International Symposium

Jomon Transitions in Comparative Context: complexity, materiality, ritual and demography among prehistoric complex foragers in Japan and Europe

11th-12th January 2019,
Cambridge

PROGRAMME AND ABSTRACTS

SAINSBURY INSTITUTE
for the Study of Japanese Arts and Cultures
セインズベリー日本藝術研究所

Centre for Archaeology and Heritage

UEA

International Symposium

Jomon Transitions in Comparative Context: complexity, materiality, ritual and demography among prehistoric complex foragers in Japan and Europe

11th-12th January 2019,

Cambridge

Dates: January 11-12 2019（Stonehenge excursion on 13th）

Venues: Cambridge (with associated visit to Stonehenge)

Organisers: Sainsbury Institute for the Study of Japanese Arts and Cultures and the University of East Anglia, Akita International University, University of Cambridge, and Waseda University

Objective

This international symposium sets recent work in Jomon archaeology in a comparative context, in particular relating to the later Mesolithic and Neolithic of Europe. It forms part of a series of events leading to an exhibition exploring Japanese resonances with Stonehenge planned for 2020.

Jomon

The Jomon cultural tradition lasted for over 13,000 years in the Japanese archipelago, until displaced by the metal-using, rice-growing societies of the Yayoi period. Recent advances in Japanese archaeology, combined with developments in social and life sciences, have revealed a rather more complex image of Jomon social change than previously understood.

Jomon ***organisational complexity*** in settlement and subsistence reached its peak in the Middle Jomon (c. 5000-4000 cal BP), but ***social complexity*** became most highly developed in the Late and Final Jomon (around 4000-2800 cal BP). Evidence for these changes and different forms of complexity include: communal and ritual buildings, grave goods, elaborate pottery and the production of prestige artifacts. These traits are often regarded as being typical characteristics of ***complex foragers***, and are interpreted as relating to rituals, feasts for the ancestors, and the social bonds of clan society. This ***Jomon complexity*** is regarded as underpinning cultural resistance to

incoming agricultural society with the advent of the subsequent Yayoi period.

This conference will explore the transitions to complex society during the later Jomon period from various perspectives, and the theoretical contribution of Jomon studies to world prehistory. Presentations will also address the mechanisms of change that led to the end of the Jomon tradition, as a case study in the archaeology of how complex foragers conceptualise and contend with change, whether resulting from internally-generated drivers or external influences.

The conference will explore the following themes:

- new Jomon studies that rethink more traditional hypotheses/narratives of 'cultural stagnation' and 'resistance to change';
- the reasons behind the apparent enhancement of ritualised practices and behaviours, in particular stone monuments such as stone circles, and burials;
- changes in settlement patterns and occupational practices (e.g. apparent decrease in the numbers of buildings and residential settlements);
- developments in the understanding of later Jomon demography, including genetics;
- how the end of the Jomon period was manifested through changing engagement with the material world, and expressed through material culture (for example dogu).

PROGRAM COMMITTEE

Simon Kaner (Chair)
Sainsbury Institute for the Study of Japanese Arts and Cultures
and Centre for Japanese Studies, University of East Anglia**,** UK

Liliana Janik
Department of Archaeology
University of Cambridge, UK

Ryuzaburo Takahashi
Department of Archaeology, Faculty of Letters, Arts and Sciences
Waseda University, Japan

Yo Negishi
School of International Liberal Studies
Akita International University, Japan

PROGRAMME

Thursday 10th January

Arrivals and check-in at Selwyn College, Cambridge
19:30: Informal dinner at Club Polonia (231 Chesterton Road, Cambridge)

Friday 11th January

Venue: Chatwin Room, Selwyn College, Cambridge

08:45-09:00: Welcome and introductory comments
09:00-09:30: Simon Kaner – *River societies and stone circles in the Jomon and the Neolithic*
09:30-10:00: Ryuzaburo Takahashi - *Archaeological implications for the emergence of the clan system in the Late Jomon*
10:00-10:30 Tohru Miyao - *Stone circles of the Jomon period in the Japanese archipelago*

10:30-11:00 Coffee Break

11:00-11:30 Nick Card - *The Neolithic of Orkney: recent research*
11:30-12:00 Yasuhiro Taniguchi *Ancient DNA analysis of Initial Jomon skeletons and bioarchaeological research in the Iyai project*
12:00-12:30 Yamada Yasuhiro - *Consideration of Mass Secondary Burials in the Jomon period*

12:30-13:30 Lunch break

14:00-14:30 Enrico R. Crema - *Reconstructing Jomon population dynamics: challenges and perspectives from Eastern Japan*
14:30-15:00 Charlotte Damm - *Demographic patterns amongst Hunter-fishers in Northernmost Europe 5500-1500 BC*

15:00-15:30 Tea break

15:30-16:00 Andrew Meirion Jones - *Making a Mark: assembling communities in the Middle Neolithic (c.3400-2900 cal. BC) and the visual imagery of Neolithic Britain and Ireland*

16:00-16:30 Ann-Katrin Meyer – *The introduction of pottery in the final Mesolithic Ertebølle Culture – current state of research and new perspectives*

16:30-17:00 Yo Negishi, Kenichi Kobayashi, Masataka Hakozaki (the latter two are not attending) - *Settlement Dynamics and Climate Change in the Final Jomon Period*

17:00-17:30: Liliana Janik, Emilie Green, Allesandro Ceccarelli with Naoko Matsumoto, Ryuzaburo Takahashi and Masato Nishino - *Connecting the Landscape: Materiality of Substance*

18:30 Drinks Reception – Newnham College

19:00 Conference Dinner – Newnham College

Saturday 12th January 2019

Venue: Chatwin Room, Selwyn College, Cambridge

08:45-09:15 Minoru Yoneda - *Contrasting patterns of human diet from Jomon to Yayoi: Isotopic analysis of human remains in Central Japan*

09:15-09:45 Hiroki Oota - *Ancient genome analysis of human remains in Japan*

09:45-10:15 Junzo Uchiyama - *Monumentality in the Jomon Japan: Landscape management of stone circle structures during the period of socio-economic instability in Neolithisation*

10:15-10:45 Chris Gillam - *Jomon Landscapes, Cultural Dynamics and Pro-Social Archaeology: Views from Toyama Bay and Mt. Fuji*

10:45--11:00 Tea Break

11:00-11:30 Duncan Garrow - *Structured deposition revisited: giving meaning to Neolithic pits*

11:30-12:00 Lesley McFadyen - *The tempo of life - the chord to occupation across Early Neolithic pit and long barrow sites in southern Britain*

12:00-12:30 Heather Sebire - *Stonehenge 100: Managing a global prehistoric icon in the 21st century*

12:30-13:00 David Dawson - *Gold from the Time of Stonehenge: Wiltshire Museum and the World Heritage Site*

13:00- 14:00 Lunch

14:30 – Depart for Devizes

c. 18:00 Arrive Devizes and check into Bear Hotel
19:30: Dinner at the Bear Hotel

Sunday 13th January

c. 10:00: Depart for Stonehenge
11:00: Arrive Stonehenge
13:30: Depart Stonehenge
c. 17:00: Arrive London Heathrow

ABSTRACTS

River societies and stone circles in the Jomon and Neolithic

Simon Kaner
Sainsbury Institute for the Study of Japanese Arts and Cultures
and Centre for Japanese Studies, University of East Anglia, Norwich, UK

This paper explores the ways in which rivers provide structuring elements within the landscape for societies in Jomon Japan and the European Mesolithic and Neolithic. Drawing on research undertaken as part of the Shinano-Chikuma Rivers Project, which is investigating the long term occupation of landscapes along the longest river drainage in the Japanese archipelago, we explore how such inhabitation of riverine environments can be placed in a comparative context. Examples will be drawn from the British Neolithic, where recent work at Stonehenge has demonstrated the importance of the River Avon, and further afield in continental Europe, where major rivers such as the Danube and the Rhine have long been regarded as important conduits for the spread and development of the Neolithic. Particular attention will be paid to the relationship between areas of settlement, monumental complexes and rivers in both regions.

Archaeological indicators of the emergence of clan systems in the Late Jomon period

Ryuzaburo Takahashi
Waseda University

Many archaeological records collected in the Japanese archipelago so far have indicated that from Middle phase to Late phase of the Jomon period, a great social transformation occurred, mainly in the northern part of Japan. The most important and remarkable change was the collapse of large circular settlements into the dispersed small-scale settlements during the later part of the Middle Jomon period. At the same time, religious materials such as clay figures (*dogu*) and large stone rods came to be found in many sites. Drastic change continued into the earlier part of the Late Jomon period, including the emergence of new forms of large semi-subterranean buildings near settlements and the collective rearrangement of human bones in a

single burial pit. Clay figures, both anthropomorphic and zoomorphic , along with special shaped pedestalled pottery as well as stone rods are most commonly found in these large semi-subterranean buildings. The structural features of the large buildings and the archaeological materials found within them strongly suggest that magical and ritual activities related to feasts for ancestors played important roles in Late Jomon society.

Recent mtDNA analysis on the human skeletal remains found in the collective burials at Nakazuma Shell Midden site has suggested that in the early part of the Late Jomon period, a matrilineal descent system was established (Shinoda et al 1999). The collective assemblages of human bones are thought to reflect specific clan members from the site. The totemic religion and social structure observed in the archaeological context of five kinds of zoomorphic figures and their geographical distributions in the Late Jomon are also thought to be good indicators for the emergence of a clan system in the latest part of the Late Jomon. The clan-based social structure was of crucial importance for the further social development and social complexity in the Jomon.

Stone circles of the Jomon period in the Japanese archipelago

Tohru Miyao
Niigata Prefectural Museum of History

Stone circles, a type of monumental structure made of rock, are a form of cultural heritage found in various different cultures. Stone circles were constructed during the Jomon period when the Japanese archipelago was inhabited by sedentary hunter gatherers. N.G. Munro was the first to introduce the stone circle of Oshoro in Hokkaido in his *Prehistoric Japan* (1908) and suggested that it had elements in common with Stonehenge and other sites in Europe related to celestial observations. A number of stone circles have been found distributed from Hokkaido to the northeastern part of Honshu Island, including Oyu and Isedotai in Akita prefecture, Komakino in Aomori prefecture, Washinoki in Hokkaido and other sites,. However, in central Honshu Island, many stone circles were built at a relatively earlier phase than those in northern Japan. These formed an integral components of the circular arranged settlements with a central plaza in the centre where graves were constructed. The pit dwellings and graves that comprised these circular settlements were not thought to be built in the same phase, and it therefore appears that stone circles at such sites were not

constructed in a short time. It is likely that the spatial structure of these stone circles was created by sequential arrangements of rocks associated with the building of graves. I have analyzed the construction process of stone circles of representative sites in northern Japan: Oyu, Isedatai, Komakino and Washinoki. I have also discussed the process of recognizing the structure of stone circles in four sites (Rokutandaminami, Shimizunoue, Dodaira, and Tsubeta) in Niigata prefecture. Using archaeological methods I modeled the order in which the rocks comprised each stone circle. In addition, I modeled how the graves associated with rocks make up a stone circle through analyzing their mutual positional relationships. Consequently, I consider that stone circles in Niigata Prefecture are constructed according to the same structure as stone circles such as Oyu and Isedotai in Akita Prefecture and others. Therefore I conclude that such remains were mainly burial monuments, and they were managed by each settlement through rituals for the dead.

The Neolithic of Orkney: recent research

Nick Card
University of the Highlands and Islands
and Director of excavations at the Ness of Brodgar

Orkney has always been considered one of the jewels in the archaeological crown of Britain, especially during the Neolithic. In recognition of this World Heritage Status *' The Heart of Neolithic Orkney'* was granted to some of these iconic monuments in 1999 - the stone circles of the Ring of Brodgar and the Stones of Stenness, the magnificent chambered tomb of Maeshowe, and the well preserved village of Skara Brae. This inscription and the subsequent publication of a Research Agenda, has acted as a catalyst for a period of sustained investigation throughout Orkney on a whole raft of Neolithic sites, both known and newly discovered. The combination of survey such as the *World Heritage Geophysics Programme* coupled with LIDAR, excavation, post-excavation and an extensive radio carbon dating programme, has increased exponentially our understanding of the period and subsequently revealed a more complex history for the Neolithic. Previous simplistic overviews for the development of Neolithic society from a landscape dotted with small isolated farmsteads and small chambered tombs to a more dynamic later Neolithic dominated by villages, stone circles and passage graves, is being overturned. Crucial to this reassessment is the discovery and excavation of the Ness of Brodgar, a multi-phased complex of

monumental buildings. Activity at the Ness spans the whole of the Neolithic in Orkney, and is illuminating many aspects of the ebbing and flowing of this dynamic society.

Ancient DNA analysis of Initial Jomon skeletons and bioarchaeological research in the Iyai Project

Yasuhiro Taniguchi
Kokugakuin University

The Iyai rockshelter site, located at 36°33'28" north latitude, 138°38'50" east longitude, in the northwest Kanto region of the Japanese main Island Honshu, lies in a mountainous region near the Joshinetsu mountains. This site is situated at an elevation of approximately 649 m. Among the multiple layers of cultural deposits from Jomon to Yayoi periods, the largest number of finds in the Initial Jomon period is unearthed from this site.

Excavations undertaken from 2014 to 2018 aimed to explore the origins of the human populations of the Jomon period and Jomon culture. In a thick layer of midden deposits dating back to the middle stage of the Initial Jomon (ca.9,000-10,000 cal BP), numerous organic materials including animal bones and plant seeds were excavated. Bioarchaeological analysis is now proceeding in collaboration with specialists in various fields: physical anthropology, zoology, botany, AMS dating and ancient DNA analysis.

The remains of approximately twenty buried human skeletons have been recovered to date. C14 dating has indicated that almost all the burials belonged to the end of the Initial Jomon phase (ca. 8300 cal BP). Of particular interest were specimens, some contracted burials, where the skeletal remains showed that the body was artificially cut off at the pelvis, showing traces of disturbance of the normal anatomical position.

The skeletal remains from the Iyai site showed a good state of preservation. The nucleotide sequence of the whole mtDNA genome (~ 17 kbp) from the No.1 skeleton was successfully determined, which it revealed to be a new haplotype that are belonged to the N9b haplogroup. Further analyses of both mtDNA and nuclear DNA are planned and will make clear the origins of Jomon people and their genealogical position in the near future.

Consideration of Mass Secondary Burials from the Jomon period

Yasuhiro Yamada
National Museum of Japanese History

At the beginning of Late Jomon period (around 4300 years BP) in the Kanto district, especially the east coast of Tokyo Bay, there was a very characteristic grave system with multiple corpses reburied together in the same one large pit. Such secondary burials are found to have some features in common. First of all, they coincided with the appearance of settlements. Secondly, they were situated in special distinct areas of settlements or cemeteries. Thirdly, they contained many male adult skeletons but no young children's skeletons. So far, seven mass secondary burials have been excavated at six sites. This grave system extended far beyond the boundaries of the Kanto region and the Late Jomon. For example, the burials at Sanganji Shell Mound in Fukushima Prefecture and the Yosekura-Iwakage rock-shelter Site at the Taishaku Valley in Hiroshima Prefecture.

In the latter half of Jomon period, large-scale stone-covered burials were built as monuments, and many of them served as the basis for ancestor worship rituals. Apparently, mass secondary burials were developed in the same context. More specifically, in the latter half of the Jomon period, human skeletons and burials became a means of creating new related groups and strengthening their integrity and unity. This resulted in the use of "memorial graves", symbolic monuments for the new groups. The background of this phenomenon was attributed to the view of life and death based on genealogical relationships. Symbolic monuments built for ancestor worship further created new groups and allowed them to prove and reconfirm their legitimacy, or priority right, to claim their land and exploit resources within set boundaries. This was intended to establish a new tradition, which reflected the manifestation of ancestor worship and the significance of such rituals.

Reconstructing Jomon population dynamics: challenges and perspectives from Eastern Japan

Enrico R.
Crema
University of Cambridge

Demography has long occupied a pivotal role in defining key research agenda in Jomon studies; from the striking difference in site density between Eastern and Western Japan prompting Yamanouchi to formulate the *salmon/trout hypothesis* to the Middle Jomon boom and bust in the number of sites and dwellings inspiring ideas such as the *Jomon farming hypothesis* or the notion of a mid-5th millennium 'collapse' and its potential link to concurrent cooling events.

Despite its relevance in constructing these grand-narratives and key hypotheses, the most recent and still widely cited reconstruction of Jomon demography across the entirety of the Japanese archipelago is over 40 years old (Koyama 1978). Subsequent studies have and are still providing more refined chronological resolutions (e.g. from broad millennium-scale periods to century- scale pottery phases) and better proxies (e.g. house counts or floor areas instead of site counts) but are restricted to relative chronologies and limited in their geographic scope. As a result, correlations to climatic changes are never assessed formally, and patterns of regional variation are only qualitatively assessed.

These challenges are not unique to Japanese archaeology, and the last 10-15 years saw the development of alternative ways to infer prehistoric population dynamics such genetic coalescence models, juvenility indices from skeletal assemblages, and summed probability distribution of radiocarbon dates (hereafter SPD). The latter in particular has become widely popular due to the ubiquity and the size of radiocarbon databases, and the possibility to infer population dynamics within an absolute chronological framework. Crema et al (2016) have recently used SPDs to assess divergences in demographic trajectories between Central and Northern Japan (Crema et al 2016) between the Early to Late Jomon periods. This paper will expand from this pilot study and examine a dataset of over 14,000 radiocarbon dates from Eastern Japan. The analysis will provide an opportunity to reassess Jomon demography as well as highlight the limitations and the potentials of SPDs.

Demographic patterns amongst hunter-fishers in northernmost Europe 5500-1500 BC

Charlotte
Damm
Arctic University of Norway, Tromsø

The hunter-fishers of northern Scandinavia, Finland and adjacent regions in Russia have gone through several marked socio-cultural transitions. This paper will focus two of these, dating to around 5000 and 2000 BC respectively. The first is marked by the emergence of several new technologies, including pottery, polished slate, bifacial lithic reduction and a wealth of rock art sites, while the second is characterised by settlements with very large dwelling structures and indications of more or less full sedentism. It is the latter period only that has been perceived as representing complex hunter-fisher communities. Notably the first period appears to precede a phase with more substantial dwellings, while the second period is contemporary with a decrease in the production of rock art. In other words, not all indicators of complexity coincides for any of the periods.

In this paper I discuss the two periods in relation to the environmental background, demographic fluctuations and settlement organisation in order to address the differences between the two periods, and between different regions. The examples discussed will be based on data from Northern Norway.

Making a Mark: assembling communities in the Middle Neolithic (c.3400-2900 cal. BC) and the visual imagery of Neolithic Britain and Ireland

Andrew Meirion Jones
University of Southampton, UK

There are considerable changes in the Middle Neolithic period in Britain and Ireland (c. 3400-2900 cal. BC), marked by a potential shift from sedentary agriculture to pastoralism and the development of new forms of monument (including cursus monuments and burial in round barrows in some regions). During this period in Ireland the great passage tomb cemeteries are developed and populated. In Britain, the period also witnesses a shift from regional artefact styles to the development of artefact forms, such as Impressed Wares, that are common to most regions. Archaeologists have only recently begun to define and grasp the complexities of this period.

Using a suite of digital imaging methods, the recent '*Making a Mar*k' project aimed to reassess the evidence for portable decorated artefacts from three key regions of Neolithic Britain and Ireland: southern England and East Anglia; the Irish Sea region;

and Northeast Scotland and Orkney. For the first time, the project revealed extensive evidence for the practices of reworking and erasure in visual imagery throughout the duration of the British and Irish Neolithic. These practices were particularly significant during the Middle Neolithic period when the links between different regions appear to be intensified. This paper will explore the implications of these practices of reworking and erasure during the British and Irish Neolithic and discuss how they helped to promote connections between different regional communities during the Middle Neolithic.

The introduction of pottery in the final Mesolithic Ertebølle Culture – current state of research and new perspectives

Ann-Katrin Meyer
University of Hamburg

The final Mesolithic hunter-gatherers of the Ertebølle Culture (EBC, ca. 5100 – 4100/3900 BC) of Northern Germany, Denmark and Southern Sweden are the first archaeological culture groups in Northern Europe to make and use ceramic containers. The first securely dated pointed bottom vessels and oval lamp bowls appear on the coastal settlements along the Baltic sea of Northern Germany around 4700 BC. Because of this, and due to a specialization in the exploitation of aquatic resources, the EBC is usually seen as a “complex” society. Despite intensive contacts to the synchronous Southern Neolithic subsistence practices, material culture and settlement patterns remained of a distinctive Mesolithic character throughout the duration of the EBC. Thus, pottery technology is thought to have reached the territory of the EBC not through Neolithic groups but via the Eastern Baltic, where similar hunter-gatherer ceramic traditions existed.

The presentation gives an overview of the current state of research concerning EBC pottery, settlement patterns and land use and introduces the author’s PhD project at the University of Hamburg as well as an ongoing research project at the University of Aarhus. Both projects deal closely with the implications of the introduction and use of pottery technology within EBC societies and their connections to the Neolithization of Northern Germany and Southern Scandinavia.

Settlement Dynamics and Climate Change in Final Jomon Period

Yo Negishi[1], Ken'ichi Kobayashi[2] and Masataka Hakozaki[3]
[1] Akita International University
[2] Chuo University
[3] National Museum of Japanese History

Japanese archaeologists have argued that the transition from the Jomon to Yayoi (the latter being the Bronze Age in the Japanese archipelago) periods was approximately equivalent to a wider period of climate change. Global cooling between 4.3k and 2.8k, which was called the 'Latest Jomon cold stage' (Sakaguchi, 1983), gradually led to the collapse of the social system in the later Jomon period as well as the acceptance of rice-growing culture from the Eurasian continent. Especially in the early half of the first millennia BC, temperature likely changed to a cooling trend over a long time span in East Asia. While recent studies on the development of early domesticated grains in western Japan has supported this scenario, the autonomous reaction to this global cooling by complex hunter-gatherers in the later Jomon period is not well studied. This paper aims to explore the internally-generated drivers of the later Jomon period correlated with global cooling. By focusing on the Kamegaoka culture in Northern Honshu Island, one of the most developed cultural complexes in the Jomon period, this paper rethinks the traditional hypothesis of Jomon 'cultural stagnation', and reconstructs a model revealing how complex foragers contended with climate change. By referring to recent developments of collective AMS dating on various archaeological records and oxygen isotopic dendrochronological records in eastern Japan, we reconstruct detailed dates for each phase and climatic fluctuations in the Final Jomon period. Besides, correlation analysis of settlement dynamics in northern Tohoku region with climate change reveals some new insights: a mostly dispersed settlement pattern and the highest development of settlement complex in the long-lasting cooling phases. Results from the recent excavation (2018) at a large palisaded large settlement site, at Kamishinjyo Junior High School in Akita city, will also be introduced.

Connecting the Landscape: Materiality of Substance

Liliana Janik[1], Emilie Green[1] and Allesandro Ceccarelli[1]with
Naoko Matsumoto[2], Ryuzaburo Takahashi[3] and Masato Nishino[4]
[1]University of Cambridge
[2]Okayama University

[3]Waseda University
[4]Chiba City Archaeology Centre

Contrasting patterns of human diet from Jomon to Yayoi: Isotopic analysis of human remains in Central Japan

Minoru Yoneda
University of Tokyo

The isotope analysis of human bones is a powerful tool to quantitatively reconstruct prehistoric human diet. The transition from the Jomon hunting-gathering-fishing societies to the Yayoi rice-farming societies of prehistoric Japan is an interesting example to consider how hunter-gatherers adopted the new technology, compared with the Mesolithic-Neolithic transition in Europe. In particular, the Tokyo Bay area is one of the best locations to investigate this topic, because the population density of this area was estimated to be the highest in the Middle-Late Jomon, and it took a long time for rice farming to spread to this area. In recent years, we have analyzed a number of human remains from the Middle to Late phases of the Jomon, but the data of the transitional period (i.e. Final phase of Jomon and into the Yayoi) was scarce. In this study, we focus on a series of human remains from the Final phase of the Jomon and Yayoi to estimate the impact of cultural transition from hunter-gatherer-fisher to farmer. The samples of Final phase of the Jomon from the Saihiro shell mound, located in Ichihara City, Chiba Prefecture, showed interesting variability among the inhabitants, but their general dietary habits were probably similar to preceding populations. On the other hand, the Yayoi skeletons from the Ikego site, a typical farming settlement in Zushi city, Kanagawa Prefecture, showed the substantial influence of wet rice in combination with marine resources. Another example from a mountainous area showed Yayoi diet including some C4 millet, which might suggest the spontaneous selection of new subsistence by Jomon people.

Ancient genome analysis of human remains in Japan

Hiroki Oota
Kitasato University School of Medicine

Recently, ancient genome analyses have entered the main stream of studies of human population history by using the next generation sequencer (NGS), especially in Europe[1,2,3], but not yet in Japan, mainly because Japanese geological features are not good for the preservation of ancient DNA. The warmer climate and high humidity have enhanced degradation of DNA molecules in old skeletal remains. In addition, ancient DNA in the Japanese archipelago is affected by acid soil owing to the volcanic nature of the islands.

In order to overcome these difficulties, we recently reported the draft genome sequence (1.85-fold coverage) of a Jomon individual (IK002, 2.5 kya) excavated from the Ikawazu shell-mound site located in the central part of the Japanese archipelago. Our population genomic study including IK002 and 25 ancient Southeast Asians showed a high genetic affinity between IK002 and Hòabìnhian hunter-gatherers (8.0 kya) (McColl *et al*. ***Science*** 2018) [4].

In this talk, I review relevant previous studies of ancient DNA in East Asia, and also focus on the potential power of population genomic study in archaeological sciences, part of Takahashi Ryuzaburo's project (Grant-in-Aid for Scientific Research (A), through which we are investigating genetic diversity among archaeological sites that might reflect transition of kinship between different parts of the Jomon period.

References

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2. Seguin-Orlando, A. et al. (2014) Paleogenomics Genomic structure in Europeans dating back at least 36,200 years. ***Science*** 346, 1113–1118
3. Fu, Q. et al. (2016) The genetic history of Ice Age Europe. Nature 534, 202–205
4. McColl, H. et al. (2018) The prehistoric peopling of Southeast Asia. ***Science*** 361:88–92.

Monumentality in Jomon Japan: Landscape management of stone circle structures during the period of socio-economic instability during the Neolithisation process

Junzo Uchiyama
Sainsbury Institute for the Study of Japanese Arts and Cutlures

Monumental constructions, whether economic, political or symbolic in their origin and use, are integral to how hunter-gatherer-fisher societies have constructed and shaped their worlds. Post-glacial landscapes of the Jomon period in Japan (ca. 16,500-2,900 BP) are marked by two major circular monuments: stone and wood circular monuments.

Even though history and the regional styles vary depending upon the region, the

general tendency is that stone and wood monuments are mainly distributed from central Honshu to southern Hokkaido and, particularly in case of stone monuments, they become large independent sites with a formulated circular style from the late Middle to the Late phases (ca. 5,000-3,300 BP), while stone structures which could be the origin of stone circles appeared from the Incipient and the early Initial phases in the late Pleistocene (ca. 15,000-11, 500 BP). These changes seem to have occurred during the period of major shifts in Jomon socio-cultural systems, in which settlement patterns became decentralized and the dissemination of cultivated plants became increasingly widespread. As all of these changes in monumentality are closely related to the perception, management and alteration of the Jomon hunter-gatherer-fisher environment and cultural landscape, integrated investigations across socio-cultural-environmental studies are necessary.

This paper considers how the Jomon monuments functioned in their socio-cultural system and what subsistence and involved land use patterns led to their development from a broader perspective of landscape management, compared with examples from Neolithic Europe.

Jomon Landscapes, Cultural Dynamics and Pro-Social Archaeology: Views from Toyama Bay and Mt. Fuji

J. Christopher Gillam
Winthrop University, Rock Hill, South Carolina, USA

Prehistoric Japan experienced significant changes in its cultural and natural landscapes over some 30 millennia of human habitation and modification (beginning ca. 34,000 calendar years BP). As an extensive period witnessing fundamental environmental and cultural changes, the Jomon era (ca. 16,000-2,400 cyBP) was dynamic, with sub-periods of relative stability punctuated by episodes of rapid change in lifestyle, material culture, and environmental and cultural setting of these complex fisher-hunter-gatherers. Geographic analyses in Toyama indicate that “early” Jomon foragers clearly targeted ecological edge environments on the landscape that were the most diverse ecotones of the region, particularly the interface of coastal and alluvial plains with the adjacent hills of the surrounding mountain ranges. Conversely, “late” Jomon foragers shifted their land-use to the alluvial and coastal plains, suggesting a potential correspondence with the development of early horticulture. Similarly, Yayoi

farmers continued this shift into the coastal plain, lending some support to this horticultural hypothesis. This research not only explores the development and change in cultural landscapes of Toyama Bay along the Japan Sea, but also provides a prospectus for analyses of the dynamic physical and cultural landscapes of Mt. Fuji near the Pacific Coast and provides a geographic framework for pro-social archaeology in these regions, such as the development of educational cultural heritage corridors, as proposed by Uchiyama (2016, 2017).

Structured deposition revisited: giving meaning to Neolithic pits

Duncan Garrow
University of Reading, UK

The concept of structured deposition is has played a significant role in the interpretation of European prehistoric sites in recent years. This paper will review the evidence for this kind of activity on British Neolithic sites and consider how the detailed analysis of pit deposits can contribute to our understanding of prehistoric complexity.

The tempo of life - the chord to occupation across Early Neolithic pit and long barrow sites in southern Britain

Lesley McFadyen
Birkbeck College, University of London

Why do archaeologists define their studies by types of site? Why start with division - domestic or monumental? Why lead with structural distinction - pit or barrow? What if our point of departure is material culture and the practices that things are caught up in? What if we look more closely at the speed, intensity and duration of practice? How might this reconfigure our understanding of the structural, and its meaning? What if this study reveals chords to occupation across types of site?

The study of the Early Neolithic in southern Britain is driven by an obsession for finding evidence for when people in the past settled down or built monuments, and the search for static and fixed architectural forms. Instead, this study understands architecture through practices, relations and things. This paper explores the significance of such an approach in thinking about how past people inhabited space.

Stonehenge 100: Managing a global prehistoric icon in the 21st century.

Heather Sebire
English Heritage

The World Heritage site of Stonehenge, Avebury and Associated Sites was inscribed by UNESCO in 1986 for its complexes of outstanding prehistoric monuments. The recent Stonehenge Environmental Improvements Project has gone a long way to achieve the objectives of improving the landscape setting of the Stonehenge part of the site, by reducing noise and visual intrusion from inappropriate structures and roads; significantly enhancing the visitor experience through the provision of improved, environmentally sustainable, visitor facilities; improving the interpretation and improving access to selected monuments thereby enhancing the learning experience for visitors and increasing understanding of the whole World Heritage Site. A lot of this work was achieved by working closely with other heritage partners including the National Trust and Wiltshire Council. The success of the project coinciding with the rise in global tourism has brought a huge increase in visitors –many more than were envisaged when the scheme was drawn up.

The challenge now lies in conserving and managing the site while protecting its authenticity and outstanding universal value. Maintaining a vision for Stonehenge while addressing the World Heritage Convention's strategic objectives of Credibility; Conservation; Capacity Building; Communication and Communities is at the fore front of the conservation management and smooth operation of the site. This paper will illustrate how these objectives are addressed while simultaneously offering the public access to a world class experience at Stonehenge.

Gold from the Time of Stonehenge: Wiltshire Museum and the World Heritage Site

David Dawson
Wiltshire Museum

The Wiltshire Museum in Devizes has Britain's best Bronze Age collection and features finds from the Stonehenge and Avebury World Heritage Site. Many of the collections were excavated by William Cunnington – perhaps the World's first archaeologist. This paper will outline the remarkable stories of the people who used Stonehenge and also

examine the challenges of running an independent museum. Sustaining the nationally important collections and running an active public programme relies on the support of museum members and the enthusiasm of volunteers. The presentation will look at the issues of marketing to an international audience and the potential of touring exhibition to boost the profile and encourage more visitors. A key theme is working in partnership – with Salisbury Museum and English Heritage at Stonehenge and with the newly created Wessex Museums Partnership.