explained as the outcomes of longer, separate developments, implying that the alphabet must have been in use for quite some time. The fact that in the 8<sup>th</sup> century we see the emergence of a range of alphabetic traditions that are evidently related, but also show clear differences from the very start and the fact that the Greek alphabet shares some remarkable similarities with Semitic inscriptions before ca. 1050 BCE, plead for an earlier date of the transmission of the Greek alphabet. This scenario is all the more compelling because of some new discoveries and insights that have been made in recent decades.

#### Discoveries of more (early) alphabetic inscriptions

The corpus of early Greek inscriptions has steadily increased over the decades. Of great significance are the recent finds of 8<sup>th</sup> century inscribed objects in Methone (Macedonia),



The Ugaritic ‘Alphabet’. Note the (near) absence of vowels.

including the so-called Acesander-cup, which contains a poetic alphabetic inscription. This inscription is very similar to that of the Nestor-cup found in Pithekoussai (Ischia) and the Dypilon inscription from Athens, which are both also dated to the 8<sup>th</sup> century BCE. It is remarkable that these three inscriptions, which belong to the earliest known Greek inscriptions are of a literary nature, presenting regular hexametric verses. Though this circumstance has been seen by Barry Powell as evidence that the Greeks introduced writing for the sole purpose of recording Homer, a more plausible explanation may be that writing was already in use for other, more mundane text genres, such as economic and administrative documents on ephemeral materials, before the first surviving literary inscriptions on durable materials. This assumption gains strength if one bears in mind that most, if not all, early Greek inscriptions are of a private nature – including vituperative graffiti, which can hardly be considered a primary use of writing and implies a wider (and in all likelihood earlier) usage of the script.

#### Light in the Dark Age

Recent archaeological studies have shown that the Greek Dark

Age was not as dark as has long been assumed, but that – apart from obvious decline – there was a substantial amount of continuity and prosperity, certainly in places like Knossos and Lefkandi. Maritime activity continued and there was still exchange with the Near East. In these conditions, the existence of literacy in Greece is conceivable, and even likely, in view of the fact that the region maintained contacts with the (literate) Levant, and the fact that writing had been in use in Greece for about 700 years till ca.1200 BCE.

#### Interconnectivity in the Mediterranean

Though in the early previous century, when the current paradigm was developed, there may have been doubts about the possibility of contacts between the Aegean and the Near East before the 8<sup>th</sup> century, the now available textual and archaeological data show that there was an international network of trade and diplomatic contacts across the Mediterranean from at least the 3<sup>rd</sup> millennium onwards, intensifying in the second millennium BCE. The necessary infrastructure for a transmission of the alphabet was already in place, long before the traditional date of its assumed

introduction in the Aegean.

#### Concluding remarks and outlook on further research

In addition to the above, there are some linguistic arguments that plead for an earlier date of the alphabet to Greece, as especially Cornelis Ruijgh has argued. All these facts combined call for a revision of the current paradigm. Rather than assuming that there was a sudden ‘explosion’ of writing in the 8<sup>th</sup> century after an illiterate phase of three centuries, the present constellation of our data favours a scenario in which alphabetic writing was already introduced to Greece around the 11<sup>th</sup> century BCE, and initially used on no longer existing materials. A potentially earlier date of the Greek alphabet has important consequences for various fields of research. It opens up new perspectives for understanding the Greek Dark Age, the spread of and relations between the early alphabets and the Homeric Question, as it would allow a scenario in which the Iliad and Odyssey are the result of a mixed written/oral tradition, just like the Epic of Gilgamesh, to which they bear so many resemblances. —

# Ebola in the American Imagination.

Contagious Metaphors and Narratives on Twitter.

## Sara Polak

is assistant professor in American Studies at the Leiden University Centre for the Arts in Society. As part of her NWO Rubicon project at the Graduate Center for the Study of Culture in Giessen, she investigates US American imaginations and cultural memories sparked by the 2013-2015 Ebola epidemic on Twitter. While her previous research was in the area of American cultural memory, this is the first time she focuses on memory as mediated through a digital social medium. Polak also regularly writes about American politics, culture and history in a range of Dutch local newspapers, and teaches American literature and culture.

Since 2009 Donald Trump has been a fervent user of the social medium Twitter, well before he became president-elect or was even running for the presidency. Through Twitter users can publish ('tweet') and relay ('retweet') very short messages – with a maximum length of 140 characters. The wealthy businessman and reality television star was already using Twitter for political purposes. The best-known instance is his role as leader of the – online loudly present – 'birther movement', which falsely claimed that president Barack Obama was born outside of the United States.

Another phenomenon that was very visible on Twitter – and in which Trump was also highly involved – revolved around the Ebola epidemic in West Africa, and the ensuing 'Ebola scare' in the United States between 2013 and 2015. When a Liberian man who carried the virus, but was not yet experiencing symptoms, entered the United States in the fall of 2014, Trump tweeted: 'The Ebola patient who came into our country knew exactly what he was doing. Came into contact with over 100 people. Here we go – I told you so!' (3 October 2014, @realdonaldtrump). This is just

one of a few hundred tweets Trump posted about Ebola patients, whom he claimed were streaming into the country via a "highway" from Africa, and were actively invited by the Obama administration.

The way in which Trump attributed agency and malign intentions to the Ebola patient – who, did not at the time of travel know he was infected – fits seamlessly into a pre-existing tradition of what Priscilla Wald has termed 'outbreak narratives'. Trump's suggestion that Ebola patient 'knew exactly what he was doing' imagines a



# Trump's suggestion that Ebola patient 'knew exactly what he was doing' imagines a 'Patient Zero' ...

'Patient Zero', who is not a victim, but a criminal who deliberately brought his own deadly virus to the United States. Pinpointing a Patient Zero creates a reproachable guilty other, and constructs a narrative within which that person owes their social exclusion to their own behavior. Once you believe there is a culpable Patient Zero, it is no longer morally problematic to exclude, isolate, or deport that person. Trump cast the man he referred to as a criminal or, even, as a zombie-like figure.

Striking about many American tweets and other social media messages about the Ebola epidemic – not only from Donald Trump – is that they mostly employ conceptual metaphors, which activate a network of cultural narratives and associations. The Trump tweet quoted here, for instance, about the patient who came into contact with as many people as he could so as to infect them, fits into a far broader discourse, in which Ebola patients are likened to zombies. Undead creatures, whose purpose it is to spread their own abject disease, and thereby to produce more copies of themselves. The zombie metaphor has very little to do with Ebola, but understanding Ebola as a zombie threat neatly fits into a pre-existing American cultural fascination and anxiety. There are many even more outrageous examples of conceptual metaphors engaged in tweets that use the word Ebola or the hashtag #Ebola. Ebola patients, in American tweets from late 2014 or early 2015, are often compared to vermin, criminals and slaves.

Apparently the epidemic in West Africa sparked associations among groups of American Twitter users

with cultural images and narratives that were not directly connected to Ebola, but which the news of the outbreak did trigger. Some – obviously manipulated – images of Ebola patients supposedly arisen from the dead 'went viral' on social media, to such an extent that they seemed more contagious than the virus itself. That says something about the cultural context in which the news of the epidemic was received, but it also says something more general about how events in the world find a place within the fabric of pre-existing narratives, and how those events in turn can bring particular, previously dormant discourses back to the forefront.

Although intertextuality – the 'conversation' between older and newer literary works – has been studied extensively, the process of how events in the present can revive discourses and narratives from the past has not been studied a great deal. Particularly in the field of social media historical analogies and metaphors that crop up often seem very far-fetched, or even random, but

they are nonetheless very powerful. The same mechanism is visible in social media discourses elsewhere, for instance with regard to the current refugee crisis in Europe. Expressions like 'a tsunami of refugees' and other flood metaphors suggest that the refugee situation is like a natural disaster, in which Europeans are at risk of drowning. Such images, and the narratives based on the frame suggested by the metaphor, have real political implications for the way in which individuals, institutions, and the international community respond to events in the present.

The NWO Rubicon project, which I am currently conducting at the University of Giessen, maps these Ebola metaphors and narratives on Twitter, and figures out how they work. I first aggregate tweets that mention 'Ebola', from the period that the Ebola scare in the US peaked and then let a computer sort these tweets based on the other words in the tweet. This shows what the most prevalent combinations are, and many of these are indeed metaphors that contribute to particular narrative frameworks.

For instance, an often retweeted 'joke' – "What did your last slave die of? Ebola." – creates a baffling connection between two seemingly completely different issues. It suggests that Ebola specifically targets Black West Africans, as did transatlantic slavery centuries ago. Most enslaved African Americans in the United States had originally been captured or bought in West Africa, where the Ebola epidemic occurred in 2013-15, but there is obviously a massive time gap between the abolition of slavery in 1863 and the Ebola epidemic. The seemingly illogical association between dying of Ebola and dying as a slave is only legible if we accept the notion that, like slavery, Ebola can only afflict West Africans. This frame implies that the white Twitter user, who is posing in the tweet as a slave owner, is protected against the disease by their whiteness. Other tweets that refer to slavery go even further, suggesting for example that the threat of an Ebola epidemic is a form of revenge from West Africans to punish the United States for its slavery history. Or they urge African Americans to be grateful for their transatlantic slavery past, because they would otherwise have contracted Ebola.

While I am sure such tweets – especially if they have had a wide reach – are telling about what could be termed the cultural imagination of particular groups and networks in the United States, it is hard to assess precisely how to weigh them and how to understand Twitter expressions in general. It is tempting to see Twitter as a giant repository of often crude, off-the-cuff thoughts and comments, allowing a peek into the collective unconscious. But even leaving aside

the question whether such a thing exists, Twitter is also a medium that, like other media, influences what is communicated through it. It invites particular observations or jokes more than others, and its elusive algorithms steer what is seen most often. While it is called a 'social' medium, it really is – like other supposedly social media – a commercial medium with its own commercial, and as part of that hidden, logic.

However, in the now emerging Trump era, it is crucial both to understand Twitter as a medium, and to grasp the ways in which it reflects, and perhaps generates, cultural narratives around events in the present that re-

appropriate older cultural memories and metaphors. However wrong or offensive Trump's and others' tweets may be, they represent a force in current-day society that is extremely powerful, and needs desperately to be better understood. —

...  
who is not a victim, but a criminal who deliberately brought his own deadly virus to the United States.

# The success of the Islamic Empire.

The Middle East is the cradle of human civilisation. It's also home to one of mankind's most ambitious and maligned forms of mass organisation, the empire. In 5,000 years the region has seen what must be a record number come and go, from the Akkadians, Babylonians, Neo-Assyrians, Medes, and Persians to the Seleucids, Parthians, and Byzantines, not to mention frequent irruptions by other people's empires, including Romans, Mongolians and Ottomans, all the way up to the British and French. All applied their own formula to the complex and bloody task of melding disparate populations into a coherent political whole; all have joined, with Nineveh and Tyre, Kipling's vanished "pomp of yesterday".

## Petra M. Sijpesteijn

Petra Sijpesteijn is professor of Arabic language and culture. Her research concentrates on recovering the experience of Muslims and non-Muslims living under Islamic rule, using the vast stores of radically under-used documents surviving from the early Islamic world. She is currently heading a large research project that aims to explain the success and cohesion of the Islamic Empire, which is made possible through an ERC Consolidator Grant.

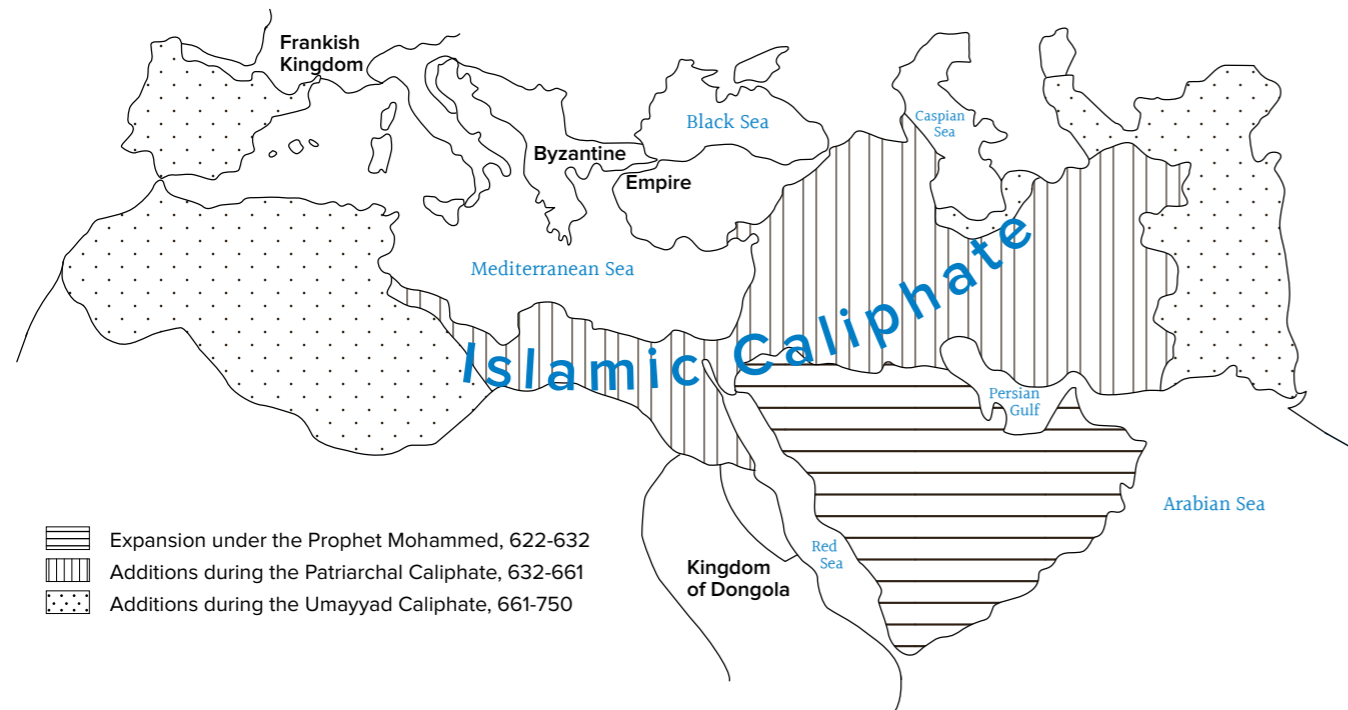
All except one: the Islamic Empire. As a political unit – in terms of both its geographical extent and duration – the success of the Islamic Empire was remarkable enough. Even more remarkably, while the political structures that bound the Islamic Empire together have long since unravelled, the language, religion and culture that the empire left behind continue to define the region in every conceivable way. It is one of the very few empires – perhaps the only one – for which there exists widespread nostalgia, and it remains the prevailing organisational benchmark in the Middle East today, its memory

resonating in movements as diverse as pan-Arabism and extremist caliphal revivalism. As a political ideal and locus of identity, it continues with astonishing vibrancy to this day.

What was it that made the Islamic Empire so uniquely resilient and successful? How did the Muslims forge a disparate mosaic of conquest societies into a coherent and durable Muslim polity? What accounts for the Islamic Empire's success, where so many before it had failed? The mystery only deepens when one considers Islam's origins. The world of the Arabian peninsula from



## Age of the Caliphs



Map showing the various stages of expansion of the Arab Empire

which Islam sprung, although less of an isolated backwater than once thought, was a loose confederation of trading posts organised around kinship and tribe, with little to no experience of bureaucratic structures, complex diversification or large-scale mobilisation. The apparatus of empire had to improvise.

It had to be improvised at speed, because the Islamic Empire was not centuries in the making. Its core lands in the Middle East were assembled in a mere twenty years. Eighty years after the prophet Muhammad's death (632 CE) its territories stretched from the Atlantic seaboard to the Indus. Such rapid expansion might suggest overreach – a recipe for structural

weakness and long-term decay. But it's a remarkable fact that every one of the countries now comprising that expanse remains Muslim, and – with the exception of Iran and Central Asia – Arabic-speaking.

While the astounding speed of these conquests has inspired a stream of scholarly studies, the much more complicated question of how the Arab conquerors managed to transform these victories into a lasting political empire, has not received similar attention. And yet this is the real story. Rapid conquests, even within one ruler's lifetime (Alexander the Great, Genghis Khan), have occurred before, but the empires thus created were charismatic, and more often

than not, fell apart as soon as the charismatic conquering ruler had died. Islam's generals, by contrast – Abu Bakr, Khalid ibn al-Walid, 'Amr ibn al-'As – are barely known outside specialist circles. The Islamic empire transcended the force of personality. Its appeal was based on something deeper and more enduring, and resonated with a broad and diverse array of peoples. Muslim territories encompassed not just a multitude of ethnic groups and religions, but also a bewildering variety of languages, including Greek, Persian, Berber, Coptic, Aramaic, Syriac and Armenian, to name just the most prominent. So how did the Arabs pull it off? How did they manage to unite and administer such a sprawling

agglomeration, where imperialists of much longer standing had failed? Or, put more precisely, if no empire can survive without the support, or at least acquiescence, of its subjects, how did the Islamic empire win that support and convince its inhabitants that being part of the empire was more advantageous than not being part of it – and how did they do so in a way that still speaks to Muslims today?

This is the subject of the ERC project, 'Embedding Conquest: Naturalising Muslim Rule in the Early Islamic Empire (600-1000),' which seeks to understand what the Islamic Empire did – and did differently – to 'bed' itself in so effectively. It's a story that unfolds less on the empire's battlefields and in its corridors of power, than in the day-to-day interactions of its inhabitants. Rather than chart the cut and thrust of the empire's high politics, 'Embedding Conquest' looks at how the empire was experienced on the ground. Scholarship to date has overwhelmingly relied on 'literary' sources in Arabic (e.g. chronicles, legal treatises, theological tracts), composed centuries after the conquests and shaped by court politics at their time of writing. This has created the impression that the embedding of Muslim rule was a top-down process, directed from the centre, built on military coercion and control through administrative systems. 'Embedding Conquest' focuses instead on 'documentary' sources in multiple languages on papyrus, leather and paper from all over the empire (e.g. letters, contracts, fiscal accounts, petitions, decrees, work permits). With their minutiae of daily life documents offer a unique bottom-up perspective onto the empire in which they were produced. It is at this ground roots level that we can start to understand how the inhabitants of the Islamic Empire became part of it, how they participated in it shaping it through interacting at all levels. Three elements seem to be crucial.

First, the Muslim Empire, from the very beginning, showed a remarkable need to explain, and to fix agreements in writing. This emphasis on negotiation was born out of

necessity. Numerically a minority, the Arabs were faced with a wide variety of potential challengers to their power from both within and without. The lack of outright superiority militarily, culturally and numerically, during and directly after the conquest periods, meant other methods of asserting control had to be applied. This does not mean that the conquests were not violent, or that no battles were fought, or that the Arabs didn't resort to violence when they needed to.

# The mystery only deepens when one considers Islam's origins.

Rather it is this reliance on negotiation, on introducing new things within a framework of continuity, which by necessity became the Arabs' trademark. It is also in this way of working, of thinking, that we should look for roots of the success of the early Islamic Empire. 'Embedding Conquest' explores the complex system of negotiation, compromise and improvisation, by which central authorities interacted with provincial interests to maintain compliance and consent amongst their subject populations, how these patterns of negotiation and reciprocity were replicated and adapted throughout the web of social interactions, and how they worked to create a sense of shared investment that held the fabric of Muslim society together.

Next, attention must be paid to the cohering force of Islam. The momentum which carried Islamic imperialism forward was vested in the special qualities of Islam itself, particularly the Muslim community's ease of entry and absorptive potential, conferring an identity that augmented rather than superseded local identities, and providing a universalist context that served to unify and empower. More practically, Islam created a uniform language of behaviour, values and expectations that helped to structure interactions at all levels, providing a platform for exchange and negotiation that could be used – like a common coinage – even by the empire's many non-believers. 'Embedding Conquest' examines how Islam functioned in the empire, less as a series of normative prescriptions than as an evolving platform for the negotiation of power, reciprocity and dependency, and a medium through which to understand rulership, patronage and statecraft. In doing so, the project aims significantly to advance our understanding of the Islamic model of statehood and power, how it built upon and reacted against local traditions, and how it was negotiated in practice.

**The use of Islam to structure and guarantee agreements is there at the very beginning.**

Finally, the project examines how power relations and networks between individuals worked to create social cohesion across the empire. Personal power in the early Islamic empire preceded positional status and institutional authority. Especially important is the web of personal associations through which Islamic rule was propagated, in messages broadcast from the centre that reverberated throughout the empire's constituent populations, only to be transmitted back in a continuous dialogue on the nature and limits of power. These ramified networks functioned as agents of central authority but also, in times of stress, as motors of resistance and dissent, as likely to edit and adapt the caliphal narrative, as they were to propagate it.

In one of the two earliest dated Arabic documents to have survived, an Arab army commander in Egypt acknowledges receipt of 65 sheep requisitioned from the local Middle Egyptian villagers to be slaughtered for the Arab troops. Packed into this prosaic little scrap of text is the image of an entire system. The conquest of Egypt was not even over and the Arabs can be seen already laying in the machinery of bureaucratic accounting and record-keeping. Equally remarkable is the impulse to justify, to explain, and – albeit hardly in a spirit of complete equality – to negotiate, with the text meticulously drafted in Greek as well as Arabic. Implicit too, is the authority of the new religion, planted firmly in the introduction with Islam's formulary signature, "In the name of God, the merciful, the compassionate." The use of Islam to structure and guarantee agreements is there at the very beginning. As is the appeal to personal standing of the unit's captain, 'Abd Allah b. Jabir. We begin to see, beyond the wild-eyed desert horsemen that the conquests stereotypically conjure, how the Islamic empire was really won. —

It's a story that unfolds less on the empire's battlefields and in its corridors of power, than in the day-to-day interactions of its inhabitants.



# The temple of Kellis at the crossroads between East and West in the Roman Empire.

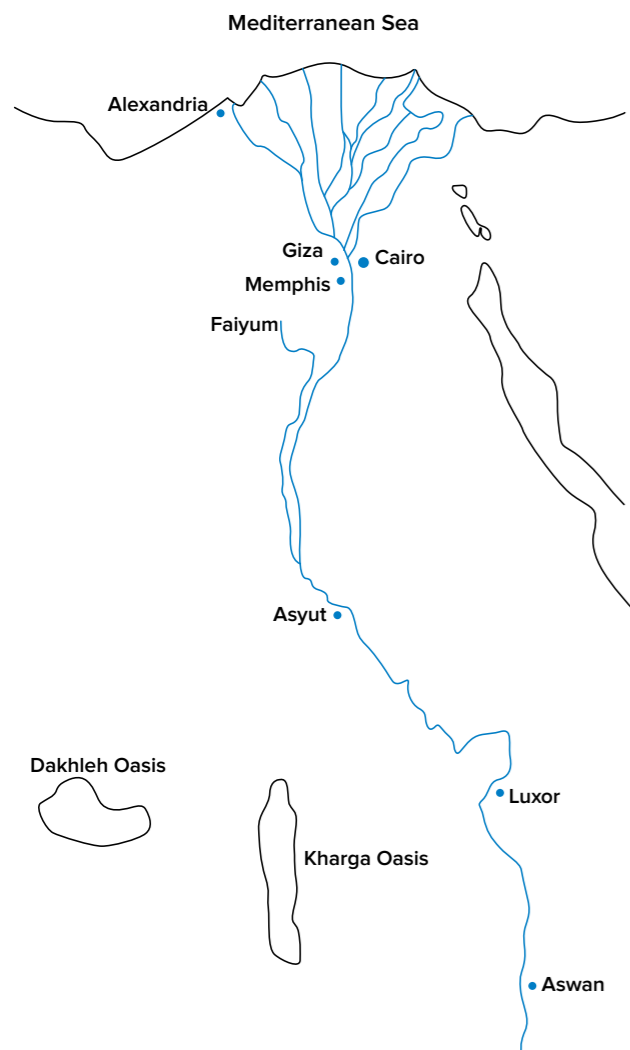
## Olaf E. Kaper

is Professor of Egyptology at Leiden University. He is the guest curator for the exhibition *Queens of the Nile*, currently running at the National Museum of Antiquities in Leiden. Since 1988 he has carried out fieldwork in Dakhla Oasis, Egypt. Work at the Kellis mammisi in Dakhla was funded notably by the Australian Research Council, the Egypt Exploration Society and The Andrew W. Mellon Foundation. In 2017 he will spend three months at the Getty Villa, Los Angeles, as a Research Scholar within the programme *The Classical World in Context: Egypt*.

**In 1991 an astonishing discovery was made in the Dakhla Oasis, Egypt. In this region, far removed from the Nile Valley, expectations were not the highest. But when the excavations started in the location where we expected to find the temple of the village of Kellis, we made a discovery that turned our view of Roman Egypt on its head. Next to the temple was a shrine, which I could later identify as the mammisi or birth temple, where the rejuvenation of the god was enacted, and this building showed a unique kind of decoration. The building was built of unbaked mud bricks, and it was entirely covered in painted plaster. As the only temple known from Egypt, it combines the traditional Egyptian style of temple decoration, with hieroglyphs and images of deities, with Roman style panel painting. Such a mixture of styles is unknown in other Egyptian temples. Based on the style of the paintings, a date in the first half of the second century CE has been determined for the structure.**

The temple was dedicated to the gods Tutu, Neith and the local goddess Tapsais. The stone temple itself survived only in its lower courses because the building had been quarried. There were, however, several mudbrick shrines around the

temple, including the large mammisi. The latter is the best-preserved building in the complex, even though it had collapsed in antiquity. It consists of a single room preceded by a courtyard. The room measures 12 x 4.80 m and it originally had a vaulted



Map of Egypt showing the position of the Dakhla Oasis.

ceiling of c. 5 m in height. After the chapel had been abandoned in the second half of the fourth century CE, the ceiling collapsed and was covered by wind-blown sand. In this state it survived, and our excavations have enabled us to retrieve the full extent of the painted decoration, albeit mostly in small fragments.

We have managed to reconstruct the images, inscriptions and the original layout of nearly all the scenes. Only parts of the west and east walls were too heavily damaged as a result of their collapsed state. A series of large paintings has also been physically reconstructed with the original fragments, with an eye to their future exhibition in a museum, and possibly in a travelling exhibition. In the centre of the rear wall was a relatively small and shallow niche, set in the wall at about two meters height. This was the focus of the shrine, intended for the display of a cultic statue. The rounded top inside this niche contained a white plaster shell motif known from classical architecture. Beneath the niche was a platform upon which the statue or statues could be placed. The front of this platform was painted with a symmetrical design of acanthus leaves, two lotus flowers, and two Eros figures. This essentially classical architectural element was surrounded by images of Egyptian deities and texts written in hieroglyphs.

The only comparable painted plaster decoration with juxtaposed classical and Pharaonic styles is found in some tomb chapels of Roman Egypt. It is possible that the two styles in the Kellis temple were painted by the same artist or group of artists, because the classical style painter incorporated some Pharaonic style elements in his work and vice versa. There are some Egyptian lotus and papyrus flowers included in the classical paintings, and the vaulted ceiling includes a large panel of classical design with a roundel that is held up by four goddesses represented in Pharaonic style, which is a visual reference to the four supports of heaven in the Egyptian tradition. The Pharaonic style painter incorporated a classical style floral spray in the decoration of a doorway that is otherwise entirely in accordance with the Egyptian

tradition. These playful exchanges seem to be significant, because they show that the two artistic styles were not made by different artists working in isolation, but that they worked in close cooperation, if they were indeed different artists at all.

By the Roman Period, the Egypt of the Pharaonic past had been transformed into a largely Hellenized society, with a culture in tune with the rest of the Mediterranean world. Hellenistic culture pervaded all parts of daily life, but the changes seemed to have little impact upon the most conservative sector of Egyptian society: its temples. The priesthood managed to resist foreign influence as late as the second century CE, and, in some places, even longer. Temples continued to be built and there is very little in their appearance that betrays their late date of manufacture. The name of the Roman emperor of the day was inscribed on the temple walls in hieroglyphs, in a script that was no longer known outside of the small group of the priestly elite. This is why the Kellis find overturned our perceptions, because here – for the first time – was an Egyptian temple in which contemporary art forms were introduced.

Apart from the exceptional mixture of styles, the most important feature of the shrine in Kellis is the omission of images of the ruler. Whereas in traditional temple decoration the Pharaoh is absolutely essential, in the Kellis mammisi he has been omitted. The Pharaoh was the crucial intermediary between heaven and earth, between the realms of gods and men, and for this reason even the Roman emperors allowed themselves to be depicted in this role in the temples, dressed as a Pharaoh. The Egyptian paintings at Kellis depict an astonishing number of over 400 images of gods. They contain all the known gods of the Dakhla Oasis itself, as well as the principal gods of all the provinces of Egypt and then some more. But there is no Pharaoh depicted, nor a Roman emperor in that role.

The importance of the Kellis mammisi lies in its appearance, in which the decorators had

taken some bold steps. It seems to be highly significant that this temple lies some 350 km away of the Nile Valley, in a region in which the Saharan trade routes to other parts of North Africa, to the Mediterranean world and to the Meroitic kingdom in the south come together, and these have created a more open attitude towards Egyptian traditional forms. Seen in this light, the Kellis mammisi is an illustration of a globalised society that is in the process of transformation. In this provincial temple of Roman Egypt, the old traditions in art and iconography were still essential for depicting the ancient gods, but it was combined with more contemporary imagery, while omitting all reference to the political ruler. It seems that the smaller provincial temples could serve as an experimental testing ground because they possessed more freedom to adapt.

The Dakhla Oasis functioned as a regular Egyptian province, but because it was geographically far removed from the rest of the country, serving as a hub on several trade routes, it assumed a distinct cultural identity and it claimed more freedom to seek out new artistic forms in temple decoration. An indication of the intercultural inspiration of these changes is the omission of the figure of the Pharaoh in the paintings, which may well be connected to the same feature in the temples of the Isis cult around the Mediterranean.

My current research therefore focuses on the diffusion and reception of ideas between the Egyptian realm and other parts of the Roman Empire, exploring how the classical world interacted with Egypt, and how the archaeology of religion in the Egyptian Western Desert reflects processes of fundamental cultural change. In addition, my study bears on the relation between ancient religions, iconography and material culture. One of my aims for the coming years is writing a monograph and assembling an exhibition in which the material from Dakhla Oasis is presented as a case study of cultural change at the crossroads of East and West in the Roman Empire. —

# T

## Trade-routes through the steppe:

Introducing the Udruh Archaeological Project.

*....'After Jesus was born in Bethlehem in Judea, during the time of King Herod, Magi from the east came....and they bowed down and worshiped Him. Then they opened their treasures and presented Him with gifts of gold and of incense and of myrrh'...*

These magi and their precious gifts from these excerpts of Matthew's Gospel (2: 2, 12) most probably relate to the Nabataean people. The Nabataeans developed from a nomadic tribe living on the desert fringes of present-day Jordan, to an independent state in the last centuries before our Common Era. The basis of their economic, political and military dominion, which covered large parts of the current Middle East, lay in their involvement in the long-distance trade of myrrh and frankincense from South Arabia, the processing of these aromatics and their expertise in water management. The famous rose-red city of Petra – the Nabataean capital – was established at a strategically situated node of caravan routes, and is renowned for its monumental buildings. Archaeological research in the Petra area focused for a long time on its urbanity and monumentality. Although the sedentarisation of

the Nabataeans resulted in an agricultural intensification of Petra's hinterland, this has hardly been of interest for archaeological research for a long time. The hinterland of important centres like Petra can provide however pivotal information contributing to the understanding of their rise, expansion and decline.

The Udruh Archaeological Project (UAP), a joint venture between Leiden University and the local Al Hussein Bin Talal University, aims to initiate the first in-depth research into the development of a complete region in the hinterland of Petra. This project, which is headed by Leiden archaeologist Mark Driessen and his Jordanian colleague Dr. Fawzi Abudanah, started with large-scale field surveys, small-scale excavations and diverse GIS-related and subsurface detection techniques. After five years of predominantly

### Mark Driessen

is a lecturer at Leiden University's Faculty of Archaeology. Supported by the Stichting Van Moorsel en Reinierse and the Dutch Ministry of Economic Affairs, and in collaboration with Jordanian academics, he is currently excavating the site of Udruh; an important 2<sup>nd</sup> century BC site in Jordan, which served as a transit for trade routes to the major city of Petra.



crowdfunded and self-funded campaigns we have been able to reconstruct a significant part of the 48 km<sup>2</sup> Udhruh region. We can state that the region around Udhruh, 12 km east of Petra, was actively exploited in antiquity. Ingenious and elaborate investments were made on the fields of agriculture, water management, caravan and trade services, military dominion, communication and security networks.

The current village of Udruh is dominated by, and centred around, the still standing remains of a Roman legionary fortress. This 4.7 hectare Roman military town was partly built over a smaller Nabataean trade or caravanserai post. The spring of Udhruh was most certainly an important criterion for the choice of location for this post. The strategically position of the southwestern part of these settlements is another apparent reason for starting these on this location. This naturally elevated corner tower of the fortress connects visually to all parts of a regional communication and security network. During our surveys we encountered a chain of watchtowers and fortlets laid out on several hills in the vicinity. The visibility from these hilltops struck us immediately, reaching sometimes an unblocked and clear view of more than 40 kilometres. These intervisibly connected watchtowers were constructed along the north-south trade and caravan route, but also next to the road to Petra. Together with the presence of Nabataean pottery at all of them, this resulted in our hypothesis that these watchtowers were part of a security network guarding and controlling the antique caravan routes through which the fabled treasures were transported.

This chain of communication was reused in Roman and later periods for military and other purposes/means. The Roman authorities decided upon constructing a legionary fortress in the place that was also known by the same name in antiquity. Measuring and reconstructing the visible parts of the curtain wall of these castra – which at some points still stand about 6 metres above the current ground level – is also part of our archaeological field work. The layout and realization of these defensive works and the retrieved architectural elements, which most probably belonged to its headquarter, make clear that the legionary base of Udhruh was definitely of more monumental stature than its counterparts along the limes Arabicus. Functioning as a desert gateway to Petra was most probably one of the reasons for this monumental refurbishment. Collected pottery and stray find coins show that there was most

probably an active Roman occupancy of the settlement throughout the second half of the third century, and a complete building inscription makes clear that the fort was rebuilt in 303/4 CE. This was carried out by the Legio VI Ferrata, for which a large area northeast of Udhruh was quarried. Large rectangular coquina blocks – some measuring around 2 cubic metres – were used to construct the curtain wall.

In Byzantine times Adroh (Udhruh) is mentioned in antiquities sources as a large and important town, and was prestigiously renamed as Augustopolis. In the 5th and 6th centuries bishops of Udhruh are mentioned along bishops of Petra. These indicate that Udhruh had a bishop of its own, and a sign that Petra experienced a gradual process of decline in the 6th and 7th centuries, paralleled by a growth in importance of Udhruh. One of these sources – the Petra papyri – show that, on the basis of the place names, the region was in a process of Arabization well before the conquest by the Muslims. This might be due to the presence of the Ghassanids/Jafnids as clients of the Byzantine state. Archaeological research by means of trial trenches in the fortress underline these transformations in post-Roman periods.

An extra-mural Byzantine church next to the southwestern corner tower was ‘cleared’ and ‘restored’ by local authorities for tourism purposes in the early 2000’s. This clearance was not carried out along the standards we would expect today, with important information having been lost. However, it produced some very interesting Christian inscription in Greek and Arabic. The 12th and 13th century Christian-Arabic inscriptions are quite unique and show that an Arab-Christian community still existed in Udhruh, many centuries after the Muslim conquest. This summer we were able – with financial support of the ‘Stichting Van Moorsel en Reiniere’ – to further investigate this church, its layout, continuity and the religious transformation of this special community. A community that was also chosen to host an important arbitration ceremony between competing Muslim parties of the battle of Siffin, which resulted in the establishment of the Umayyad state in 660 CE.

Although the above makes clear that archaeological research on the site itself is very diverse and stimulating, we put most emphasis on the hinterland during the first years of the project. Already after our first surveys, and considering the previous work done by Fawzi Abudanah,

we realised that the region has great potential for archaeology. Next to the already mentioned security and communication system, it became very obvious that the landscape, with the most southern occurrence of fertile yellow Mediterranean soils, was selected for an active agricultural use. After five years of archaeological field work, we can conclude that the research area around the town of Udhruh is one of the most complete and best preserved field ‘laboratories’ in Jordan to study the long-term development of innovative water management and agricultural systems throughout the Nabataean, Roman, Byzantine and early Islamic periods (2nd century BCE – 10th century CE).

Three different antique agro-hydrological systems can be distinguished in the Udhruh region. The already mentioned perennial source in Udhruh was used to irrigate a patchwork of small fields, which were laid out eastward of the village. Retrieved ceramics date the fields from the Nabataean period and onwards.

In the hilly area northwest of Udhruh a combination of ancient rainwater-catchment and floodwater-harvesting techniques is observed. These terraced fields cover a vast area of several square kilometres and provided surface finds dating from predominantly Nabataean and Byzantine times.

Southeast of Udhruh an impressive network of well-preserved ancient subterranean and surface-water conservation measures and connected irrigated fields – a qanat-system – was recorded in a large flood plain largely covered by alluvial deposits. The basis of these qanats consist of four aquifers or water levels, tapped by subterranean canals which are constructed and maintained through more than 200 vertical qanat-shafts, hacked out of the limestone bedrock over an overall distance of more than 8.5 km. The surface transport of the water is through more than 2000 m<sup>3</sup> of solidly built channels and aqueducts. It accumulates in large reservoirs, with capacities of millions of litres of water, constructed to irrigate an extended agricultural field system with at least 35 hectares of tilled land. It became clear through observations in erosion gullies, small-scale excavations and a combination of non-destructive geophysical ground-based and airborne exploration methods, that the long sustaining Udhruh qanat and field systems are perfectly and quite completely conserved.

Access to water is one of the greatest challenges mankind has to face in the 21st century. Scholars from different fields of research around the world are dealing with the ever-growing demand for water. Ancient societies dealt with similar problems, as can be seen for the Udhruh region where innovative investments in agricultural and water resource management led to a massive transformation of the landscape and turning parts of the desert into green oases. For the Udhruh Archaeological Project we have gathered an international and interdisciplinary research team of scholars that will examine, in close cooperation with the local communities, what the key to this water management and agricultural success was in ancient times.

**It became clear that the long sustaining Udhruh qanat and field systems are perfectly and quite completely conserved.**

Additionally, we hope that the acquired knowledge of the ancient agro-hydrological systems can contribute to sustainable agricultural and water management solutions for the future. So a future gospel will say that the Magi from the east brought a treasure many people can benefit from; the liquid gold: WATER.

# B

## Buddhism in Gandhara and beyond:

Cultural interaction between ancient East and West.

### Marike van Aerde

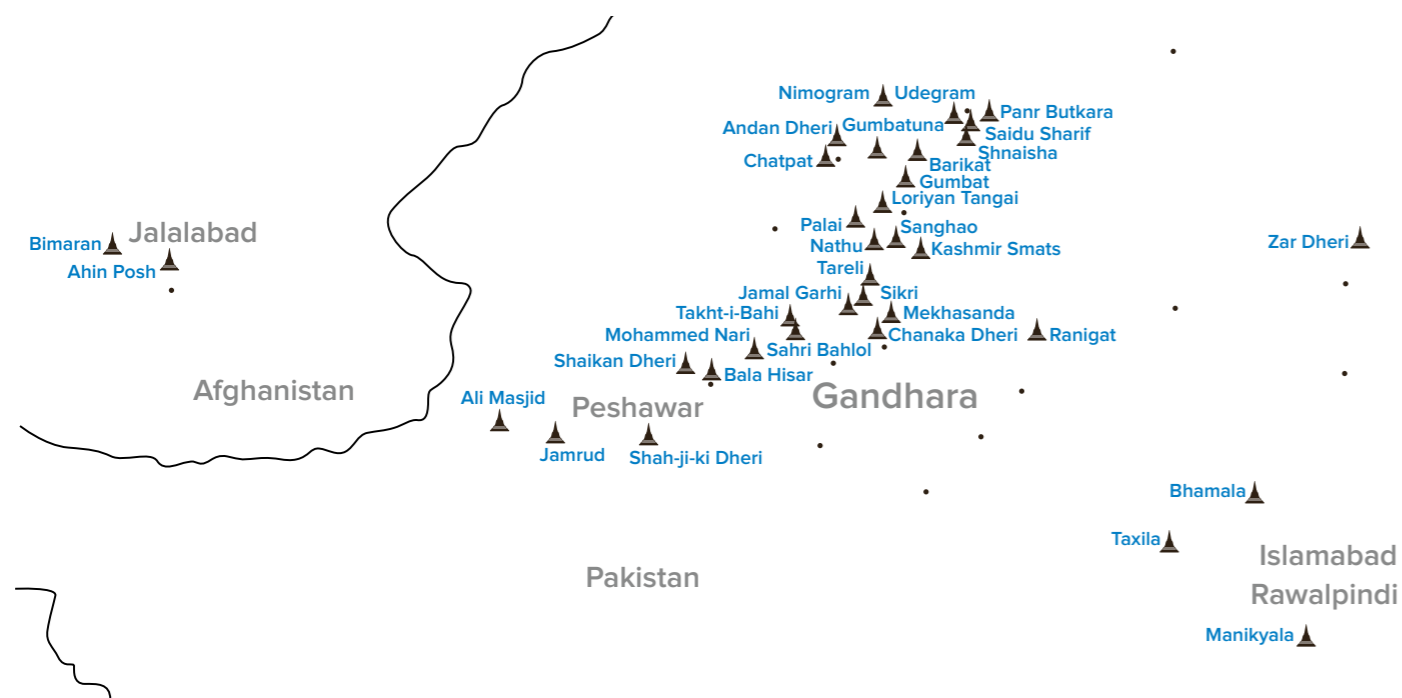
studied Archaeology and Classics at the Radboud University Nijmegen and University College London (UCL), and completed her PhD (2015) as part of the VIDI project 'Cultural innovation in a globalising society: Egypt in the Roman world' supervised by Miguel John Versluys at Leiden University. She investigated cultural interaction between Rome and Egypt, and takes a similar approach in her Postdoc on Hellenistic and Buddhist culture in the archaeology of Gandhara. So far, she has been supported by the Catherine van Tussenbroek Fund and collaborated with the Leiden Archaeology Faculty, the British Museum, and UCL's Institute of Archaeology in London.

**Buddhism is one of the oldest religions in the world, and deeply connected with East and South Asian culture. The man who was to become the Buddha was born as Siddhartha Gautama, the son of a warrior king, in the foothills of the Himalaya in ca. 563 BCE. Buddhism draws on the life and experiences of the Buddha, whose teachings (known as dharma) present a model for life towards enlightenment and freedom from earthly suffering. Some of the earliest Buddhist texts, in the form of the Jataka tales, date from 300-400 BCE, while the earliest known full account of the life of the Buddha – the Buddha Charita – was written by the Indian poet-monk Ashvaghosha in the 2<sup>nd</sup>-1<sup>st</sup> century BCE.**

Buddhism began as a religion of monks and monasteries, founded by the Buddha's original followers. But as the teachings of the dharma spread, the amount of Buddhist monuments and places of worship – usually in the form of stupa burial mounds and Bodhi trees – increased across the area of modern-day North India and Pakistan. So did Buddhist scholarship. Especially the region known as Gandhara, which spread

from modern-day East Afghanistan to Northwest Pakistan, saw a remarkable rise in Buddhist learning and philosophy, which reached beyond the monasteries and began to influence both public and political life. At that time, the Gandhara region was part of the Maurya Empire. Emperor Ashoka the Great (who reigned from 268-232 BCE) became the first political patron of Buddhism, which significantly increased the religion's





Map of Gandhara with its major sites.

spread throughout the Maurya Empire and beyond. Nowadays, Buddhists are a minority in India and Pakistan, but the religion became predominant in both Far East Asia (via China, the Korean peninsula, and Japan) and South Asia (via Sri Lanka, Cambodia, and Thailand). This spread has significantly influenced the material culture of these regions, as archaeological sources from as early as the 2<sup>nd</sup>-1<sup>st</sup> century BCE already show. But this increasingly wide variety of Buddhist culture across Asia – possibly the reason for its widespread ‘success’ – seems originally rooted in the Gandhara region.

Some of the first known anthropomorphic depictions of the

Buddha emerge from the archaeology of this region specifically, and can be dated roughly from the time of Ashoka’s reign onwards. Something quite remarkable seems at work here: these first statues of the Buddha, as a human figure, have so far been widely recognised for their ‘Greek’ or ‘Hellenistic’ style, ever since they were excavated in the late 19<sup>th</sup> to early 20<sup>th</sup> century. Virtually all archaeological campaigns in the region were undertaken by British and French colonial scholars at that time – and their records and interpretations still make up the majority of the (predominantly Western) understanding of these archaeological sources today. These scholars focused deliberately on the ‘Greek’ aspects of these Buddhist

sculptures and reliefs, in order to demonstrate that the arrival of Hellenistic settlers in Gandhara, in the form of the Indo-Greek kingdoms (2<sup>nd</sup>-1<sup>st</sup> century BCE), became a ‘superior filter’ for the existing local Buddhist culture, which became known as Greco-Buddhist art. In the West, Buddhism was seen as a ‘negative’ culture, while the superiority of Greek art was considered irrefutable at that time. This led to many misinterpretations and wrong datings of especially Buddhist archaeology from Gandhara, and the prevalence of so-called cultural containers, where ‘Greek’ and ‘Buddhist’ elements are regarded as signs of separate ethnic categories. Briefly put, Buddhist material culture from Gandhara was considered superior because it

was ‘Greco-Buddhist’, whereas the spread of Buddhist material culture beyond the region was deemed of lesser quality (and therefore of lesser interest) because it could no longer be regarded as Greek craftsmanship. As a result, Greco-Buddhist art has long been (and often still is) seen as an isolated category that was unique to Gandhara, because of the presence of the Indo-Greek kingdoms. But the actual archaeological data suggest something quite different.

The distinct naturalistic style and certain material techniques of many of the Buddhist sculptures and reliefs from the Gandhara region, can indeed be recognised as part of the wider material culture repertoire of the Hellenistic world from the 2<sup>nd</sup>-1<sup>st</sup> century BCE. At the same time, many details (even in the form of distinct facial features), attributes and subject-matters of these objects match descriptions and traditions from Buddhist scholarship and scriptures very closely, and cannot be found anywhere else in the Hellenistic world. Moreover, most examples of so-called Greco-Buddhist art in Gandhara are integral parts of specific Buddhist architecture and monuments, as evident from most surviving excavation reports of Gandharan sites. The evidence clearly shows that these sculptures and reliefs were not isolated objects in a Hellenistic/ Indo-Greek environment, even though most 19<sup>th</sup> century Western scholars did choose to interpret them in that way, as a result of their own predetermined perspectives of both Greek and Buddhist culture. In addition, objects from Gandhara that seemed to lack Buddhist attributes or subject matter were deemed ‘fully Greek’ (e.g., figures of Herakles or Medusa) and labelled as imports

from the Mediterranean, based on style and general appearance only. Even when these objects were originally excavated as part of Buddhist architecture, such as stupa monuments. However, modern-day analyses of material properties have demonstrated that most of these ‘imports’ were in fact made locally in Gandhara, from local stone or bronze. The sites of Taxila, one of the central cities of Buddhist scholarship under Ashoka the Great, and the great stupa monument at Butkara I provide a variety of interesting examples.

## The increasingly wide variety of Buddhist culture across Asia seems originally rooted in the Gandhara region.

More than anything, such new analyses point towards a process of interaction on quite a global scale; the opposite of ethnic categorisation and cultural containers. The archaeological sources show different and often highly flexible layers of material choices, technical skill, subject matter, and (local) contexts that emerged in Gandhara during this time. And this, in turn, points towards an ongoing process of interaction and exchange that seems incited by cultural contact and trade networks throughout the ancient East and West; again, the opposite of cultural isolation and categories according

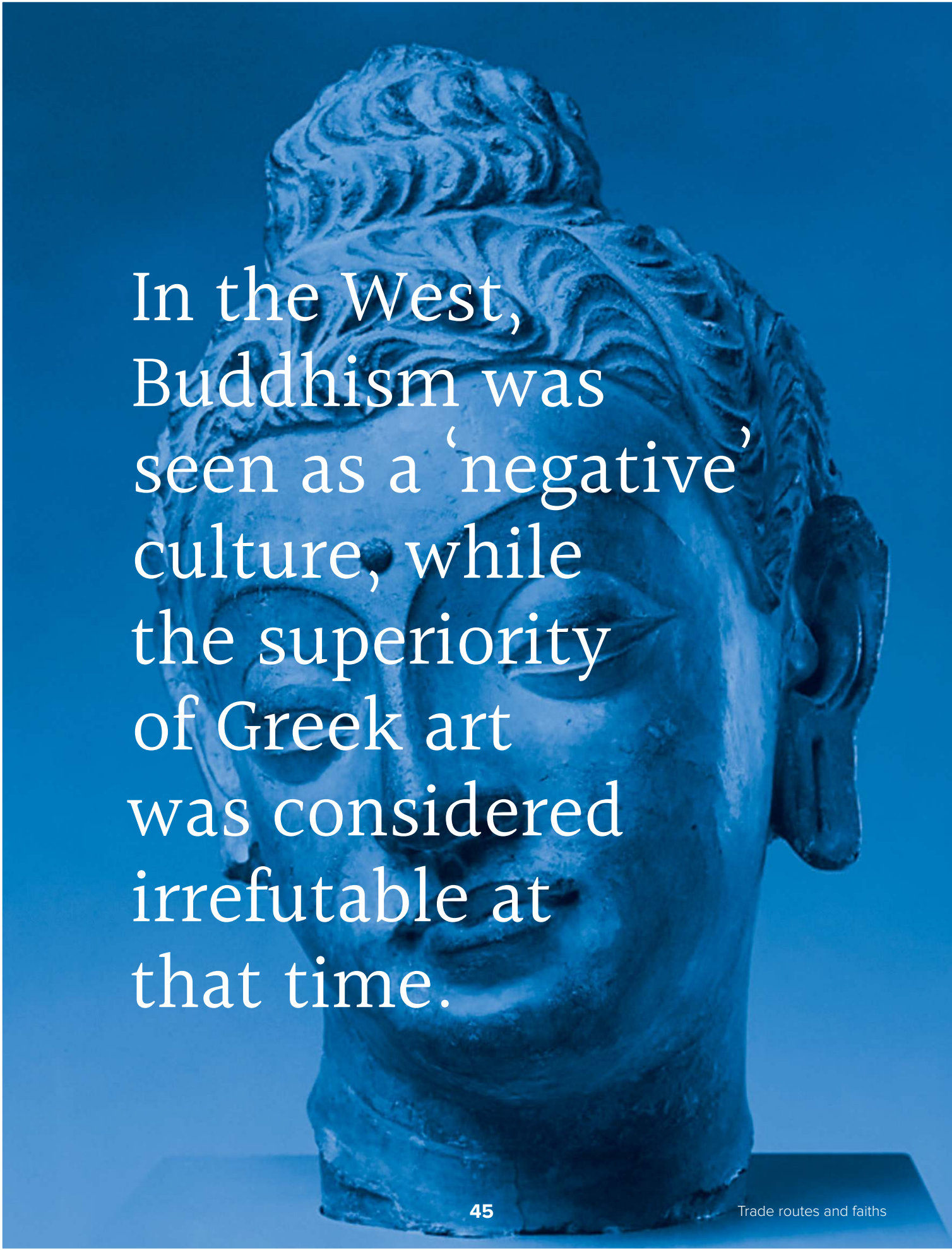
to so-called culture styles. By asking 'What is Greek about Buddhist material culture from Gandhara?' from the onset, we already put categories in place before examining the actual data. More relevant (and interesting) is the question 'How did the flexible interplay work of Buddhist elements and Greek naturalistic techniques that the archaeological data from Gandhara show?' Contrary to studying Greco-Buddhist art from Gandhara as an isolated (and predominantly Greek) phenomenon, this makes us think about the wider scope of cultural interaction, trade, and exchange networks throughout Eurasia. On a practical level, what routes, connections, and processes enabled

**Such new analyses point towards a process of interaction on quite a global scale.**

this kind of interaction in the first place? And why did it become so successful for Buddhism in Gandhara specifically? That subsequently leads to the question how elements from Gandharan Buddhist material culture spread beyond that region, and how they contributed to the large-scale spread of Buddhist culture throughout Asia. Buddhism indeed continued to spread far, towards both East and South, but at its origin it also met and interacted with the West. This process certainly does not appear to have been a clear-cut case of origin

and transmission – and certainly not one of specific cultural 'filtering'. More than anything, the archaeology of Gandhara suggests that Buddhist material culture was inherently layered, flexible, and interactive from its very start. Perhaps that original characteristic enabled, or at least encouraged, its large-scale spread and appropriation throughout the very diverse cultures of South and Far East Asia.

Re-examining Gandharan sites and objects can give us new insights into specific case studies from the archaeological data – but it also reminds us of the potential influence of our own perspectives as scholars. By trying to look beyond the notion of culture containers and ethnic categories, we will be able to look beyond Gandhara, as well. In that way, singular sites and even individual objects can become valuable sources about the widespread interactive networks that seemed to prevail throughout ancient Eurasia and that seem to have convened, possibly in multiple ways, in the Gandhara region from the 2<sup>nd</sup>-1<sup>st</sup> century BCE onwards. On a practical level, this requires a substantial re-examination of archaeological data from both Gandhara and beyond. The often scattered locations of artefacts and incomplete records can provide some challenges, but initial results have already shown that the interaction between Hellenistic and Buddhist elements in Gandhara can be seen as part of a much larger material culture process, which was marked by diversity and flexibility. Subject matter, techniques, material choices, and physical contexts were apparently interchangeably available, depending on the specific requirements for the artefacts and/or architecture in question. Based on these findings, the continuing study of cultural interaction between ancient East and West promises to yield yet many more insights. And, in particular, will expand our understanding of the spread of Buddhist culture beyond cultural categorisation, as well as beyond Gandhara. —



In the West, Buddhism was seen as a 'negative' culture, while the superiority of Greek art was considered irrefutable at that time.



# S

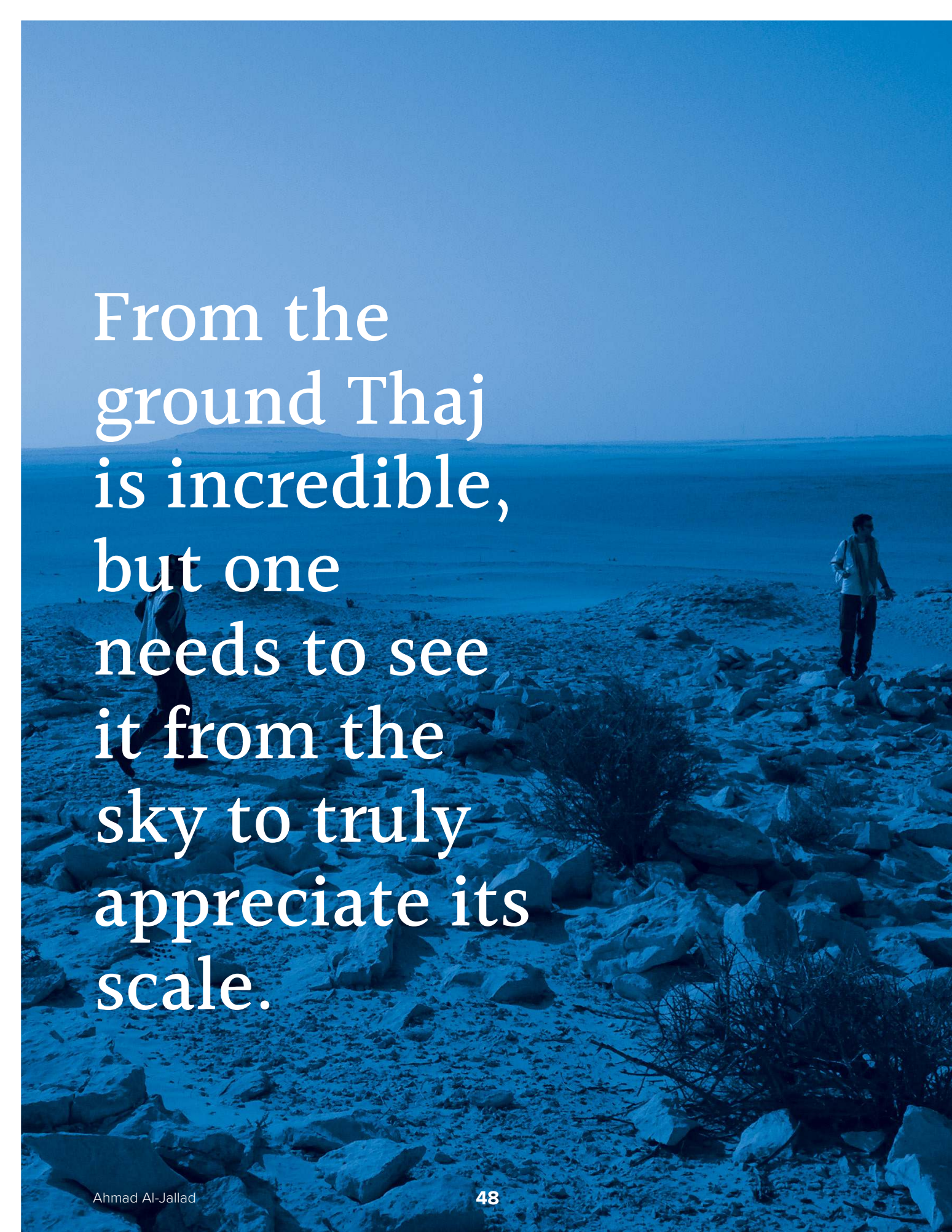
## Searching for Ancient Arabia's Lost City of Salt.

The Thaj Archaeological Project.

### Ahmad Al-Jallad

specializes in the early history of Arabic and North Arabian. He has done research on Arabic from the pre-Islamic period based on documentary sources, the Graeco-Arabica (Arabic in Greek transcription from the pre-Islamic period), language classification, North Arabian and Arabic epigraphy, and historical Semitic linguistics. His notable decipherments include a zodiac star calendar used in the Safaitic inscriptions (Arabian Archaeology and Epigraphy, 2014), the oldest Arabic poem yet discovered (Journal of Ancient Near Eastern Religion, 2015), and the decipherment of the oldest, fully vocalized Arabic text, written in Greek letters (Arabian Epigraphic Notes, 2015). He is the founding director of the Leiden Center for the Study of Ancient Arabia, and co-directs the Thaj Archaeological Project.

Ancient Greek and Latin writers speak of a wealthy and powerful trading kingdom in Pre-Islamic East Arabia called Gerrha. Its capital city was said to be five miles in circumference and its inhabitants, who were said to be Chaldean refugees, dwelt in houses of salt. According to Artimedoros, the Gerrhaeans became the richest of all the tribes and possess great quantity of wrought articles in gold and silver. Gerrha would have been a major hub of international trade between South Arabia, Mesopotamia, the Mediterranean and India following the conquests of Alexander the Great, perhaps as grand as Palmyra or Petra. A major difference, however, exists between Gerrha and the other major trading hubs of the ancient Near East – its location is unknown. The largest kingdom in East Arabia in the Classical period has somehow disappeared under the sands of the vast eastern desert. The Thaj Archaeological Project (TAP) aims to bring into the light of history the pre-Islamic heritage of East Arabia and find the location of the mythical city of Gerrha.



From the ground Thaj is incredible, but one needs to see it from the sky to truly appreciate its scale.

Thaj is the name of the largest archaeological site in East Arabia, located some 90km east of the port city Jubayl on the Arabian Gulf. The significance of the site was first recognized in early aerial photographs, where patterns in vegetation growth patterns, along with ruins visible from the surface, revealed a formidable city wall enclosing an area of 40 hectares. Another 40 hectares of inhabited area exist outside the wall, and a large, mostly undisturbed, necropolis (burial grounds) awaits study. In 1998, Saudi archaeologists excavated one of these undisturbed burial mounds and found a first century CE tomb of a young royal girl, containing burial offerings of gold, pearls and precious stones, including a Hellenistic gold funerary mask. The combination of the site's size, as well as its apparent wealth, have led many scholars to consider this the best candidate for the capital city of Gerrha.

## One of these hidden stones may hold the key to the mystery of Arabia's lost city of salt.

TAP is a major international archaeological effort, initiated by Ahmad Al-Jallad (Leiden University), and led by him and Jérôme Rohmer (CNRS, Paris) in a partnership with the Saudi Commission for Tourism and National Heritage, headed by Mahmoud al-Hajiri. The first season of the mission stretched from October 25th to November 30th, 2016, and four more seasons are scheduled. In order to properly understand a site of this size and its relationship to other major archaeological sites in the region – some of which perhaps belonged to the realm of ancient

Gerrha – the team employed a combination of traditional archaeological methods and the latest, cutting-edge non-invasive techniques.

### Aerial Photography and a Geophysical Survey

From the ground Thaj is incredible, but one needs to see it from the sky to truly appreciate its scale. In order to gain a better understanding of the outline of the ancient city, including residential areas, streets, marketplaces, etc., the team contracted the company FalconViz to carry out a global aerial photographic coverage and 3D scanning of the site. At a resolution of as high as 1cm per pixel, the outline of the structure of the ancient city as seen from the surface has never been clearer. The team did not stop here. Given Thaj's size, the choice of where to dig is critical, as resources and time are limited. To enhance the aerial photography, Dr. Rozan al-Khatib and Paul Calou from the Institut de Physique du Globe of Strasbourg (France) carried out a geophysical survey using a machine that measures magnetic anomalies. Their work revealed a network of streets and structures not visible from the surface. For the first time, we can see what the ancient city at the site of Thaj looked like in detail, and it is grand.

### The Excavations

Based on the aerial photographs, the team opened two areas for excavation, one at an opening in the city wall – thought to be gate – and the second in a densely built area outside of the walled city. The anomalous break in construction in the first area was confirmed to be a gate to the city, but the excavation revealed another feature – a large protruding defensive tower, unique in its design so far. The extramural area required a different approach. The aerial photography revealed a massive, densely built block. In order to further narrow down the area to dig, the first two weeks were devoted to wide horizontal exposure of an area of 600 sq. m, corresponding to the half of an ancient city block. Two soundings uncovered a kiln and what might be a textile manufacturing area – the team

had discovered the ancient city's industrial zone! The study of the pottery from the site revealed several local varieties as well as imports from Mesopotamia and from as far away as India. Finally, the construction of the buildings made use of gypsum, a whitish-gray mineral related to salt.

#### The language of ancient Thaj and its inscriptions

Several inscriptions in a local variety of the Ancient South Arabian alphabet – termed Hasaitic by scholars – have been discovered at Thaj. All of these so far have been gravestones, containing the names and lineages of the city's elite. The language of the ancient city remains a mystery, as the short texts are rather formulaic and contain few examples of grammar. Nevertheless, clear evidence of Aramaic influence can be seen and in fact a few bilingual Hasaitic - Aramaic inscriptions have been discovered, agreeing with the claim that Gerrha was settled by Chaldaean refugees, who may have brought Aramaic with them. The team this year excavated a well containing one such inscription. The text was badly damaged, having spent so much time under water, but what can be clearly made out are the lines containing the date, which reads: year one of ??? the king and may he persist. Was this a local king of Gerrha? Only future discoveries will tell. The presence of a local writing tradition must have been used more widely than just for gravestones. We expect to find in future excavations texts commemorating the construction of buildings, votive, religious inscriptions, and if we are truly lucky, the city's archive.

#### Surrounding sites

The team surveyed surrounding sites as far away as 40 km to the north and south in an effort to understand the relationship of the hinterland to the ancient city. About ten kilometres to the south of the site are three mountains stretching north to south called the Battils. The northern and southern mountains are relatively bare, containing a few prehistoric burial mounds, tumuli, and modern Arabic graffiti. The middle Battil was quite different. On its summit was a great concentration of pottery sherds, numerous as sand, as well as a few burial tumuli. The pottery is identical to that of Thaj and suggests a connection between the two. High places such as these are commonly used for religious rituals in the ancient Near East, and it is possible that the middle Battil was the location of some religious significance to the inhabitants of ancient Thaj. Perhaps more enigmatic

is the major mountain to the north, called Jebel Quwaydiyāt by locals. The mountain contains the ruins of a fortification along its middle terrace, and some cairns, possibly graves, lie on its summit. Pottery similar to that found at Thaj is abundant at the site. 40 km northwest of Thaj, two more fortified mountains, one with clear ruins of structures, were discovered. The relationship between these 'high' places and the site of Thaj is not yet understood and will be a goal of subsequent seasons.

#### Moving forward

TAP's first season reveals a site remarkably similar to descriptions of Gerrha – the ancient city of Thaj was a large and wealthy metropolis involved in international trade. It had a sizable residential area within the defensive perimeter and an industrial zone outside it. Its wealth is demonstrated not only by its size and its impressive construction but also in the burial offerings discovered by the Saudi excavation of a tomb. Its inscriptions reveal a meeting point between Mesopotamian and Arabian influences, perhaps alluding to a Mesopotamian component in the population. Its buildings made use of gypsum, a whitish-gray mineral very similar in appearance to salt.

All of this evidence strongly qualifies Thaj as the lost capital of Gerrha, but conclusive proof remains elusive. In the next season, the team will excavate a massive structure revealed by the geophysical survey in the centre of the ancient city. This may very well be the main temple of the site, which may contain inscriptions indicating the name of the town. We also plan to excavate a tomb, which will shed more light on the identity of the city's ancient inhabitants. Finally, the well containing the bilingual Hasaitic - Aramaic inscription is constructed from finely hewn stones, the types usually employed for the carving of inscriptions, and may have been constructed at a later period from the ruins of ancient Thaj. We plan therefore to dismantle the well to see if the hidden faces of these rocks bear writing. One of these hidden stones may hold the key to the mystery of Arabia's lost city of salt. —

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