

ENTANGLED ECONOMIES

MINING AND AGRICULTURE FROM ANTIQUITY
TO MODERN AGES IN SOUTHERN SPAIN



SEDE OLAVIDE EN CARMONA
RECTORA ROSARIO VALPUESTA



Deutsche
Forschungsgemeinschaft

Programm

Wednesday, April 10

- 9.00 *Welcoming*
- 9.30 Martin Bartelheim, Roland Hardenberg
The concept of ResourceCultures and its application in current research in southern Iberia
- 9.50 *Questions*

TEMA MINING CULTURE TODAY AND CONSEQUENCES FOR THE LANDSCAPE

- 10.00 Manuel Respondek
Art and cultural heritage in an extractive ResourceCulture. The Case of the Cuenca Minera de Riotinto
- 10.30 Esteban Ruiz Ballesteros
Riotinto as a socio-ecosystem

11.00 *Break*

- 11.30 Domingo Carvajal Gómez
The role of mining in the development of sustainable tourism
- 12.00 Juan Romero, Rosa Fernández Díaz
No town that was once a mining town is prosperous

12.30 *Discussion*

13.30 *Lunch*

TEMA LAND USE AND AGRICULTURE UNDER EXTERNAL INFLUENCE

- 15.00 Elena Revert Francés
Phoenician influence on local agriculture and animal husbandry in the southern Iberian Peninsula in the early Iron Age
- 15.30 Juan Manuel Román
The water mines in Carmona
- 16.00 Jaime Vives-Ferrándiz Sánchez, Guillem Pérez Jordà
Farming, connectivity and urbanization in southern Iberia during the first millennium BC

16.30 *Break*

- 17.00 Esther Rodríguez González, Sebastián Celestino Pérez
Following the evidence defining the transition between the Late Bronze Age and the 1st Iron Age in the Middle Guadiana Valley
- 17.30 Eduardo Ferrer Albelda, Francisco José García Fernández
The landscape of Tartessus. Urban networks and economic strategies
- 18.00 *Discussion*
- 19.00 *End*
- 21.00 *Joint dinner in the restaurant “El Molino de la Romera”
 C/ Sor Ángela de la Cruz, 8*

Thursday, April 11

9.15 *Gathering*

TEMA CULTURAL CONTACT AND MINING IN ANTIQUITY

- 9.30 Dirce Marzoli, José Suarez Padilla
The archaic Phoenician presence and its impact in the area around the Strait of Gibraltar: Cerro del Villar and Los Castillejos de Alcorrín as case studies (9th-7th centuries BC)
- 10.00 Ana M. Niveau de Villedary y Mariñas, Charles Bashore Acero, Rodrigo Portero Hernández, Marcos A. Martelo Fernández
The impact of Phoenician agriculture and metallurgy in the southern Iberian Peninsula. The archaic site of Sagasta/Tinte (Cadiz, SW Spain) as a study case
- 10.30 Clara Toscano Pérez
Indigenous, Phoenicians and Greeks in Huelva and Tejada la Vieja through material culture: new data
- 11.00 *Break*
- 11.30 Mark Hunt Ortiz
Mining and landscape in the southwest of the Iberian Peninsula in the Early Iron Age
- 12.00 Juan Aurelio Pérez Macías
Roman mining, landscape and territory in the SW Iberian Peninsula
- 12.30 *Discussion*
- 13.30 *Lunch*
- 15.00 **Excursion through Carmona** with Juan Manuel Román

Martin Bartelheim (University of Tübingen)

Roland Hardenberg (Frobenius-Institute, Frankfurt)

The concept of RESOURCECULTURES and its application in current research in southern Iberia

In the conceptual framework of the SFB 1070 RESOURCECULTURES 'resources' are understood as culturally constructed things which move societies. These resources have value for the societies in question and they can be used to form, maintain, and change social relations and identity-formation processes. In this sense, resources are products of historical and social developments. They develop in certain societies under certain conditions and influence the societies in turn. Their meanings, however, can change depending on time and space, what means that valuations, valorisations, revaluations, and devaluations of things are central aspects in the construction of resources and their social and cultural handlings. As it is understood here, resources as foundations of social life can be both material and immaterial. The decisive factor is that people attribute a cultural value to them for their form of living together. These culturally shaped values and ideas about resources, the cultural practices of handling them and the social identities and formations that derive from the use in time and space are subsumed in the term 'ResourceCultures'.

The SFB 1070 RESOURCECULTURES' research project on the Iberian peninsula «*Cultural Entanglements in the Lower Guadalquivir - Interacting ResourceCultures and Socio-Cultural Change in the South of the Iberian Peninsula*» focuses on long-term developments of ResourceCultures in the south of the Iberian Peninsula. In a first phase, resource use of the Chalcolithic in the coastal area, which is favourable for settlement, and in the dry inland area were compared. The second phase focused on Bronze Age and modern forms of use of different landscape types in the Guadalquivir Valley and the neighbouring Sierra Morena, which were understood as resource structures and were investigated from an archaeological and ethnological perspective. In the current third phase ResourceCultures are investigated and compared that met and influenced each other in this region during the Early Iron Age and the Modern Era.

MINING CULTURE TODAY AND CONSEQUENCES FOR THE LANDSCAPE



Corta Atalaya, Riotinto. Source: Sophia Siegel

Manuel Respondek (Frobenius-Institute, Frankfurt)

Art and cultural heritage in an extractive ResourceCulture. The Case of the Cuenca Minera de Riotinto

It is not the copper, which has been mined on an industrial scale for around 150 years, but the mine itself that is the central resource in the Cuenca Minera de Riotinto. Decades of extractivist activities have also brought enormous changes to the landscape and society: open-cast mines, vast wastelands with industrial ruins, arid, acidic soils contaminated with heavy metals and monocultures. The boundary between the mine, the mining industry and the associated landscape and villages is blurred. The resource has shaped economic, cultural and social life. The inhabitants of Cuenca Minera see themselves as bearers of a "mining culture" and manifest their relationship to their surroundings in painting, literature and poetry, with the characteristic landscape elements serving as leitmotifs for their art. In addition, corporate foundations and municipal administrations define who or what is considered cultural heritage in the Cuenca Minera. At the same time, the population has different views on this and emphasises its own role in the transformation of the landscape in relation to the "foreigners" and the "company". It is therefore up for debate whether the region is a tierra minera, a tierra de artistas, a tierra británica or even a Martian landscape.

My ongoing PhD explores the Cuenca Minera from the perspective of an extractivist ResourceCulture and aims to contribute to understanding the connections between identification, participation and aesthetic sensibility. Cultural heritage and art are possibly the topoi that create identity. The presentation explores people's identification processes with their self-made (mining) landscape and analyses the stability of such a resource culture and examines whether alternatives to resource extractivism are emerging with a view to the future.

Riotinto as a socio-ecosystem

The arrival of the British in Riotinto in 1873 did not mark the beginning of mining or mining culture in the region, but it did introduce very substantial changes in the way the resource and its exploitation were considered. Beyond the technical transformations surrounding mining and mineralurgy, the establishment and development of the Rio Tinto Company Limited (RTCL) generated a qualitative turning point in the configuration of the territory, society and culture in the mining area, the consequences of which can be traced to the present day. The flows of ore and people, the large-scale transformation of the territory, and the establishment of a particular system of power, all combine to generate a new territory in all senses of the word. There is no sphere of life that was not transformed by "the English". It is assumed that they imposed a new logic implemented through a large-scale planning exercise. It is difficult to conceive the impact of all this on the everyday: the transformation in the life of a family from the neighbouring Sierra de la Aracena who settled in the area to work in the mine. The classic confrontation between the rural-peasant world and the urban-industrial world took place in Riotinto much earlier than in other surrounding areas.

The concept of socio-ecosystem can help us to understand in an integrated way the bio-physical-socio-cultural conformation of this region, on which a particular model of human-environment relationship is based. From here we can unravel the ambivalent nature of many of its elements, spaces and contexts, which are both cultural and natural, as well as their transformations over time. From this perspective, we propose a brief journey through the character of the mineral itself, the world of work, food, landscape, social relations, mobility, the way of inhabiting and feeling the region... This socio-ecosystemic view will allow us to trace the continuities and changes, the resistances and recreations in the mining culture and the different contributions that have shaped it up to the present day.

Domingo Carvajal Gómez (Department of Electrical Power and Project Engineering, University of Huelva)

The role of mining heritage in the development of sustainable tourism

The mining industry has been of great importance in the socio-economic/cultural development of many cities, districts, regions, and countries around the world. Society must know of the important role that mining has played in the history and development of humankind, and cultivating this awareness is an important strategy in achieving sustainable mining.

Mining will have a great future if we are able to ensure that society and new generations have a real and positive understanding of what the mining industry has been and the role it will have for a future sustainable society. This is a transcendental role that mining heritage can accomplish. In a mining heritage centre it is possible to see the significant role played by the mining industry in the development of society throughout history.

The situation of the mining heritage of the Spanish part of the Iberian Pyrite Belt (IPB) in the last years has some very positive signs that should have been accompanied by a better economic environment. The mining heritage management has had a very important progress because, have been achieved a high level of awareness by different public and private organizations. Both of them have involved together and this has led a series of new actions aimed at promoting tourism focused on the mining heritage. The IPB has important mining heritage resources to support the socioeconomic development of communities. Also, the reopening of mining activity in the IPB should not be an obstacle to the tourism activity, but on the contrary, the support of the mining companies can facilitate and give financial support for new initiatives.

Juan Romero

Rosa Fernández Díaz

(Ecologistas en Acción)

No town that was once a mining town is prosperous (and neither is the Riotinto Mining Basin)

Mining is an economic activity with an expiry date and, for the communities, it is bread for today and hunger for tomorrow.

Spain has a variety of mining models: abandoned, like several mines in the Sierra de Huelva, active, like the Riotinto mine, or with projects for future exploitation. All have in common abandonment and crisis after exploitation, caused by submissive and univocal specialisation. In the case of Riotinto, industrial waste is the currency with which the mine pays the Cuenca Minera. The mining basin on the contrary declares itself to be "mining and NOT waste" and tries to distance itself from projects based on the marketing of waste that the mine endorses.

In most mining areas, in addition to a social and economic divide, there can be a wake of damage to the environment and health, even with diseases that become embedded in local genetics.

In today's world where we are concerned about limited natural resources and how we will leave our planet for future generations. Care is the axis of coexistence and survival for our species, mining does not fit in and still allows itself to launch hopeful but unverifiable information to improve its position in the stock market, as has recently happened with the E-Lix project of Atalaya Mining in Riotinto.

A radical paradigm shift in mining activity is needed. The Riotinto mine could be a pioneer, but far from it, it is launching a plan for the future of the basin that aims to make the towns more dependent, chaining them to mining as well as to industrial waste - incompatible with their progress and long-term sustainable wellbeing.

LAND USE AND AGRICULTURE UNDER EXTERNAL INFLUENCE



Cattle bull in Sierra Morena. Source: Elena Revert Francés

Elena Revert Francés (University of Tübingen)

Phoenician influence on local agriculture and animal husbandry in the southern Iberian Peninsula in the early Iron Age

The arrival of Phoenician populations on the Iberian Peninsula at the beginning of the first millennium BC, but specially their interaction with the local populations, has been an attractive subject for research for decades. The exoticism aroused by the representations of oriental deities, together with innovations in metallurgy, architecture and ceramic ware, have inspired much research, both in the past and today. Agriculture and animal husbandry, as central pillars of the peninsular Iron Age economy, were surely influenced in one way or another by these Phoenician populations. Research on plant and animal species brought by these new populations seems to have experienced a boost in recent years, especially in botany. But these populations not only brought with them plants and animals previously unknown on the Iberian Peninsula. They also brought with them new ideas and customs, new ways of exploiting agricultural resources which, it seems, did not penetrate with the same rapidity in the native populations. The archaeological reflection of all this is what we intend to investigate in this project, taking as case studies the introduction of olive cultivation and oil production, as well as the breeding of cattle. Here we present the interest that lies behind this project, the methodology used to approach the subject of study and the results we hope to obtain.

Juan Manuel Román Rodríguez (Local archaeologist,
Municipality of Carmona)

The water mines in Carmona

Water mines are systems of wells and galleries excavated in the subsoil for the collection, channelling and exploitation of groundwater. These hydraulic engineering works, based on Persian qanats, were introduced into the Iberian Peninsula in Roman times and, with various modifications and adaptations, have been used up to the present day.

The cornice of Los Alcores, in Seville, has the ideal geological conditions for the construction of these infrastructures, some of which are known to exist in this area. However, no systematic explorations and studies had been carried out. Since 2016, the City Council of Carmona and the Andalusian Association of Underground Explorations have been carrying out a programme for the exploration and documentation of the existing water mines in the municipality, both in rural and urban areas. The main objective of this work is to inventory, catalogue and provide protection and conservation measures for these underground conduits, built in Roman times and in which different types of heritage values converge.

Guillem Pérez-Jordà (Dept. of Prehistory, Archaeology and Ancient History,
University of Valencia)

Jaime Vives-Ferrándiz Sánchez (SIP-Museum of Prehistory in Valencia)

Farming, connectivity and urbanization in southern Iberia during the first millennium BC

In this presentation, we explore changes to agricultural practices during the first millennium BC in southern Iberia. We suggest that the degree of engagement with Mediterranean networks and differences in socio-political relations led to distinct historical trajectories over time. Broad relations between settlements and the larger environment are investigated with methods aiming at the identification of farming, the production of surplus and the creation of institutions of trade.

In the first part of our presentation, we will look at the adoption of new crops and its long-term consequences. The introduction of crops entailed changes to the organization of production but also created foodways and generated new cultural practices that varied over time and space. This is nicely revealed by the cultivation of grape, that required intensive labour, and the production of wine. Through selected case studies we will ultimately show that connectivity is linked to redistribution and to opportunities to intensify production.

In the second part, we will argue that practices of farming and redistribution are not solely dependent on patterns of geography or location, but also on human agency and mobility with the wider Mediterranean and the stability of political authority. This is key to understanding local trajectories of urbanization, that were by no means homogeneous in the area.

Esther Rodríguez González

Sebastián Celestino Pérez

Institute of Archaeology (CSIC – Junta de Extremadura)

Following the evidence defining the transition between the Late Bronze Age and the 1st Iron Age in the Middle Guadiana Valley

The documentation of a new settlement pattern in the middle Guadiana valley at the end of the 6th century BC, defined by the presence of buildings hidden under burial mounds, has traditionally marked the transition between the Late Bronze Age and the 1st Iron Age in this region of the interior of the Iberian Peninsula. However, this process of change in the territorial order was neither rapid nor abrupt. Thus, in this paper we propose to review the archaeological evidence used to define this transitional period in order to offer a revision of the state of the question in the light of the latest archaeological developments.

Eduardo Ferrer Albelda (University of Seville)

Francisco José García Fernández (University de Seville)

The landscape of Tartessus. Urban networks and economic strategies

The Phoenician colonisation caused profound changes from the beginning of the Iron Age in the region known as Tartessus. One of the most important was the introduction of the city and the urban way of life. This was a long-term process that crystallised in the second half of the 1st millennium BC and was inseparable from other economic, social and cultural processes. In particular, the exploitation of mining and agricultural resources led to the development of territorial structures designed to exploit and market them. These in turn are conditioned by the physical environment, its possibilities and limitations. In this contribution we will focus on the lower Guadalquivir and the geographical units that shape it, trying to analyse on a regional scale the different economic strategies that are deployed in the region and the resulting urban networks.

CULTURAL CONTACT AND MINING IN ANTIQUITY



Roman waterwheel. Source: Wiki Commons

Dirce Marzoli (Deutsches Archäologisches Institut Madrid)

José Suárez Padilla (University of Málaga)

The archaic Phoenician presence and its impact in the area around the Strait of Gibraltar: Cerro del Villar and Los Castillejos de Alcorrín as case studies (9th-7th centuries BC)

The area between the Bay of Malaga and the Strait of Gibraltar, together with Huelva, contains evidence of the first Phoenician presence in the Far West. The study of sites such as Cerro del Villar (Málaga) or Los Castillejos de Alcorrín (Manilva, Málaga) have great potential for studying the relationships established between Phoenician and indigenous societies from the end of the 9th century BC, and for assessing their mutual impact on an economic, social and cultural level. One of the aspects that are beginning to become known at the sites under investigation and in their immediate territory point to the existence of dynamics of intensification and technological innovation of the mining and metallurgical resources, in particular the use of iron, and the presence of traditions of exploitation of copper-based resources with indigenous technology in Phoenician settlements. This points to the need for further research to gain a deeper understanding of the role that these activities played in the settlements and their protagonists. On the other hand, the incipient research carried out years ago on agricultural exploitation in the area around the Bay of Málaga at the beginning of the Iron Age at least allows us to intuit its importance within the economy of the Phoenician settlements and the impact of these practices on the surrounding territory.

Ana M. Niveau de Villedary y Mariñas (University of Cádiz)

Charles Bashore Acero (University of Madrid)

Rodrigo Portero Hernández (University of Salamanca y IIIPC)

Marcos A. Martelo Fernández (University of Cádiz)

The impact of Phoenician agriculture and metallurgy in the southern Iberian Peninsula. The archaic site of Sagasta/Tinte (Cadiz, SW Spain) as a study case

The site of Sagasta/Tinte is the latest sector to be discovered that belongs to the archaic settlement of Gadir, currently located under the modern city of Cadiz.

Despite the archaic phase being partially affected by the roman phase that levelled the area, it was still possible to document an area dedicated to metallurgical activities that has been dated towards the end of the IXth and beginning of the VIIIth century B.C. through radiocarbon dating. These metallurgical remains include subproducts and elements related to different phases of the production cycle, and makes it one of the most significant metallurgical discoveries belonging to the archaic phase of the ancient city of Gadir. Archaeometric analysis has allowed for the identification of different technological processes linked to copper-based metallurgical production. This discovery sheds new light upon the economic importance of this activity during the earliest moments of Phoenician presences in the south of the Iberian Peninsula.

Furthermore, the presence of animal remains with traces of having been consumed are also indicative of maintenance activities at the site. The archaeozoological and taphonomic study of faunal remains belonging to mammals, birds, fish and molluscs are indicative of the economic importance of husbandry and the exploitation of marine resources in archaic Gadir. The analysis of the remains belonging to mammals indicate that ovicaprid, together with bovine husbandry, constitute the basis of the carnic diet at the site of Sagasta-Tinte, and follows the general parameters seen in other Phoenician sites belonging to the same period.

Clara Toscano Pérez (University of Huelva)

Indigenous, Phoenicians and Greeks in Huelva and Tejada la Vieja through material culture: new data

Our presentation at the workshop "Entangled Economies: Mining and Agriculture from Antiquity to Modern Ages in Southern Spain" will focus on the interaction of indigenous people and Phoenicians in two key settlements during the Tartessian period: Huelva and Tejada la Vieja (Escacena del Campo, Huelva).

Traditionally, a greater emphasis has been given to the Phoenician presence in Tejada La Vieja and a greater indigenous presence in the city of Huelva, which could be justified by a different main economic activity.

In order to corroborate or refute this starting point, a comparative analysis of the material culture will be carried out, taking into account both the presence and absence of artefacts and ecofacts that are fundamental for the development of different economic activities.

With the information we currently have, we will try to answer the changes in the landscape as a consequence of the increase in mining-metallurgical activity in the Iron Age. It is also essential to establish the question of roads within the landscape, as this will help us to understand the direct relationship between settlements.

This information is supported by the results of the analyses carried out as a result of the excavation campaigns carried out in recent months, both in the city of Huelva and in Tejada la Vieja. Of particular note are the results of the analyses of the slag and some metals from both sites, as well as those of plant macro-rests and lipids.

Juan Aurelio Pérez Macías (University of Huelva)

Roman mining, landscape and territory in the SW Iberian Peninsula

We present in this study the results of the latest research about the Roman mines in the SW Iberian Peninsula. Taking into consideration the natural landscape altered by the effects of leached acid water from oxidized ore masses, we also study the impact inflicted by the mines and metallurgy caused by the Roman exploitation, as well as other modifications of the landscape derived from the occupation of the environment to build towns, cemeteries and roads. Finally, we discuss about the territorial organization of this mining area and its relationship with other mines exploited in Roman times at the Iberian Pyrite Belt.



SFB 1070 RESOURCECULTURES

Organization:

SFB 1070 RESOURCECULTURES

Project A 02: The Use of Landscape as a Resource and Socio-Cultural
Change on the Iberian Peninsula

Prof. Dr. Martin Bartelheim

Prof. Dr. Roland Hardenberg

Dr. Elena Revert Francés

Manuel Respondek

Sophia Siegel

Location:

Sede Olavide en Carmona, Rectora Rosario Valpuesta

Casa Palacio de los Briones

C/ Ramón y Cajal n° 15

41410 Carmona

Seville, Spain

Dates:

10/04/2024 -

11/04/2024

EBERHARD KARLS
UNIVERSITÄT
TÜBINGEN



FROBENIUS-INSTITUT
FÜR KULTURANTHROPOLOGISCHE FORSCHUNG
AN DER GOETHE-UNIVERSITÄT FRANKFURT

Universität Tübingen

SFB 1070 RessourcenKulturen

Hölderlinstr. 12 · D-72074 Tübingen

www.sfb1070.uni-tuebingen.de