TAG14
Manchester

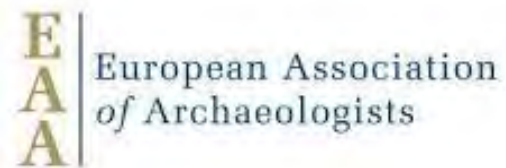**THEORETICAL ARCHAEOLOGY GROUP CONFERENCE 2014 • 15 – 17 DECEMBER 2014**
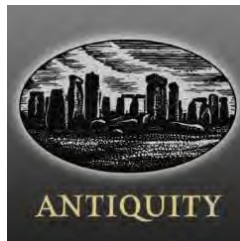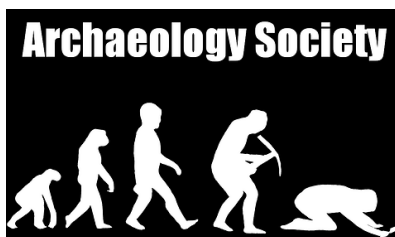
HANDBOOK & ABSTRACTS

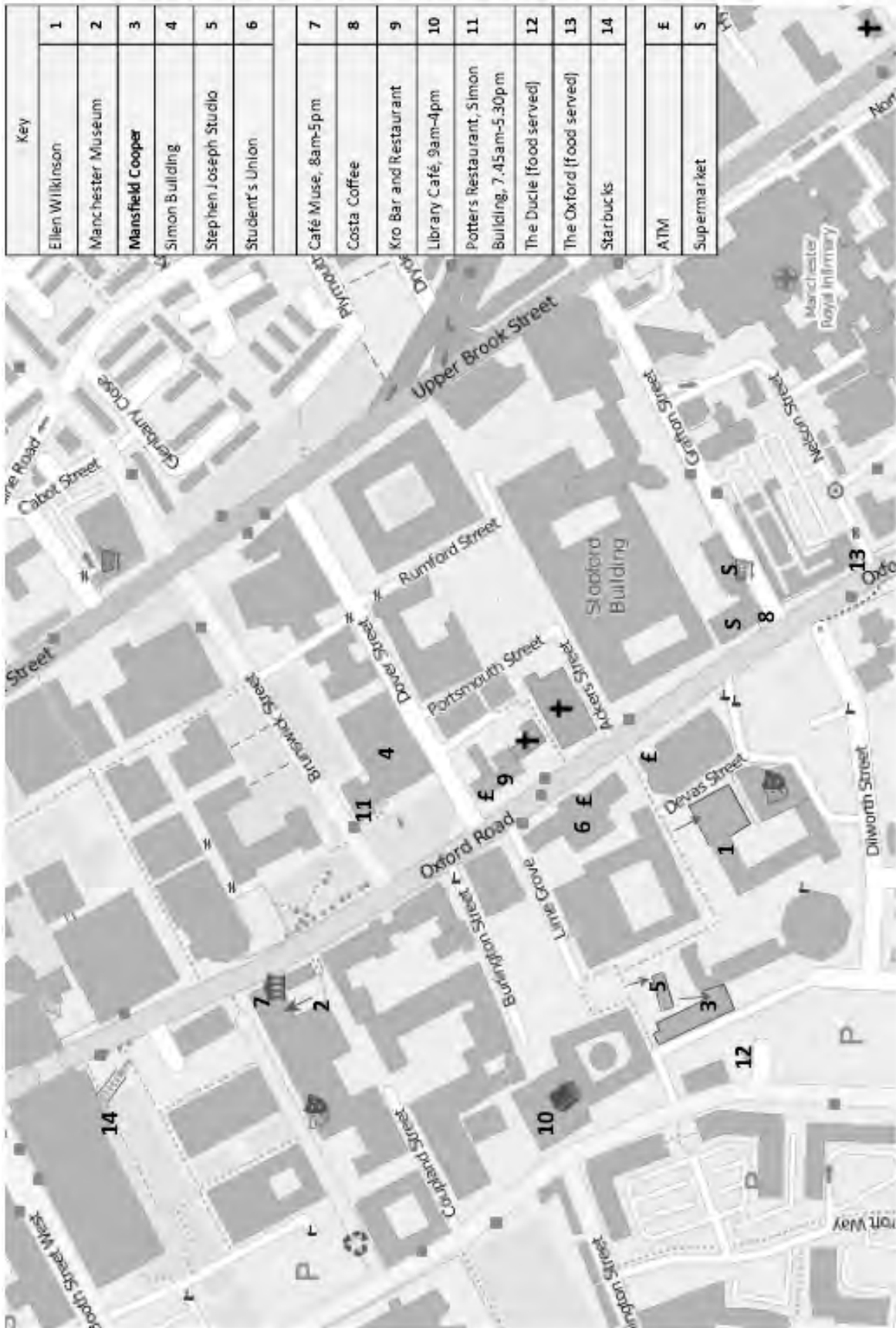**TAG2014 would not have been possible without the hard work and enthusiasm of the following people:**

Sarah Ashford	Jon Dobbie	Ellen McInnes
Holly Atkinson	Jamie Farrington	Richey Ostowsky
Jane Barker	Irene Garcia Rovira	Scott Peers
Jade Beresford	Melanie Giles	Eric Reekie
Julie Birchenall	Matthew Hitchcock	Brian Sitch
Sarah Bockmeyer	Roger Horne	Julian Thomas
Naomi Bradbury	Ceri Houlbrook	David Thompson
Dan Calderbank	David Jennings	Will Cooper
Dominic Cisalowicz	Stephanie Koerner	Phillippa Todd
Hannah Cobb	Alex Lawrence	Marte Tollefsen
Carla Clynes	Steven Leech	Liya Walsh
Frederick Craig	John Mabbley	Michaela Ward
Benjamina Dadzie	Hannah Mansell	Susan Whyatt
Lauren Doughton	Stephanie McCulloch	Chiara Zuanni

The TAG2014 Organizing Committee is grateful to the following organizations for sponsoring and supporting the 36th Annual meeting of the Theoretical Archaeology Group:

Welcome to TAG 2014!

As you will see here, the Manchester TAG Organizers have brought together an exciting academic programme of sessions, seminars, performances and exhibitions covering a wide range of themes relevant to today's theoretical archaeology agenda. There is also an engaging social calendar and we are grateful to the University and many other organizations too for hosting and supporting these.

We look forward to seeing you all in the sessions, around the conference grounds, and of course at the TAG Party.

Tim Darvill and Colin Renfrew

What's Inside

#TAG2014

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Drawn by Holly Atkinson using OpenStreetMap data as licensed under the Open Data Commons Open Database License (ODbL).

Guide to TAG

The University of Manchester Archaeology Society

TAG2014 is largely organised and run by the University of Manchester Archaeology Society, and we invite you to join us for the duration of the conference. An ArchSoc membership card is included in the inside of the back cover of this booklet and you will need it to attend the TAG quiz and party.

The society aims to open up the practice and study of archaeology to students, staff and members of the public who are interested and enthusiastic about the subject, whether they happen to be studying it or not. The pursuit to further our archaeological knowledge forms a key part of the society's activities, and we also actively promote student engagement in a range of projects - the running of TAG2014 is no exception! We hope you enjoy the conference.

Help is always at hand

The conference sessions will take place in three buildings; the Mansfield Cooper Building, the Stephen Joseph Studio, and the Ellen Wilkinson Building. If you need any assistance throughout the conference just ask any of our friendly TAG helpers. They will be stationed on the registration desk in the Mansfield Cooper Building and in each of the lecture rooms, in all buildings, throughout the conference. You can identify them by their TAG14 t-shirts.

The TAG Logo

The TAG14 logo is our homage to the distinctive "FAC" designs that came to be iconic symbols, synonymous with the Manchester music scene in the 80's and 90's. The Factory label was famous for a stark, industrial design ethos that was seen on record sleeves, gig posters, buildings, clothing, merchandise and more. Many of these designs were by Peter Saville, and everything that Factory produced was given its own FAC number - FAC 1 being a promotional poster for an early Joy Division gig. More information about the FAC designs can be found at the factory records website here: http://www.factoryrecords.net/catalogue/index.htm. The TAG14 logo echoes the FAC51 design that was the FAC number of the (in)famous Hacienda nightclub, with the "hazard tape" background and a bold graphic style. Whilst the TAG Party is not quite as legendary as The Hacienda, we hope it is still a night to remember!

Social Events

Monday 15th December	**Tuesday 16th December**	**Tuesday 16th December**
Wine Reception	*The Antiquity Quiz*	*TAG Party*
Hosted by Manchester Museum	The Union Bar, Students Union	Club Academy, Students Union.
7:30 – 9:00 pm	8:00 – 9:00 pm	9:00 pm onwards

*** The Archaeology Society card in the inside back cover of this book will be required to gain entry to the Students Union for the quiz and party.***

Under the rules of the Students Union, the Archaeology Society have to accept full liability for any damage caused to the venue during the quiz and party – so we ask for your help in engaging in responsible revelry so that we can keep everything intact!

Social Media at TAG Manchester

Debate need not be confined to sessions and the pub! Now you can join in anywhere by Tweeting your thoughts using #TAG2014. We hope to have a live Twitter feed from the TAG hashtag on the screen in the Mansfield Cooper Building foyer. You can also find us on Facebook too.

Art

A range of artist workshops, exhibitions and performance art will be taking place throughout the conference in the Stephen Joseph Studio.

Books and Exhibitors

It would not be TAG without the temptation of a fantastic collection of book stalls! These can be found, alongside various exhibitors, on the ground floor of the Stephen Joseph Studio.

TAG14 Souvenirs

If you have enjoyed your time at TAG2014, why not treat yourself to souvenir reminder of the conference? And what could be better than a TAG14 t-shirts or ArchSoc hoody? Both will be available for purchase from the Mansfield Cooper Building Foyer.

Interested in Studying at Manchester?

If you are interested in postgraduate study in archaeology at the University of Manchester then please do come and talk to us. Departmental staff will be on hand during the conference to answer any queries. We will have a dedicated space in the foyer of the Mansfield Cooper Building where you can find us – a timetable of different staff availability throughout the conference will be posted on the desk so you can catch us all.

General Timetable (also see detailed timetable on the back cover of this handbook)

Monday 15th December
10:00   Registration opens (Mansfield Cooper Foyer)
13:00 – 17:00   Afternoon sessions
17:30 – 19: 00   Plenary Session: The Antiquity Lecture (Simon Building, LTA)
19:30 – 21:00   Wine Reception (Manchester Museum)

Tuesday 16th December
09:00 – 13:00   Morning sessions
13:00 – 14:00   Lunch (Pre-booked lunches can be collected from The Student Union)
14:00 – 18:00   Afternoon sessions
20:00 – 21:00   Antiquity Quiz (Students Union – The Union Bar)
21:00   TAG Party (Students Union – Club Academy & The Union Bar)

Wednesday 17th December
09:00 – 13:00   Morning sessions
13:00 – 14:00   Lunch (Pre-booked lunches can be collected from The Student Union)
14:00 – 18:00   Afternoon sessions
18:00   End of Conference

#TAG2014

Guide to Manchester

Manchester derives its name from the Roman fort *Mamucium*, parts of which have been reconstructed in modern **Castlefield**. Next door is the **Museum of Science and Industry**, home to the world's first goods and passenger railway, which developed hand in hand with Manchester's famous textile industry. This industry was centred in the **Northern Quarter,** including the site of Arkwright's first textile mill. Interpreting Manchester's social history and industrial heritage is the **People's History Museum**, which, alongside centres such as **Elizabeth Gaskell House, Manchester Art Gallery**, **Manchester Museum, Cheethams Library** and **John Ryland's Library Deansgate,** showcases our cultural and literary heritage. Cultural hubs including the **Northern Quarter, Gay Village, China Town** and the seasonal **Christmas Markets** highlight our modern, varied and vibrant community.

Places to Eat, Drink and Make Merry

- **University 'Places to Eat'** and their opening times: http://www.foodoncampus.manchester.ac.uk/
- Opposite the Student's Union is Danish bar, coffee house and restaurant **Kro**. A good choice of vegetarian and some gluten free options. Your TAG badge will get you a discount here.
- **Café Muse** is Manchester Museum's own café, accessible from inside and outside the museum. Serving sandwiches, cakes, pastries, main meals and hot drinks. It has vegetarian options.
- **On the 8th Day** is a legendary vegan and vegetarian coop with a café in the basement. It is on Oxford Rd approximately ten minutes walk from the University towards the city centre.
- Along Oxford Rd, just opposite and past the Students Union to the south, you will find a **Costa Coffee, a Subway, a Domino's and a McDonalds**!
- There are also branches of **Sainsbury's** and **Morrison's Local** near campus. Sainsbury's is next to Costa Coffee and Morrison's is just behind it.
- **Red Chilli** is a Chinese restaurant which sits between the University of Manchester and Manchester Royal Infirmary, almost opposite the Student's Union. Lunch time deals for under £6, it has an extensive and well regarded menu. It has vegetarian options.
- 15 minutes walk south of the university, along Oxford Rd, is Rusholme, or Manchester's famous **"Curry Mile".** Take your pick!
- **The Ducie** is the best pub on campus! Located a stone's throw behind the Mansfield Cooper building, and with a great selection of real ales and ciders, it's the well-known haunt of the faculty archaeologists.
- **The Oxford** is the favourite pub of the Archaeology Society and is just down Oxford Road. Your ArchSoc card will allow you a 15% discount here!

Getting Around

Buses

- Buses stopping at the University's main Oxford Road campus depart frequently from Piccadilly Gardens, and include the services 41, 42, 43, 141, 142, 143 and X57. Ask for the University of Manchester's Student Union.
- There are 3 main bus companies:
  - First Buses (Purple and White) 41, 42
  - Stagecoach Electric Hybrid Buses (Green and White) 42, 43, X57
  - Stagecoach Magic Buses (Blue) 141, 142, 143
- **First and Stagecoach Magic** buses are both currently offering the competitive rate of £1 from the city centre to university campus. As the "student" buses, Magic buses offer cheaper prices than the electric hybrid ones.

- The **147** university-subsided bus service **links Piccadilly train station to the North and South Campuses and Royal Manchester Infirmary**. For further information, visit http://www.studentnet.manchester.ac.uk/crucial-guide/university-life/maps-and-travel/

Manchester Airport
- Manchester Airport has its own train station which runs into the city centre. The **43** bus (Stagecoach Hybrid) also runs from the Airport to the Oxford Road university campus and terminates at Piccadilly Gardens.

Taxi Services
- **Street Cars** offers a 24 hour Service and a 10% student discount to those with a valid student card: 0161 228 7878

Car Parks
- Booth Street East (M13 9SS), Booth Street West (M15 6PB)
- These are both multi-storey University Car parks open every day of the week. 24 hour parking will cost you approximately £10.
- Cecil Street (M15 6GD) costs £5 for all day but consequently fills up very early.
- For those arriving by car and using Sat Nav, the university's Oxford Road post code is: **M13 9PL**

Places to See and Things to Do
- **Castlefield** The site of the Roman fort *Mamucium* on the banks of the River Medlock. Excavations in 1980 were followed in 1984 by reconstructions of the north gate and sections of the fort, which can be seen today.
- **China Town** Located off Portland Street, China Town is home to a large number of South East Asian eateries and supermarkets. Stop and view the impressive Chinese Arch bridging Nicholas Street and Faulkner Street.
- **Elizabeth Gaskell House** Lived in by Gaskell and family from 1850-65, the same period in which she wrote her best known novels. The house is a 20 minute walk from the university, on Plymouth Grove, off Upper Brook Street. Open Wednesday, Thursday and Sunday between 11am-5pm. Adult tickets: £4.95 and concessions (seniors and students) £3.95. http://www.elizabethgaskellhouse.co.uk/house
- **Gay Village** Centred around Canal Street, with the Rochdale canal running alongside it; home to numerous events including the annual Manchester Pride and a number bars and restaurants serving the LGBT and non-LGBT communities.
- **John Ryland's Library Deansgate**. Impressive gothic architecture houses an archive of manuscripts and rare books. Exhibitions running in December include manuscripts from the 15th-16th centuries, and a focus on literary heroines. Open Monday noon-5pm, and the remainder of the week 10am-5pm, free admission, http://www.library.manchester.ac.uk/rylands/
- **Manchester Art Gallery.** The collection ranges from the 17th century to the 21st. Open in the week 10am-5pm, free admission. Located next to China Town and a five minute walk from the high street and the Arndale shopping centre http://www.manchestergalleries.org/
- **Manchester Museum**. Our very own university museum, located on Oxford Road. The museum is most well-known for its Egyptian collection, and contains an impressive selection of taxidermy. It also has a large ethnographic collection, and galleries on archaeology, archery and earth sciences, as well as a vivarium. A temporary exhibition on the natural history and culture of Siberia is running through December. Open 10am-5pm in the week, free admission. http://www.museum.manchester.ac.uk/

- **Manchester's Christmas Markets** Running until the 21st December and opening in the week between 10am -7.30pm across St. Anne's Square, Albert Square, Exchange Street and the Corn Exchange, in the heart of Manchester City Centre.
- **Museum of Science and Industry (MOSI)** Based in Castlefield, MOSI holds some of the world's earliest computers developed at the University from the 1940s onwards. Also offers exhibitions on historical transport; including the world's oldest surviving passenger railway station. Visitors can experience the power of locomotives, a Victorian sewer, the air and space hall, and a 4D theatre. Open in the week from 10am-5pm, free admission. http://www.mosi.org.uk/
- **The Northern Quarter** Home to Manchester's first textile mill and more recently a filming location for the 2011 blockbuster Captain America. It houses an eclectic mix of bars, cafes, restaurants, bakeries, and shops specialising in vintage goods, clothes, retro gaming and records. Including Manchester's Craft and Design Centre, and Affleck's Palace, a four floor emporium just behind the Arndale shopping centre.
- **The People's History Museum** Manchester's social history and more general workers history. From the 19th century's Industrial Revolution and Peterloo Massacre to the current day. Open in the week from 10am-5pm, free admission, a five minute walk from Manchester Victoria train station. http://www.phm.org.uk/

Sessions and Abstracts

With a plenary, 30 sessions and hundreds of abstracts there is a lot for you to read! So, for your convenience, we have placed an overview timetable on the back cover of this booklet. Meanwhile this handy summary of sessions, locations, and pages to find abstracts will help you navigate the rest of the handbook. And if in doubt please feel free to ask a TAG helper!

Abbreviations: MC - Mansfield Cooper SJ - Steven Joseph   EW - Ellen Wilkinson Graduate Centre

	Session	Day	Start Time	Room	Page Abstracts begin
	PLENARY: The Antiquity Lecture Undisciplined Realities: mutually informed uses of ethnography, history, and archaeology.	MON	17.30	Simon Building, LTA	13
1	Archaeological Approaches to Violence in Prehistory	TUES	14:00	MC G22	15
2	Archaeology and Assemblage	TUES	14:00	MC G21	18
3	An Archaeology of Sport: Theory, Method and Practice	WEDS	09:00	MC 2.03	23
4	Bridges Over Troubled Theoretical Waters: Crossing the Divide between Data-based Archaeology and Archaeological Theory in Prehistoric Studies	TUES	09:00	MC G20	26
5	Between the Arts and Archaeological Interpretation	WEDS	09:00	MC G22	33
6	Cataloguing Magic: The Complex Biographies of Ritual Objects in Museum Contexts	TUES	14:00	SJ G4	37
7	Cognitive Archaeology: The Challenge of Understanding Human Becoming	WEDS	09:00	MC G20	41
8	Cosmologies in Transition: Continuity and Transformation in the Material Record	TUES	09:00	EW Seminar	48
9	Decolonising Human Origins	TUES	14:00	MC 2.03	55

	Session	Day	Start Time	Room	Page Abstracts begin
10	Digging the Legend: Cultural expectations in the archaeology of conflict	MON	13:00	MC G21	59
11	3D Imaging in Archaeology – A Brave New World?	WEDS	09:00	MC 2.02	61
12	House Societies in Prehistory	MON	13:00	MC G22	67
13	This House Believes that Archaeology Should NOT be Instrumentalised	TUES	09:00	MC G19	70
14	How to Publish your Article in Archaeology	WEDS	14:00	SJ G4	76
15	Inclusivity and the Pedagogy of Archaeology	WEDS	09:00	MC G21	77
16	Imperial Conquests, Indigenous Traditions and the Emergence of New Societies	MON	13:00	MC G19	78
17	Is it just fortune and glory? The Social Impact of Archaeology	WEDS	09:00	SJ G4	83
18	Madness, Medicine and Material Culture	MON	13:00	SJ G4	86
19	Mesolithic Britain and Ireland: 10 Years On	WEDS	09:00	MC G19	89
20	Networks of dominance – Aspects of Inclusion & Exclusion in Archaeological Approaches to Social Connectivity	TUES	09:00	MC 2.03	90
21	OK computer? Digital Public Archaeologies in Practice	TUES	14:00	MC 2.02	92
22	Rethinking Comparison in Archaeology	TUES	09:00	MC G22	96
23	Rubbish and Ritual Revisited	WEDS	14:00	MC G22	100

	Session	Day	Start Time	Room	Page Abstracts begin
24	General Session	WEDS	14:00	MC 2.03	103
25	Stoking the Flames: Towards an Archaeology of Fire	TUES	09:00	MC 2.02	107
26	Students in Archaeology: Understanding and Engaging the Next Generation of Archaeologists	WEDS	14:00	MC G21	111
27	TAG's Next Top Model	MON	13:00	MC 2.03	115
28	The Everyday Assemblage: Routine and The Ordinary in Archaeology	MON	13:00	MC 4.05	118
29	The Watchful World; Animate Environments in Hunter-Gatherer Archaeologies	TUES	09:00	MC G21	122
30	A 3D Digital Image Can Tell a Thousand Words.' The Application of Digital Imaging Technologies beyond Documentation	MON	13:00	MC G20	125

#TAG2014

Plan of Mansfield Cooper Building and Stephen Joseph Studio

G22

G21

G20

G19

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G1

G4

G3

Stephen Joseph Studio

Mansfield Cooper Building
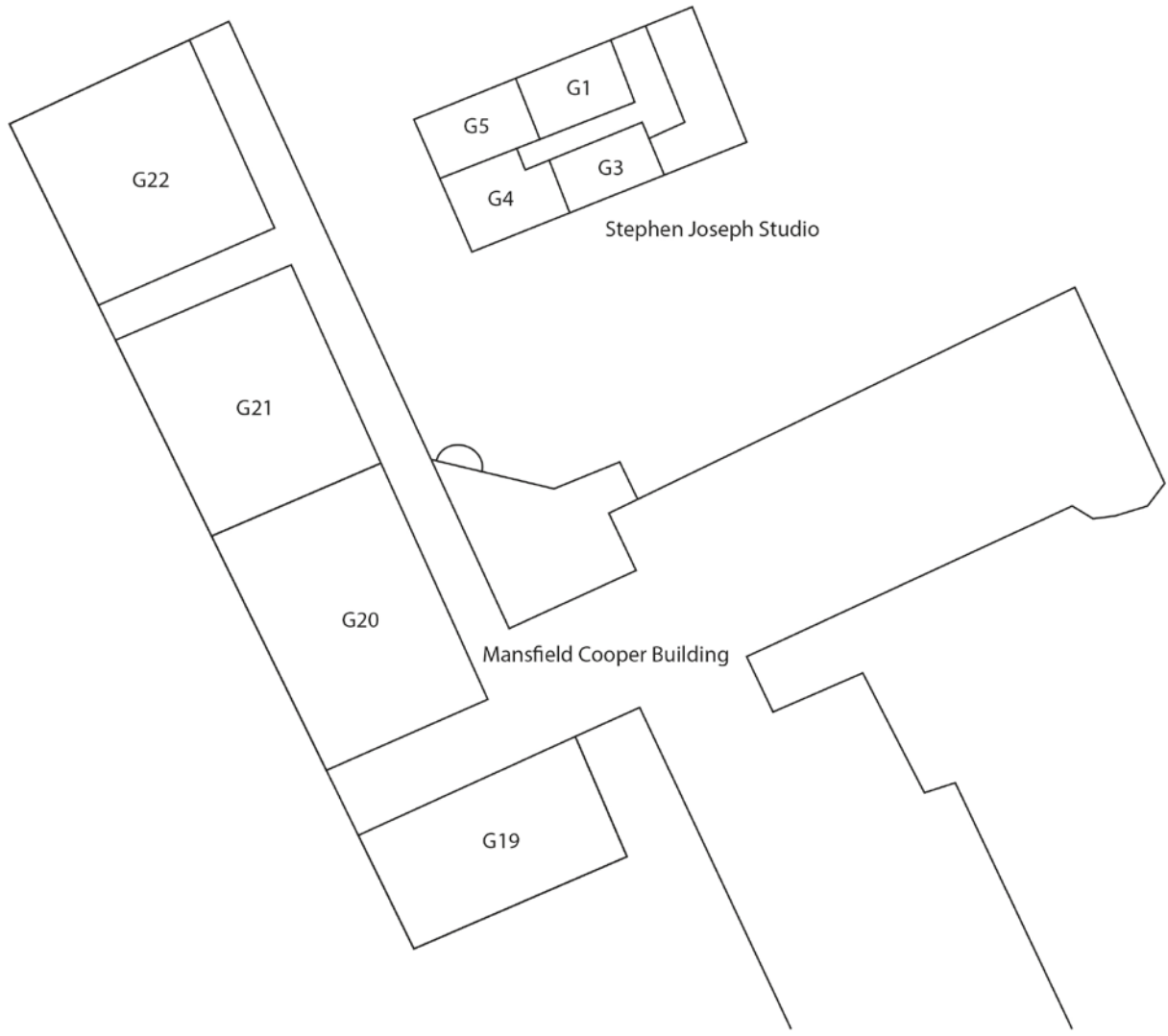
NB. Mansfield Cooper rooms 2.02, 2,03 and 4.05 are on the second and fourth floors respectively and can be accessed by the lifts in the main foyer.
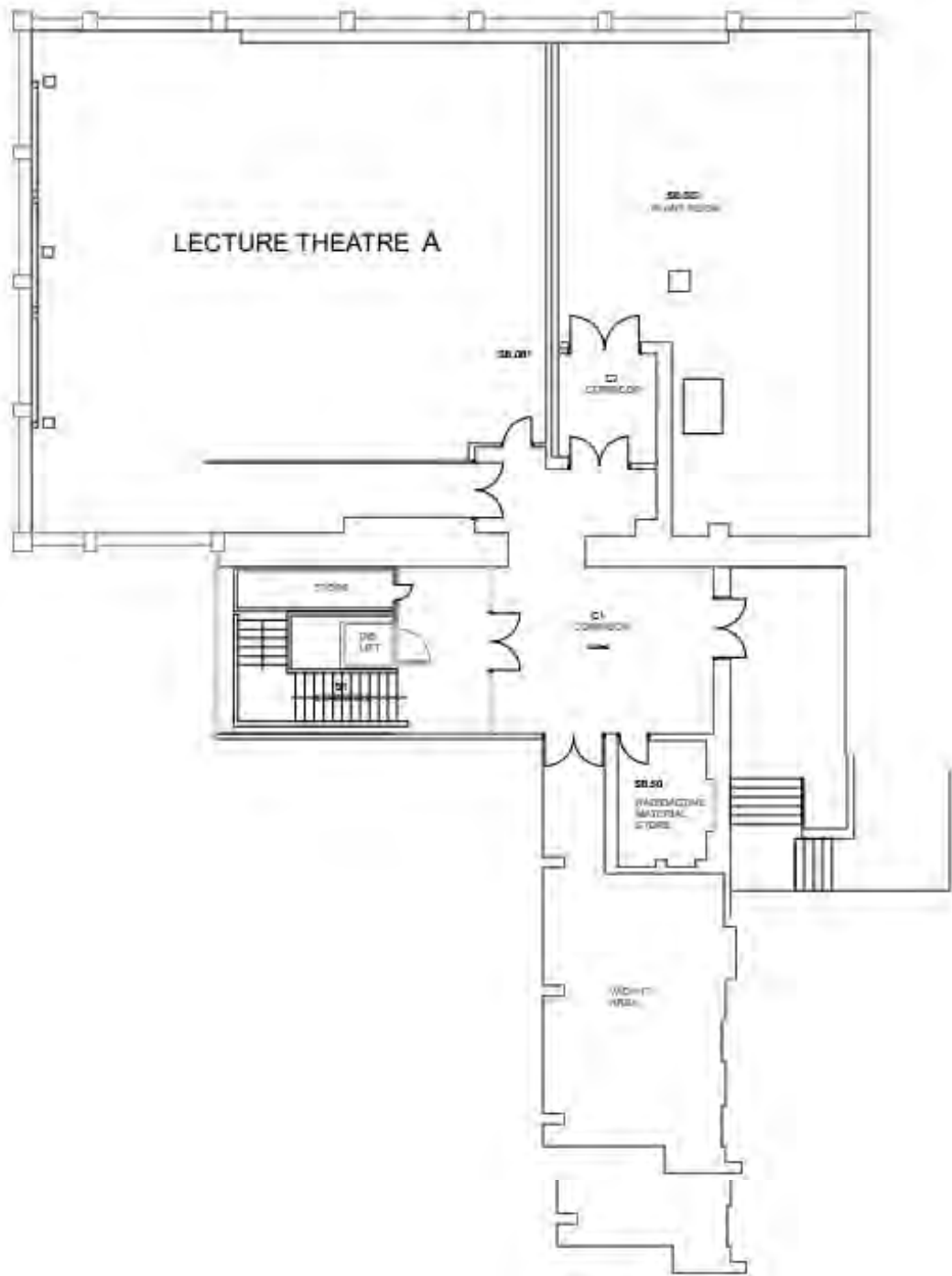
LECTURE THEATRE A

The Antiquity Lecture: A plenary in two parts.

Undisciplined Realities: mutually informed uses of ethnography, history, and archaeology.

Monday 15th December 17:30
Simon Building, Lecture Theatre A

Over the past two decades interdisciplinary and cross-disciplinary collaborations have been favoured by research funding agencies around the world. Putting together otherwise disparate intellectual pursuits and scholars is thought to enrich the process and produce results that extend understandings beyond narrow disciplinary boundaries. In contrast to anthropology and history, archaeology has always been an interdisciplinary process. Yet contemporary archaeological and historical narratives about the past are by their very nature composed of and reliant upon analogies and comparisons. The past is a series of taxonomies, categories, and intellectual constructs that jostle for position in our analyses. In archaeology this jostling has been expressed through the use of ethnography and history and engagement of anthropologists and historians. In this session we will explore the interplay and mutual dependence of ethnography, history and archaeology as it is practiced in settler-colonial societies. Taking two different but ultimately sympathetic approaches we will attempt to unravel a series of cross-disciplinary intellectual straightjackets. In particular we will be asking: How do we come to know and understand the past? How do we explore cultural difference in the past? Does interdisplinarity promote new understandings of the past?

'mind forg'd manacles': How can we think our way out of the conceptual straightjacket?
Lynette Russell
In his quintessential poem London William Blake wrote of the ultimate urban world where the streets and the river, the very geographic spaces are 'charter'd' mapped and legal. On these mapped and constrained streets, Blake implied we run the risk of 'mind forg'd manacles'. In this paper I consider two ways that the categories of analysis can indeed manacle our interpretations. My examples are the result of Aboriginal/ European engagement and contact in Australia. While the setting might be specific the findings have currency in many locales, periods and phases. In my recent work I am drawn to the intercultural spaces of camp sites and stations occupied by both Aboriginal people and European newcomers. These sites transcend easy categorisation. They are historical; and, as they once were occupied by Aboriginal people they are also Aboriginal, yet they are also archaeological. I will attempt to unravel the complex ways that these categories can play against one another and reveal these can be deeply productive. The second aspect that I will examine will be a series of objects/ artefacts from the historic period which are not readily categorised into black or white; European or Aboriginal. These are forms of bricolage. Understanding the mechanisms by which these entered the Aboriginal context and the considering the transformative processes these have undergone requires a confluence of disciplinary approaches. This is where history, archaeology and ethnography meet.

Lynette Russell is an Australian Research Council Professorial Fellow (2011-2016) and Director of the Monash Indigenous Centre (Archaeology, Anthropology and History). For 2012-13 she was Creative Fellow at the State Library of Victoria. She is widely published in the areas of history, post-

colonialism, indigenous or native studies and representations of race. Her current work is in the area of anthropological and post- colonial history. She is a Fellow of the Academy of the Social Sciences of Australia and an elected fellow of both the Royal Anthropological Institute (London) and the Royal Historical Society (UK). She is currently vice president of the Australian History Association. In 2015 she will be visiting fellow at All Souls College, Oxford. She has written, co-authored or edited ten monographs and numerous articles and book chapters. Her books include: Roving Mariners: Aboriginal Whalers, in the southern oceans 1790-1870, (2012). Boundary Writing: living across the boundaries of race, sex and gender (2006), Appropriated Pasts: Archaeology and Indigenous People in Settler Colonies, (2005), A Little Bird Told Me, (2002), Colonial Frontiers: Cross-cultural interactions in Settler Colonies, (2001) and Savage Imaginings: historical and contemporary representations of Australian Aboriginalities, (2001).

Dissolving divides: Indigenous archaeology and the quest for cultural and theoretical relevance
Ian J. McNiven

The past two decades have seen Indigenous archaeology formally coalesce as a distinctive archaeological practice. This practice emerged from a desire to make archaeology more culturally and epistemologically meaningful, interesting and relevant to Indigenous communities. Development of Indigenous archaeology has focused on laudable processes of collaborative research. Yet ensuing theoretical developments, while desired, remain minimally explored. This situation raises the question: Does Indigenous archaeology have theoretical dimensions that extend beyond collaborative research processes? Furthermore: Can Indigenous archaeology make theoretical contributions to better understand the past with broader application to the practice of archaeology? This paper addresses both these questions. I argue that theoretical development of Indigenous archaeology requires challenging a series of ontological and epistemological divides and dualisms within mainstream Western archaeology. To explore these challenges I focus on what I consider to be three key emerging theoretical domains of Indigenous archaeology. First, 'encountering the past' challenges objectivist tangibility of the archaeological record with ancestral presence and artefactual absence. Second, 'historicing the present' challenges secularist archaeologies of ancient difference with archaeologies of the more familiar recent past linked to identity and diachronic explorations of ontology and spiritualism. Third, 'narrating the past' challenges processual approaches to the past with humanised cultural histories, oral histories and multivocality. Meeting such theoretical challenges have the potential to alter the practice of mainstream archaeology such that the current distinctiveness of Indigenous archaeology dissolves.

Ian J. McNiven is Professor of Indigenous Archaeology in Monash Indigenous Centre, Monash University, Melbourne. He specialises in the archaeology of Australian Indigenous coastal societies, in particular the Queensland coast and the islands of Torres Strait. He has held academic positions at the University of Queensland and The University of Melbourne, and has considerable private industry experiences as a cultural heritage consultant. He has worked on numerous native title cases and was an expert witnessed for the Torres Strait sea claim. His research focuses on understanding the long-term development of specialised maritime societies with a focus on the archaeology of seascapes and ritual and spiritual relationships with the sea. Other research interests include the archaeology of the southern coast of New Guinea and ancient cultural connections with Torres Strait and northern Australia, the development of Aboriginal eel aquaculture facilities in western Victoria, and the colonial history of archaeology. In 2007-2009, he was President of the Australian Archaeological Association Inc. and is an elected Fellow of both the Society of Antiquaries London (since 2007) and the Australian Academy of the Humanities (since 2013). In addition to over 120 refereed papers and book chapters, his co-authored/edited books include Constructions of Colonialism: Perspectives on Eliza Fraser's Shipwreck (1998), Australian Coastal Archaeology (1999), Torres Strait: Archaeology & Material Culture (2004), Appropriated Pasts: Indigenous Peoples and the Colonial Culture of Archaeology (2005), and The Social Archaeology of Indigenous Societies (2006).

(S1) Archaeological Approaches to Violence in Prehistory
Session organiser: Alberto García Piquer (Universitat Autònoma de Barcelona, Spain)

The broad aim of this session is to allow and promote discussion around this polemical topic and, especially, to explore such questions as the following: (1) In prehistoric societies, might violence have been an instrument that allowed society to assimilate and accept situations of social asymmetry? Starting perhaps with structural violence against women and extending further to more generalized types of intra- and inter-group violence? (2) What might have been the historical conditions under which societies might have organised themselves by exercising such structural violence? (3) How can we make the study of alternative practices a key focus of archaeological research? What kinds of archaeological indicators can and should be developed in order to identify such practices in prehistory; and to analyse their origin and causes?

14:00–14:15	**Introduction**
14:15-14:35	**Conflict Archaeology and the Practice Approach: A Synthesis of Archaeological and Medical Knowledge.** Rolf W. Fabricius (University of Southampton) and Andreas Hansen
14:35–15:15	**Avoiding war: ritualized violence in the Andean Late Intermediate Period (LIP) of Tarapacá (Northern Chile, ca AD 900-1300).** Aryel Pacheco (Durham University) and Rodrigo Retamal (University of Chile; University of Cambridge)
15:15-15:35	**Executions and sacrifices in Viking Age North-Western Europe.** Bo Jensen (Københavns Universitet, Denmark)
15:35–15:55	**A materialist feminist and libertarian approach to violence: the case of pre-classical Peru.** Pedro Castro (Universitat Autònoma de Barcelona) and Trinidad Escoriza (Universidad de Almería)
Break	
16:30-16:50	**A Marxist approach to violence: Iberian Southeast in Late Prehistory**. Juan Antonio Cámara Serrano (Universidad de Granada)
16:50–17:10	**Silent violence: a feminist approach to early structural violence against women.** Assumpció Vila (Institució Milà i Fontanals, CSIC), Robert Carracedo (Universitat Autònoma de Barcelona) and Alberto García Piquer (Universitat Autònoma de Barcelona)
17:10–17:30	**Signs of violence in the Neolithic period in the NE of the Iberian Peninsula?** Stephanie Duboscq (Universitat Autònoma de Barcelona) and Juan F. Gibaja (Institució Milà i Fontanals, CSIC)
17:30-18:00	**Questions and Discussion**

Abstracts

Conflict Archaeology and the Practice Approach: A Synthesis of Archaeological and Medical Knowledge
Rolf W. Fabricius (University of Southampton) and Andreas Hansen
Conflict archaeology, as a distinct strand of archaeological research, is still in its earliest stages and, as such, still in need of much refinement. In this paper, the authors explore some of the main issues and challenges faced in the archaeological discourse on subjects related to combat in the past. The issues discussed underscore the importance of constructing and employing a clear theoretical framework in order to ask appropriate question and focus upon the matter at hand. Drawing upon an interdisciplinary synthesis of archaeological detail and medical knowledge, we promulgate a practice approach and the need to understand the nature of combat on a micro-level. Warfare studies, we argue, demand, among other things, richly contextualized analyses aimed at understanding the physiological reactions and corporeal interaction with extrasomatic technology.

The approach entails an examination of agency in terms of how people act in the world, i.e. what they actually do, think and feel, and answers the call for a method which seeks to understand interpersonal violence through direct consideration of how it is undertaken. It is an attempt to remedy the current situation wherein it is apparent that other focus areas - such as the causes and consequences of war - have achieved their status in the archaeological literature at the expense of the essential details of practice.

Avoiding war: ritualized violence in the Andean Late Intermediate Period (LIP) of Tarapacá (Northern Chile, ca AD 900-1300).
Aryel Pacheco (Durham University) and Rodrigo Retamal (University of Chile; University of Cambridge)
The Late Intermediate Period in the South Central Andes (AD 900-1300) is commonly characterized by a rise in violence between groups in order to control access over resources. However, different lines of evidence suggest that Tarapacá population did not get involved in war. Skeletal evidence indicates low prevalence of direct interpersonal violence, including facial, cranial and nasal traumas (N=5/97), both for males and females. We suggest that these traumas could be interpreted as a result of ritualised combat (*tinku*), although domestic violence should not be rejected. Only one male displayed an embedded point in his right first rib, which can be attributed to open intergroup combat. Moreover, his missing left toes could be interpreted as the result of punishment (amputation).
Evidence of direct lethal violence in the previous period in Tarapacá (Formative Period, 400 BC-AD 900) and evidence of a belligerent climate in contemporaneous neighbours of San Pedro de Atacama suggest that this society employed ritualised violence in order to avoid larger conflicts (war). We propose that this society utilized material culture during ceremonies of ritual combat where leadership was dialectically constructed and performed. Controlled violence scenarios permitted the sublimation of social inequalities or internal conflicts, along with role display performances in front of, or including members of other groups. These performances could be used to create stability during internal and external unstable conditions, resulting in facilitated commercial interchanges.

Executions and sacrifices in Viking Age North-Western Europe.
Bo Jensen (Københavns Universitet, Denmark)
In this presentation, I examine the written and archaeological evidence for execution and human sacrifice in the Viking World. I argue that we can recognise a body of evidence for violence to helpless victims, distinct from the evidence violent conflicts (war, feuding), but that within this evidence the distinction between religious sacrifice and juridical execution is much less clear. Moreover, I show that most of the archaeological evidence fits quite poorly with the written sources' description of sacrifice, yet cannot be confidently identified as executions either.
 Consequently, I put aside the semantic divide between sacrifices and executions and make some points about the social reality of these killings, equally relevant for both: I argue that these killings were strongly ritualised, firmly located at special places space and likely at special time, creating landscapes and calendars of death. I also argue that neither the identity, gender nor class of victims or killers seems to have been emphasised in these rituals. Instead, they created a temporary or illusory ritual community of perceived equals, as in Turner's communitas. This also puts victims closer to Agaben's *homo sacer* than to Foucault's subjects of sovereign power.

Halberds in Scotland: a paradigm of violence
Rachel Faulkner-Jones (University of Edinburgh)
The Early Bronze Age in Scotland was a period which included some relatively major social and economic changes. The emergence of copper and bronze halberds from 2400BCE has been widely accepted as the first instance of weapons designed specifically for human combat, rather than hunting, though their specific uses are still debated. However, by reducing the halberds' usage

down to a single purpose, and by labelling the artefacts purely as weapons, a monofunctional interpretative paradigm emerges which stifles other models and different (though by no means exclusive) interpretations. Focussing on the halberds' capacity for violence has so far been the primary aim of halberd studies. It is here proposed that the halberds simultaneously served other social and political roles, probably in addition to their combat functions. By encouraging reflexivity in the existing overreaching paradigm of violence, broader theoretical themes such as gender, heteronormativity, exchange networks and social modelling can be brought into consideration. Coupled with an improvement in experimental data collection for the halberds themselves, a more encompassing, detailed and useful theoretical model for this period of prehistory can be developed.

A Marxist Approach to Violence: Iberian Southeast in Late Prehistory
Juan Antonio Cámara Serrano (Universidad de Granada)
This paper argues that following the establishment of unequal access to production it was reproduced from various forms of violence. This structural violence might be visible with both internal and external armed conflicts (last of them to distract attention) and, sometimes, with the implementation of the policy of terror, or, more often, was masked, from the ideological control. When referring archaeological indicators of the conflict is usually put more emphasis on signs on open warfare (present or latent): evidence of violent deaths, weapons, fortifications, battlefields and / or destruction. Following in the footsteps of researchers have drawn attention to the importance of analysis of settlement patterns to study transformations derived from a more or less permanent conflict, we intend attract attention also on indicators of the connection between military and ideological spatial control. Although all the Southeastern Iberia Late Prehistory will be discussed two cases will be analysed in detail, Andarax River-Tabernas Corridor during local Chalcolithic (3300-2150 cal BC) and Eastern Granada Plateaus during the Bronze Age (2150-1350 cal BC). First of them show joint and / or succession of ritual funerary (megaliths) and military (forts-towers) monuments for territorial domain, not only as a way to exclude foreign access to own resources but also to ensure the circulation of internal tribute and prevent the defection of the exploited masses. The second example shows how, once secured territorial control by the dispersion of fortified sites (mainly settlements), control of people within settlements is reinforced.

A materialist feminist and libertarian approach to violence: the case of pre-classical Peru
Pedro Castro (Universitat Autònoma de Barcelona) and Trinidad Escoriza (Universidad de Almería)

Silent violence: a feminist approach to early structural violence against women
Assumpció Vila (Institució Milà i Fontanals, CSIC), Robert Carracedo (Universitat Autònoma de Barcelona) and Albert García-Piquer (Universitat Autònoma de Barcelona)
In this communication we vindicate the centrality of the management of reproduction in Hunter-fisher-gatherer societies and how this crucial management could generate a social organization in which women were subject to a *structural violence.* Indeed, we contend that there are two types of violence: *circumstantial violence,* that is, acts of brutality committed by specific individuals resulting in physical injury, and *structural violence,* the less obtrusive form exercised socially by the "group". In fact, it is this concept of *structural violence* that has characterised social systems based on dissymmetrical relations between the sexes, which, in every single case, have favoured men.
Can circumstantial or structural violence exist without the other? Is structural violence more important, more consequential, than the other, which is the product of a specific situation? Is circumstantial violence an indicator of structural violence? Does circumstantial violence *only* indicate the occurrence of isolated events or exceptions?
Our attempts to identify these forms of violence will involve us in the discussion of the objectives and possibilities of archaeological science. We propose a redefined ethno-archaeological approach as a way for searching archaeological indicators. Being able to demonstrate or disprove the

existence of structural violence against women in the "first" prehistoric human societies would provide us with a solid basis for a debate on the naturalisation of current behaviours and expectations according to a person's sex. We could then move beyond the essentialist ideas, which have done so much to establish "immutable" roles for the sexes inside society.

Signs of violence in the Neolithic period in the NE of the Iberian Peninsula?
Stephanie Duboscq (Universitat Autònoma de Barcelona) and Juan F. Gibaja (Institució Milà i Fontanals, CSIC)
Violence in many forms is a well-established phenomenon in contemporary society, and the fight against violence is one of the central priorities of many associations, NGOs, individuals, etc. This struggle must go through an attempt to understand the violence, its origin, causes, and many of its manifestations. Anyone wishing to fight against violence in an effective and sustainable way must fight the evil at the root, trying to understand when the violence, whether interpersonal or intergroup, has started, where, why? Many researchers aroused these questions, and they come back frequently in archaeology, our discipline being used to attempt to document an "origin" of the violence. What about a time as old as the Neolithic period, without writing to inform us how societies ruled? Did violence already exist, and what kind of violence? Against whom was it directed, and could we get to know why?
We will use this communication to draw up a report of the situation in the Neolithic in the NE of the Iberian Peninsula. What information can provide us the archaeological data about a possible violence at that time? We will see what are its possible manifestations (structural violence? circumstantial violence?), where and against whom they appear (based upon sex or age of individuals, or upon other criterions?) and how did they evolve chronologically (from the Mesolithic to the late Neolithic period).

(S2) Archaeology and Assemblage.
Session organisers: Prof. Yannis Hamilakis (University of Southampton) and Dr. Andrew Meirion Jones (University of Southampton)

The concept of assemblage has long been part of the archaeological lexicon, implying groups of associated or related artefacts. Recent uses of the term have relied on the philosophy of Gilles Deleuze, who related it to the play of contingency or structure, organization and change, and emphasized the internal heterogeneity of the assemblage and its dynamic character. Developing this idea, the cultural theorist Jane Bennett (2010) describes assemblages as ad hoc groupings of diverse elements. 'Assemblage' relates to processes of arrangement, organizing and fitting together, and through these processes of arrangement and re-arrangement new material configurations are brought into being. For Bennett, this process is emergent, in that it makes things happen.
A number of recent writers in archaeology have adopted this definition of assemblage using the concept to describe the relationship between the archaeologist and the archaeological record, and the changing nature of the archaeological record (Fowler 2013; Hamilakis 2013; Lucas 2012; Jones and Alberti 2013), while others have contrasted the notion of context and assemblage (Jones and Alberti 2013), and stressed the role of sensoriality in the activation of assemblages, proposing the term, "sensorial assemblages" (Hamilakis 2013). In addition, North American archaeologists have reworked the notion of assemblage in order to understand the Native American concept of 'bundling' (Pauketat 2013; Zedeño 2013).
How useful is Bennett and Deleuze's notion of assemblage to archaeology? How does it relate to the notion of assemblage as typically understood by archaeologists? What are the limits of the notion of assemblage; can everything be described as a form of assemblage? Is 'bundling' a useful cross-cultural concept or should its use be restricted to North American contexts?

14:00-14:10 **The Cabinet of Dr. Faustus – an introduction to assemblage theory** Andrew Meirion Jones and Yannis Hamilakis (University of Southampton)

14:10-14:30 **The Assemblage of Higher Education** Karina Croucher, (University of Bradford) and Hannah Cobb, (University of Manchester)

14:30-14:50 **Changing Assemblages.** Rachel Crellin, (University of Leicester)

14:50-15:10 **Assemblage and Synthesis** Chris Fowler, (Newcastle University)

15:10-15:30 **Assemblages and scale in archaeology.** Oliver J.T. Harris, (University of Leicester)

15:30-15:50 **Sensorial Assemblages.** Yannis Hamilakis, (University of Southampton)

15:50-16:00 **Discussion**

Break

16:20-16:30 **Being, belief, comprehension and confusion: an exploration of the assemblages of English post-Reformation religious ontology.** Jude Jones, (University of Southampton)

16:30-16:50 **Art, assemblage, alchemy: the decorated artefacts of Neolithic Britain and Ireland.** Andrew Meirion Jones, (University of Southampton)

16:50-17:10 **Temporality, assemblages and Black Swans. Johan Normark, (University of Gothenburg, Sweden)**

17:10-17:30 **An Assemblage of the Living and the Dead: A Re-Investigation of Tinkinswood Chambered Tomb.** Jess Thompson, (University of Southampton)

17:30-17:50 **The World is a Great Winnowing Tray: qualities of practice, indigenous values, and an assemblage from a California Cave.** David Robinson, (University of Central Lancashire)

17:50-18:00 **Concluding discussion**

Abstracts

The Assemblage of Higher Education
Karina Croucher, (University of Bradford) and Hannah Cobb, (University of Manchester)
In this paper we use process philosophy, particularly Ingold's concept of the meshwork and DeLanda's assemblage theory, to critically analyse the discipline of archaeology. In particular, we focus on the undervaluation of pedagogy and pedagogical research in Higher Education today: that is, the undervaluation of teaching & learning and research into teaching & learning. Through analysing the Academy as an assemblage, we can begin to undermine the division between teaching and research, and provide a framework for understanding how we can re-centre students and pedagogy as fundamental to the production of archaeological knowledge. In doing so we provide a theoretical grounding for resituating our current practices, suggest practical means for change, and highlight the benefit to the discipline arising from a revaluation of archaeological pedagogic research and an enmeshed understanding of archaeological practice. In short, this is not just about thinking and theorising, but about taking action and instigating change, and evidences how theoretical thinking can impact on real world situations in the archaeology we teach, practice and research.

Changing Assemblages
Rachel Crellin, (University of Leicester)
In this paper I explore how the notion of assemblage can be helpful for considering change in prehistory. I implement an assemblage based approach that draws on Jane Bennett's, Deleuzian inspired, concept of vibrant matter as the basis for change. Materials are viewed as vibrant and in flux, never fixed. I seek to create a heterogeneous view of change where assemblages, or parts of assemblages, may change at varying speeds, rhythms and scales. I present these ideas as a relational approach to change in prehistory. In this paper I will use the notion of assemblage and emergence to discuss changing burial practices between 3000-1500 cal BC on the Isle of Man. Rather than seeking

to present a caricature of Late Neolithic burial practices and contrast it with Early Bronze Age practices I will trace change gradually through the emerging assemblage that is burial practices on the Isle of Man. I will delve into the different assemblages that constitute these phenomenon at varying scales in order to trace their inherent, and constant, change more closely. I will consider how this kind of thinking can allow us to study change differently and what advantages and disadvantages this may hold for archaeologies of change.

Assemblage and Synthesis
Chris Fowler, (Newcastle University)
This paper will address the relationship between assemblages and acts of archaeological synthesis. It will argue that assemblages arise from sequences of relationships, and are transformed when some of the relationships configuring them change - including through the activities of archaeological research. From this perspective, an archaeological assemblage includes not only the artefacts recovered from an archaeological site, for instance, but all of the apparatus involved in recovering and understanding those artefacts. Such assemblages are at once the enduring media of past relations and also dynamic compositions which extend and expand when we interact with them; they become reconfigured in the process. I recently completed a synthesis of Chalcolithic and Early Bronze Age mortuary deposits in North East England, treating this as a kind of assemblage composed of and intersecting with other assemblages (e.g. specific burials, artefacts, typologies, radiocarbon dates, circumstances of site discovery and excavation, theoretical approaches to identity). In this paper I will reflect on how assemblages are extended and transformed through such archaeological research, arguing that interpretations involve reconfiguring assemblages. I will explore some methodological and theoretical implications of this position, including the difficulty of identifying the 'limits' of an assemblage, and discuss how the approach led towards a specific understanding of the relationship between past and present.

Assemblages and scale in archaeology
Oliver J.T. Harris, (University of Leicester)
The growing interest in assemblages has already opened up a number of fascinating lines of enquiry in archaeology from the morphogenetic capacities of matter through to a rethinking of the concept of community. In this paper I want to explore how assemblages allow us to rethink the critical issue of scale. On the one hand archaeology has traditionally been seen as the discipline of deep-time par excellence. Great processes like the evolution of humanity, the colonisation of the globe or the origins of agriculture remain essential research foci. On the other hand, since the 1980s, classic post-processual accounts have focussed either on the momentary and the fleeting – a kind of ethnographic present – or expanded the scale of their linguistic concepts from single sites to European wide phenomena without undue consternation. Where archaeologists have attempted to integrate different scales the result has usually been to turn to time perspectivism and its fixed, linear and ontologically incompatible layers of process. In this paper I want to draw on the work of Manuel DeLanda and Jane Bennett to suggest that each of these approaches has been guilty of reductionism of one kind or another. In contrast, I will use assemblages to examine how we can rethink both the emergence of multiple scales, and their role in history, without reducing the differences of the small-scale to an epiphenomenal outcome of larger events, or treating large-scale historical processes as mere reifications of the 'real' on-the-ground stuff of daily life.

Sensorial Assemblages
Yannis Hamilakis, (University of Southampton)
In the book "Archaeology and the Senses: Human Experience, Memory, and Affect" (CUP, 2013), I introduced the notion of sensorial assemblages. In doing so, I have expanded the application of the concept of the assemblage beyond the material. Sensorial assemblages are constituted by the contingent co-presence of heterogeneous elements such as bodies, things, substances, affects,

memories, information, and ideas. Sensorial flows and exchanges are part of this sensorial landscape and at the same form the 'glue' that holds them together. Sensorial assemblages can be brought together and constituted for specific performative events, temporarily territorialised in specific locales, and later dispersed (de-territorialised), and re-assembled, perhaps in a modified form and composition, elsewhere. Sensorial assemblages produce place and locality through evocative, affective, and mnemonic performances and interactions. In this paper, using specific examples, I will develop this concept further, placing particular emphasis on sensorial flows and on affectivity. I will show how sensoriality can contribute to a more fruitful deployment of the concept of the assemblage in archaeology, and more broadly.

Being, belief, comprehension and confusion: an exploration of the assemblages of English post-Reformation religious ontology.
Jude Jones, (University of Southampton)
The religious temperature of the early modern period in England was always close to boiling point. Given that Protestant belief was constantly challenged by residual Catholic adherence and practice, religious identity of whatever kind was crucial to both individual and parochial cosmological understanding. In this respect, the many spatial, sensory, material and performative changes which were visited on churches over this period were designed to shape and redirect belief but could also act to confuse and agitate some of those who experienced them. These could be seen in terms of outbreaks of 'pew rage', riots over the Laudian imposition of altar rails, and, by the 18th century, the reaction of many of the poorest parishioners to their gradual exclusion from the body of the church itself.

Such changes to spiritual materiality and spatial and sensory experience can be interpreted as networks which promoted differing clusters of interconnections to reflect the religious fluctuations of the institutions of Church and State. However they can also be envisaged as a series of constantly re-worked assemblages which were fiddled with for the same reason but which allow for the extra dimension of chronological development. As I have said, these assemblages included the constitution of the church's material body and its spatial arrangement but also, equally importantly, the synaesthetic and mnemonic impact of liturgical performance, the affective and emotive qualities of ritual involvement and the possibility inherent in any belief system for disengagement or transgression.

This paper examines some of these material assemblages and explores some of the more abstract and personal aspects which can usefully be applied to the term since, implicit in an assemblage, are the persons, past and present, who perceive and act within it.

Art, assemblage, alchemy: the decorated artefacts of Neolithic Britain and Ireland
Andrew Meirion Jones, (University of Southampton)
This paper explores a curious group of decorated artefacts from the middle and late Neolithic of Britain and Ireland. These artefacts of chalk, stone and antler are traditionally understood to be prestige goods, or 'symbols of power' (after the 1985 National Museum of Scotland exhibition) presumed to circulate as elements of a 'vocabulary of esteem' (Sheridan and Brophy 2012).
Recent research, using digital imaging techniques, as well as contextual analysis calls the prevailing interpretation into question. These artefacts have a restricted circulation, and are often rapidly made and discarded. Instead the act of making appears to be a significant feature of these artefacts. Why is this? This paper will focus on assemblage as a performative process associated with fashioning and making in addition to arranging or grouping. The paper will examine practices of making and deposition from two specific contexts: Folkton, Yorkshire and Monkton Up Wimborne, Dorset, and will consider these sites as part of a wider assemblage of activities associated with decoration and marking in the later Neolithic.

Temporality, assemblages and Black Swans
Johan Normark, (University of Gothenburg, Sweden)
Levi Bryant defines time as the duration a machinic assemblage needs to produce an output. The rate of production depends on the assemblage. Since Bryant follows the Bergsonian/Deleuzean order of time, where past and present are merged into a creative flow, the future is not included. Tristan Garcia proposes an order where the present comes first, followed by the past which has less degree of presence. Last comes future which has maximal absence. Future is only a fixed point of reference. Yet, it is this inexistent future cognitive assemblages attempt to predict. Calendar systems are tools for prediction, acting both as bright objects and incorporeal machines in Bryant's terminology.

As the past of an assemblage grows it becomes more determined which means that origins are open but later trajectories follows the constraints, entanglements and gravity formed by the assemblage itself. Its predicted future becomes increasingly narrower until the assemblage ceases to produce. This end is often an unexpected Black Swan event to the assemblage itself whereas archaeologists, in hindsight, insert a narrative behind the demise. One such narrative is the Maya collapse. Resilience theories and Holling's adaptive cycle are used as narratives to explain why the "Classic Maya Civilization" reorganized rather than collapsed. To the "post-collapse" Maya themselves the disruptions in assemblages related to the Classic period divine kingship led to a change in the calendar systems. Future was no longer a fixed point in a failed accumulative calendar, but a recurrent point in a cyclical calendar.

The World is a Great Winnowing Tray: qualities of practice, indigenous values, and an assemblage from a California Cave.
David Robinson, University of Central Lancashire
New discoveries from a Californian cave complex have found a remarkable assemblage of 'cached' perishable and other artefacts. Comprised of baskets, cordage, bone, antler, leather, food residues, and other materials, the assemblage is made from a wide range of practices included the act of caching within an interior cave space. This paper thinks through that assemblage by considering how the capacity of the individual objects and their grouping may relate to values within the society which cached it: this is challenging, as in order to approach this material it requires thinking about both technology and the quality of practice. In this paper, I discuss the site, its assemblages, and place it within a wider literature concerning caching, assemblage theory, and notions of quality and value.

An Assemblage of the Living and the Dead: A Re-Investigation of Tinkinswood Chambered Tomb
Jess Thompson, (University of Southampton)
Excavated in 1914, Tinkinswood (otherwise known as St. Nicholas) is a Cotswold-Severn tomb, located in the Vale of Glamorgan. The assemblage from Tinkinswood today comprises over 900 disarticulated and incomplete fragments of human bones and teeth, alongside several hundred animal bone fragments and a small number of artefacts spanning the Neolithic to Medieval periods. An analysis of this collection has not been published since the initial excavation report (Keith, 1916; Ward, 1915, 1916) almost 100 years on, is it possible to say anything new about the dead who were buried there?
Whilst it has traditionally been held that there is a lack of concern for individual integrity in single chambered tombs (Shanks & Tilley, 1982; Thomas, 1988), taphonomic analysis has demonstrated that most bodies were deposited whole at Tinkinswood. Successive deposits have fragmented the underlying bodies and skeletons, resulting in the loss of the original depositional layout. Working specifically with Bennett's (2010) concept of assemblage, the processes of bone diagenesis and disarticulation, involving hundreds of species of living micro-organisms, will be understood as key entities in this assemblage. These acts are responsible for the transformation of articulated and individual Neolithic bodies to disarticulated and fragmented 'human remains', no doubt resulting in

changing affects and meanings of the dead, as bones were handled and removed over time. The importance of the tomb context and subsequent artefact depositions will be considered in relation to this. We may understand Tinkinswood as comprising relationships between the living community, the newly dead, and decaying bodies and skeletons affected by this lively matter.

(S3) An Archaeology of Sport: Theory, Method and Practice
Session organisers: Paul Murtagh (Durham University/Archaeology Scotland) and Phil Richardson (Archaeology Scotland)

The session is concerned with exploring, defining and better understanding the archaeology of sport. Sport permeates many aspects of life in the modern world, from the everyday casual participation in sports, to global events such as the Football World Cup and the Olympics. However, whilst sport has been researched in many areas of the social sciences, particularly within the fields of Anthropology, Sociology and History, this area of research is remarkably understudied in Archaeology. Recently, there has been a growing interest in sports archaeology, including surveys and histories of sports places in a number of cities across the UK as part of the "Played in Britain" series (e.g. Inglis 2004). Archaeologists such as Jason Wood (2005; 2011) have promoted the heritage value of sports archaeology, and a recent edition of World Archaeology (2012) was dedicated to exploring a number of important sporting heritage themes. However, while these developments are welcomed, it is clear that, as a discipline, archaeology has yet to fully embrace sports heritage. This session aims to demonstrate how an archaeology of sport can provide us with a new ways of understanding how sport developed, the role of sport in society, as well as the value of sports heritage. In addition this session will explore how this emerging area of archaeological research allows us to examine wider theoretical themes to do with issues such as materiality, community and identity. This session features papers that explore questions such as: What is sports archaeology, and why is it important? What techniques and approaches should be used to study sports archaeology? In what ways can studying sports archaeology help us explore and better understand other archaeological questions?

09.30-09.50   **Sports Archaeology: Theory, Method and Practice.** Paul Murtagh, (Durham University/Archaeology Scotland) and Phil Richardson (Archaeology Scotland)
10.00-10.20   **Home and away: location, identity and the materiality of football grounds.** Christopher Davis, (Durham University)
10.30-10.50   **From Alice Street to the world: the afterlife of one of English football's lost grounds.** Rick Peterson, (University of Central Lancashire)
Break
11.20-11.40   **Beta Archaeology: ACCORD collaboration with Rock-Climbers at Dumbarton Rock.** Alex Hale, (RCAHMS), John Hutchinson (Dumbarton climber, University of Glasgow), John Watson (Dumbarton climber, Stone Country Press), Mhairi Maxwell (Digital Design Studio, Glasgow School of Art) and Stuart Jeffrey (Digital Design Studio, Glasgow School of Art).
11.50-12.10   **Creating an infrastructure for the nation's sporting heritage.** Justine Reilly, (Sporting Heritage CIC)
12.20-12.40   **Breaking Ground. Football and archaeology – a winning combination for artistic engagement.** Jason Wood (Heritage Consultancy Services)

Abstracts

An archaeology of sport? Theory, Method and Practice.
Paul Murtagh, (Archaeology Scotland/ Durham University) and Phil Richardson, (Archaeology Scotland)
What is sports archaeology? Is an archaeology of sport possible? What can an archaeology of sport tell us about contemporary society? And can an archaeology of sport inform us about wider archaeological questions and theories? This paper will seek to explore these questions so that we can better define and understand what sports archaeology and heritage is. It will also outline some of the ways in which we can do a sports archaeology, focusing on Archaeology Scotland's 'Playing the Past Project', and highlight some of the problems that can arise when engaging with such archaeology and heritage. Finally the paper will highlight how archaeologists can engage with and inform wider debates within society about sports heritage.

Home and away: location, identity and the materiality of football grounds
Christopher Davis, (Durham University)
From the beginnings of professionalism, in the latter half of the nineteenth century, a permanent home ground has been an integral part of any football club's identity. Initially constructed for fans whose attendance, loyal support and financial backing provided a steady stream of income, football grounds became local landmarks and part of urban landscapes or 'sportscapes' (Bale 1989). However, following the recommendations in the Taylor Report (1990) for the phasing out of standing terracing, many clubs faced the prospect of redevelopment of existing stands or the construction of new grounds in new locations to ensure similar attendances with all-seater capacities. The demolition of entire stadiums and rebuilding of individual stands led to concerns of the loss of monuments intrinsically linked to a major aspect of twentieth century social history. Though parts of some football grounds were listed, such as the Main Stand at Ibrox, many were destroyed or altered beyond recognition during the acceleration of redevelopment in the 1990s and early 2000s (Inglis 1996, 2000).
Whilst the listing of some stands was an acknowledgement of the architectural value of sports grounds, there has recently been an increasing appreciation of the inherent material value of football grounds in relation to identity. Movement away from a club's traditional ground not only leads to the loss of a particular landmark and sportscape but also the physical fabric of a communal focus that generations had congregated at and shared experiences of. Utilising examples from football grounds in Britain, this paper will explore the various ways that clubs and fans have responded to such processes of loss and movement. This will include engagement with the new spaces that the destruction of football grounds created, interaction with materials salvaged from football grounds during demolition, reconstruction and construction, as well as how such acts of fragmentation and enchainment memorialise lost grounds and sustain identities.

From Alice Street to the world: the afterlife of one of English football's lost grounds
Rick Peterson, (University of Central Lancashire)
In 2011 the University of Central Lancashire carried out two short seasons of excavation at Peel Park, the former home of Accrington Stanley FC (Peterson and Robinson 2012). This was an innovative project, not simply because it involved full-scale excavation on a former Football League ground, but because it was designed as a collaboration between sports journalists, a local school and academic archaeologists. This paper will look at the different expectations each of the partners had prior to fieldwork and how the details of the archaeology influenced the different outputs of the project. These included academic research papers, fanzine articles, a TV segment on a football round-up show and key stage 2 history lessons.

Beta Archaeology: ACCORD collaboration with Rock-Climbers at Dumbarton Rock

Alex Hale (RCAHMS), John Hutchinson (Dumbarton climber, University of Glasgow), John Watson (Dumbarton climber, Stone Country Press), Mhairi Maxwell (DDS, GSA) and Stuart Jeffrey (DDS, GSA)

The ACCORD project explores opportunities and implications of community co-production of 3D heritage site records. The ACCORD team worked with a group of rock-climbers at the site of Dumbarton Rock (colloquially referred to as 'Dumby') from the 8th to 10th of July this summer. Our focus was not the historic Castle which sits atop this volcanic plug, rather together we recorded and modelled a particular aspect of the Dumbarton Rock cliff face and some of the boulders, which are the focus of the climbers' activities. We used photogrammetry and RTI (Reflectance Transformation Imaging) and laser scanning to record aspects of the sporting heritage of Dumby. This collaborative paper is the outcome of a longer term engagement and discussion which has emerged from this work. The role of 3D recording and modelling in expressing and creating value attached to the monuments will be discussed.

Here we will put the 3D recording undertaken in context, specifically as a site of contested sporting heritage. This loved edgeland, in all its grittiness, is the main actor in the relationships established here. Additionally, climbers have a rich body of knowledge. Creating 3D records of their climbing heritage has facilitated a means of sharing this knowledge, a step towards fulfilling their aim to legitimise this place as a site of historical importance. 'Beta' is the colloquial climbing term used to refer to the knowledge that must be unlocked in order to succeed and complete a bouldering problem or climbing route. But as we hope we make clear in this presentation it also has relevance for understanding the success of our collaboration.

ACCORD (Archaeology Community Coproduction of Research Data) is funded by the AHRC under the Connected Communities stream and is a 15 month partnership between the Digital Design Studio at the Glasgow School of Art, Archaeology Scotland, the University of Manchester and the RCAHMS. For more information check out our blog www.accordproject.wordpress.com or twitter @ACCORD_project.

Creating an infrastructure for the nation's sporting heritage.

Justine Reilly, (Sporting Heritage CIC)

This year saw the launch of two national programmes specifically to support the nation's sporting heritage, National Sporting Heritage Day and the National Sports Museum Online. This presentation will provide information about both initiatives and welcomes feedback about the projects.

The National Sporting Heritage Day aims to provide an annual focus point for organisations across the country, big and small, to remember the importance of sporting heritage to a wide range of social, political, cultural and economic stories. Rather than seeing sporting heritage as something which is celebrated only during major sporting events, the event aims to raise the value of such collections and recognise its importance on a par with other topics. The National Sporting Heritage Day takes place on the 30th September, and in 2014 alone over 20 organisations were involved, with hundreds of people, young and old, taking part. The National Sports Museum Online aims to draw together, for the first time, information about all sporting collections held in the UK, tangible and intangible. They may be privately owned or designated collections, held by local sports clubs, or national museums. The objective is to establish an online database of sporting collections which provides information about what exists, where it is held, and how to access it.

Breaking Ground. Football and archaeology – a winning combination for artistic engagement

Jason Wood, (Heritage Consultancy Services)

In November 2013, Park Avenue football ground, a long forgotten time capsule of Bradford's social history, began to be unearthed when artist Neville Gabie and archaeologist Jason Wood conducted the first ever archaeological excavation of a football goalmouth and goalpost. This small intervention was witnessed by people of all ages. Most had stories to tell; all displayed a passion for the former ground and a willingness to see it investigated and utilized to better effect. Scrambling through the

forest of trees that now occupy the terraces, where crowds in excess of 30,000 regularly stood to watch top flight football, they recounted games they had seen and relocated where they used to stand. Many others from the surrounding housing estate came, fascinated by the archaeology and keen to try themselves.

The wealth of history associated with Bradford Park Avenue, the landmark design of the stadium by Archibald Leitch, its relative intactness, its location in an area of significant cultural diversity, relatively disenfranchised from the arts and heritage, provide a perfect opportunity to develop a high quality project around a subject with popular appeal. The archaeology is to some extent a 'device'. Our objective is to reveal and promote the significance of the place through art, with the ultimate intention being to pair several artists, photographers and musicians with archaeologists, social historians and geographers working in partnership with community groups to deliver a multifaceted arts and heritage project with a genuine focus on public engagement.

This paper will recount the experiences of the Breaking Ground project to date and consider its potential to support and perhaps even rebuild a sense of community through the common heritage of football. It will lead into a discussion about sports archaeology and wider theoretical themes such as materiality, community and identity.

(S4) Bridges Over Troubled Theoretical Waters.
Session organisers: Paul R Preston, (Lithoscapes Archaeological Research Foundation), Katie Davenport-Mackey, (Lithoscapes Archaeological Research Foundation and University of Leicester), Seosaimhín Bradley (University of Central Lancashire) and Tom Elliot, (University of Worcester).

Session Chair: Vicki Cummings, (University of Central Lancashire)

During recent workshops of the *MESO*-Lithics project, a number of issues have arisen that have far-reaching implications for archaeology as a whole. Namely, interpretations derived from archaeological theory in prehistoric studies are becoming ever more ambitious, ranging from low-order functional or economic theory to higher-order socially or stylistically mediated narratives. However, such interpretations are presently limited by the legacy of ideological upheavals and profound revolutions in thought over the last sixty years. From Culture History to the post-Post-Processual fragmentation of theoretical perspectives. Added to this is the prevalence of following fashionable philosophers such as Bourdieu, Heidegger and Deleuze (to name just a few). However, a common feature that has remained a detriment to archaeological studies is the tendency of disciples of each theoretical movement to reject that which went before —*throwing out of the methodological and conceptual baby with the theoretical bathwater*— irrespective of the value of certain approaches. One of the major casualties of these 'revolutions' is the use of data to support interpretations - especially by theorists. As a result, many have apparently forgotten the role of, or indeed how to marshal, data in their interpretations. Instead narratives have become ideologically led, as archaeologists increasingly prefer 'top down' theoretical approaches. This session aims to redress this by promoting a discussion on how this impasse may be redressed by showcasing recent attempts by archaeologists to bridge this important, conceptual divide between data and theory. Contributions focus on a number of aspects of archaeological evidence, including but not limited to - lithics, ceramics, faunal remains, osteology, environmental studies, chronologies, and other data. We aim to publish the results of this session.

9:00-9:25	**Never Mind the Boswellox®— Where's the Data, Method and Research Framework?** Paul R Preston, (Lithoscapes Archaeological Research Foundation)
09:25-9:50	**What Constitutes Archaeological Data?** Elisabeth Corey-Lopez, (University of Edinburgh)
09:50-10:15	**Building on Quicksand: Categorical Systems, Semantic and Lexical Dissonance, and the Conceptualization of Archaeological Theory.** Matthew Swieton, Alice La Porta and Debanjan Mitra, (University of Exeter)
Break	
10:40-11:00	**Striking a balance: macroscopic vs. microscopic analysis of flint from archaeological contexts.** Seoshimin Bradley, (University of Central Lancashire)
11:00-11:25	**Answering Theoretical Difficulties of Submerged Contexts Using Stone Tool Provenancing.** Josephine Mills and Matthew Pope (UCL Institute of Archaeology)
11:25-11:50	**Can Data be Used to Test Archaeological Theories, Views from the Palaeolithic. Part 1: Testing Climate and Environmental Determinism in the European Middle and Upper Palaeolithic.** Rupert. A. Housley (Royal Holloway, University of London and RESET Associates)
11:50-12:15	**Can Data be Used to Test Archaeological Theories, Views from the Palaeolithic. Part 2: Examining Diffusionism Vs. Technological Innovation in the Middle Palaeolithic of Europe and Africa.** Simon P. E. Blockley (Royal Holloway, University of London) et al.
12:15-12:40	**Using Geometric Morphometrics and Statistical Analysis of Flake Scar Patterning of Clovis Fluted Points to Document Interaction and Drift**. Eren Metin (University of Missouri and Cleveland Museum of Natural History), Briggs Buchanan (University of Tulsa), and Michael J. O'Brien, (University of Missouri).
12:40-13:00	**Questions**
Lunch	
14:00-14:25	**Biographies of the Land: Using GIS, Geophysics and Human Geography to Understand the Later Prehistoric Yorkshire Wolds.** Emily Fioccoprile, (University Of Bradford)
14:25-14:50	**Moving Away from the Empirical/Experiential Dichotomy: An Attempt to Integrate Data and Theory in the later Prehistoric Landscapes of the Yorkshire Dales.** Mary K. Saunders, (University of Bradford)
14:50-15:15	**The Smooth, the Striated and the Ugly: Making Space for Data in Landscape Archaeology.** Katie Davenport-Mackey (Lithoscapes Archaeological Research Foundation and University of Leicester) and Paul R Preston (Lithoscapes Archaeological Research Foundation).
15:15-15:40	**How far can we use Laplace's Principle of Insufficient Reason to Model Prehistory?** Ray Rivers, (Imperial College London)
Break	
16:00-16:25	**Through the Smoke: Materialities and Memories in the Canadian 'Neolithic'.** Gregory Braun, (University of Toronto)
16:25-16:50	**Narrating life histories of copper-alloy artefacts: a case study on flow of metals and ideas in eastern Eurasia during the second half of the second millennium BC.** Gary (Yiu-Kang) Hsu and Ruiliang Liu, (University of Oxford)
16:50-17:15	**Form and Flow: The Karmic Cycle of Copper.** Mark Pollard, Peter Bray, Chris Gosden and Ruiliang Liu (University of Oxford).
17:15-17:25	**Questions**
17:25-17:40	**Discussant: Thoughts and Reflections.** Rob Gargett (www.the subversivearchaeologist.com)
17:40-18:00	**Discussion**

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Abstracts

Never Mind the Boswellox® — Where's the Data, Method and Research Framework?
Paul R Preston, (Lithoscapes Archaeological Research Foundation)
The conceit of this paper is to introduce TAG 2014 Session 4. Within archaeology there has arisen an increasingly artificial polemic of science versus 'theory' associated with a pervasive myopic view that there is only one type of archaeological 'theory' — namely, higher order 'hyper-theory' centred on philosophical appropriations, rather than 'low order' methodological or scientific approaches. At its most extreme archaeology seems to have become caricatured into two extreme positions: the ' I don't do science' and the 'I don't do theory' groups. This has resulted in a deep seated division within archaeology between a between an approach that has a viable research methodology, but ignores social, political and cultural engagements and an approach that emphasises a social understanding of material culture, but lacks an explicit methodology. This paper will demonstrate the myriad consequences of this divide between science and theory and the need to combine, rather than oppose both approaches so as to transcend this difficult polemic within archaeology. This will be illustrated by a case study showcasing a holistic systematic methodology and referential framework for the Mesolithic.

What Constitutes Archaeological Data?
Lizzie Corey-Lopez, (University of Edinburgh)
In reality the definition of archaeological data is bounded by the decisions of archaeologists. It will be limited by experience, knowledge, restricted by research questions and ultimately the survival of primary evidence. Within most areas of prehistory the last element can be very scant indeed. The use of theories borrowed from other areas of the humanities present a tempting solution to the interpretative gaps left by a deficit in the archaeological record. It is very tempting when existentialists such as Heidegger and Deleuze place such a strong emphasis on the universal role of experience to the development of the human condition. Although in other theoretical perspectives, such as Darwinism and Evolutionary theory there will be a necessary allowance for probability to bolster the lack of proof. The bolster in these cases rely on empirical evidence which is tested through scientific principles. In archaeology humanistic theories can appear comparatively idealistic; as self-evident and self-referencing because the human condition itself is taken as the ultimate proof. However, in beginning with these philosophical theories as the starting point the danger will always be the risk of fitting the limited facts to suit that ideal. I have been utilising more pragmatic theoretical concepts, such as Chaînes Opératoires and Middle Range Theory, combined with low level experiments to link the Picrolite figurine repertoire of 4th Millennium Cyprus to the carvers. Instead of focusing on the social background as the starting point, I have chosen to begin with the material itself, the stone, Picrolite: its structure and working properties (using the techniques allowable within the archaeological context). This approach, which I have titled Praxis, heavily relies on combining the direct experience of the working processes, the material, and the debris it produces, linked to a close understanding of the archaeological record. The middle-range method provides a foundation for continued hypothesis building and further testing in a more narrowly focused vein. In doing so, the question still remains: am I creating data which can provide a solid interpretative base or not? Therefore: what should constitute archaeological data?

Building on Quicksand: Categorical Systems, Semantic and Lexical Dissonance, and the conceptualization of Archaeological Theory
Matthew Swieton, Alice La Porta and Debanjan Mitra, (University of Exeter)
Although the discipline of archaeology is defined by interpretation, it also relies on the construction and application of meaningful categorical systems. Historically, such modes of systemic categorization include typology, technology, and functionality; their application, moreover, is not mutually exclusive. These existing modes, however, lead to differential interpretations of the

archaeological record. We contend, by applying a comparative methodology of case studies, that the differential applications of these categorical systems in prehistoric lithic analysis leads to dramatic variations of interpretation, thus inhibiting the conceptualization of meaningful theory. Furthermore, through an examination of the development of lithic studies conducted in European and North American prehistory we shall demonstrate the following: varying interpretations between Intra- and Inter-continental categorical systems, semantic and lexical discrepancies in archaeological discourse, the resulting political effects of constructing prehistoric narratives under these conditions, and the hindrance of contextualized theory that follows.

Striking A Balance: Macroscopic vs. Microscopic Analysis Of Flint From Archaeological Contexts.
Seoshimin Bradley, (University of Central Lancashire)
Flint tools are arguably the most numerous artefact type recovered from prehistoric sites in Britain and Ireland. Knowing which sources of flint were exploited for tool-making has the potential to change our perception of how prehistoric communities lived, moved, and traded goods within their landscape. Research undertaken by the Implement Petrology Group has revolutionised our understanding of how other lithologies were procured and transported through petrological and geological studies, however similar analyses of flint have been partial and sporadic. This may be due to the inherent difficulty in studying the structure of flint, or the over-reliance on qualitative, macroscopic methods of identification. These methods rely on visual characteristics of the flint, and have been used to 'source' flint to specific areas, e.g. movement of flint from the Yorkshire Wolds and Antrim coast into Scotland. The use of macroscopic characteristics is fraught with problems, and instead of enhancing our interpretations, can actually cause confusion. This paper will present the advantages of and disadvantages of the qualitative approach most commonly used in archaeological analysis of flint, before suggesting that the application of existing scientific methodologies can shift our attention from appreciation of colour, size, and texture, to more diagnostic differences. However, simply adding 'science' is not a silver bullet to the thorny issue of flint provenancing - can we strike a balance between the qualitative and the quantitative?

Answering Theoretical Difficulties of Submerged Contexts Using Stone Tool Provenancing.
Josephine Mills & Mathew Pope, (UCL Institute of Archaeology)
This research is focused on understanding Neanderthal landscape use and behaviour in the Gulf of St. Malo through exploring the provenance of raw materials used in the Middle Palaeolithic of the region. The ultimate aim is to understand raw material acquisition and subsistence strategies found on the far western fringes of the Neanderthal world, putting key Middle Palaeolithic sites, such as La Cotte de St. Brelade, into a regional context. However the study area represents a dynamic context that changed dramatically throughout the Pleistocene as climate fluctuation prompted sea level rise and fall during glacial and interglacial periods. Currently we are faced with two main problems, we cannot study the vast majority of the Neanderthal landscape because it is now submerged by modern sea level thus consequently no direct mapping of raw material outcrops is possible without expensive and potentially dangerous underwater investigation. We see stone tool provenancing, in particularly flint provenancing, as a key method to draw links between sites across the Gulf of St. Malo allowing us to suggest how many flint sources were used and where these may be located. This would in turn provide a reference from which to explore behavioural characteristics of Neanderthal subsistence such as raw material preference, distance travelled, and interaction with the complex topography of the continental shelf. In this way flint provenancing may figuratively draw back the water revealing important, and otherwise unreachable, features of the Neanderthal occupation on the Armorican Massif.

Can Data be used to Test Archaeological Theories, Views from the Palaeolithic. Part 1: Testing Climate and Environmental Determinism in the European Middle and Upper Palaeolithic
Rupert. A. Housley (Royal Holloway, University of London and RESET Associates)

There has been a long debate within archaeology on the role of environment in influencing the evolution and adaptation of human populations. While for a long time unfashionable recent studies have re-emphasised the role of climate change in directly influencing change in the archaeological record. This has been particularly prevalent in Palaeolithic studies, where climate forcing on the dispersal, contraction, extinction and genetic variability of humans has been proposed. At the same time some researchers have emphasised the potential for social and cultural drivers of change. All of these discussions have been backed up with data but inherent uncertainties, particularly over chronology has limited the potential to robustly test some of these ideas. Here we review the latest technical developments and re-explore some key debates in the Middle and Upper Palaeolithic of Europe.

Can Data be used to Test Archaeological Theories, Views from the Palaeolithic. Part 2: Examining Diffusionism vs. Technological Innovation in the Middle Palaeolithic of Europe and Africa

Simon P. E. Blockley (Royal Holloway, University of London), Daniel S. Adler (University of Connecticut), Daren. F. Mark (Scottish Universities Environmental Research Centre), Ron. Pinhasi (University College Dublin), Beverly A. Schmidt-Magee (University of Connecticut), Samvel Nahapetyan (Yerevan State University), Caroline Mallo(Universidad de La Laguna), Francesco Berna (, Simon Fraser University), Phil J. Glauberman (University of Connecticut and Üniversiteler Mah, Ankara), Yannick. Raczynski-Henk (Yerevan State University), Nathan Wales (University of Connecticut and University of Copenhagen), Ellery Frahm (University of Sheffield), Olaf Jöris (MONREPOS Archaeological Research Centre and Museum for Human Behavioural Evolution, Römisch-Germanisches Zentralmuseum Mainz), Alison. MacLeod[1], Victoria. C. Smith (Royal Holloway, University of London), Victoria L. Cullen (University of Oxford), & Boris Gasparian (National Academy of Sciences of the Republic of Armenia).

A second long-standing debate within archaeology has been the contrast between ideas of diffusion versus internal development to explain technological change. Within Palaeolithic archaeology there are several examples of the fairly rapid appearance of new forms of technology that have been attributed to the appearance of new Hominin species within a region. While some examples of this application of a diffusionist model, for example the attribution of Aurignacian technology and its appearance across Europe to the arrival of Anatomically Modern Humans, other technological transitions within both European and African records are more contentious. Here we discuss new evidence for the timing and nature of the onset of Levallois technology and discuss the evidence for development out of earlier traditions vs ideas of technical diffusion.

Using Geometric Morphometrics and Statistical Analysis of Flake Scar Patterning of Clovis Fluted Points to Document Interaction and Drift

Eren Metin, (University of Missouri and Cleveland Museum of Natural History), Briggs Buchanan, (University of Tulsa) and Michael J. O'Brien, (University of Missouri)

Clovis projectile points appear to have been made the same way regardless of geography, but several studies have documented differences in shape that appear to be regional. Two principle processes have been proposed for shape variation: stochastic mechanisms such as copy error (drift) and Clovis groups adapting their hunting equipment to the characteristics of prey and local habitat. Via the combination of geometric morphometrics and statistical analysis of flake scar patterning we conducted an analysis of 115 points to examine whether stochastic mechanisms alone could cause significant differences. Our analysis was intraregional, so as to rule out a priori environmental adaptation. Analysis of flake scar patterning confirmed that the production technique was the same across the sample, but we found differences in shape that highly correlated with the stone outcrop from which Clovis points originated. Our dichotomous, intraregional results quantitatively confirm that Clovis foragers engaged in two tiers of social learning. The lower, ancestral, tier relates to point production and can be tied to conformist transmission of ancestral tool-making processes across the

Clovis population. The upper, derived, tier relates to point shape, which can be tied to drift that resulted from increased forager interaction at different stone-outcrop "hubs".

Biographies of the Land: Using GIS, Geophysics and Human Geography to Understand the Later Prehistoric Yorkshire Wolds.
Emily Fioccoprile, (University Of Bradford)
During the first millennium BC, the people of the Yorkshire Wolds began carving up their world with linear earthworks. Through the integration of GIS, geophysical fieldwork and human geography, this paper proposes a biography for the land surrounding the monumental earthworks at Huggate Dykes, first excavated by JR Mortimer in the 19th century. The paper traces the life of the monument through several phases of construction and modification, exploring how it developed in a place that was already alive with myths and meaning. It examines how people would have experienced, contextualised and re-negotiated the monument and its landscape over time. Finally, the paper asks when and why Huggate Dykes ceased to hold special meaning—essentially, when the monument died—and how its story can help us to understand life in later prehistoric East Yorkshire. In order to create a biography of Huggate Dykes, the paper draws upon a variety of data sources, including: OS and antiquarian maps; aerial photographic transcriptions from the National Mapping Programme; targeted geophysical fieldwork; JR Mortimer's childhood experiences; and Drayton's seventeenth-century Poly-Olbion. Such a biography should concern not only the physical environment, but also the intangible characteristics that defined a place in the past (e.g. perceived agency, ancestry, magic). This paper considers how the story of Huggate Dykes would have been intertwined with those of humans, animals, objects and other sites on the Yorkshire Wolds. It opens up a dialogue between data and theory, approaching from both sides in order to arrive at the best possible interpretation.

Moving Away from the Empirical/Experiential Dichotomy: An Attempt to Integrate Data and Theory in the later Prehistoric Landscapes of the Yorkshire Dales
Mary K. Saunders, (University of Bradford)
The approaches currently used in British landscape archaeology epitomise the idea of a divide between empirical, data-driven research and work undertaken within a conceptual and theoretical framework. This dichotomy is at its most extreme in the study of prehistoric landscapes, where most recent theoretical debate has occurred. Tension exists between those undertaking 'objective' fieldwork, who question the validity of highly conceptual ideas, and theorists who fail to fully understand or appreciate how best to collect, use or interpret field data. During the first year of a PhD project, in collaboration with the University of Bradford, Dales Landscape Heritage and the Yorkshire Dales National Park Authority, several complementary survey data sets were collected over part of one of the later prehistoric field systems which characterise the Yorkshire Dales. Rather than empirically viewing these datasets as the end product of the work, they are instead considered as a form of evidence from which archaeological hypotheses and theories can be drawn. This presentation illustrates how data and theory can be successfully integrated in the study of prehistoric landscapes.

The Smooth, the Striated and the Ugly: Making Space for Data in Landscape Archaeology
Katie Davenport-Mackey, (Lithoscapes Archaeological Research Foundation and University of Leicester) & Paul R Preston, (Lithoscapes Archaeological Research Foundation).
This paper examines Mesolithic hunter-gatherer occupation of mountain landscapes in Northern England. It combines data from new lithic analyses and site characterisations with anthropological lines of evidence in order to reappraise current models for understanding Mesolithic use of the landscape. It proposes a radically new narrative that intimately links hunter-gatherer mobility strategies with stone tool use and flexible ways of inhabiting and exploiting the changing landscape. It concludes that the Mesolithic sites in this case study were situated on traditionally

used transit routes across the mountains and were adjacent to culturally important 'handrail' landmarks. Furthermore, an analysis of site investment features demonstrates that a number of sites were intended to be revisited on a future occasion. Therefore it is argued that sites were likely to have been culturally and functionally significant persistent places.

How far can we use Laplace's Principle of Insufficient Reason to Model Prehistory?
Ray Rivers, (Imperial College London)
Laplace's Principle of Insufficient Reason (PIR) was proposed for the gaming tables of the ancien regime. It suggests that, in the absence of complete knowledge about a system, we should give equal likelihood to all alternatives that are commensurate with the information that we possess (i.e. flat Bayesian prior). Since the knowledge that we have about a system is encoded in its entropy, the PIR can also be interpreted as looking for configurations of maximum entropy. This approach has been adopted by archaeologists to help understand settlement formation in Archaic Greece (Rihll and Wilson 1987) and Bronze Age Syria (Davis *et* al 2014) as well as the maritime networks of the Bronze Age Aegean (Evans *et al* 2012). In this paper I shall recapitulate these ideas and, if possible, briefly consider their application to the distribution of Neolithic hand axes in the Vaucluse (Wilson 2007).

Through the Smoke: Materialities and Memories in the Canadian 'Neolithic'
Gregory Braun (University of Toronto)
Iroquoian smoking pipes were symbolically charged objects entangled in webs of memory, ritual performances, and other social practices. By examining the biographies of smoking pipes through the lens of situated learning, and contrasting them with those of other ceramic objects, we may better understand the various communities of practice involved in their production, use and discard. This paper uses petrographic, experimental and spatial data to explore the ceramic industries at several Iroquoian villages inhabited before European contact. My examination suggests that some of the raw materials used in pipe and pot manufacture were symbolic referents that reflected and reified Iroquoian cosmologies. These materials, although invisible after manufacture, acted as framing devices for shamanic and other social practices throughout the biographies of smoking pipes. In addition, the changes in smoking technologies that occurred alongside the coalescence of Iroquoian society suggest a shift from public to private smoking rituals, one that was related to the dramatic social changes that must have occurred alongside the adoption of a 'Neolithic' way of life. Keywords (if necessary): Neolithic, Iroquoian society, materiality, object biographies, communities of practice, smoking pipes, shamanism, petrography.

Narrating Life Histories of Copper-Alloy Artefacts: a case study on Flow of Metals and Ideas in Eastern Eurasia During the Second Half of the Second Millennium BC
Gary (Yiu-Kang) Hsu & Ruiliang Liu (University of Oxford)
Life histories of metallic artefacts can be investigated by following object lives from birth, life, to death. Conventional provenance studies, linking chemistry of metal with ore deposits, overemphasise where objects were produced or "born", but neglect transformations that would occur during their lifetime via the recycling or mixing of metal from different contexts. In this paper we argue that re-melting and re-casting of ancient copper-alloy objects can cause two particular transformations. One is the chemical alteration that manifests the circulation of metal in both regional and inter-regional scales. The other is the ideological change that re-modifies the outside metal into favourable shapes or forms in individual communities. Our case study on metallurgy in eastern Eurasia demonstrates these two modes of transformations. On the one hand, chemical data suggest the dynamic of metal flow between three major metallurgical centres: Minusinsk Basin, Kazakhstan, and China. On the other hand, ideas of making certain steppe-style artefacts were freely transferred between these regions where metalworkers utilised indigenous resources to re-create the objects in favour of local tastes.

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Form and Flow: The Karmic Cycle of Copper.
Mark Pollard, Peter Bray, Chris Gosden and Ruiliang Liu (University of Oxford).
There is overwhelming evidence that the recycling of copper was practised in both historic and prehistoric contexts. This has led us to fundamentally re-evaluate our approach to the interpretation of chemical and isotopic data from archaeological copper alloy objects. We would argue that, in focusing exclusively on the search for static geological origins or 'provenance,' conventional object-based perspectives have ignored the complex effects of human action on the chemical and isotopic composition of metal. Accepting that human interactions with metal (reworking, recasting, mixing and re-alloying) may weaken and ultimately destroy the possibility of provenance in a traditional sense does not, however, diminish the value of archaeometallurgical chemical and isotopic research. If we approach such studies of ancient metal from a broader perspective, taking a life-history approach to both objects and the metal from which they are made, then the dynamic composition of copper can provide us with the key to understanding structure in the data. We argue, that the composition of the flow of metal contains information of far more value than simple notions of 'source' – but it is complex and socially-embedded. Many archaeologists are now beginning to appreciate the potential importance and impact of recycling in the past, and we suggest that the methodology outlined here is a way of directly addressing these issues.

(S5) Between the Arts and Archaeological Interpretation
Session organisers: Stephanie Koerner (University of Manchester and University of Liverpool) and Claire Marshall (Plateau Imprints)

Few participants in TAG's first meetings are likely to have expected that innovations in the arts would come to play crucial roles in in the dynamics of archaeological research and the ways in which findings are interpreted. At the time the most influential polemic was grounded in notions that saw the arts and the humanities, on the one hand, and the so-called hard sciences, on the other, as opposed and mutually uncomprehending 'two cultures' (Snow 1962; Preucel 1991). However, starting already in the late 1980s (e.g. Pearson and Thomas 1988), the situation has been radically transformed by remarkable innovations in the dynamics of the arts and archaeological and historical interpretation (for instance, Renfrew, Gosden and DeMarrias 2004; Adkins 2012; Ross 2013). The broad aim of this session is to bring together practitioners with very diverse disciplinary backgrounds together in an exploration of patterns of diversity and overlap between such innovations. The themes and issues that the session explores include (but are not all restricted to):
precedents and parallels;
archaeologists and artists as curators – curators as archaeologists and artists;
media, aesthetic experience, participation;
substance, memory, display;
plurality of sensorial experience;
experimentally in archaeology and the arts;
challenges of interpreting the 'contemporary past;
material culture interfaces of the actual and the possible.

09:00-09:05   Introduction
09:05–09:25   Interfaces of the Arts and Archaeological Interpretation. Stephanie Koerner (University of Manchester; Liverpool University)
09:25-09:45   Material Balance: 'Re-enactment' as Interface of Performance Art and Curatorial Practice. Louise Adkins (Manchester Metropolitan University)

09:45-10:05 **Conversations Among Friends: Artists' and Archaeologists' Friendships and the Works of interpretation, 1900 to 1939.** Helen Wickstead (School of Art and Design History, Kingston University, London)

10:05-10:25 **Intersensorality, Indeterminacy, Experimental Sound Design and Archaeological interpretation.** Claire Marshall (Plateau Imprints)

10:25-10:45 **"A busload of Indians": the story of Upper Cingati.** Justine Wintjes (Wits School of Arts, University of the Witwatersrand)

Break

11:15-11:35 **Media, Archaeology, Diversity of Audiences, Museums, the Contemporary Past.** Kostas Arvanitis (University of Manchester)

11:35-11:55 **Multi-Media, Prehistoric Sites, Public Engagement.** Rupert Till (Huddersfield University)

11:55-12:15 **Crossroads between Contemporary Art and Archaeology: What Can We Learn from Atlantic Pock Art?** Joana Valdez-Tullett (University of Southampton, CEAACP; J.Valdez-Tullett@soton.ac.uk)

12:15-12:35 **"Precarious Visualities and Interpreting the Contemporary Past in the Work of Christian Boltanski, Taryn Simon and Adela Jušić"** Imogen Mcroberts (University of Manchester)

12:35 **Discussion** Led by Professor Julian Thomas (University of Manchester) and Professor Mike Pearson (University Aberystwyth)

Abstracts

Interfaces of the Arts and Archaeological Interpretation
Stephanie Koerner (University of Manchester; Liverpool University)

According to Alexander Nagel (2012), in the 1960s, "the story of the end of art" was both a recurrent theme in modernist art criticism and a "battle cry" in much artistic and gallery management. One of the most influential corollaries of this "story" has been the predominance of characterisations of Modern Art as having broken away from traditions that have seen representation - and especially historical representation – as the key functions of art. Weibel (2002) explains that the 'crisis over representation' in the history of art began when predominant paradigms for philosophy denied its having a role to play as "a medium of truth and knowledge, a medium with whose help the world could be recognized and explained…. [A]rt internalized these externally imposed dictates and in a series of manifestos during the twentieth century, continually proclaimed a crises of representation and the end of art." All this helps focus attention on the remarkable novelty of recent innovations in Contemporary Art centring on the complexities of interpreting the 'contemporary past' – history here and now in the making (Benjamin 1940).

There is extraordinary diversity amongst current innovations in the dynamics of the arts and archaeological interpretation. However, it is possible to identify several remarkably recurrent themes relating to the aims of this session, for instance: in projects that go against the grain of 20th century claims about art – and especially art's relationship to history – having reached the 'end of the road' (Weibel 2002, 2005; Pearson 2010); in new lines of inquiry that go against the grain of notions that see archaeology's subject matter as restricted to the distant past (Schofield 2005) , which focus on the 'contemporary past' (Buchli and Lukas 2001) - the irreducibly contingent "Zetztzeit" (history here and now in the making (e.g., Benjamin 1940); and amongst innovations in the arts and archaeological interpretation, which are replacing traditions that have prioritised sight and/or vision with approaches that appreciate the plurality of aesthetic experience (e.g., Classen 1993). This presentation explores aspects these innovations and themes in long term historical perspectives, and their bearing upon such widely debated questions as those of: What of the past should be studied and interpreted? Why? By and for Whom? How?

Material Balance: 'Re-enactment' as Interface of Performance Art and Curatorial Practice
Louise Adkins (Manchester Metropolitan University)
Few questions pose more complex challenges for artists working as curators and curators working as artists today than those about the ways in which 're-enactment' engages the dynamics between the 'the actual and the possible.' This presentation develops a perspective on these topics using examples from a series of performance art events at the Cornerhouse Gallery, Manchester, entitled "Between 2012," in which 're-enactment' played key roles. One of these was a 're-enactment' of the third game in the 1972 World Chess Championship, between American Bobby Fisher and the Soviet defending champion, Boris Spasskey. Yet, 're-enactment' was at the heart of the curatorial activities involved in creating the series, as well, because of the roles played as curatorial model by a series of temporary events/exhibitions (likewise entitled 'Between'), which took place from 1969-1973 the Dusseldorf *Kunsthalle* (art hall), Germany in times between institution's mainstream exhibitions.

Conversations Among Friends: Artists' and Archaeologists' Friendships and the Works of interpretation, 1900 to 1939
Helen Wickstead (School of Art and Design History, Kingston University)
"Civilization", to Stuart Piggott, lay in "development of the arts of intercourse; the means for stimulating witty and subtle conversation between cultivated men" . In this paper I examine conversation among friendship groups including archaeologists and artists. I hypothesize a process of archaeological interpretation that emphasizes its 'hermetic' qualities. In the earlier twentieth century, I argue, the 'full story' emerged through conversations among men and (importantly) women in elite groups; published literature contained only restricted elements of interpretation suitable for sharing with the uninitiated. Artists, writers and performers bound friendship networks together deploying interpretative knowledge only fully available via group membership. I explore this hypothesis using correspondence and archival materials related to two groups: (1) A group described by the archaeologist O.G.S. Crawford as "The Cult of Kata", including archaeologists, novelists, musicians, composers and performance artists, active between the late 1900s and 1930s; (2) Visual artists and writers associated with the Morven Institute of Archaeological Research's excavations at Avebury, active 1934 to 1939.
Works of interpretation included novels, plays, poetry, dance pieces, musical compositions, paintings, sculpture and archaeological texts, but the "arts of intercourse" interlinking this work were of primary importance. Comparing the earlier Cult of Kata with the later Morven Institute reveals how the increasing institutionalization of interwar archaeology, alongside processes of professionalization associated with modernist formations in the arts, restructured intercourse among friendship groups. Professionalization refashioned the social relations of interpretation, with consequences for how we might use archaeology and the arts to think today.

Intersensorality, Indeterminacy, Experimental Sound Design and Archaeological interpretation.
Claire Marshall (Plateau Imprints)
In this paper, Prigogine's insights of the roles of 'contingency' 'indeterminacy' and 'non-linear dynamics' in the ways in which critical experiments give rise to surprise provide points of departure for examining innovations in multi-sensory interpretation of archaeological sites and objects. I will focus particular attention on contributions these insights' advantages can make to using experimental sound design in archaeological interpretation in fieldwork, museum and heritage site contexts. My case is the work being carried out on the VR reconstruction of the Ribchester Roman Fort in Lancashire for the 2014 centenary celebrations. Due to be unveiled in September 2014, this case will be amongst the first full 4D interpretations and multi-sensorial interpretations of a site in the UK, which foregrounds the intersensoriality (e.g., Howes 2003, 2006) and indeterminacy of 'material culture,' in general, and public heritage interpretation and experience, in particular.

"A busload of Indians": the story of Upper Cingati
Justine Wintjes (Wits School of Arts, University of the Witwatersrand)
I tell the story of a small painted shelter situated in the Busingatha Valley of the northern KwaZulu-Natal Drakensberg known as kwaTshane Elibomvane. It was originally recorded in the 1920s by a little known photographer from Natal and the ninth Frobenius expedition to Africa. Several painted slabs were subsequently removed and the site's remaining paintings engulfed by graffiti. The link between the 1920s recordings and the physical site quickly vanished into the archive, and the photographs and hand-drawn copies were assumed to have originated in a bigger and more famous, but ultimately also ruined, site lower down in the valley called Cinyati (or eBusingatha). In an attempt to reverse this process and to reconfigure the archive according to (what is left of) the original place and its paintings, my paper examines the record pertaining to this 'lost' site and proposes a digital revisualization.

Media, Archaeology, Diversity of Audiences, Museums, the Contemporary Past
Kostas Arvanitis (University of Manchester)
How are "interpretations of the archaeological past constructed and mediated in and beyond museum environments"? What are the roles "of the open data and visualisation technologies and methods in the negotiation and re-articulation of value and cultural engagement with different audiences"? How do archaeolog[ists] and different audiences and stakeholders deal with the interpretation and presentation of the contemporary past"? What impacts have "open data and visualisation technologies and methods" had on the "current scope and practices of 'museum archaeology'"?

Multi-Media, Prehistoric Sites, Public Engagement
Rupert Till (Huddersfield University)
This presentation explores the potential of music in Virtual Reality modelling of sites and modes of projection, in light of research carried out at the Paphos Theatre and Tombs of the Kings in Cyprus; the Hypogeum in Malta, and the Sculptors' cave in Scotland. It focuses on the potential of using music as a way to qualitatively explore and explain space and place, and also to work on audio rich multimedia representations of sites for dissemination and public engagement activities.

Crossroads between Contemporary Art and Archaeology: What Can We Learn from Atlantic Pock Art?
Joana Valdez-Tullett (University of Southampton, CEAACP)
Art is an ambiguous concept carrying great controversy when applied to Archaeology. This is mostly due to the rigidity of definitions that characterize archaeology. Although necessary, sometimes this trait constrains the evolution of some ideas. Working with prehistoric graphic manifestations, I often come across the word "Art" starting with the notion of "Rock Art", but also the question "What is Art"? It is interesting that archaeologists keep using this word to describe the archaeological record, even whilst admitting that it is a western concept that may have never existed amongst Past culture, as Ethnography has demonstrated regarding traditional contemporary societies.
Art History and Archaeology derive from a gradual process of replacement of Antiquarianism, sharing some interests. Lately, several lines have been written regarding the relationship between Contemporary Art and Archaeology. Without aiming at the production of an analogy between the two fields, and acknowledging that no direct comparisons can be made, this paper aims to explore the ways in which contemporary art can aid Archaeology in the interpretation of the archaeological record and assess the humanity behind it. The paper will be illustrated with the case study of Atlantic Rock Art that is in itself archaeological evidence and bears the label of "Art". But is it?

Precarious Visualities and Interpreting the Contemporary Past in the Work of Christian Boltanski, Taryn Simon and Adela Jušić

Imogen Mcroberts (University of Manchester)

This paper uses Ross's (2008) concept of "precarious visualities" to explore common themes in the work of Christian Boltanski, Taryn Simon and Adela Jušić, which focus on the contemporary past – the history of the here and now in the making. Particular attention focuses on such themes as: identity and archival practice, cultural construction of 'heredity'; and issues of ethical responsibility raised by historical interpretation.

(S6) Cataloguing Magic: The complex biographies of ritual objects in museum contexts

Session organisers: Ceri Houlbrook, Natalie Armitage, Chiara Zuanni (University of Manchester).

Session Abstract

Following the success of 'The Materiality of Magic' session at Liverpool TAG 2012, this second session aims to further establish 'magic' as a term and subject on the archaeological agenda. Despite its simple definition in the *Oxford English Dictionary*, as 'the power of apparently influencing events by using mysterious or supernatural forces', 'magic' is a term viewed by many scholars with wariness or distrust, having been ascribed certain pejorative or sensationalist connotations. These connotations have greatly influenced our perceptions and uses of it. This factor will therefore be considered in specific relation to museum contexts; how has the word 'magic' been used by museums and the heritage industry? Has it been avoided? Has it been exploited?

However, as well as offering an exploration of the sensationalist undertones of 'magic', this session also aims to de-sensationalise and de-stigmatise it by defining it simply as a term encompassing ritual practices and popular beliefs, and inviting our contributors to propose their own definitions of it. The primary purpose of this session is to investigate the complex biographies of ritual and folkloric objects within museum contexts. Not limited geographically, we aim to offer a wide range of case-studies demonstrating the complex issues involved in the 'museumising' of 'magical objects'. How have they been catalogued? Do their statuses as ritual or folkloric artefacts influence how they are stored and displayed? How are they presented and interpreted? These are just some of the questions this session aims to explore.

14:00-14:20	**Is there such a thing as 'magic'?** Elizabeth Graham (UCL)
14:20-14:40	**'Objects of Power: Magic or Sacred or What?'** Crispin Paine, (UCL)
14:40-15:00	**Revealing the Ritually Concealed: Tracing the concealed shoe from its moment of discovery.** Ceri Houlbrook, (University of Manchester)
15:00-15:20	**Economies of magic: reassessing interpretations of cowries in the African Iron Age** Holly Atkinson, (University of Manchester)
15:20-15:40	**Behind Glass: Magical and Religious Objects Out of Context** Natalie Armitage, (University of Manchester)
15:40-15:50	**Questions for papers 1-5**
Break	
16:10-16:30	**Collecting Magic** Tabitha Cadbury, (University of Bristol)
16:30-16:50	**The Materiality of Finnish Folk Magic - Objects in the Collections of the National Museum in Helsinki** Sonja Hukantaival, (University of Turku)
16:50-17:10	**Redefining 'Magical Medicines': Public Engagement and Curation of African Medico-religious Objects at Manchester Museum.** Bryn Trevelyan James (King's College, London)
17:10-17:30	**Magic in Museums: the case from Estonia.** Tõnno Jonuks, (Estonian Literary Museum) and Kristiina Johanson (University of Tartu)

17:30-17:50   The case of the spinning statuette: 'magic' at the Manchester Museum? Campbell Price (Manchester Museum) and Chiara Zuanni (University of Manchester)

17:50-18:00   Questions for papers 6-10

Abstracts

Is there such a thing as 'magic'?

Elizabeth Graham, (UCL)

When I was carrying out research on the Franciscan evangelisation of the Maya in Yucatan and Belize in the 16th century, I realised I needed to know more about the Christianisation of Europe. This research then got me interested in the terminology used to discuss Christianity, particularly the terms that figured, and to some extent still figure, in the positioning of 'us' (good guys) and 'them' (bad guys): words like the devil, demons, cults, pagans, miracles, saints, and magic. Saints are the good deities, demons are the bad ones; miracles are performed by God, magic is the work of the devil. Preliminary research suggests that the word 'magic' derives from early Christian labelling of the practices of Persian non-Christian holy men. If this holds true, then 'magic' is derived from the demonization of the cultural practices and beliefs of 'the other'. It is, in and of itself, meaningless; it takes its usage from historical context. Why, then, do we still use it? Why has it been such a hot topic in anthropology, as in 'magic' vs. 'religion'? (I would even hold that there is no such thing as 'religion'!). I hope in this presentation to explore these questions and stimulate debate.

'Objects of Power: Magic or Sacred or What?'

Crispin Paine, (UCL)

This short talk will look at some of the objects that have the power, or can be used, to effect personal change. Some are called sacred, some medical, some magic, while some can be therapeutic and others can effect real damage. We shall look at a variety of objects of power - holy relics, amulets, lucky charms, quack medicines and simple souvenirs - and (rather than attempt answers) ask questions. What makes them different? If there is a difference between religion and magic, who is defining it? And above all, how should museums behave towards objects of power, and how should they respond to the variety of attitudes visitors are likely to take to them? What responsibilities do these things give their curators?

Revealing the Ritually Concealed: Tracing the concealed shoe from its moment of discovery

Ceri Houlbrook, (University of Manchester)

Concealed shoes are shoes which were purposely concealed within the walls, chimney breasts, and roof spaces of domestic buildings. A vast number of these have been discovered throughout Britain, dating primarily to the 18th and 19th centuries. The motivations behind their concealments are still unknown to us, but the prominent theory suggests that shoes were employed as apotropaic devices, concealed within homes to protect the inhabitants from malignant preternatural forces. The metonymical connection between a shoe and its previous wearer is believed to imbue the shoe with the necessary protective power, and one theory suggests that, to possess this power, shoes must bear the unambiguous imprint of their past wearers, hence why the vast majority of them are old, well-worn or damaged.

Concealed shoes are often found during restructuring works, and from the point of discovery, their biographies can follow a variety of courses. Some debate, for example, surrounds their removal. Some finders believe it to be 'bad luck' to remove concealed shoes and therefore wish to keep them *in situ*. Other concealed shoes are donated to museums, where still more debate surrounds their treatment: should they be restored by textile conservationists, as some are, or should they be left in their original state, their damaged conditions being considered central to the interpretation of the custom?

Focusing on two caches of concealed shoes discovered in Ilkley and Otley, North Yorkshire, this paper aims to trace the complex biographies of these objects following discovery, considering how they have been variously perceived and treated by their finders and custodians.

Economies of magic: reassessing interpretations of cowries in the African Iron Age
Holly Atkinson, (University of Manchester)
Cowries have been incorporated into a myriad of African contexts and artefacts, whilst their presence on the continent is one of long standing. Interpretations of cowries, however, have remained superficial. Influenced by the art historical approach, cowries in museum contexts have been considered from a primarily aesthetic viewpoint. Concurrently, archaeological interpretations have focused mainly on cowries as currency; a consequence both of their prolific use during the slave trade, and of European imports, particularly in West Africa. Apparent as painted and embossed motifs on pottery, gourds and figurines, as divination counters and burial goods, and materially incorporated into clothing, charms, furniture, power figures, masks and even walls, this variety of functions begs us to question the reason(s) for their value.
Museum and archaeological approaches have failed to appreciate their complex and multiple biographies. Not merely aesthetic products of trade, cowries were a means by which ritual, social and political processes could be negotiated and maintained. Adopting the definition of magic put forward by this session, it is therefore suggested that cowries in Iron Age Africa were perceived to have medicinal potency and formed part of a ritual economy. Consequently, this paper argues for the need to consider and engage with the material properties which made cowries potentially magical objects. This approach will be supported and explored using African cowry artefacts in museums; to also indicate how we can begin to overcome the lack of engagement with notions of magic in museum settings.

Behind Glass: Magical and Religious Objects Out of Context
Natalie Armitage, (University of Manchester)
The nature of the Vodou altar and much of the associated magical practice is one of assemblage, while many objects are recurrent in various instances, many of the artefacts are found and then assembled to create meaning. These sacred objects are also not fixed, their nature is changeable, often being added to by the various visitors and observers with countless offerings. It could be argued that the objects in themselves are not necessarily sacred or magical, produced for such a purpose as in a westernised religion, but the altar/object becomes so by means of the accumulation and collaboration with an audience. Can such objects exist in a traditional museum setting? Or does the nature of their assemblage and their necessity for interaction render them inert in such a location?
If, as Hooper-Greenhill asserts, the strength of the museum lies in providing 'people an experience of the real thing such that a desire to know more ensues' (1999, 1) then how does this relate to the specific objects of a culture, such as Vodou, in the 'behind glass' museum culture that we are all familiar with; where the material objects of worship seem defined by the interaction with an audience, not inherent in the object itself? Are the material artefacts of such a practice only viewed in their true sense when there is a reciprocation with the viewer? Is their very nature interactive, and how does that change the way in which we might approach the museology of such objects?

Collecting Magic
Tabitha Cadbury, (University of Bristol)
Although references to popular magic have permeated historical records for millennia, it was not until the late nineteenth and early twentieth centuries that English charms and amulets were systematically collected and catalogued by museums. This paper examines changing tides of museum practice in collecting and cataloguing English material magic. It provides an overview of the most prolific collectors - folklorists, curators and early anthropologists such as Edward Lovett,

Herbert Toms and Alfred Cort Haddon - and influential museums. Why did academic and popular interest in documenting this material ebb and flow, and why is the tide of interest rising again today?

The Materiality of Finnish Folk Magic – Objects in the Collections of the National Museum in Helsinki
Sonja Hukantaival, (University of Turku)
In Finland the material aspects of magic have long been of marginal interest to scholars. Still, during the late 19th and early 20th century academics and lay collectors in Finland gathered several magical objects into museums, in addition to vast folklore collections describing magic practices. Matters of 'vernacular' or 'folk' religion including magic practices and beliefs have a long research history within the disciplines of Finnish folkloristics and comparative religion, but neither have had any particular interest in material aspects. Recently, however, some Finnish archaeologists have "discovered" these phenomena and finally also the material part of magic is becoming the object of study.
This paper concentrates on the objects classified as magical in the collections of the National Museum in Helsinki. These date mainly to the late 19th and early 20th century, and are thus contemporary with the archived folklore accounts illuminating the meanings and use of such objects. The collection includes for example miniature coffins containing an impaled frog or wooden stick figure, magic pouches with various content, animal bones and teeth, round "snake's court stones", and curious growths of trees. In addition to these the museum also holds numerous Stone Age tools which evidently have been used as potent "thunderstones".
The aim of this paper is to present this collection, to show the characteristics of objects in Finnish folk magic, and also to analyze the process of ascribing magical meanings to a natural or constructed object, both from the viewpoint of practitioners and museum personnel.

Redefining 'Magical Medicines': Public Engagement and Curation of African Medico-religious Objects at Manchester Museum.
Bryn Trevelyan James (King's College, London)
Since Evans-Pritchard's (1937) seminal publication, Witchcraft, Oracles and Magic among the Azande, African medico-religious practices have typically been interpreted within a rubric of 'magic' and the supernatural. A consequence of this has been the widespread anthropological tendency to reduce healing practices from across Africa to a spiritual or religious metaphysic, disregarding material culture and associated practices (Morris 2011: 245). Problematically, this in turn limits disciplines, like archaeology and museology, which rely upon anthropology analogically (Insoll 2011a: 145).
Having researched West African medico-religious practices both in Manchester Museum and on multiple seasons of fieldwork in Ghana since 2008, the question of how to build a broader base of analogy for exploring the region's 'magical objects' has been a long-term focus. This paper unpacks the museum-based cycle of that investigation, particularly as Manchester Museum's 'Researcher in Residence'. Grounded theoretically within the field of archaeological ethnography (Hamilakis & Anagnostopoulos 2009), academics from various disciplines and diverse members of Manchester's African community were invited to redefine objects in the collection via workshops, events and installations. Here, the alternate beliefs and material biographies emerging from these dialogues, and the utility of a circular process of enquiry within museum contexts, is examined through primary case studies.

Magic in Museums: the case from Estonia
Tõnno Jonuks, (Estonian Literary Museum) and Kristiina Johanson, (University of Tartu)
Estonian museology has traditionally been deliberately 'objective' and 'scientific', thus missing interpretative labels, like 'religious', 'magical' etc. Still two collections can be emphasised as exceptions – Estonian National Museum with its ethnographical collection, including several items

used for healing magic; and the Museum of Pärnu. The latter is especially interesting – being one of the first local museums in Estonia based on private collections, it includes several objects with attractive legends. Most of the objects are Stone Age lithic items that have been considered "thunderbolts" and used for different magical purposes by the local community. The discussion of the paper will focus on how magic has been used, or more usually – why it has been avoided in Estonian museums and why most of the objects have been treated in emphatically 'scientific' way.

The case of the spinning statuette: 'magic' at the Manchester Museum?

Campbell Price, (Manchester Museum) and Chiara Zuanni, (University of Manchester)

In June 2013, a video of an Egyptian statuette spinning by itself in its case in the Egypt Gallery of the Manchester Museum went viral. The video caught also the attention of media worldwide, prompting a huge public response to the episode. This paper aims to discuss how ideas of magic, drawing on perceptions of Ancient Egypt, were used by the museum, the media, and the public to interpret and comment on the spinning statuette.

The statuette would have been set up in a temple around 1750 BC. It was dedicated in honour of a man called Nebiu, and carries a text promising offerings for the deceased from the god Osiris. It was donated to the museum in 1933, and since then has been on display.

During the media storm that followed the publication of the video, many hinted at a 'magic event', which could be related to popular perceptions of Ancient Egypt: ideas from movies and popular culture were widely used to explain and comment, often ironically, on the episode. At the same time, in the museum galleries people were jostling to see the statuette and questioning the museum staff. Therefore, this paper will observe how media and museum audiences have used the concept of 'magic' in relation to the spinning statuette: what beliefs and attitudes towards 'magic' emerge from these comments? Why was the museum criticised for suggesting a 'magic' connection? And what have been the outcomes of the episode for the museum and for our understanding of public perceptions of Ancient Egypt?

(S7) Cognitive archaeology: The challenge of understanding human becoming

Session Organisers: Karenleigh Overmann (University of Oxford; Center for Cognitive Archaeology, University of Colorado) and Joanna Fairlie, (University of Liverpool).

Session Abstract

Cognitive Archaeology tries to understand how ancient peoples thought by systematically interpreting the artefacts they left behind. However, the act of interpretation presupposes the need for answers to fundamental questions: What is cognition (Edelman & Tononi, 2000), and what is the role of materiality in it (Knappett, 2005; Malafouris, 2013)? What are the causes of change in hominin–human cognition over the last two million years? Finally, how does understanding the answers to these questions make a better archaeologist?

This session will explore these questions by presenting embodied and extended cognition as mechanisms that allowed past peoples to interact and exchange meaningful information with their multiple environments, improve their niches, and change themselves (Bateson, 2004). Changes to hominin cognitive abilities across evolutionary spans of time and the mechanisms that enabled those changes will be discussed. Material Engagement Theory (Malafouris, 2013) will be propounded as a model for understanding the deeply interactive connection between mind and environment, and the role of materially based purposeful activity in triggering cognitive change. Better understanding of interactive mechanisms of neural plasticity and cultural change (Malafouris, 2009; Renfrew & Malafouris, 2008), environmental change and niche construction (Kendal, Tehrani, & Odling-Smee, 2011; Laland & O'Brien, 2010), and developmental and environmental processes (Gilbert & Epel, 2009; Gottlieb, 2007; Wexler, 2008) should enable a deepened understanding of the archaeological

record. It will mean an enhanced ability to establish sound epistemological approaches during interpretation of artefactual data (Garofoli & Haidle, 2014), and clarify the potential offered by different metatheories, particularly distinguishing between linear and complex models. This session will explore the dynamic interplay of mind and matter in human becoming.

09:00-09:10 **Introduction**

09:10–09:30 **Ecology of skills: The case of skills to control conchoidal fracture bymeans of direct hard-hammer percussion.** Dr. Tetsushi Nonaka, (Graduate School of Human Development and Environment, Kobe University, Japan)

09:30-09:50 **Prehistoric stone tools, chess expertise, and cognitive evolution: An experiment about recognizing features in flint debitage.** Yvan I. Russell, (Middlesex University, London; University of Oxford)

09:50-10:10 **Why Cognitive Archaeology is Good for the Mind.** Professor Larry Barnham (University of Liverpool)

10:10-10:30 **Intercorporeality and the tacit dimension in experimental archaeology.** Dr Matthew Walls (University of Oxford)

10:30-10:50 **Intentions in tensions: Creativity, compromise, and making meaning with material.** Mike Groves (University College London)

10:50-11:00 **Discussion**

Break

11:30-11:40 **Introduction of cognitive evolution/human behaviour**

11:40-12:00 **Comparative analysis of primate cognitive evolution.** Christopher Mitchell, Kevin Arbuckle, Dr Mike Speed and Dr John Lycett (University of Liverpool)

12:00-12:20 **Calibration, not plasticity: The roles of epigenetics and learning.** Professor Tom Dickins (Middlesex University, London)

12:20-12:40 **Shifting sands: Dynamic systems as a new framework for discussing the lifetime development of cognition and its long-term evolution.** Joanna Fairlie (University of Liverpool)

Lunch

14:00-14:10 **Introduction to afternoon sessions**

14:10-14:30 **Why 1940s Information Theory is today distorting and misleading archaeological research into cognition, language and human evolution.** Peter Bond (University f Liverpool)

14:30-14:50 **Cognitive uniformitarianism vs. the cultural brain.** Karenleigh A. Overmann (University of Oxford; Center for Cognitive Archaeology, University of Colorado)

14:50-15:10 **Tracing a prehistoric process of semiotic scaffolding through early body ornamentation.** Antonis Iliopoulos (University of Oxford)

15:10-15:30 **From interaction to correspondence: An archaeology of visual style.** Dr Martyn Woodward (Plymouth University)

15:30-15:50 **Cognitive archaeology in Spain: The state of the questions, problems, and developments.** Guillermo Diaz de Liaño del Valle (Universidad completense de Madrid)

15:50-16:00 **Discussion**

Break

16:30-18:00 **Discussants wrap-up, Dr Lambros Malafouris (University of Oxford); Dr John Gowlett (University of Liverpool)**

Abstracts

Ecology of skills: The case of skills to control conchoidal fracture by means of direct hard-hammer percussion

Dr. Tetsushi Nonaka, (Graduate School of Human Development and Environment, Kobe University, Japan)

It has been suggested that changes in behavior that establish a new environmental relationship often antedate genetic, physiological, or morphological changes; and behavior is viewed as one of the leading edges of evolution, rather than simply the end product of it (e.g. Gottlieb 2002). In an experimental study on the skill of controlling conchoidal fracture in flaking through direct hard-hammer percussion, Nonaka, Bril, & Rein (2010) showed the difficulty and the necessity of experience in organized flaking found in some of the Oldowan sites (e.g. Delanges & Roche, 2005), which requires seeking out the relevant features in the surface structure of the core that reflect the constraints of conchoidal fracture. Specifically, modern experienced stone knappers discovered a lawful relationship between the observable layout of surfaces of the core, size of a detachable flake, and threshold of kinetic energy required to initiate the fracture, which was demonstrated by the selection of striking location and the control of movement. In this talk, I will discuss how complex the "simple" skill of controlled flaking is in terms of perception and motor control. I will further suggest that the emergence and recurrence of the skill requires the changes in a whole developmental system, including normally occurring experience during ontogenetic development which allows for the maintenance of intense scrutiny across generations directed towards the salient features of the environment that can potentially provide utility and function.

Prehistoric stone tools, chess expertise, and cognitive evolution: An experiment about recognizing features in flint debitage.

Yvan I. Russell, (Middlesex University, London; University of Oxford)

Prehistoric stone tool knapping was an expert skill. This experiment was a cognitively demanding test of modern day knappers using an adaptation of the classic Chase and Simon (1973) paradigm from chess expertise (where chess experts/novices are briefly exposed to chess positions and later asked to recall the patterns). Here, pieces of flint debitage were used instead of chess pieces, and it was a recognition test rather than recall. Expertise was measured by social status and questionnaire. Three participant groups were tested (archaeology professionals, students, and non-experts) in 15 trials each, each comprising four tasks: (1) sorting task, (2) exposure, (3) sorting task, and (4) recognition task. The sorting task (interference) required participants to sort flint debitage by size into different buckets. In the exposure task, the experimenter showed the participant three types of rock (flakes, miscellaneous rocks, cores) seriatim for 2 seconds each. The recognition task required that the participant attempt to identify previously seen rocks on three tables (flakes, miscellaneous, and cores tables). Experts performed significantly better than students and non-experts. Post-session interviews revealed a diversity of strategies, suggesting that increased expertise enhanced perception. This result parallels chess expert studies, and template theory in chess might apply to knappers.

Why Cognitive Archaeology is Good for the Mind

Professor Larry Barham (University of Liverpool)

This talk offers a personal perspective on the session theme on 'how does cognitive archaeology make you a better archaeologist?' As a relative newcomer to the subject I have had to absorb unfamiliar literature on neural networks, theories of perception and action. I've had to incorporate new ideas on the complex interaction of mind, environment and objects into my work. All this extra reading has been demanding on my time - so why did I bother? My comfort zone as a Palaeolithic archaeologist lies in the anthropology of small-scale societies, stone tool technology and the environmental sciences, but I wanted to make room for cognitive archaeology because I learned, long ago, from my processualist mentors, that we shouldn't lose sight of the "Indian behind the artefact" (Binford 1962 drawing on Braidwood 1959:79). But a palaeopsychology of early humans

seemed an impossibility until the late 1990s with the work of Stephen Mithen (1998) and the refocusing of Palaeolithic research away from the impersonal social group to the entangled social life of the individual (Gamble 1998). Cognitive archaeology has developed much since then and I use a case study from my own recent work (Barham 2013) to illustrate how the study of artefacts, in particular the thought processes involved in their making, can lead to us to more nuanced understandings of the interplay between cognitive and social change. These insights can challenge current preconceptions about our behavioural evolution as a species – and, in the process, make us all better academics.

Intercorporeality and the tacit dimension in experimental archaeology
Dr. Matthew Walls, (University of Oxford)
Making and using technologies that are represented in the archaeological record is an important means through which archaeologists learn about past societies. Indeed, experimental archaeology is one of the most influential research strategies that has shaped the development of archaeological theory and practice over the last 60 years. Implicit in many experimental studies, is a model of cognition that construes the knowledge involved in technical practices as something that can be codified, represented, transmitted, and published through traditional academic media. However, technical skills often require forms of knowledge that are sensorimotor and kinaesthetic in nature. Learning to make artifacts, it will be argued, is a process of enskillment where archaeologists themselves develop capacities for sensory awareness and embodied responsiveness that can only exist through the physicality of practice. Drawing on the perspectives of situated and embodied cognition, this paper explores these forms of knowledge and considers the tacit dimension of experimental archaeology's contribution to archaeological thought.

Intentions in tensions: Creativity, compromise, and making meaning with material
Mike Groves, (University College London)
This discussion is based on an anthropological study of contemporary British woodworkers and explores how engagements with material and technology coerce human actions and thought into complex actor-networks (Latour, 2005). What emerges from this study is that creativity, as something so highly valued in contemporary Western socio-cultural contexts, is in fact a result of myriad negotiations, compromises and circumstantial adaptations of action with both human and non-human actors. These kinds of dialogues create and are created by the network.
The core themes that shall be discussed are: How categorization (of objects, materials and people)—artifact, art, craft: tradesman, artist, craftsperson—influence the way something is made and hence how both makers and consumers come to value and identify work and themselves; how specialization within a given material in fact hinders the creative capacity of individuals; how materiality is mobilized by 'innovators' and hence is constantly open for scrutiny; how technological choices (Lemonnier, 1993) reflect social identities; how notions of 'tradition' and 'heritage' are co-dependent on 'innovation' and reinterpretation; and how past realities as present fantasies (or vice versa) are factored into contemporary practice.

Comparative analysis of primate cognitive evolution
Christopher Mitchell, Kevin Arbuckle, Dr. Mike Speed, and Dr. John Lycett, (University of Liverpool)
Studying advanced cognition in animals most commonly involves studying changes in brain size (Healy & Rowe, 2007). This approach makes several assumptions that can be circumvented by using a more direct measure of cognitive ability. The ability of an animal to respond to challenging or novel problems with flexible, innovative behaviour should be considered an indicator of cognitive abilities. The cause of advanced abilities of primates is often attributed to their heightened sociality. The "social intelligence" hypothesis proposes that ecological problems can be solved by living in groups. Since additional problems are posed by living and competing within a social group, more sophisticated cognitive abilities are beneficial driving brain expansion (Dunbar & Shultz, 2007).

Alternate explanations for heightened intelligence in primates include visual specialisation, ecological intelligence and cognitive buffering. Although each of these theories has received some support, sociality has emerged as the generally favoured theory of cognitive evolution. Here we show that sociality is far from the only causal factor in primate brain evolution. Using comparative methods, we investigated ecological, social and life history predictors of four binary markers of complex behaviour that are associated with high general intelligence. Our results show that the evolution of enhanced cognitive abilities allowed some primate groups to adopt terrestrial lifestyles, suggesting that enhanced intellectual abilities preceded major ecological transitions in primate evolutionary history. We also found that the evolution of terrestrial living is correlated with cognition but sociality is not. Indicators of increased intelligence were found to be predicted by both social and ecological factors. Our analyses indicate that terrestriality and diet breadth are better predictors of advanced cognitive ability than social group size. We propose that focusing on the social brain hypothesis as a complete explanation for primate cognitive abilities is inappropriate. Alternate variables describing ecological and life history variables are also informative and add up to a more complex, inclusive view of the primate brain.

Calibration, not plasticity: The roles of epigenetics and learning
Professor Tom Dickins, (Middlesex University, London)
This paper will directly address one of the key themes of the symposium. Epigenetic mechanisms are those mechanisms that effectively silence gene action. Most commonly direct methylation of DNA sequence, or of the histone bodies to which DNA attaches itself are discussed as mechanisms in the behavioural biology literature. Attaching a methyl group will inhibit transcription of some codons and in turn impact upon subsequent protein structure etc. Such processes can be initiated through neuroendocrine action (Crews, 2008), among other things, and maintained trans-generationally for a few generations under appropriate conditions. I have argued elsewhere (Dickins & Rahman, 2012, 2013) that such mechanisms are candidate adaptations that permit facultative response to stochastic ecologies during development, and I have sought to interpret this using life history theory. Such responses are blunt, pushing an organism down one trajectory or another, which can often be interpreted as shifting an organism into a slower or faster life history, each of which entail different consequences for fitness maximization. Epigenetic mechanisms and learning mechanisms both act to calibrate organisms to their environments, and can be regarded as operating at different levels of granularity. Moreover, epigenetic control of gene expression can impact upon learning mechanisms directly (e.g. Dias & Ressler, 2013; Keverne, & Curley, 2008; Zovkic & Sweatt, 2013). Importantly, they differ in the fallibility of their outcomes. Methylation can be undone bringing an organism to condition A from condition B. Learning can be forgotten, but the degradation of learnt skills is more graceful. This is related to differences in informational effort and architecture, consequences of ecological demands and selection (Dickins & Dickins, 2008) such that epigenetic mechanisms are much simpler conditional structures than learning mechanisms. Each has different costs and benefits. I will discuss the parallels between epigenetic and learning mechanisms and suggest a hierarchy of mechanisms of calibration.

Shifting sands: Dynamic systems as a new framework for discussing the lifetime development of cognition and its long-term evolution
Joanna Fairlie (University of Liverpool)
This talk proposes the use of complexity theory, currently being experimented with across multiple scientific disciplines (e.g. Edelman & Tononi, 2001; Lerner & Benson, 2013; Sambrook & Whiten, 1997; Thelen & Smith, 1994), as a framework for the discussion of cognitive evolution. This paper will try to establish what we can actually tell about the likely pattern of cognitive evolution by examining the archaeological record. This examination will be independent of any pre-existing affiliation to specific cognitive theory. There will be a brief review of some cognitive theories currently in use amongst archaeologists and palaeoanthropologists, and the degree to which they

accurately reflect the archaeological evidence will be discussed. The potential of a complexity description of cognition will be examined in the same way.

A brief verbal (or non-mathematical) description of complexity dynamics as a theory that describes change over time in open systems will be given. Mention will be made of its ability to describe cognition as the emergent product of constantly changing and interacting biological, historical, experiential, behavioural, cultural, socio- and ecological environmental factors. The potential of a complexity dynamic framework to allow a viable description of evolutionary cognitive change will be illustrated through references to the transition from a mainly reductive Palaeolithic stone tool technology to a more predominantly hafted tool technology (Barham, 2013).

Why 1940s Information Theory is today distorting and misleading archaeological research into cognition, language and human evolution

Peter Bond (University of Liverpool)

Metaphors aid learning and understanding. Few will think them harmful. Fewer still will recognize they seriously constrain creativity and stifle new ideas at their birth. Some concepts are so deeply embedded in a scientific paradigm they are sacrosanct, beyond challenge, and so are applied uncritically, even when they are deeply flawed. One of these is a first-generation cybernetics Theory of Information (Shannon, 1948), and the brain-as-computer metaphor. Cybernetics is the basis of computer science, neural networks, artificial intelligence, and brain-as-computer cognitive science (cognitivism). It is also foundational to New Archaeology. David Clark (1968) was influenced by Ashby and Weiner, founders of first order cybernetics. Some 20 years later, cognitive archaeology began to emerge as a new 'old' cybernetics project, which Colin Renfrew (Renfrew and Zubrow, 1994) stated would continue the Processualist's enthusiasm for 'scientific tradition', an empirical methodology, and the cognitive, mathematical and computer sciences. Unfortunately, cognitive archaeologists appear to have missed the development of a new generation of cybernetic science, not constrained by the brain-as-computer metaphor, which places cognition in a wholly different epistemological framework.

The presentation will show why the brain-as-computer metaphor is leading some archaeological researchers to a dead end. A second order cybernetic model, developed by biologists and neuroscientists Humberto Maturana and Francisco Varela (e.g. Maturana and Varela, 1980) reveals living systems as operationally closed, self-creating, or autopoietic systems open to matter and energy, but closed to information and other inputs. This state of biological autonomy means living systems do not require any instructions from 'outside' to continue living; neither do external stimuli instruct them how to behave. In other words, they do not require 'information' to persist or act. This model also has significant implications for current theories of language and human evolution, and pushes cognitive research toward the phenomenological archaeology of the Post-Processualist era—which should spice up the debate on cognition.

Cognitive uniformitarianism vs. the cultural brain

Karenleigh A. Overmann, (University of Oxford; Center for Cognitive Archaeology, University of Colorado)

When its evolutionary history is considered, the human brain is often viewed *neurocentrically* (the neuroscientific focus on the brain that tends to isolate it from body and world and conflate it with mind and cognition) and with an assumed *cognitive uniformitarianism* (which supposes that the evolutionary processes observed today are sufficient to have yielded, over appropriate spans of time, the modern human brain from the brains of ancestral primates). These assumptions are challenged by two areas of emerging research: cross-cultural psychological studies and archaeological investigations into the role of materiality in cognition. The first body of research shows that an overreliance on data from Western, educated, industrialized, rich, and democratic (or WEIRD) cultures has yielded an artificially narrow view of psychological variance, when cognition can and does vary in significant, often unexpected ways across and because of cultural contexts (e.g.

Henrich, Heine, & Norenzayan, 2010). The second conceptualizes materiality as a constitutive element in the cognitive system, where it interacts on par with, though not identically to, brains and bodies (Malafouris, 2013).

When viewed as a component of a cognitive system, the brain is no mere "biological entity" but a "cultural artifact" (Malafouris, 2013, p. 45) whose function and form are shaped by the body and the materiality with which it interacts. The brain's evolutionary development changes when its characteristic plasticity interacts with materiality over evolutionary time spans, affording opportunities for existing psychological processes to be repurposed for cultural algorithms and for new functions and structures to develop. Two case studies are presented to illustrate how brain, body, and materiality might function, interact, and change within the cognitive system. The first examines numerical cognition through the unique encephalization of the human parietal lobe, the neural interaction between fingers, psychological processes, and manipulated objects, and the artifacts used for quantification. The second compares early modern humans and Neandertals in terms of gross neuroanatomy, dental characteristics and wear patterns, and the archaeological record.

Tracing a prehistoric process of semiotic scaffolding through early body ornamentation
Antonis Iliopoulos, (University of Oxford)
In the past decade, ornamental shell beads, such as those unearthed at Blombos Cave, South Africa and dated to approximately 75,000 years ago, have been at the forefront of prehistoric archaeology. Most evolutionary archaeologists view them as inherently symbolic products of an already symbolic brain, and purport that their codified meanings were collectively shared through language (Henshilwood et al., 2004; d'Errico et al., 2005; Henshilwood & Dubreuil, 2011). On this basis, they treat them as an undisputed proxy for the origins of behavioural, and by extension, cognitive modernity. The symbolic and linguistic inferences have not gone uncontested though, for their invalidity has been aptly recognised by Rudolph Botha (2008, 2009, 2010). The archaeologists' main theoretical assumptions, about the linguistic nature of material signification and the representational function of cognition, were not however challenged.

Given that material signification is neither inherently symbolic, nor the a priori product of innate symbolic representations computed by the brain, they commit a pair of fundamental methodological mistakes—namely, the fallacy of the linguistic sign and the representational fallacy (Malafouris, 2013). In this paper, I avoid the pitfalls of the strictly symbolic approach by opting for a pragmatic semiotic theory and an enactive theory of cognition. The synergistic fusion of Charles Peirce's semiotic theory with the hypothesis of enactive signification advanced by Lambros Malafouris yields a framework geared towards studying the evolutionary emergence of signification. By applying it to early body ornamentation, I trace the transition from the perception of iconic and indexical grounds to the conceptualization of iconic and indexical signs; which in turn provided the foundations for the creation of symbolic concepts and systems. To this extent, early body ornaments appear to have provided the material anchoring required for a prehistoric process of semiotic scaffolding.

From *interaction* to *correspondence*: An archaeology of visual style
Dr. Martyn Woodward, (Plymouth University)
Material Engagement Theory (MET) (Knappett and Malafouris, 2008; Malafouris, 2013) has become an exemplar for understanding the deeply *interactive* connection between mind and environment within cognitive archaeology, re-raising many well versed philosophical questions regarding how the material world contributes to the development of the human mind. Where the focus upon the *interaction* of these domains is of great importance, it is the presupposition of an *interaction* itself that may restrict the richness of such an endeavour. The 'radically enactive' paradigm (Varela et al. 1993; Thompson, 2007) underpinning MET posits that the material world does not so much contribute *to* human cognition—through the *interaction* of two independent entities—it is always already *of* what we might describe as human experience, experience and environment emerge

reciprocally. How does this reciprocity change the way we think about the material world? How does it affect how we might approach the archaeological study of material artefacts?

The creative intermingling of material world and experience is what Tim Ingold (2013) describes as a *correspondence* in which we do not so much *interact* with a static world as always correspond with an animate one; properties are more like 'qualities' of an emergent whole that take on certain characteristic of what they correspond to. Artefacts such as kites, lassos, and baskets (Ingold, 2013) express this correspondence of human, environment and material worlds through their formal structures, styles and use, and the changes of these features over time. This paper focuses attention on the style of human artefacts by borrowing from the phenomenological tradition of painting (Crowther, 2011, 2012; Merleau-Ponty, 1961), describing how the compositional strategies and qualities of line give a visual expression to a particular way of acting in the world. Such expression is a process of rendering visible the invisible temperament and experience of the artist, intermingled with the 'properties' (or forces) of the environment that emerge in correspondence—the canvas, the brush, the paint, and environmental conditions—offering empirical access to the historical 'qualities' of the material world to which practitioners' movements correspond.

Cognitive archaeology in Spain: The state of the questions, problems, and developments
Guillermo Diaz de Liaño del Valle (Complutense University Madrid)

This paper discusses the lack of acceptance that cognitive archaeology has faced in Spain, which is unfortunate in that such alternative ideas and approaches can be quite valuable, as they are often based on epistemological and methodological criteria that differ substantially from more traditional approaches.

Two main factors inform the failure of cognitive archaeology in Spain. First, the required interdisciplinarity is far from being achieved, and the cognitive studies needed to improve it are still fairly new in Spanish academia. Second, adherents of the dominant theoretical orientations—Processualism and Post-processualism—have rejected cognitivist approaches on thematic and methodological grounds, though the latter has been more willing to discuss them.

Despite the various criticisms cognitive approaches have gathered, the debate has been a productive one, generating cognitivist proposals with the potential to contribute significantly to the study of human cognitive evolution. As will be shown, Spanish cognitivist proposals share some features with mainstream cognitive archaeology, but they also incorporate elements from a variety of non-traditional approaches, including structuralism, literacy theories, sociology, and ethnoarchaeology.

(S8) Cosmologies in Transition: continuity and transformation in the material record.
Session organiser: Fabio Silva, (University College London and University of Wales Trinity Saint David)

The archaeological record is primed to the identification of technological and economical transitions: periods when new technologies and subsistence strategies were introduced, such as Levallois points or farming. However, transitions of a more immaterial nature, such as religious conversions or other shifts in world-view, are not as readily identifiable or interpreted when the material record is the only primary source available.

The aim of this full-day session is to further our understanding of periods of economical, social, religious or technological transition, their impact on the cosmologies of those involved and how these are imprinted on the archaeological record. The goal is to shed light on the methodologies of interpretation, especially of prehistoric transitions where the material culture is the only available record. Approaches can be purely theoretical, applied (e.g. case study based), ethnographical, historical or archaeological. Archaeologists interested in cognition, religion, ritual, landscapes and skyscapes are particularly welcome. Scholars from other disciplines interested in material culture are also welcome.

9:00-9:20	**Cosmologies in Transition: continuity and transformation in the material record.** Fabio Silva, (University College London and University of Wales Trinity Saint David).
9:20-9:40	**Continuity or change? A microscopic scale analysis of monuments and ritual in Aberdeenshire.** Liz Henty, (University of Wales Trinity Saint David)
9:40-10:00	**Gender, Power and Asymmetry in the Neolithic: Avebury as a case study.** Lionel Sims, (University of East London)
10:00-10:20	**Rock-art in transition.** Peter Skoglund, (Gothenburg University)
10:20-10:40	**Yadlee Stone Circle: Persistent arenas of cosmology.** Alex Westra (SOAS, Yadlee Stone Circle Project) and Alexander Wood, Colton Vogelaar, Tom Gardner (Yadlee Stone Circle Project)
10:40-11:00	**Q&A Session**
Break	
11.30-11:50	**Calendar Buildings**. Nicholas Campion, (University of Wales Trinity Saint David)
11:50-12:10	**Identifying transition in ritual power in the Neolithic of the Levant.** Estelle Orelle, (University of East London)
12:10-12:30	**Cosmological transitions before, during and after the Temple Period in Prehistoric Malta** Tore Lomsdalen, (Independent scholar)
12:30-12:50	**The Past in Transition: The Changing Role of the Past in the Late Bronze Age and Early Iron Age in the Thames Valley.** Alex Davies, (Cardiff University)
12:50-13:00	**Q&A Session**
Lunch	
14:00-14:20	**Change and Continuity in the Architecture and Cosmology of Chaco Canyon**. Andy Munro, (Swinburne University) and Kim Malville, (University of Colorado)
14:20-14:40	**Pre-Islamic Origins of Islamic Architecture: the Development of Muslim Ritual Spaces.** Barbora Ziackova, (SOAS)
14:40-15:00	**Curtailed Skyscapes.** Pam Armstrong, (University of Wales Trinity Saint David)
15:00-15:20	**The Sublime of Sky – A Modern Transition in Skyscape.** Daniel Brown, (Nottingham Trent University)
15:20-15:40	**Cosmologies, Cults and Complexity: exploring the dialectic of the sociopolitical and symbolic in transegalitarian societies.** Suzanne Villeneuve, (University of Toronto)
15:40-16:00	**Q&A Session**
Break	
16:30	**Discussion: Cosmology in the archaeological record**

Abstracts

Cosmologies in Transition: continuity and transformation in the material record
Fabio Silva (University College London and University of Wales Trinity Saint David)
This paper will provide an overview and introduce the topic of cosmological transitions in the archaeological record. It will look at how past scholars have considered the social impact of technological and economic transitions, particularly with respect to the Neolithic transition in Europe, and how the ensuing cosmological narratives are often riddled with assumptions or generalizations. In particular broad-sweeping studies (eg Hodder 1990, Lewis-Williams and Pearce 2009) will be contraposed to regional studies (eg Thomas 1991, Tilley 1996), their theoretical approaches and results compared and tested against the latest data from archaeology and genetics that indicate a lot more variety than had been previously suggested.
It will be argued that, in order to better theorize prehistoric cosmological transitions, archaeologists need to consider the breadth of ethnographic and historical records that demonstrate a variety of possible transitional avenues and emphasize the role of indigenous communities and their cosmologies in the outcome of said transitions.

Continuity or change? A microscopic scale analysis of monuments and ritual in Aberdeenshire
Liz Henty (University of Wales Trinity Saint David)
General archaeological accounts of Scotland provide only a broad picture of the Neolithic transition to farming and the subsequent changes in the Bronze Age with its different economic package. Though useful in themselves they tend to lack discussions on cosmological transitions. Scotland is a large area with a variety of terrains from mountains to low-lying river basins and this leads to different economic concerns and ritual behaviour. To examine change and/or continuity this paper looks at one small area of Aberdeenshire which is home to several classes of Late Neolithic and Early Bronze Age monuments. Using archaeoastronomical techniques it looks at the orientations of the monuments found there to examine changes in cosmology. It suggests that a microscopic scale analysis may add detailed evidence which is lacking in general narratives.

Gender, Power and Asymmetry in the Neolithic: Avebury as a case study.
Lionel Sims (University of East London)
Thomas (2013) has suggested that the Neolithic can be considered as a profound social transformation of its Mesolithic precursor. This suggests a complex transition that combines themes of both continuity and reversal from foraging to pastoralism. The standard anthropological model in the shift from hunting bride service to herding bride price systems (Holden and Mace 2003) would expect to be included within this new model which integrates previously incompatible archaeological models of Neolithic discontinuity (Renfrew 1973) and Neolithic continuity (Zvelebil 1996). This paper focuses on the Avebury monument complex as a case study to evaluate the gender implications of this new archaeological model of the Neolithic. The archaeology of the 100 or so paired and parallel lines of megaliths marking the West Kennet Avenue's route between Avebury stone circle and the Sanctuary 2.4 km away (Smith 1965) are particularly useful in this respect. While one of the four extant models of the Avenue specifically addresses the issue of gender, none of them can explain the detailed material culture revealed by site excavation. Furthermore these details themselves suggest that the archaeology extends to the skyscape. This paper suggests that by mobilising the anthropology of gender and the archaeoastronomy of the West Kennet Avenue (Sims, forthcoming) and integrating both with the archaeology, a new emergent interpretation cancels all anomalies in previous treatments of the Avenue and provides additional support for Thomas's new model.

Rock-art in transition
Peter Skoglund (Gothenburg University)
In archaeology, periodization is sometimes regarded as process we need to undertake because we lack précised data on chronology. In contrary to this, I regard periodization as an analytical tool we should use consciously to understand history. In order to apprehend history we must create divisions in the flow of events that unfold through time. The idea is that similar phenomenon can be understood and explained from a similar background.
Thus, the study of history is a compromise between encounters of contemporaneousness and moments of change. If to understand the preconditions for human life we must study humans both as being parts of structures, but also involved in processes that help to transgress these structures. Both these processes reveal themselves in the study of history as a compromise between encounters of contemporaneousness and moments of change.
From this background I will discuss a case study on rock-art in SE Sweden where rock-art was produced during the period 1700-200 BC. The material has been divided in four phases and these will be related to changes in the surrounding cultural landscape, but also to major social and ideological changes in a north European context. It will be argued that rock-art was not a static medium, but it gained new and different kinds of meanings as time progressed from the earliest Bronze Age into the Iron Age. It will be argued that there is not one single perspective that

encapsulate rock art, but it was a medium that applied to rather different historical contexts and thus gained different kinds of meanings during the course of the Bronze Age.

Yadlee Stone Circle: Persistent arenas of cosmology
Alexander Westra (SOAS, Yadlee Stone Circle Project) and Alexander Wood, Colton Vogelaar, Tom Gardner (Yadlee Stone Circle Project)
Current research of ethnology in Scotland reveals high similarities in structural design of Indo-European cosmology which suggests that despite the faster substitution of protagonists, the overall structure of the cosmologies remains evidently little affected. Previously at TAG Yadlee Stone Circle project at the session on Taskscapes we briefly touched on Skyscapes putting forward some simple notions about the wider landscape implications of Skyscapes at Yadlee. We demonstrated the strong connections of landscape features within the visually bound space, and positive associations with solar events. Now in a dedicated Skyscape session we propose some further analysis and interpretation of the solar significance of the site. Focusing the study in depth on the sun, we propose that the Skyscape, as a dynamic model of analysis, renders the skies a source of reliable data. The solar rhythms provide a regular and predictable set of phenomena, and as such could be considered a persistent arena of cosmology. As such, the solar movements are a socially significant phenomenon; motifs from Folklore and Art as metaphors for observed solar movements suggest these yearly cycles are culturally rich. The material record from other types of sites (cairns, henges, mounds) poses analogous questions as Yadlee. We can generate new hypothesis about the meaning of sites that are predominantly assigned with a ritualistic function, and then with the identification of articulations of world-views through the material record determine shifting of cosmologies in reaction to large-scale social changes.

Calendar Buildings
Nicholas Campion (University of Wales Trinity Saint David)
This paper will explore a modern example of the tradition of constructing cities and sacred sites as reflections or embodiments of the sky. By creating spaces which were connected to the celestial bodies it was possible to create human communities which were linked to celestial ones, encouraging social stability and harmony. Such ideas underpinned traditions of the foundation of cities from China, through India, the Middle East and Mesoamerica. The paper focuses on Avon Tyrrell House, a substantial private residence which was designed and built in 1891-3. The architect, William Lethaby (1857-1931), was part of the Arts and Crafts movement and one of England's leading modernists. The paper will frame discussion of the building within notions of the continuity of ancient traditions of solar symbolism in architecture and the consideration of function in the archaeology of the present and immediate past. The topic will be framed within questions raised by the apparent use of magical symbols in modernist architecture, and consequences for our understanding of modernity.

Identifying transition in ritual power in the Neolithic of the Levant
Estelle Orelle (University of East London)
This paper focuses in particular on changes in control of ritual power, one of the processes accompanying the transition from a hunter gatherer way of life to the establishment of hierarchical religion in the Near East. Female ritual power underpinning the hunter gatherer social structure can be seen to be appropriated by males controlling a religion dominated by male gods.
A model from evolutionary anthropological research locates the origins of symbolic behaviour in ancient mating systems. The model predicts that the level of energetic stress of females during this period (~500 kya to 150 kya) drove the changes and that female coalitions coped with this stress through the use of deceptive symbolism, to motivate males to secure greater and more reliable reproductive investment in the form of high energy foods. The social contract achieved by this underpinned the hunter gatherer social structure which remained in place for many millennia. The

genital imagery originating from this theory provides a blueprint for recognizing the supernatural in preliterate periods and its manipulation and transformation in a variety of techniques make it possible to track the course of the appropriation of ritual power by males. These particularly powerful symbols are first seen in the figurine assemblage in areas of the Levant during the millennia from the Natufian to the Pottery Neolithic periods but continue to have cross cultural significance over extremely long periods.

Cosmological transitions before, during and after the Temple Period in Prehistoric Malta
Tore Lomsdalen (independent scholar)
Around 5,000 BCE an apparently indigenous culture began the erection of freestanding megalithic structures, figurative art and collective hypogeal burials in Malta. This is generally known as the Temple Period. It lasted for another millennia, and then went into a sudden and unexplainable decline, replaced by completely new cultural and cosmological manifestations. Evans (1959) maintains the first rock-cut and megalithic Maltese tombs are analogous to the ones found in Sicily and Western Europe and subsequently developed into a megalithic temple culture represented by deities under the control of ancestors/spirits. Renfrew (1973) suggests a chiefdom society may have been the driving force behind the erection of the monumental structures. However, why this indigenous temple culture, not comparable to anywhere else in the contemporary world, developed on the Maltese archipelago, is lacking clear indications and merely based on circumstantial evidences.

Pre-Temple Period examples of a cosmological connotation are found in Skorba, dating to 4,400-4,100 BCE, in a hut-like structure which Trump (1966) describes as a 'shrine'. Subsequently, and according to Malone (2007), the megalithic temples of prehistoric Malta present some of the most sophisticated architectural ritual spaces furnished with symbolic iconography and material culture in early Western Europe. They offer a hint of highly structured ceremonial ritual practice and cosmology which perhaps reflected an equally complex social structure. Grima (2001) proposes that two cosmological domains are being represented: land and sea, but this author adds a third component to the islanders' cosmology: the sky (Lomsdalen 2014). The orientations of these temples seem not to have been laid at random but to have been influenced by several factors, including their landscape and skyscape (Agius and Ventura 1980, Vassallo 2007). Cox (2001) argues that there are two main groups of orientations: Ggantija Period (3,600-3,000 BCE) temples are oriented on a NW-SE axis; whereas Tarxien Period (3,000-2,500) temples are oriented on a NNE-SSW axis.

By the end of the Tarxien Phase temple building had reached a culmination. Five hundred years later the archaeological record features a very different religious practice, favouring single cremation burials. The cult represented by the figurines and rituals related to the living and the dead was completely abandoned (Malone et al. 2007). Soon afterwards Malta seems to have been colonised by a population with all the typical features of the Bronze Age, with nothing resembling the masonry and architectural capacities and abilities of their predecessors. According to Malone and Stoddart (2013) there are no secure archaeological sequences with dated remains that have been identified to testify any occupation at all on Malta for the intervening centuries, and the archaeological sequence remains mute as to what happened next. This concludes an apparent two and a half millennia paradigm change of cosmological transitions on Prehistoric Malta.

Based on archaeological records and skyscape observations, this paper will try to identify the underlying elements to the introduction of new cosmological paradigms reflected in sociological, religious and technological transition periods in Prehistoric Malta.

The Past in Transition: The Changing Role of the Past in the Late Bronze Age and Early Iron Age in the Thames Valley

Alex Davies (Cardiff University)

Perceptions of the past in pre- and proto-historic societies have recently become a rich area of archaeological study. Ethnographic evidence demonstrates the variety of roles that ancestors can play in living societies, and psychological studies show the malleability of human memory. Understanding how the past and ancestors were conceptualised is an important step in understanding wider cosmological concerns as these often influence and are influenced by each other. This paper aims to compare and contrast some of the main archaeological aspects of the Late Bronze Age and Early Iron Age of the Thames Valley – settlement and house forms; artefact production, exchange and deposition; monumentality and landscape use - and argues that this period saw a dramatic shift in how past generations were perceived and the roles that ancestors played in the communities of the living. The last centuries of the Late Bronze Age (c.1000-800 BC) are characterised by fleeting relationships with material possessions, settlements, houses and some landscape features. The Early Iron Age (c.600-350 BC), in contrast, witnessed much longer-term relationships, passing objects and place down through the generations. This suggests significantly different meanings and associations attached to everyday features, with previous generations playing a larger role in the communities of the living in the Iron Age.

Change and Continuity in the Architecture and Cosmology of Chaco Canyon

Andrew M. Munro (Swinburne University) and Kim Malville (University of Colorado)

Ancestors of modern Pueblo people constructed increasingly complex monumental architecture starting during the late 9th century CE, and continuing through the first decades of the 12th century CE at Chaco Canyon. Orientation and alignment studies combined with topological analyses of horizons to identify workable solstice foresights have identified four distinct architectural traditions. Three of these are orientation traditions; buildings are front-facing to the south-southeast, south, and east-southeast. The fourth tradition is based on construction of buildings at observation points for visual solstice sunrise or sunset horizon feature alignments.

Orientations to the south-southeast and south appeared in the 6th century among Late Basket-maker period pit houses and continued though the major period of monumental "Great House" construction, known as the Bonito Phase. During this time Pueblo Bonito and Chetro Ketl became the largest Great Houses in the canyon. The east-southeast tradition was probably related to December solstice sunrise, which may have been a time for major festivals and trade fairs in the canyon. Festivals at that time could have been important for encouraging continuance of cyclical time and the return of the sun to the north. This orientation is dominant in the Rio Grande valley, southeast of Chaco Canyon, and first appeared to the north of Chaco in the Sacred Ridge community, which was violently destroyed around 840 CE for unknown reasons. That tradition may have influenced the orientations of Great Houses constructed in the canyon nearly two centuries later.

New construction following the severe drought of 1090-1100 CE was quite different; new Great Houses were constructed at locations that provided views of the juxtaposition of the solstice sun with dramatic features of the natural horizon. The construction of these Late Bonito Phase Great Houses may have been politically motivated by elites in the canyon in an attempt to reinstate the "spiritual magnetism" of Chaco Canyon by demonstrating knowledge and control over cosmological processes. Construction may have been organized by the elites living in the Great Houses to perpetuate their own political authority and ideological legitimacy, as in the theory of Durkheim. Alternately, these Late Bonito Great Houses may have resulted from a spiritual resurgence within and beyond the canyon, such that pilgrims visited Chaco to view the sun interacting with the sacred landscape and assisted in their construction. Consistent with Victor Turner's view of pilgrimage as counter-hegemonic, the elite residents of the earlier Great Houses may been ignored, having lost their power and ideological authority. Whatever the meaning of the post-1100 Great Houses,

construction did not continue for more than a few decades. Chaco Canyon was abandoned as a pilgrimage center sometime after 1130 CE.

Pre-Islamic Origins of Islamic Architecture: the Development of Muslim Ritual Spaces.
Barbora Žiačková (SOAS)
Whilst much scholarship has been afforded to post-Umayyad (661-750 CE) material culture, relatively little has been said of the pre- and early Islamic period, particularly regarding architecture. In part this has been due to the lack of archaeological excavations, owing largely to the dismissal of this period as of no significance by both Western scholars - by whom the idea of "Arab civilization" has been deemed an oxymoron - and the ruling Muslim powers of the region, to whom the period is known as the "Jahiliyyah" or the "Age of Ignorance" before the time of the Prophet Muhammad (d. 632 CE.)
This paper aims to achieve two objectives: first, to provide an overview of the current state of scholarship of early mosque architecture, including a critical analysis of the political issues that affect the extent of possible archaeological excavation in the region, particularly pertaining to religiously significant sites; secondly, to offer hypotheses utilizing source material from a variety of disciplines (archaeology, ethnography, etc.) regarding the development of ritual spaces in early Islamic Arabia, focusing not on the traditionally accepted influences of Byzantium and the Sassanian Empire, but indigenous architectural (Wesler 2012) and cultural practices (Al-Ansary, 1982).

The Sublime of Sky – A Modern Transition in Skyscape
Daniel Brown (Nottingham Trent University)
To appreciate and understand what a skyscape can mean, a viewer needs to engage with landscape and celestial phenomena. The moment when people realise that they are an integral part of a dialogue with landscape and celestial phenomena forming the experience where a skyscape is formed, as described by B Brady at TAG 2012 as well as D Brown at TAG 2013. Therefore, analysing skyscapes needs to take into account the stance of a viewer engaging with it especially when dealing with skyscapes experienced by ancient people, eg associated to megalithic monuments. Herein lies the greatest challenge, since we are unable to question a member of such a prehistoric society or lack any ethnographic records of their society.
This presentation addresses how to access the ancient skyscape experience. It analyses how the skyscape experience has been expressed in modern times and contrast it with the material record of the skyscape experience created by ancient people. The comparison illustrates how people have moved away from appreciating cosmic cycles towards moments in time and imagery, defining a transition in skyscape experience from past to present. An attempt is made to define the details of this transition as well as describing why it might make it seemingly impossible to interpret ancient skyscapes. As a conclusion it offers a way to cross this barrier by realising that researchers need to appreciate the common approaches of people in engaging with skyscapes rather than focusing on their final interpretation. At this point fieldwork in skyscape exploration becomes a self-reflection and an understanding of how the sublime of the sky is accessed.

Curtailed Skyscapes
Pam Armstrong (University of Wales Trinity Saint David)
This paper will explore skyscapes of the Mesolithic to Neolithic transition in south west England. When considering celestial horizon events the focus is often on the sun and moon. It is the rise and set of both these celestial objects across our local horizons that we use to measure the passage of time, their movements providing a calendrical marker which it is assumed has been in place for millennia. This practical use of sun and moon is a form of skyscape archaeology that has to do with cycles, seasons and timing, linking as it does Tropic and solstice, Equator and equinox.
 But there are other horizon events, those which are not so compellingly synchronised to the annual round, which may have less to do with marking time and more to do with ritual. These are horizon

events which involve stars, and in particular stars which are undergoing the phase of Curtailed Passage. This paper considers Bernadette Brady's suggestion that there was a belief in the Old Kingdom in Egypt, that stars of Curtailed Passage contained mythopoeic qualities to do with immortality, death and resurrection (Brady 2012). Brady suggests the particularities of the rise and set of this little discussed star phase symbolised for the Egyptians a spiritual journey of ascent and descent which reflected the journey through life and death.

Questions surrounding life and death are central themes in many religions so it is possible other belief systems from other times also found the celestial motion associated with this star phase of symbolic interest. My research into a variety of Neolithic monuments from Cotswold burial tombs such as Belas Nap to the iconic Pentre Ifan in Wales, explores the possibility that amongst their various alignments these enigmatic structures may also have included alignment to stars of Curtailed Passage. Maybe, in similar fashion to the Egyptians, Neolithic communities used stars undergoing the phase of Curtailed Passage to link land and sky, star and ritual through their skyscapes.

Cosmologies, Cults and Complexity: exploring the dialectic of the sociopolitical and symbolic in transegalitarian societies
Suzanne Villeneuve (University of Toronto)

In examining the motivations and processes surrounding transitions in cosmologies at the tribal or village (transegalitarian) level during periods of emerging inequalities and political complexity, it becomes apparent that exclusive ritual organizations like secret societies may play unusually important roles. Such ritual organizations provide a critical context for understanding the ways in which the cognitive and behavioral aspects of religion and ritual intersect with social changes and create a mutually dependent dynamic. Yet, the conditions under which such organizations develop, the specific strategies they employ, the motivations for their formation, and many other aspects are not well understood since very few studies have been conducted to address these issues specifically. Furthermore, of particular importance for archaeologists who wish to be able to identify such organizations in the past, there has been virtually no systematic documentation of the material characteristics of secret society activities at the transegalitarian level. To broaden our perspective, emphasis is placed on understanding how cosmologies and their material manifestation, operate to create or maintain persistent inequalities. Cosmologies structure the social and symbolic landscape together with daily practice and hence material residues. These issues are explored through examination of a fine grained archaeological record from the Canadian Plateau involving the co-emergence of ritual structures and large residential corporate groups, and ethnographic and ethnoarchaeological contexts involving ritual organizations in sociopolitical village dynamics.

(S9) Decolonising Human Origins
Session organisers: Martin Porr and Jacqueline Matthews (University of Western Australia)

Archaeology has experienced in recent decades some significant challenges regarding its inherent colonialist legacies in theory and method. Approaches to global human evolution and the Palaeolithic have so far not received similar critical attention. This is an interesting phenomenon that most likely is related to the presentation of human evolution as a natural process that can be described and explained in biological, 'scientific' and objective terms. However, against this assessment stands some significant research that demonstrates the social and cultural construction of 'biological' or 'genetic' facts. The same applies to the narratives that are constructed to explain the course of deep human evolution and the causalities that were involved. These critical approaches suggest that biological and cognitive human evolution is largely constructed within a Western framework, which rests on an essentialist view of human characteristics, 'human nature' or 'cognitive capacities'. These ideas have highly problematic links to colonialist concepts of innate

human abilities, which underwrote racist ideas in the 19th century. As a result, this orientation also silences Indigenous perspectives and voices in the discourse about so-called modern human origins and the deep past of humanity. This session is aimed at critically analysing current approaches to human evolution and human origins and search for new approaches that enable a renegotiation of what it means to be and become human.

14:00–14:30   **Between the universal and the local. Pathways towards the decolonisation of human evolution.** Martin Porr and Jacqueline Matthews (University of Western Australia)
14:30–15:00   **Tribes and tribal instincts: A critique.** Tim Lewens (University of Cambridge) and Jonathan Birch (London School of Economics)
15:00-15:30   **The Far East and the Far West**. Robin Dennell (University of Sheffield)
15:30–16:00   **De-colonising the past. Implications for a Middle to Upper Palaeolithic 'Transitional Industry' from Britain.** John Piprani (University of Manchester)
Break
16:30–17:00   **Decolonising visions of Aboriginal stone artefacts: An antipodal perspective.** Jacqueline Matthews (University of Western Australia)
17:00 – 17:30   **Decolonising the origins of art.** Martin Porr (University of Western Australia)

Abstracts

Between the universal and the local. Pathways towards the decolonisation of human evolution
Martin Porr and Jacqueline Matthews (University of Western Australia)
This paper is a broader introduction to the aims and themes of the Decolonising Human Origins session. It will provide a foundation for why human origins research is in need of decolonising. Possibly one of the most important observations in this context is that in contrast to almost all other areas of archaeology so-called human origins research appears largely untouched by broader critiques that have challenged inherent colonialist legacies in archaeological theory and method. We will examine here the engrained assumptions and underlying legacies of Western thinking about the deep human past that serve to keep human origins research in the realm of biological and evolutionary explanation as a natural, universal and inevitable process. These elements have significant impacts on a range of aspects within current constructions of human origin narratives, such as the notion of 'origins', biological and cultural capacity, dispersal and transmission/heredity mechanisms, temporality and so on. We will further highlight the impact on the integration of Indigenous perspectives and voices as well as more dynamic and social understandings of what it means to be and become human.

By drawing attention to the flaws and contradictions that plague current narratives of origins and modernity, we will start to suggest some pathways forward to a decolonised practice. If human origins research is aimed at understanding and telling the story of 'us' it can no longer be told in a manner that privileges only Western values. There is a great need for approaches that coalesce the universal and local contexts in a way that does not assume general or universal cognitive categories and algorithms that supposedly guide human behaviour.

Tribes and tribal instincts: A critique
Tim Lewens (University of Cambridge) and Jonathan Birch (London School of Economics)
In this paper, we criticize the 'tribal instincts' hypothesis defended by cultural evolution theorists such as Peter J. Richerson and Robert Boyd. Central to this hypothesis are the ideas that early human populations were objectively structured into 'ethnolinguistic tribes', and that these tribes competed in a process of 'cultural group selection'. We suggest that both ideas may point to a hidden legacy of unchallenged colonialist assumptions. We illustrate these points with a discussion of the case of the 'Nuer conquest' of the Dinka in 19th Century South Sudan, Richerson and Boyd's flagship example of

'cultural group selection' acting in modern populations. We argue that the notion of the Nuer 'outcompeting' the Dinka by virtue of their greater aptitude for war may well have been (in various respects) an artefact of colonial observation. Moreover, the very idea that the Nuer and the Dinka constituted discrete 'groups' of the sort that could participate in a process of group selection can be doubted for similar reasons. We proceed to consider what a theory of cultural evolution stripped of such assumptions might look like. We argue that, in fact, competition between 'tribes' is a dispensable feature of the cultural-evolutionary project. The basic cultural evolutionist methodology involves constructing mathematical models, inspired by those of classical population genetics, to understand the changing genetic and cultural composition of populations over time. We can retain this basic methodology without invoking dubious assumptions about population structure.

The Far East and the Far West
Robin Dennell (University of Sheffield)
One important consequence of 19th century western imperialism, particularly by the British and French, was the way they remoulded much of the world that they dominated in their own terms. This was particularly true of geography and history. Geographically, the terms "Near East", Middle East" and "Far East" indicated distance from Europe. These terms also has historical implications, with those closer to Europe geographically sharing more of the values and traditions of those further east. The "Near East", for example, was the birthplace of Christianity and home to much of the world depicted in the Old Testament. In contrast, the Far East" was depicted as ancient but also stagnant, backward, insular, and isolated; its apparent exoticism served only to emphasise its alien nature and cultural separateness from European tradition. This intellectual framework is implicit in Movius's 1948 synthesis of the Early Palaeolithic, in which the Far East was seen as backward and primitive by comparison with the "dynamism" of the rest of Asia, Europe and Africa, and as contributing nothing of significance to the early development of humanity. Such prejudices have no useful role in modern investigations of the Early Palaeolithic, and should be disregarded.

De-colonising the past. Implications for a Middle to Upper Palaeolithic 'Transitional Industry' from Britain.
John Piprani (University of Manchester)
The Lincombian is a Middle to Upper Palaeolithic 'Transitional Industry', the British component of the pan-European Lincombian-Ranisian-Jerzmanowician (LRJ). This presentation will deal with the Lincombian in relation to three areas: historical legacies; implications for theory and method; and an indigenous perspective. To understand the impact of historical legacies it is necessary to highlight the value placed upon the scientific analysis of human fossil evidence, associated dateable materials, and relative stratigraphies when attempting to understand the modern human colonisation of Europe and concomitant disappearance of the indigenous Neanderthal population. The Lincombian has no unequivocal associated human fossil evidence and an early Type Fossil approach to collection means there is little in the way of associated dateable materials or relative stratigraphy. The material does not fit easily into the Middle to Upper Palaeolithic temporal architecture but at the same time seems to add little to current understandings of the period.
With this in mind the second section will posit an alternative theoretical approach and suggest that these same materials may be usefully employed in answering a different set of questions, questions aimed at structuring understanding from an indigenous perspective. To develop this argument alternative methodological approaches are applied to two areas: in contrast to an early focus upon homogeneity the type fossil materials are interrogated in an attempt to understand within corpus heterogeneity; secondly in a shift away from dating and stratigraphy sites are discussed in relation to more fundamental landscape features. In the third and final section I will discuss how through this process an indigenous perspective does seem to emerge and patterning within the materials and landscape seems to stand in contradiction to the linear modelling of time generally used by archaeologists to understand this period.

#TAG2014

Decolonising visions of Aboriginal stone artefacts: An antipodal perspective
Jacqueline Matthews (University of Western Australia)
In this paper I consider how the narrative of an origins of modern humans has played out in the context of Australian Indigenous archaeology. Encounters with Aboriginal people and their history from the colonial period onwards have challenged Western conceptions of what it means to 'be human' and more recently to 'be modern', which has problematic implications for traditional archaeological understandings of so-called behavioural modernity. However, I argue that the Australian record should not be problematic to understandings of humanity and modernity. The landmass of Sahul has only ever been occupied by anatomically and behaviourally modern humans but an understanding of humanity and modernity based on the Western conceptions of capacity and development, which are measured by markers of material complexity is inappropriate in this context. Exploring why this is the case challenges traditional notions of humankind and its development, and this is key if we are to advance a productive decolonising agenda in the realm of human origins research.

I focus specifically on understandings of stone artefacts and explore the disconnection between archaeological and Indigenous perspectives on these things. By not seriously engaging with Indigenous perspectives, archaeologists effectively (but often unconsciously) remake the makers of stone artefacts into the imagined frameworks and sensibilities of Western practitioners. I will argue that the antipodal case holds insights for our understanding of human origins more broadly, particularly because it challenges the construction of grand narratives of global human development and universal measures of humanity or modernity. If traditional Western orientations and approaches struggle to deal with the relatively recent Aboriginal past then we need to question just how well they are suited to the deeper, more remote past. I will suggest that a decolonisation of our visions of the past will require fundamental ontological shifts and a movement towards relational understandings of the world.

Decolonising the origins of art
Martin Porr (University of Western Australia)
Figurative representations are traditionally regarded as the ultimate litmus test for the presence of fully modern humans – people like us – in the deep past. The research history of Palaeolithic art shows that the interpretation of its place in the narrative of global human evolution is guided by assumptions about humans and humanity that are ultimately European, modernist, essentialist and, consequently, colonialist. In this paper I will briefly examine the treatment of Palaeolithic art and Australian Indigenous rock art in relation to the following deeply entrenched assumptions: 1. 'Art' is a specific and delineated ability and capacity that is shared by all modern humans. 2. The ability to produce 'art' actually has to have one origin. 3. 'Art' can be divided into higher or lower forms, where it is assumed that the former can be assessed in relation to its realism, elegance, and gracefulness etc. 4. The normal course of development of art is from lower (less realistic) to higher (more realistic) forms of expression. 5. The highest and most sophisticated art forms are realistic paintings or realistic sculpture, which reflect biologically and culturally sophisticated individuals. The juxtaposition of the general narrative of the origins of art and modern humanity with the interpretation Australian Indigenous rock art within a colonial context will allow rethinking the historically developed practice of giving one part of the world (traditionally Europe) primacy in assessing the complexity of human existence. Until today, the archaeological record of Europe is used – explicitly or implicitly – as a measure of human modernity. This orientation leads to the idea that large parts of the globe are impoverished and underdeveloped corners of the world that are outside of the normal course of human history. Questioning this view has not only implications for archaeology but also for engaging globally with Indigenous heritage.

(S10) Digging the Legend: Cultural expectations in the archaeology of conflict
Session organisers: Andy Brockman (Operations Room Archaeology) and Martin Brown

The first modern exercise in forensic Battlefield Archaeology was probably the work of Doug Scott and his team for the US National Parks Service which succeeded in completely overturning over one hundred years of print and Hollywood mythology about "Custers Last Stand" and the Battle of the Little Big Horn. As powerful as this was as archaeology, it was an equally powerful statement of the potential for the engagement of the archaeology of conflict in the broader cultural landscape of received national and international narratives and myths.

The session is inspired and framed by a moment in an iconic film, John Ford's western, "The Man Who Shot Liberty Valance". The film ends with the character of the newspaper editor saying "When the legend becomes the fact, print the legend". Dealing as it so often does with deeply ingrained cultural and national mythologies the session will explore how the Archaeology of Conflict must be aware of both the possibility for positive community engagement this provides, as well as of the dangers of received, cultural narratives interpolating themselves into the investigation and interpretation of the archaeology of conflict.

The session will draw on the example of recent work in Burma relating to the mythology of buried Spitfires and in Sweden the crash site of RAF Lancaster "Easy Elsie," and aircraft belonging to 617 Squadron of "the Dambusters" fame. Other iconic moments of conflict will also be discussed.

13:00-13:30	**Modern Conflict Archaeologists, Are they the Useful Idiots of Full Spectrum Dominance Strategy** Jon Price, (No Man's Land)
13:30-14:00	**Living Up to the Dead: Pride, Mourning and Memory at the War Graves of Fromelles.** Layla Renshaw (Kingston University)
14:00-14:30	**The loss of the steamship Mendi – investigating and commemorating a South African national icon in UK territorial waters.** Graham Scott, (Wessex Archaeology)
14:30-15:00	**Poole's D-Day Heritage** Tom Cousins, (Bournemouth University)
15:00-15:30	**Who Owns Easy Elsie?: The Archaeology of the Dambusters.** Andy Brockman (Operations Room Archaeology)

Break
15:40-16:45   Documentary film "What the Dambusters Did Next"
16:45-17:00   Discussion

Timings may be subject to change

Abstracts

Modern Conflict Archaeologists, Are they the Useful Idiots of Full Spectrum Dominance Strategy
Jon Price, (No Man's Land)
In this paper I will summarise aspects of archaeological co-option to, and cooperation with, the military, and briefly define in what ways modern conflict archaeology can or will bring practitioners into close contact with the military family, drawing on my own experience of fourteen years of activity in this field. I will then introduce and explain the development of Full Spectrum Dominance strategy by the military, and the three contested areas it defines: the kinetic, digital and cognitive battlefields. I will examine the significance of what is said, and what isn't concerning intelligence operations and the cognitive battlefield, and how this interacts with the other theatres and I will highlight a clear example of this process. I will then sketch out the cognitive battlefield issues which must be addressed by reflective practitioners in this comparatively recent, though rapidly growing field of archaeology.

Living Up to the Dead: Pride, Mourning and Memory at the War Graves of Fromelles.

Layla Renshaw, (Kingston University)

The Battle of Fromelles in Northern France was launched in July 1916 as a diversionary attack during the Somme offensive of World War I. It was launched against a German stronghold by soldiers from the Australian Imperial Force who were fighting alongside UK troops. The first major battle fought by Australian troops, it proved to be a particularly bloody and militarily futile action. As well as German and British losses, there were 5,533 Australian casualties and a subsequent Australian memorial to the dead describes this battle as 'the worst 24 hours in Australia's entire history'.

In the immediate aftermath of the battle, German burial parties buried Allied dead in unmarked pits and the locations of some were forgotten. Following a sustained and contentious campaign by amateur historians and relatives of the dead, the suspected location of these burial pits was investigated in 2008, confirming the existence of mass graves. Subsequent archaeological and scientific work has resulted in the excavation, analysis and reburial of these bodies, with a significant number positively identified using DNA. A new, purpose-built Commonwealth War Graves Commission Cemetery was inaugurated in the village of Fromelles in 2010.

This paper is based on an extensive series of interviews with relatives of the dead conducted in Sydney and Canberra and site visits in Northern France. The particular focus of this paper is how this excavation, and the intensive genealogical and genetic work that has accompanied it, has triggered a range of new and complex ways of relating to the dead. The paper will highlight the impact of the ANZAC mythology on family history. It will assess the tensions between the culturally pervasive ANZAC legend and the reality of these deaths, and how individuals construct personal and private meanings from a battle that is part of their nation's collective heritage.

The loss of the steamship Mendi – investigating and commemorating a South African national icon in UK territorial waters

Graham Scott, (Wessex Archaeology)

On a cold and foggy night in February 1917, the steamship *Darro* collided with the Liverpool steamship *Mendi*, sending it to the bottom in just 20 minutes. More than 600 men of the South African Native Labour Corps being transported to the Western Front were drowned. To a Britain inured to loss by three years of war, the loss of the *Mendi* was just one terrible event of many and quickly forgotten. In South Africa the white government, fearful of the oppressed black population, actively suppressed memory of the tragedy. Nevertheless that memory survived as a symbol of black resistance and since the end of Apartheid the *Mendi* and the Labour Corps have become powerful and highly politicised symbols of hope and equality. This paper will tell the story of the *Mendi* and will discuss some of the challenges faced by archaeologists investigating and disseminating information about a potent national icon.

Graham Scott of Wessex Archaeology has been involved in the archaeological investigation of the *Mendi* since 2006. He is now part of a volunteer professional team currently working to create new commemorative displays at the museum of the South African National War Memorial.

Poole's D-Day Heritage

Tom Cousins, (Bournemouth University)

On the 4th of April 1944 in preparation for Operation Neptune, the Normandy landings of 6th June 1944, exercise "Smash I", the biggest live-fire exercise of the war, was conducted in Studland Bay outside of Poole Harbour, Dorset.

During this exercise, two squadrons of Valentine Duplex Drive (DD) amphibious tank were utilised for beach landings; these tanks could be launched from a landing craft at sea and through the deployment of a canvas skirt and a propeller they could 'swim' ashore under their own power to provide armoured support for a landing force assaulting a fortified position, such as the Normandy

beaches. Although the majority of the tanks launched during this exercise got ashore, six tanks sank with the loss of six troopers; one tank ran aground and was later scuttled.

Knowledge of these losses created a myth that the exercise was a disaster, when in fact it can be seen as a small loss which prevented a much larger loss on D-Day. IWM interviews of troopers who took part in the exercise vary greatly and have shown to exaggerate the loses and not the successful aspects of the exercise.

Who Owns Easy Elsie?: The Archaeology of the Dambusters.
Andy Brockman (Operations Room Archaeology)
In the Summer of 2013 the author of this paper visited the crash site of 617 Squadron Lancaster "Easy Elsie" in northern Sweden as part of the research for the documentary film "What the Dambusters Did Next" [TVT Productions 2014]. This paper will explore the pressures of cultural expectation in producing a popular television documentary about a national icon. Given there is currently a petition to return the remains of Easy Elsie to a UK Museum as the last surviving "Dambusters" Lancaster, the paper will go on to explore and discuss the question of who "owns" the physical remains of Easy Elsie and the narrative those remains embody.

(S11) 3D Imaging in Archaeology – A Brave New World?
Session organisers: Marcus Abbott (ArchHeritage) and Thomas O'Mahoney (University of Manchester)

3d imaging in archaeology is well established, but it is only now, as computing and hardware costs decrease significantly, that it is being accepted as a mainstream part of archaeological investigations. Often a new analytical or recording technique is treated like a 'black box' – when it works effectively it is wonderful, but when things do not occur as expected the technique rather than the investigator's approach is often blamed. Although 3d imaging is often portrayed as such a 'black box' technique, this session will attempt to show that this is not the case, and will highlight how the decisions made by users can influence the interpretation of the data produced.

By providing case study examples of digital projects we aim to provide an accessible introduction to some of the work that is being achieved in this high technology sector of archaeology. We understand that some individuals can find the amount of information overwhelming and the techniques are sometimes explained in a very technical manner. As part of the session, we wish to offer anyone who might be considering utilising these techniques in a project of their own, the opportunity to ask an expert panel on how the latest technology might help them with their own project or project proposal.

9:00-9:20.	**Introduction**
9:20-9:40.	**Up close and personal: 3D imaging, social media and the crowd.** Maiya Pina-Dacier and Kezia Evans, (DigVentures ltd)
9:40-10:00	**The Cult of the Archive: digitisation of historical records.** Katherine Fennelly, (University of Manchester)
10:00-10:20	**Imaging mummies – the trials and tribulations.** Lidija McKnight, (KNH Centre for Biomedical Egyptology, University of Manchester)
10:40-11:00	**Difficult artefacts from the Stonehenge Landscape.** Dr Anne Teather
Break	
11:20-11:40	**3D Modelling of Mobiliary Art from the Magdalenian Site of Montastruc, Tarn-et-Garonne, SW France.** Andy Needham, (University of York), Dr. Rob Davis (University of Bradford) and Dr. Jill Cook, (Department of Prehistory and Europe, The British Museum).

11:40-12:00	**Photogrammetry: The integration of a fledgling discipline within commercial excavations.** Donald Horne and Katie-Morag Hutton, (Cambridge Archaeological Unit)
12:00-12:20	**Commercial archaeology in the digital age.** Marcus Abbott, (ArcHeritage)
12:20-12:40	**Image-based 3D reconstruction: the future of archaeological excavation practice.** Jeroen De Reu, Wim De Clercq (University of Ghent) and Pieter Laloo, (GATE bvba Evergem, Belgium).
12:40-13:00	**3D and other Digital Approaches to Archaeology at Keatley Creek.** Suzanne Villeneuve, (University of Toronto and Simon Fraser University)
Lunch	
14:00-14:20	**The survey of Bodiam Castle: which weapon in the 3D imaging armoury to use?** Catriona Cooper (University of Southampton) and Penny Copeland, (University of Southampton).
14:20-14:40	**Visualising an Ice Age Island: Exploring an integrated approach to digital recording & visualisation in Jersey.** Sarah M Duffy, (University of York)
14:40-15:00	**Inspecting Morphological Residual Models with RTI viewer.** Artzai Elorza Arana, (University of Salamanca), J. Martinez- Rubio (LFA-DAVAP, University of Valladolid and H. Pires (University of Porto).
15:00-15:20	**Landscape holography: scoping potential on the Great Orme.** Dr Sian James (University of Bangor), and Mr Zaid Al-Obaidi, (Seahawk AP)
15:20-15:40	**Mass digitisation of the archaeological record: problems and prospects.** Thomas O'Mahoney, (University of Manchester)
15:40-16:00	**Discussion**
Break	
16:30-18:00	**Workshop**

The session will end with a 1-2hr workshop and networking event focused on the data capture techniques discussed during the session including; Photogrammetry; Structured Light Scanning; Post processing of data.

We will provide computers with preloaded software for this, as well as TV screens for larger demonstrations. The idea is that session participants will be able to 'have a go' at the techniques that they are less familiar with, and discuss problems they encounter in workflows. Anyone who is considering using any of these techniques is welcome to attend and ask advice from workshop participants in a relaxed informal environment.

Abstracts

Up close and personal: 3D imaging, social media and the crowd
Maiya Pina-Dacier, Kezia Evans, (DigVentures ltd)
3D imaging brings us bigger, better, more beautiful data to interpret - but so does the crowd. What happens when you bring the two together?
DigVentures has pioneered the use of 3D images within a more social archaeology that makes finds available online, in 3D, within 24 hours of them coming out of the ground. By releasing 3D images in real time, DV reaches a limitless, more engaged audience, receives faster interpretations, and gains access to experts all over the world. On the flip side, it does mean we have to build social into our decision making process from an early stage - from file sizes to choice of software. But understanding these decisions, and fighting the inevitable urge to keep hold of your data 'until you're ready', can bring huge benefits to your project. This session will take a 'warts and all' look at what's needed to 'go social' with your 3D images, some of the lessons we've learnt and how they can benefit not just your project, but everyone with an interest in it. After all, the real innovation is not the technology, but what people choose to do with it.

The Cult of the Archive: digitisation of historical records

Katherine Fennelly, (University of Manchester)

In the last decade, virtual museum and digital collections have bridged a gap between the dual responsibility of many heritage professionals to conserve, as well as educate. 3D or 2D representations of objects on websites open to the public have allowed for close public engagement with objects housed in collections thousands of miles away, which are sometimes fragile and occasionally dangerous. Researchers are now assessing the uses and pitfalls of studying material objects digitally. This paper will consider how digitised material culture can contribute to the study of the recent historic past. Examples will be drawn from research on administrative material culture, and the digital modelling of artefacts from excavation of nineteenth century material. Finally, this paper will engage with recent debates over the use of digital humanities, their accessibility, and the ethics of rarefication in the creation of 3D models or 2D scans.

Imaging mummies – the trials and tribulations

Lidija McKnight, (KNH Centre for Biomedical Egyptology, University of Manchester)

Radiography has long been advocated as a 'wonder technique' for the study of mummified remains, and there can be little doubt that it offers an unprecedented insight into wrapped bundles. It does, however, pose logistic and practical issues when studying material of this kind. Mummified remains from museum collections have been subjected to radiographic investigation at the University of Manchester for over 40 years using clinical modalities. The technological progress of the techniques and our experience over this period has led to the formation of a protocol which has since been implemented by other scanning venues. In this paper, some of the trials and tribulations of our experience in 'mummy radiography', both human and animal, will be presented.

Difficult artefacts from the Stonehenge Landscape

Dr Anne Teather, (University of Manchester)

The fragility of many artefacts made of chalk and the rarity of finds of prehistoric daub have rendered existing approaches to the study of this material culture ineffectual. Repeated handling and handheld microscopy can erode such fragile artefacts. Further, the pertinent questions of manufacture and subsequent use are not easily explored where datasets of previously excavated material are either absent or unpublished. This difficulty is alleviated through new approaches to material culture, but how satisfactory are they? How easy is it to delve into this new world? This paper discusses the results of exploratory work using 3D scanning, x-ray and CT imaging in an investigation of chalk and daub from the Stonehenge Riverside Project excavations.

3D Modelling of Mobiliary Art from the Magdalenian Site of Montastruc, Tarn-et-Garonne, SW France

Andy Needham, (University of York), Dr. Rob Davis, (University of Bradford) and Dr. Jill Cook, (Department of Prehistory and Europe, The British Museum).

The Late Upper Palaeolithic site of Montastruc, SW France, dating to c. 13,000 BP, is home to a rich corpus of mobiliary art, with over 100 decorated organic pieces and 51 engraved stone plaquettes. Some of the organic objects from the site, notably the swimming reindeer, have been rightly identified as works of artistic genius. By comparison, the engraved stone plaquettes are enigmatic and often receive limited attention, despite their numerical prominence across the Magdalenian, likely due to the difficulty associated with interpreting what are often densely packed and superimposed designs. We here explore the use of 3D modelling as a tool in analysing these objects. Using a MechScan whitelight macro 3D scanner, high resolution scans of the plaquettes were created to facilitate design recognition, the analysis of phasing and line order, and to create digital proxies to simulate handling and varying light conditions and directions, and for use in presentation/dissemination. We conclude that 3D models can aid in analysis, presentation and

dissemination of results. While never a replacement for engaging first hand with the collection, we suggest that the 3D models produced by this technology can be an effective means of engaging with more ephemeral forms of Palaeolithic art.

Photogrammetry: The integration of a fledgling discipline within commercial excavations
Donald Horne and Katie-Morag Hutton (Cambridge Archaeological Unit)
This paper proposes to explore the inherent biases of on-site photogrammetry. The choices made here are not just made within the capture and the creation of 3D models but are occurring from all parties involved in the excavation of these objects.

The case study here, rather than exploring the 3D documentation of a single site will be looking at the impact of the integration of photogrammetry into the suite of recording methods used on excavations of a commercial unit (The Cambridge Archaeological Unit) and the caveats there within. Photogrammetry is still a relatively new prospect within commercial archaeology even more so when being pursed on active excavations with the commercial constraints of both budget and time. As we are still trying to prove the worth of photogrammetry in these conditions, we are actively choosing the best examples of items: the best preserved, the best excavated and the most aesthetically exciting items. This situation is obviously flawed; the alternative of a complete photogrammetric record across the entirety of most sites would be financially and temporally nonviable and the usefulness of the extra information provided would be negligible parallel to the current recording systems. What is the third way? Is it possible to create a methodology that allows a constant standard of excavation and conditions?

Commercial archaeology in the digital age
Marcus Abbott, (ArcHeritage)
Advancements in digital technology are having a profound effect on the way we record, present and understand archaeology. Over the last decade archaeologists have embraced digital techniques and technologies like laser scanning, photogrammetry, and 3D visualisation as new tools and opportunities for interpretation and public dissemination. In the past, these methods were often considered an exclusive technology, available primarily to projects with extensive research budgets; however recent advancements in computer hardware and software now put these digital techniques within the capabilities of most archaeologists and heritage focused organisations

The successful incorporation of digital techniques into archaeological workflows requires an approach and methodology closely tied to research aims. Understanding of a project's unique objectives, client expectations, and final product are all crucial aspects which inform the ultimate choice of technique or combination of techniques. Therefore a balanced knowledge of the benefits and limitations of digital technologies is essential to their effective use. Additionally, issues surrounding the archiving of digital data are ever present and will continue to grow as the volume and diversity of technologies employed by archaeologists increases.

This presentation investigates cutting edge technologies and their application in the context of commercial archaeology, drawing on case studies from ArcHeritage to illustrate the benefits and limitations of different techniques and the possibilities for the dissemination of archaeological projects in the digital age.

Image-based 3D reconstruction: the future of archaeological excavation practice.
Jeroen De Reu, Wim De Clercq (University of Ghent) and Pieter Laloo (GATE bvba Evergem, Belgium)
Image-based 3D reconstruction has the potential to revolutionise the practice of archaeological fieldwork. It holds great opportunities for increasing the quality of archaeological documentation, study and interpretation, but it also brings new challenges and risks. This paper will focus on the application of image-based 3D reconstruction for the documentation of archaeological excavations, with particular reference to its application within the framework of development-led archaeology. Based on a series of case studies, we will present how we try to systematically apply an image-based

3D recording workflow for the documentation of excavations, how we use the 3D data during the excavations and the post-excavation processing and how it aids the study, interpretation and understanding of the site. We will show that applying image-based 3D reconstruction, instead of traditional recording techniques, requires a complete change in the workflow of an excavations, but that the quality of the excavation documentation is increased. Besides the opportunities, we will also highlight new challenges and risks encountered while applying this technology.

3D and other Digital Approaches to Archaeology at Keatley Creek.
Suzanne Villeneuve (University of Toronto and Simon Fraser University)
The Keatley Creek Project has incorporated digital methods into excavations since 2006, which has benefited investigations of major theoretical issues concerning the processes surrounding early cultural developments. The original objective behind new methods was to assist with the recording, analysis and interpretation of complex stratigraphy. Methods have advanced to a very practical, cost efficient, digital paperless approach involving 3D scanning, Photogrammetry, GIS, auxiliary software, video, high resolution imaging and image processing, and other techniques. Work flow can be made efficient enough to view and produce results (including graphics) as excavations unfold. It is now possible to complete in weeks (with greater detail, accuracy, data and analysis capability), what used to take multiple research seasons to complete. This has led to new ways of analysing and correlating results, and ways in which we engage with, learn from and interpret the past. Benefits also extend to collections management, student training and learning experiences. This paper will emphasize the trials, techniques and challenges in developing some techniques for recording archaeological stratigraphy.

The survey of Bodiam Castle: which weapon in the 3D imaging armoury to use?
Catriona Cooper (University of Southampton) and Penny Copeland (University of Southampton)
Different types of 3D imaging techniques have been applied to building archaeology as they have been developed. In recent years people have favoured laser scanning as a method for recording standing buildings as it can sweep through a building quickly and with good detail. In this paper we suggest that this cannot be the end of the story. We now have a range of 3D imaging techniques for recording buildings and we need to look at the where the process of interpretation lies. We can suggest that even though a slower task, a total station survey can be a good alternative. The nature of total station survey encourages onsite understanding and interpretation, producing a detailed knowledge of the building and how it worked. The speed of laser scanning is its benefit, but it reduces interpretation to a very passive view on a computer. Interpreting onsite encourages engagement with the results and can ensure the appropriate level of detail is recorded. There is also room for a more tactile approach to the materials. Here we present a large scale building survey undertaken at Bodiam Castle over three seasons of work. We show how viewing the building at different times of day, in different seasons and from continual movement around the site has allowed for a greater understanding of the structure and fabric of the building.

Visualising an Ice Age Island: Exploring an integrated approach to digital recording & visualisation in Jersey
Sarah M Duffy, (University of York)
Despite the growing adoption of digital 3D approaches across the archaeological community, challenges relating to compartmentalization of skill-sets and technology transfer still linger in the transition from analogue to born-digital data capture. Such challenges jeopardize the optimization of the techniques in the field as well as their analytical potential back at the office. This paper seeks to explore the application of 3D recording and visualization approaches in different phases of investigating the deep past in Jersey (CI).
The Ice Age Island project aims to investigate early human occupation in Jersey from Neanderthal settlement to the Mesolithic. It draws upon a consortium of specialists from universities around the

UK and is undertaken in partnership with Jersey Heritage and the States of Jersey. Together, the project team seeks to find new ways to examine, share and enhance the understanding of island's deep history which has included the incorporation of innovative digital recording and visualisation techniques such as photogrammetry, structured light 3D scanning and reflectance transformation imaging (RTI) into the project design. This paper will highlight how an integrated and reflexive approach to digital capture and processing has informed the larger programme of research and enabled dissemination of findings to the public and specialists.

Inspecting Morphological Residual Models with RTI viewer
Artzai Elorza Arana (University of Salamanca), J. Martinez- Rubio (LFA-DAVAP, University of Valladolid) and H. Pires CICGE , (University of Porto)
The Morphological Residual Model is a technique for contrast and depict shape from 3D models that contributes significantly to increase the amount of information available for archaeological researchers in the surface of sites and objects. The result of this process is a 3D model where morphological anomalies are depicted as vertex colour attributes.
The visual inspection of this 3D digital information is a time-consuming and relatively complex process, it comprises managing files of huge sizes that require heavy hardware and a certain amount of expertise to efficiently interact in 3D virtual environments.
To address this problem we used a virtual approach based in the PTM/RTI pipeline, a well-known technique for visualizing shape in archaeological studies, but instead of photographs from real scenes we worked with virtual images captured from MRM 3D models. The results are compared to those achieved with 3D-based shading filters, aiming to contribute for the discussion about 3D data and interfaces in archaeological practice.

Landscape holography: scoping potential on the Great Orme
Dr Sian James (University of Bangor), Mr Zaid Al-Obaidi (Seahawk AP)
This paper summarises the Landscape holography project that aimed to investigate the feasibility and potential of using landscape holography in cultural heritage. This innovative project carried out a small scale scoping project on Pen-y-Dinas hillfort on the Great Orme, Llandudno, to investigate the challenges and possibilities of landscape holography for research, education and possible commercial applications of the technology. A UAV was used to capture digital images of the site that were then turned into 3D data using photogrammetry software, the results of which were transferred into holographic form ready for dissemination in this high technology project. The creative collaboration between the University of Bangor's History, Welsh History and Archaeology department and SeahawkAP meant that both academic and private sector's benefitted from this research, not to mention the added interdisciplinary effort of the School of Computer Science and ViewHolographics in manipulating the digital data. Rather than just being a pretty gimmick to show in exhibitions, the results of this research show how by pushing the boundaries of 3D imaging archaeologists and contributors can create meaningful new interpretations of sites and landscapes and make heritage more accessible and visible to all.

Mass digitisation of the archaeological record: problems and prospects.
Thomas O'Mahoney, (University of Manchester)
Recent advances in computing and hardware have resulted in an explosion of projects engaged in mass digitisation of artefacts and fossils. Notable examples of this include Smithsonian 3dx, African Fossils, MicroPasts and the 3d Co-Form project. What all these projects have in common is that they rely on a variety of digitising techniques to achieve their aim, with a core of full time, professional support. Unfortunately, the set up costs of these sorts of projects are often something which is poorly estimated, as well as the need for ongoing support and a long term strategy for data curation. How these problems can potentially be overcome as well as efficient workflows for mass digitisation

of collections, and the problems (as well as advantages!) inherent in this sort of approach will be the focus of this presentation.

(S12) House Societies in Prehistory

Session organisers: Colin Richards (University of Manchester) and Julian Thomas (University of Manchester)

In his book The Way of the Masks (1982) Claude Lévi-Strauss introduced the notion of the 'house society', a corporate social group that holds an estate of collective material and immaterial wealth. Here, the 'house' refers at once to a physical structure and the community who are attached to it, as, for instance, with the 'House of Windsor'. Such a group is reproduced by transmitting its name, goods and titles across the generations, between members of the community who may be real or fictive kin. This transmission achieves its legitimacy through an ideology of kinship or affinity. From an archaeological point of view the critical feature of house societies is that their continuity is vested in material things: often the dwelling structure itself, but also the valuable goods that pass between the generations, signifying the unbroken existence of the community. Lévi-Strauss argues that such a house represents a 'moral person', a social actor which may compete or collaborate with others. These claims are particularly interesting in the context of recent calls for a 'flat ontology', which sees material things as participants in the creation of society, rather than merely reflecting human actions and intentions.

Lévi-Strauss makes the quasi-evolutionary argument that house societies may represent an intermediate stage between kin-based and class-based societies, where social inequality still needs to express itself through the medium of 'the old ties of blood'. However, as Susan Gillespie points out, it may be that 'housiness' is actually a characteristic of a range of quite different societies, and that communities may become more or less 'housey' over time. The concept need therefore not be linked with unilinear evolutionism at all.

In this session papers will seek to explore the utility of the notion of house societies in a variety of temporal and geographical contexts.

13:00-13:20	**Ritual Specialists in House Society Dynamics** Suzanne Villeneuve, *(University of Toronto and Simon Fraser University)*
13:25-13:45	**House societies in the Central European Neolithic?** Penny Bickle, (University of York)
13:50-14:10	**My House is my Castle: Neolithic House Societies in Scandinavia 4000-2000 BC** Mats Larsson
14:15-14:35	**House societies in the Irish Neolithic – a help or hindrance?** Jessica Smyth (University of Bristol)
14:40-15:00	**Developing Neolithic société "à maisons" in Orkney: absorption, transmutation and animation** Colin Richards, (University of Manchester)
Break	
15:30-15:50	**World enough and time — permanence and impermanence, performance and mobility associated with houses in earlier neolithic Britain** Seren Griffiths and Ben Edwards
15:55-16:15	**The Tomb of the House** Julian Thomas
16:20-16:40	**Affinity and Mortuary Archaeology: A Proto-Historical Perspective** Duncan Sayer
16:40-17:00	**Discussion**

Ritual Specialists in House Society Dynamics
Suzanne Villeneuve, (University of Toronto and Simon Fraser University)
This paper will examine the role of ritual specialist organizations in the dynamics of House Societies. New insights on this topic from two case studies will be presented, including a fine-grained archaeological ritual context from the Canadian Plateau, and an ethnoarchaeological case study from Indonesia involving an ongoing ritual, feasting and megalithic tradition. The growing body of literature on House Societies will also be drawn upon to examine a range of archaeological and ethnoarchaeological examples. Emphasis is placed on exploring the potential of the House Society model for understanding processes and conditions surrounding the co-development of large residential corporate groups and ritual in restricted spaces. This line of investigation has the potential for revising models of socio-political village dynamics to bring insights to questions surrounding the degree of inequality expressed in these house groups.

House societies in the Central European Neolithic?
Penny Bickle, (University of York)
Sociétés à maison (house societies; Levi-Strauss) is a theory of how households operate to ensure that such relationships can be reproduced. In arguing that the household was viewed as a 'moral person', Levi-Strauss draws on two related processes of reproduction: the legitimation of the household through kinship and its material and immaterial embodiment. Such themes are useful for examining prehistoric domestic architectures because they bring together social relationships and their material expression over time. However, in contrast to Levi-Strauss' model of descent — in which the continuation of the house is prioritised over and above patrilineal or matrilineal descent systems — recent studies from isotope analysis, and to a certain extent aDNA, have presented the Linearbandkeramik (LBK) as a strongly patrilocal and patrilineal society. This paper will explore whether this means the notion of house societies cannot apply to the early Neolithic and whether we can track LBK descent practices. Levi-Strauss envisaged house societies as a form of organisation practised by societies in the process of changing from kin-based to class-based social structures. While this may not be the particular case for the LBK, the role of the house in social relationships in transition will also be explored.

My House is my Castle: Neolithic House Societies in Scandinavia 4000-2000 BC
Mats Larsson, (Linnaeus University, Sweden)
People were active agents in the way in which the settlement sites, the farming plots and so on were chosen. In the earliest part of the Early Neolithic new areas inland, preferably away from the Late Mesolithic sites, were occupied, preferably sandy soils close to water. The settlements were made up of a single farm. During the early and Middle Neolithic TRB culture this seems to be the norm. During the latter part of the Middle Neolithic corresponding to the Battle Axe Culture we can however see a marked change. The farms seems to grow larger and there is often a close connection between the farms and the burial grounds.
Then in the Late Neolithic, around 2000 BC, the farms grows even larger and their seem to be a agglomeration of farms into what could be called proto-villages. During this whole period we can also see a change in how people used their settlements and the environment in different ways. Keeping the house clean, digging pits for waste etc. The above is particularly interesting in the context of what recently has been named "entaglement". Material things, and the surrounding landscape, act as participants and backdrop in the creation of society. This is a long-term history that sees the importance of the "house" change while still being the centre of people's attention.

House societies in the Irish Neolithic – a help or hindrance?
Jessica Smyth, (University of Bristol)
Houses are frequently taken for granted. They are so much part of everyday life, so familiar, that we often hardly seem to notice them. This is reflected to a certain extent in how we excavate houses and present the data, in many instances exploring little of the architecture itself other than size, shape and orientation and the location of artefacts. The notion of 'house societies', as originally expounded by Claude Lévi-Strauss and developed by Janet Carsten, Stephen Hugh-Jones, Roxana Waterson and others, can thus be an important aid in re-animating and re-positioning domestic architecture within our narratives. In terms of the Irish Neolithic, this approach has been particularly useful in examining the large number of Early Neolithic rectangular timber houses recently uncovered. However, these distinctive houses are a relatively short-lived phenomenon, and the domestic architecture from the 36th century cal BC onwards leaves very different and generally more ephemeral traces in the archaeological record as well as diverging quite dramatically in terms of shape and design. Can the structure of a house society exist in the absence of sturdy, permanent buildings? How do we account for change in the settlement record? Is the notion of 'house societies' more of a hindrance than a help in understanding social reproduction in prehistory?

Developing Neolithic société "à maisons" in Orkney: absorption, transmutation and animation
Colin Richards, (University of Manchester)
In this paper I will examine the changes in the architecture and constitution of houses, chambered cairns and other monuments of the Orcadian Neolithic in terms of société "à maisons". Here, I am not so concerned about either the coherence or viability of the original Levi Strauss concept, or whether the Orcadian Neolithic really constitutes a société "à maisons". Instead, I want to explore the social strategies that are manifest in the material changes witnessed during the late fourth and early third millennium BC, and offer alternative narratives of decent and belonging as articulated through the role of the dead within chambered cairns and houses, and the consequences of disparate 'assemblages' merging and transforming to create new substances and 'assemblages' of dwelling.

World enough and time — permanence and impermanence, performance and mobility associated with houses in earlier neolithic Britain
Seren Griffiths, (Manchester Metropolitan University) and Ben Edwards, (Manchester Metropolitan University)
The concept of 'the early neolithic house' has taken on significance in discussion of the identity (Thomas 2013), processes of 'Neolithisation' (Sheridan 2011), and the nature of subsistence (Whitehouse *et al.* in press) and domestic activity (Brück 2008) in early neolithic Britain. These structures are superficial similar in plan, and show evidence for architectural motifs which strongly indicate share above ground aesthetic traditions and understandings (though cf. Last 1996). In Ireland, the ubiquity of these structures has led to the recognition of a 'house horizon' (Whitehouse et al. in press; Cross 2003; Smyth 2014). The reification of 'the neolithic house', as well as the abstraction of more complex histories (Bayliss *et al.* 2011, 378), and activities (Brück 2008, 251) into shortlived 'domestic' narratives (cf. Thomas 1996; Bradley 2005) has significant implications for the kinds of societies and processes of change that we envisage.
Using a newly excavated 'house' structure and midden from Milfield, Northumberland, associated with Carinated Bowl pottery, this paper will emphasise the importance of recognising non-typical early neolithic 'domestic' structures, and their potential importance in processes of change in early neolithic societies. Specifically we play off ideas of permanence and impermanence, enduring and ephemeral domestic architecture and other anthropogenic landscape modification, and the importance of ties to land and locality. We emphasise the importance of the performance houses not only as parts of shared aesthetic traditions, but at specific moments in time and space; as parts of dynamic, transformative processes in early, mobile, dispersed neolithic communities; against the

wider backdrop of tensions associated with the first appearances of neolithic material culture and practices.

The Tomb of the House
Julian Thomas, (University of Manchester)
The notion of the 'house society' is a useful tool to think with, rather than an inflexible model to be imposed on archaeological evidence. It potentially presents us with possibilities than enable us to address prehistoric societies in unfamiliar ways. In this contribution, I will focus on two aspects of the concept: firstly, the insight that 'building the house' is actually a means by which a community of a certain kind is brought into being, so that the construction of a building may be more significant than its use; and secondly, the characterisation of the house community as a 'moral person'. That is, a group of persons united by collective ownership of a body of property, and real or fictive kinship, can operate as a collective actor, sometimes representing their buildings or their community as a 'person'. I will suggest that these points enable us to consider the relationship between halls and tombs in Earlier Neolithic Britain in fresh ways, and will illustrate my argument by discussing recent excavations at Dorstone Hill in Herefordshire.

Affinity and Mortuary Archaeology: A Proto-Historical Perspective
Duncan Sayer, (University of Central Lancashire)
The post-Roman era is one of the most dynamic periods situated before History, and using narratives manifest in material culture societal emphasis was placed on house and family bonds. But archaeology has been influenced by anthropological perspectives, Lévi-Strauss synthesized kinship models based on ethnography, and in the 1980s archaeologists were criticized for attempting similar things. Other social science subject like sociology and history, both firmly situate affinity within the realm of community, social identity and cultural transmission. And so it is remarkable that archaeology has barely touched this research topic. In this paper I will explore the material perspective, looking at early Anglo-Saxon cemeteries as central places to perform compound kinship narratives, meaning the very organisation of these sites manifests societal affinity. This paper will build on new GIS technologies and present a complex material picture emphasising the centrality of house and kinship to society, it will explore these relations as palimpsest and multidimensional networks visible in the materiality of mutable performers.

(S13) This House Believes that Archaeology Should NOT be Instrumentalised
Session organisers: Tara-Jane Sutcliffe (University of Durham) and Sarah Howard (Ironbridge International Institute for Cultural Heritage)

This session takes the form of a house debate focusing on the instrumentalisation of archaeology, which has always been an aspect of the discipline but that has grown apace in recent years with the popularity of Public Archaeology, Community Archaeology and archaeologies with a 'social purpose' at their core.
There is much to extol in archaeological projects and practices that benefit communities and individuals in the present, as will be demonstrated in this session by those who position themselves in favour of the instrumentalisation of archaeology. Nevertheless, caution is required in ostensibly subjugating archaeology to political, economic, social and even psychological ends. Contributors arguing that archaeology should NOT be instrumentalised will take to task the role of archaeologist-as-social-worker and the potentially deleterious effects of aligning archaeological enquiry with political agendas (aka, archaeology-as-agitprop). In so doing, questions will be raised concerning the ethics of archaeologies that are primarily driven by national socioeconomic agendas and the institutional policies of funding bodies. Should archaeology be independent of these agendas? Or is

an archaeology that is more integrated into societal issues and engages with contemporary discourses a more relevant one? Ultimately, the debate over instrumentalisation has at its core what we as archaeologists believe is the role of our discipline in the contemporary world and how this might change in the future.

Deliberately provocative, the purpose of this session is not to dismiss or discredit social-purpose archaeologies but rather to encourage critical appraisal of the parameters of praxis. Contributors are invited to present 'For' or 'Against' the House in order to progress debate in an open, inclusive and mutually respectful arena. Please be aware, speakers need not feel constrained to present a personal position: devil's advocates most welcome! In addition to formal papers active participation will be sought from the floor and delegates are encouraged to come prepared with 'points of information'.

This session is sponsored by Maney Publishing and will be live tweeted using: #instruarch.

Discussants: Paul Belford (Clwyd-Powys Archaeological Trust) and Gerry Wait (Nexus Heritage)

09:00-09:30   **Introduction.** Tara-Jane Sutcliffe (University of Durham) and Sarah Howard (Ironbridge International Institute for Cultural Heritage).

09:30-10:00   **Keynote: Unfortunately, Archaeology has always been instrumental.** Sarah May, (Heritage for Transformation)

10:00-10:20   **Does archaeology have to become instrumentalised to be accessible?** Victoria Beauchamp (Workers' Educational Association) and Nicola Thorpe, (Workers' Educational Association)

10:20-10:40   **Parklife: Communities and transformations at Whitworth Park, Manchester** Mel Giles (University of Manchester) and Hannah Cobb (University of Manchester)

10:40-11:00   **In defence of community archaeology as a serious approach to the past**. Rachael Kiddey, (University of York)

Break

11:40-12:00   **There is no archaeology without instrumentalised archaeology.** Rob Hedge, (Worcestershire Archive & Archaeology Service)

12:00-12:20   **Frugal Consumption.** Kenneth Aitchison and Doug Rocks-Macqueen (Landward Research)

12:20-12:40   **Does the end justify the means? Social purpose archaeology and the importance of standards.** Kate Geary, (Chartered Institute for Archaeologists)

12:40-13:00   **Discussion** Paul Belford (Clwyd-Powys Archaeological Trust) and Gerry Wait (Nexus Heritage)

Lunch

14:00-14:20   **The use and abuse of community archaeology: a tool for political one-upmanship?** Caroline Pudney, (University of Chester)

14:20-14:40   **Being Instrumental, not an Instrument: the Impact of the Idea of Archaeology for All**. Mike Nevell, (University of Salford/Council for British Archaeology)

14:40-15:00   **Community Archaeology impacts Archaeology too.** Hayley Roberts (University of Bournemouth)

15:00-15:30   **Discussion** Paul Belford (Clwyd-Powys Archaeological Trust) and Gerry Wait (Nexus Heritage)

Break

16:15-16:35   **Dancing on the brink of relativism: public archaeology, action research and the role of expertise**. Guillermo Reher, (Institute of History, Spanish National Research Council)

16:35-16:55   **Should archaeology be harnessed for the good of people in general and subjugated to 'political, economic, social and even psychological ends' or should we just hide away in our ivory towers/trenches?** Jacqui Mulville, (Cardiff University) and Barbara Brayshay, (University College London)

16:55-17:30 **Discussion** Paul Belford (Clwyd-Powys Archaeological Trust) and Gerry Wait (Nexus Heritage)

Abstracts

Keynote: Unfortunately, Archaeology has always been instrumental
Sarah May, (Heritage for Transformation)
Archaeology has always been instrumental in the sense that it has served a social purpose. The real question is: whose purposes *should* it serve?
Initially, archaeology was instrumental in establishing a safe position for the powerful, in relation to the social forces that brought them to power. It also established 'the patron' as cultured and educated, which raised his social standing. Nineteenth-century clubs and societies allowed people to partake of this benefit more directly, adding social contact and networks to the more nebulous sense of refinement. Unsurprisingly, the narratives created by this process naturalised hierarchies and smoothed over dissent.
While the elites of the 21st century still need the pasts that archaeology creates, they can make do with those already made. Public bodies, however, are not convinced that the narratives themselves are sufficiently valuable to justify the costs. While some see the benefit of archaeology as a form of entertainment, many archaeologists seek to involve the public directly in archaeological work, creating the same kinds of values that 19th century field clubs did for their members. Increasingly, today, we can identify other benefits from engaging in fieldwork that range from improved health to increased employability.
This may be socially useful. But, if we enlist the disempowered to create pasts that serve the people who oppress them, then we are *colluding in that oppression*. Further, the presentation of voluntary labour as 'improving' is an inherently conservative notion that constructs wellbeing and education as the responsibility of the individual rather than of society. So, instrumental archaeology is, unsurprisingly, tied to the neoliberal politics of those who fund us. Archaeology is, and always has been, an expensive pursuit. We should always be aware (and wary) of what our work *does* for the people who fund it. We should question rather than embrace instrumentalism.

Does archaeology have to become instrumentalised to be accessible?
Victoria Beauchamp (Workers' Educational Association) and Nicola Thorpe, (Workers' Educational Association)
The Workers' Educational Association (WEA) has recently completed a three-year project that aimed to engage people from disadvantaged backgrounds with archaeology. The Digability Project did not set out to create 300 archaeologists but, rather, to engage people with the heritage of their local surroundings and to help develop understanding of the subject.
The project developed educational programmes that provided a taste of what archaeology can offer and, coupled with a foundation based on 'social purpose' education, students were challenged to question the information presented and encouraged to make interpretations from their own perspectives. The resulting experiences were rewarding. Sites and course content were viewed from different perspectives (sometimes literally, as from a wheelchair) and this led to stimulating discussions. There were additional, unforeseen, benefits too, such as improvements to individuals' health, wellbeing, and social functionality.
The project did not seek to instrumentalise archaeology. Tutors wanted students to engage with 'real' experiences and for archaeologists to present their work 'accessibly'. We found that a lack of experience and confidence, amongst some professionals, often led to separate or 'special' tasks being found for students with additional needs. This highlights that more training in engaging different communities is required. This approach would emphasise inclusivity rather than instrumentalisation.

Archaeology can remain a professional and rigorous discipline, whilst still striving to broaden both audiences and participants. We should not fear an inclusive approach. However, it should be driven by recognition of the inherent long-term value in it, and not just because it is the political flavour of the month!

Parklife: Communities and transformations at Whitworth Park, Manchester
Melanie Giles (University of Manchester) and Hannah Cobb (University of Manchester)
In this paper we explore the various communities that engaged with the Whitworth Park Community Archaeology and History Project, tracing the transformative practices that this project engendered, in order to think through the instrumentalisation of archaeology.

In defence of community archaeology as a serious approach to the past
Rachael Kiddey, (University of York)
"Doing archaeology with the rest of the team…makes me feel fantastic. I like that we have a laugh and do something…important."
Archaeology cannot be divorced from socio-economic and political agendas because, as an interpretive exercise, it is always a function of these social relations. The entire archaeological process – choosing a site to investigate, the process of recruiting people into the business of archaeology, what we choose to conserve, etc – is, inherently, political. Just as 'the present' is a tapestry of perspectives and experiences that cannot be reduced to a single story, so 'the past' does not exist to be empirically excavated by 'expert' archaeologists. The past exists as a shared set of multiple social relationships and, as such, everyone has the right to access it and work on its interpretation. Key questions then become about representation and methodology. Who chooses which 'pasts' receive attention? Whose perspectives do we publically fund and represent? And how can we ensure that archaeological work undertaken by 'non-experts' (community groups) is done in in a manner that it may be considered 'genuine' and comparable to work undertaken by professionals? Rather than concern ourselves over whether or not we might be considered to be operating along similar lines to social workers, the challenge remains to develop community archaeology in such ways that it is no longer considered a poor relation of, or hand-maiden to, commercial archaeology. This paper will present some thoughts on how we might move towards such a position.

There is no archaeology without instrumentalised archaeology.
Rob Hedge, (Worcestershire Archive & Archaeology Service)
British Archaeology is in crisis. The framework is crumbling; in the last six years we have lost a third of professional archaeologists. Critically, we have lost a disproportionate proportion of local authority archaeologists who constitute the fulcrum around which the sector is organised. Love them or loathe them, advisory archaeologists and HERs are the cornerstone of our world. Without them, there is no developer-funded archaeology, local amateurs are left isolated, and academics are bereft of data.

The incorporation of archaeology into the planning process represented the triumph of social purpose archaeology. We flourished as a discipline because we believed that the past not only belonged to the people, but mattered to the people, enriched their appreciation of their environment and, as such, was too important to disappear beneath the tracks of a machine. The value of archaeology has always been extrinsic. If no-one cares, no-one lobbies. If no-one lobbies, no-one legislates. Social purpose was the flag we pinned to the masthead.

The flag has become the life raft. We could abandon ship, cast out into an inviting sea free from political imperatives and the tyrannies of ideology. But we cannot exist in a vacuum. Archaeology is contingent upon public appreciation of its value. Without this, legislators will cave to hard economics, departments will struggle to attract students and the collective pool of expertise will dry up. We are right to question the ethics of archaeologies driven by political ideologies or market

forces. But the alternative is an intellectually and financially impoverished discipline. If we truly believe that archaeology matters, we must embrace instrumentalisation.

Frugal Consumption
Kenneth Aitchison and Doug Rocks-Macqueen (Landward Research)
In terms of environmental economics, archaeological remains form a scarce and non-renewable resource. This has been recognised for over 40 years, and has led to their legal protection in advance of land-use change. But in non-development-led initiatives, these remains can be excavated (=destroyed) for entertainment purposes. Too much community archaeology focuses on interventive fieldwork that, while it may make participants happy, not only does it add nothing to the sum total of human knowledge, it degrades a limited environmental resource in the process.
In support of the motion, this paper will argue 'no' to the trivialisation of archaeological practice through the application of the community archaeology model.

Does the end justify the means? Social purpose archaeology and the importance of standards
Kate Geary, (Chartered Institute for Archaeologists)
The potential for archaeology to contribute to a wide range of agenda, including economic regeneration, health and well-being, community cohesion, and environmental sustainability, is increasingly widely recognised. However, in order for that contribution to be truly sustainable, these goals should not override the need for archaeological work to be carried out in accordance with the appropriate ethical and technical standards.
The development and regulation of ethical and technical standards are at the heart of what the Chartered Institute for Archaeologists does: what it's all about. At the same time, all archaeological work is, or should be, underpinned by the concept of *public benefit* and we recognise the value and importance of increased public access to, and involvement in, archaeology.
My contribution to this debate will consider whether the concepts of 'professionalism' and 'inclusivity' can be reconciled or whether they are inherently contradictory. Does the importance of Standards preclude a bottom-up approach? Do we have the resources to advise on and monitor standards in social purpose archaeology? Do we even know how to? And, if it does go wrong, who's going to sort it out? What responsibility should we expect funding bodies to take? And, much as we might value the social benefit of the 'end', does that ever justify a less than satisfactory 'means'?

The use and abuse of community archaeology: a tool for political one-upmanship?
Dr Caroline Pudney, (University of Chester)
For the purpose of this debate I will argue that whether the state is pushing for a 'Big Society' or a 'fairer and more prosperous' place, our government is selling us a warm and fuzzy sense of community that has led to a pandering to political agendas within archaeology. In a climate of economic uncertainty, where public funding for archaeology is limited, we find ourselves fighting for the scraps of the annual budget allocations. In order to justify our existence as archaeologists we therefore have to prove, beyond doubt, that what we do matters. As a result we see archaeological projects which appear to do nothing more than tick the right boxes.
Community archaeology in its very essence, is an instrumentalised form of archaeology. Consequently there has been a merging of boundaries between the archaeologist and the social worker and it is time to question whether this trajectory is one we wish to continue before it is too late. Using my own experience on community archaeology projects involving adult and young offenders in south Wales, I will argue that if we wish to continue with an instrumentalised archaeology then we need to be realistic in terms of what it can, and should, achieve. At the same time, we need to ensure that those projects which begin as heritage-focused projects do not get hijacked in a game of political or societal one-upmanship.

Being Instrumental, not an Instrument: the Impact of the Idea of Archaeology for All
Michael Nevell, (University of Salford/Council for British Archaeology)
This paper will look at some of the impacts of embracing the concept of 'Archaeology for All', which as a vision was launched by the CBA in 2005. Aimed at encouraging wider participation in British archaeology the CBA initiative has led directly to funded community archaeology bursaries, a local heritage network and the Home Front Legacy WW1 project. Encouraging wider participation can range from information, consultation and placation to partnership, delegated power and citizen control. Using a number of case studies (Defence of Britain Survey, Industrial Buildings training seminars, Dig Manchester) this paper will look at the wider impact of training volunteers, tensions between volunteer and professional, 'experiential archaeology' vs excavation, and the problems of raised expectations. There are many positive impacts from archaeological activities but perhaps we should also acknowledge there are problems and pitfalls that we should avoid.

Community Archaeology impacts Archaeology too.
Hayley Roberts, (University of Bournemouth)
Community archaeology projects are increasingly recognised for having positive wellbeing and social impacts but little research has been carried out into the archaeological impact and implications of its development. In some project designs archaeological research questions are of secondary importance but others are being created by archaeologists in order to capitalise on alternative funding streams. The impact that this unmonitored situation is having on the archaeology is currently poorly understood and weakly defined.
This paper will begin to address this issue, using case studies from Dorset, and will consider several questions. Who is doing community archaeology? What are they researching and why? How are they doing it? How are they communicating their results?
The initial results from a survey of community archaeology projects will highlight examples of good and bad practice and try to understand the reasons behind them. These are not always obvious and sometimes surprising; but, by knowing what they are, we will have better understanding of the contribution that community archaeology makes to the archaeological record.

Dancing on the brink of relativism: public archaeology, action research and the role of expertise
Guillermo Reher, (Institute of History, Spanish National Research Council)
In the 2010s being grunge is still a fad, at least for archaeologists. The life motto of most is: 'the more popular I am the more I torment myself'. Because archaeology is all about questioning oneself, and the way things are done. It is precisely the constant social popularity of archaeology, combined with this ethical nihilism that sets the cornerstones of the house debate. At root there are many causes. One of the most damaging is the constant confusion between public archaeology and action research. Also, archaeologists are often loath to consider themselves 'the experts', which begs the question of what they really are: excavation contractors, associates, interested outsiders? The parameters which delimit these concepts are under constant redefinition, in an ever more slippery slope towards postmodern relativism.
This does not mean questioning oneself and the way we do things is not a good thing. In a growingly complex world of globalization, it is precisely standing by one's ethics that can help overcome many of the challenges that society faces today. How these challenges are met, however, greatly depends on *how* things are done. Are archaeologists really doing, or are they just talking? This paper will explore the ways in which different archaeologists are confronting these issues, and also the substantial differences between theory and praxis.

Should archaeology be harnessed for the good of people in general and subjugated to 'political, economic, social and even psychological ends' or should we just hide away in our ivory towers/trenches?

Jacqui Mulville, (Cardiff University) and Barbara Brayshay, (University College London)

Using examples from our community engagement research within Archaeology and Geography we propose that all knowledge creation is in effect instrumentalised. Indeed until recent advances in citizen social science, knowledge creation and production has been in the hands of an academic elite validating their truths though traditional reductive (or even extractive) methodologies. Participatory Action Research (PAR), Voluntary Geographic Information (VGI) and crowdsourcing data challenges the privileging of traditional knowledge hierarchies.

Dr Mulville leads Guerrilla Archaeology a group that focuses on engaging with the public outside traditional learning environments and is part of the Caer heritage project. Both these projects chief motivation is not instruction, but provocation and we use our research to act as facilitators: not to convey any particular 'truth', but to enable everyone to find their own truth within the past and establish their own relationship with it. By doing this we engage with a diverse range of audiences and hope to co-create a past, rooted in our research, with the wider public.

Dr Brayshay works with Mapping for Change, a social enterprise based at UCL that specialises in citizen science research using participatory mapping methodologies. The emergence of participatory mapping has helped to embed the theories of citizen social science in local communities of practice and moved what were previously purely academic debates into the public arena, contesting the status of knowledge claims, knowledge creation, ownership and the empowerment of informant communities. It is a methodology that enables the expression of multi layered narratives in spatial and temporal contexts, and as such challenges the reductive methodologies, interpretive frameworks and explanatory models of conventional social scientists. On the other side of the argument approaches that give priority to locally situated knowledge that give power and control over knowledge creation and purpose to marginalised or excluded voices are vulnerable to the criticism that they lack a critical standpoint and do not have the same validity as "academically" produced knowledge which is defined as impartial, objective and scientific.

Our research locates us at an interesting interface between the two models – we bring to the debate a nuanced argument that advocates a move away from these oppositional top down / bottom up hierarchies and instead embrace an inclusive archaeology that incorporates the production of multiple layers of "rich" "thick" information that can be generated, co-created and owned by many voices.

(S14) How to Publish your Article in Archaeology
Session organiser: Dr. Ilaria Meliconi (Elsevier)

This short (ca. 1 hour) workshop is intended, especially, for early career researchers, and aims to give researchers guidance on how to publish an archaeological study through standard and recognised journals. It will focus on a selection on the part of the audience of several of the following topics: copyright; author responsibilities; impact factors and other metrics; Open Access and CC licenses; how to be a great reviewer; getting your article noticed by the media.

(S15) Inclusivity and the Pedagogy of Archaeology
Session organisers: Katy Bell (University of Winchester) and Ellen McInnes (University of Manchester)

"If you have decided to become an archaeologist you will need a reasonable education in archaeology" http://archaeology.about.com/od/gettingtraining/) begins one career advice website. In this session we will argue that the pedagogy of archaeology goes beyond the practice of preparing the archaeologists of the future. As an inclusive discipline archaeology attracts a wide range of people who use the subject as a transition between points. This session explores this role of archaeology within Higher Education and the community, alongside, and as part of, strategies of teaching and engagement. Confirmed papers look at the inclusion of people with Asperger's Syndrome in Higher Education, and the development of Higher Education teaching. However, the session aims to include a variety of examples of where the inclusive nature of archaeology, as both a subject and practice, has encouraged academic, personal, and community development. Papers are encouraged, which consider how new and innovative ways of teaching facilitate the development of participants and allow them to make a transition, be it socially, mentally or financially.

10:00-10:25	**Archaeology- the Dyslexic Profession or the Profession of Dyslexics?** Doug Rocks-Macqueen
10:25-10:50	**Archaeology and Autism**. Katy Bell (University of Winchester)
Break	
11:40-12:05	**The Unexpected Outcomes of Engaging Academics.** Alison Atkin (University of Sheffield)
12:05-12:30	**The Edinburgh Archaeology Outreach Project.** Hannah McGlynn (University of Barcelona)
12:30-12:45	**Comments on Equality and Diversity in British Archaeology.** Hannah Cobb (U-University of Manchester)
12:45-13:00	**Questions and Discussion**

Abstracts

Archaeology- the Dyslexic Profession or the Profession of Dyslexics?
Doug Rocks-Macqueen
How many Archaeologists are Dyslexic? Using data from the Profiling the Profession series, the Disabilities in Archaeology project and HESA, I present what we know about dyslexia in UK Archaeology and how many archaeologists and students have it. Also, discussed will be the disconnect we see between the very high number of students who have it and the very few professionals that do. The rest of the paper will focus on what these findings mean for UK Archaeology. Also, some of the more disturbing trends seen in the UK, such as cuts to funding for those with disabilities like Dyslexia, and what those might mean for Archaeology.

Archaeology and Autism
Katy Bell (University of Winchester)
As someone who has worked with university students and in the field it has become obvious that increasing amounts of people who have autistic tendencies are entering both higher education and the field. Based on a paper written for my Teaching In Higher Education Certificate this paper aims to look at the reasons why archaeology as a discipline attracts those with autistic tendencies and how we can help them transcend from higher education into effective fieldworkers. This paper draws on evidence gathered from existing fieldworkers in archaeology and observation in teaching and talking to students. In addition it considers the best practice that can be adopted to help universities, units and those living with autism to succeed.

The Unexpected Outcomes of Engaging Academics
Alison Atkin (University of Sheffield)
Archaeology conferences present delegates with an overwhelming amount of information within a limited period of time. Aimed at individuals with higher education experience, presentations are often filled with complex detailed specialist information following standard guidelines. As a consequence interesting topics can become impenetrable to those outside the immediate area of research. This limits both the impact of the presentation and is potentially isolating to individuals in attendance.

This paper will present an example of a conference presentation that utilised outreach tactics in order to engage with the wider academic community, which resulted in unexpected further outreach outcomes. At the 16th Annual Conference of the British Association of Biological Anthropology and Osteoarchaeology I presented a poster titled 'The Attritional Mortality Myth: a catastrophic error with demography'. The poster incorporated numerous design aspects typically reserved for public engagement (interactivity, conversational language, illustrations, social media prompts, etc).

This poster generated a significant amount of discussion amongst conference delegates and was ultimately awarded the Bill White Prize for best poster. Since the conference, it has been viewed online over 20,000 times and discussion – about both the poster and the research presented – has continued on social media, blogs, and via e-mail. In presenting post-graduate level research in an accessible, engaging, and 'un-academic' manner, this poster opened the door to the ivory tower allowing a free-flow of information and ideas in both directions. This paper aims to demonstrate that for the betterment of our discipline we need to be both engaging… and engaged, beyond our subdisciplinary silos within archaeology.

The Edinburgh Archaeology Outreach Project
Hannah McGlynn (University of Barcelona)
The Edinburgh Archaeology Outreach Project is a non-profit, free community archaeology group run by students of the University of Edinburgh. Our primary function is to enable children to have the opportunity to engage in a field that they perhaps feel they can't get involved in. We are not the only project to tackle this; we are in fact only a drop in the ocean when it comes to archaeological outreach. There are programs being run throughout Britain doing fantastic things to build upon community archaeology. To name but a few there is the Young Archaeologist's Club in York who are creating aerial maps of archaeologically significant landmarks in a way that they are accessible to those who are partially sighted. The Society of Antiquaries of Scotland are running Dig It! 2015 in which they are promoting and running a host of nationwide events and talks as well as promoting projects, of which EAOP is one, and the majority are catered towards children. These are just a small handful of the pretty cool outreach and community work being done. This of course then highlights the question of where in amongst all this is the need for the Edinburgh Archaeology Outreach Project? Why are we here? What makes us different? To answer these questions an important number should be remembered, that number is 220,000.

(S16) Imperial Conquests, Indigenous Traditions, And the Emergence of New Societies
Session organisers: Chris Gosden (Oxford University) and Peter Wells (University of Minnesota)

When imperial powers conquer other peoples, they typically impose new forms of military, political, and economic control over those they conquer. In contexts in which the conquered peoples did not practice writing (as in the case of the peoples of temperate Europe), we ordinarily have textual sources only from the conquerers (e.g. Caesar, Tacitus), and no self-referencing accounts from the

conquered. Even the archaeology of imperial situations tends to favour the imperial powers, since they often leave much more permanent material remains (e.g. stone architecture) than those they conquer.

In recent years, archaeologists and historians have turned their attention to the conquered peoples to try to understand their experiences. Some have argued that conquered peoples often shape the future societies at least as much as the conquerors do. A variety of terms have been applied to the complex social dynamics that follow conquests. These include "creolization," "entanglement," "hybridization," "mixing," and "resistance." How useful are these terms? Papers in this session examine the roles that indigenous styles, motifs, expressions, practices, and beliefs have played in the formation of new societies following imperial conquests.

13:00	**Introduction** Peter S. Wells, (University of Minnesota)
13:05-13:25	**Can the concept of ontology help us understand the meeting of states and non-state societies?** Chris Gosden, (Oxford University)
13:25-13:45	**Endorsing neoliberal ideology? Characterizing 'Post-colonial Roman Archaeologies'.** Richard Hingley, (Durham University)
13:45-14:05	**Green wood: the material constitution of Romaness.** Miguel John Versluys, (Leiden University)
14:05-14:25	**Will the Real Assyrian Please Stand Up?** Bleda Düring, (Leiden University)
14:25-14:45	**The northern frontier of Roman Britain - worlds colliding, new worlds emerging?** Fraser Hunter, National Museums of Scotland
14:45-15:05	**Colonial Categorizations and the Making of Roman Africa.** David Mattingly, (University of Leicester)
Break	
15:30-15:50	**The late Iron Age South Cave weapons cache: exploring ontology through artefacts at the edge of Empire.** Melanie Giles, (University of Manchester)
15:50-16:10	**Entangled objects of funerary practices in 1st-3rd century AD Sardinia: a semiotic perspective on material culture.** Mauro Puddu, (University of Cambridge)
16:10-16:30	**Your letters, my stones: epigraphy and cultural interaction in North-Western Roman Spain. D**avid Serrano Lozano, (Universidad Complutense de Madrid)
16:30-16:50	**Conservatism or resistance: exploring roles of tradition, function and agency in the development of epigraphic and sculptural habit in the Roman Central Balkans.** Dragana Mladenović, (Southampton University)
16:50-17:00	**Discussion**

Abstracts

Can the concept of ontology help us understand the meeting of states and non-state societies?
Chris Gosden (Oxford University)
Recent work on ontologies has outlined a number of forms of difference including naturalism, used to designate a western mindset and animism. How far are such concepts useful in understanding the meeting of state forms, such as Rome and the societies of late Iron Age Europe? Do state forms always have ontologies approximating to a naturalist stance? In this paper I will use contrasts between Classical art and so-called Celtic art to explore varying ontologies and modes of power.

Endorsing neoliberal ideology? Characterizing 'Post-colonial Roman Archaeologies'
Richard Hingley (Durham University)
Growing recent criticism has focused on the works of 'post-colonial' Roman archaeologists (e.g. Beard 2013; González-Ruibal 7; Versulys 2014). For the purpose of this paper, post-colonial Roman archaeologies are accounts that aim to develop explicitly 'post-colonial' approaches (derived from literary theory and anthropology) to explore (a) the traditions of study of the classical past (Hingley

2000) and also (b) the impact of imperial expansion upon the territories that Rome subsumed (e.g. Mattingly 2006; Hingley 2005; Webster 2001; cf. Gardner 2013; Hingley 2014). The latter works adopt concepts such as 'creolization', 'hybridity' and 'discrepancy'. This paper picks up on González-Ruibal's (2014, 7) recent observation that post-colonial Roman archaeologies are not politically innocent since they may be seen to unwittingly endorse neoliberal ideologies through the celebration of fluid identities that serve to mask power inequalities and in the process overemphasise the agency of the colonised and oppressed. Although the issue of power inequalities is already incorporated in the work of some post-colonial Roman archaeologists through an emphasis on enslavement and disempowerment (e.g. Hingley 2014; Mattingly 2006), this paper stresses the need for a continuous interrogation of the entanglement of the Roman past with the global present. This can be established through the establishing of measures of difference and similarity. If post-colonial Roman archaeologies do not seek to negotiate this difficult intellectual terrain, their authors may be seen to endorse dominant political ideologies that may also serve to mask the otherness of the past.

Green wood: the material constitution of Romaness.
Miguel John Versluys, (Leiden University)
' Les cultures "travaillent" comme le bois vert (-)'
(Marc Augé, *Non-lieux. Introduction à une antropologie de la surmodernité* (Paris 1992) 33)
The fact that conquered peoples shape societies as much as the conquerors do is, from an antropological perspective, but a truism. It remains important to try and understand the social dynamics resulting from this (ongoing) proces of cultural formation in terms of "hybridization" and the like, as long as we realise (1) that "hybridization" is what drives world history from its beginnings and (2) that to understand what particular kind of "hybridisation" we are talking about it seems to be the degree of connectivity that matters in the first place, for both the conqueror and the conquered. As Stephan Palmié (Mixed blessings and sorrowful mysteries. Second thoughts about "hybridity", *Current Anthropology* 54 (4) 2013, 463-474) put it: the question is not *what* is a hybrid, but *when* is a hybrid. It follows that, as *explenans*, these categories are not well suited to understand the emergence of new societies at all, especially not when perceived as dichotomous (conqueror-conquered, pure-hybrid, Roman-Native, etc.). Moreover, focussing on conquerors and conquered only tells half of the story, at best. The configurations we call society and history are a mix of human beings with objects; and we therefore have to give things an equally important place in the emergence of new societies.
In this lecture, therefore, I will look at the role of objects in the formation of (what we call) cultures, focussing on the remarkable punctuation of connectivity that is the Roman world. In an important article that is much more quoted than elaborated upon, Chris Gosden (What do objects want?, *Journal of Archaeological Method and Theory* 12 (3) 2005 193-211) has argued that forms and styles of material culture were able to shape people as social effective entities. Peter S. Wells (*How ancient Europeans saw the world. Vision, patterns, and the shaping of the mind in prehistoric times*, 2012) has even talked about a "visual ecology". These authors deal with Iron Age and Roman Britain and Europe; I will focus on the Eastern Mediteranean to see what the agency of objects from that part of the conquered territory meant for processes of "becoming Roman". John C. Barrett has recently argued that there would be a material constitution of humanness (*Archaeological Dialogues* 21 (1) (2014) 65-74); could there also be a material constitution of Romaness?

Will the Real Assyrian Please Stand Up?
Bleda S. Düring, (Leiden University)
Assyria has often been portrayed as the archetype of a ruthless militaristic state that forcefully subdued their opponents and broke up groups not only for military reasons, but also to annihilate their cultural capacity to act as a society. It is increasingly clear that the Assyrian state was indeed engineering conquered societies and landscapes to suit their own purposes. However, it is also clear

that the Assyrian state could not have been as successful as it was if it relied only on force. Instead there are good reasons to argue that non-Assyrian people were opting in because they could benefit. In this paper I will draw on recent data from Middle Assyrian Tell Sabi Abyad, and to a lesser extent on Neo-Assyrian Ziyaret Tepe, to illustrate this point. In particular, I will argue that elite personnel could be simultaneously Assyrian in their official capacity and non-Assyrian in their private life.

The northern frontier of Roman Britain - worlds colliding, new worlds emerging?
Fraser Hunter, (National Museums of Scotland)
The long-term impact of Roman contact around and across the British northern frontier provides an excellent case study to consider social transformations between an imperial power and local populations in a variety of settings. Using selected aspects of the material culture record, particularly decorative metalwork, this will be explored to see what emerged from this lengthy engagement.

Colonial Categorizations and the Making of Roman Africa.
David Mattingly, (University of Leicester)
Empires such as Rome often had a massive impact on the history of conquered territories, but Romans also constructed the historical and literary record in a way that often distorted reality. The mythtory of Roman Africa stressed a desert landscape transformed by Rome, with snakes, scorpions, wild beasts and a few scattered nomads supplanted by a burgeoning world of cities and a booming agricultural economy. There is no denying of course that Africa under Rome was highly urbanised and its countryside highly productive of grain, olive oil and wine, yet the powerful Roman discourse of colonial initiative and inspiration as explanation for Africa's success requires reappraisal. New archaeological work on Iron Age society in the Maghreb (Numidia) and Sahara (Garamantes) suggests a different and more nuanced reading of this colonial encounter and one in which indigenous peoples had a much more significant role. The new society of Roman Africa was certainly changed but neither by as much, nor in quite the same way, as traditional studies have emphasised.

The late Iron Age South Cave weapons cache: exploring ontology through artefacts at the edge of Empire.
Melanie Giles, (University of Manchester)
In 2002, a unique deposit of 5 iron swords in copper alloy scabbards and 33 spearheads, was wrapped and placed in a pit which had been cut into a settlement ditch at South Cave, East Yorkshire (Evans forthcoming). This weapons cache was covered by Dressel 20 amphora sherds. Dating to the cusp of the Roman invasion of the north, they have been interpreted as the hasty burial of weapons after a skirmish, or in advance of a military inspection: possibly in response to the *lex Julia Vi publica* (Digest 48.6, 1) which forbade the carrying of arms by civilians (Halkon 2010). These weapons are remarkable fusions of different materials (including glass, horn, antler, cetacean and possibly elephant ivory, O'Connor 2013) worked within a robust style of Celtic art typical of later Iron Age scabbards in the north of Britain (Stead 2005). But what do they tell us about the ontology of these inhabitants, poised at the cusp of world-shattering transformations in their sense of being? Through an analysis of these artefacts as well as a series of chalk figurines deposited around the same time on other settlements, I will examine ways in which masculine and martial identity was re-negotiated this period of change.

Entangled objects of funerary practices in 1st-3rd century AD Sardinia: a semiotic perspective on material culture.
Mauro Puddu, (University of Cambridge)
Concepts such as hybridity, creolization, resistance, metissage, and entanglement have been put forward to account for those social and cultural dynamics resulting from the encounter between Rome and its provinces that the mostly criticised Romanization paradigm has often been

unsuccessful to address. While these words have surely contributed to shift the attention from the centre of the Empire to its provinces and their ordinary people, I argue that they often struggle to link the material culture with the social practices that left them, failing to become epistemological tools. In fact, focusing on the descriptive presence of (certain classes of) objects rather than on the specific ways and circumstances in which they were used, they often remain words that simply replace Romanization as a word, but leave almost intact its paradigm and resulting ethnic dualism.

Starting from a critical analysis of the parameters that allow them to apply to material culture studies, I suggest, in order to highlight the divergent practices conveyed by similar objects in different contexts, to go back to the concepts of culture and identity from a Peircean semiotic perspective. My argument will focus on a detailed and contextually driven study of the material culture left from the funerary practices performed in Sardinia in the first three centuries AD, to demonstrate that complexities of colonial/imperial situations are hardly distinguishable in their original "atomic" (often ethnic) components and should rather be contextually interpreted.

Your letters, my stones: epigraphy and cultural interaction in North-Western Roman Spain
David Serrano Lozano, (Universidad Complutense de Madrid)
The epigraphic record in north-western Hispania has been studied with notable interest during the last four decades due to a special reason, among others: the original, particular, and sometimes unique nature of its epigraphic texts and, even more, decorations, which have raised a considerable number of studies, focused on the possible roman, indigenous or both natures of these provincial representations.

Within this debate between "Romanization" and "indigenization" of the record, lays the need of focusing in the very processes that led to one of the most peculiar epigraphic expressions of the Roman Empire, especially for one of its extremely peripheral and, to some extent, marginal areas. Thus, I suggest an analysis which compares the roman-nature process developed in the provincial landscape (trade, urbanism, route-design, population-movement) against those element whose nature was strongly influenced by the very provincial / indigenous interest (local aristocracies, identities, self-representation).

Through the epigraphic record as guide fossil, as well as counting on the last archaeologic and numismatic data, it could be possible to display and scenery of cultural tension (and compatibility) on the soil of a Roman province, understanding the latter as a system with its own nature and complexity: within provincial communities, big, medium and small scale processes were in development while individuals and groups tried to readapt themselves to a world with new rules. One of the results of this clash can be interpreted in the images and words displayed in their epigraphic record.

Conservatism or resistance: exploring roles of tradition, function and agency in the development of epigraphic and sculptural habit in the Roman Central Balkans.
Dragana Mladenović, (Southampton University)
The Roman Central Balkans was slow to adopt many of the distinctively Roman forms, with the media of writing and sculpture being no exceptions. It took 150 years after the initial conquest of the region for both forms of display to become more common. Furthermore, even once partially accepted, their number and overall quality remained relatively low. The an epigraphic and predominantly aniconic tradition of pre-Roman religion and art is the first explanation that comes to mind, quite rightly, often accompanied with a notion of resistance to explain the slowness of the uptake. While certainly possible, such a scenario ultimately simplifies the complexity of the processes at hand. Novelty in the function that standard epigraphic and sculptural objects served, as well as their link to specific Roman customs, requires a more nuanced analysis. Who were the local people that would have a need for such media of display, what were their agendas, and can we see them making choices that are a clear reflection of cultural resistance? Equally, when viewing a diffusion of new cultural models over a number of centuries, at which stage do 'tradition' and

'resistance' lose their explanatory power? The paper will tackle these questions by offering a contextualisation of the sculptural and epigraphic developments in the Central Balkans, an area in which cultural change was carried out by the lower classes and not elite negotiations, which adds a further dimension to the observed dynamics.

(S17) Is it just fortune and glory? The Social Impact of Archaeology
Session organiser: Dean Paton (Big Heritage, UK)
Archaeology is an academic discipline, a career and a hobby, but is it also a tool for change? Can archaeology in all its forms have a wider social and environmental impact? This session explores the social impact of archaeology in the 21st century. The aim is to explore the potential for archaeology to tackle current social and environmental issues and whether archaeologists should be more prominently engaged in these broader debates given the span of human activity we explore. This session is organised by Big Heritage and would welcome papers that both support and challenge the above.

"But, it's just a shitty pot…" – **Understanding social value in archaeology.** Dean Paton, (Big Heritage)
Adopt-a-Monument: a tool for change? Cara Jones, (Archaeology Scotland)
'Relevance' as the new 'Significance' - the social and environmental value of archaeology. Jon Humble, (Inspector of Ancient Monuments (Programmes & Projects) & Senior National Minerals & Environmental Adviser)
Closing Time: Recording a Community at Sheffield's late Castle Market. Hannah Baxter, (Project Officer for 'Trading Histories', ArcHeritage)
Public Archaeology is a Martial Art 2014. Lorna Richardson, (Public Archaeologist)
Underwater Archaeology: Impact Beyond the Intertidal Zone. Emily J. Stammitti, (Underwater Archaeology, University of Edinburgh)
Community Archaeology and its Impact. Paul Blinkhorn, (Independent Archaeologist)
Op Nightingale, the recovery of people as well as artefacts. Cdre Peter Buxton OBE, (Head of Royal Navy Medicine and Senior Office of Defence Archaeology Group) and Sgt Diarmaid Walshe, RAMC (Co-founder of Op Nightingale and Project officer Defence Archaeology Group)

Abstracts

"But, it's just a shitty pot…" – **Understanding social value in archaeology**
Dean Paton, (Big Heritage)
Does archaeology as a discipline need to justify its existence? Whatever the philosophical arguments of this question are, the simple answer under a coalition government is increasingly becoming a loud, resounding yes. The financial arguments alone for funding archaeology in its current state just don't stack up.
However, this papers argues that archaeology already creates incredible social impact in communities across the UK, but as a profession, we are exceedingly poor at recognising, recording and reporting these impacts to our peers, and the wider world. We are regularly hitting community targets that our health and social services would (and do!) pay a fortune to match, yet we either don't recognise that we're doing this, or choose to ignore the fact completely.
Using case-studies that have been funded by bodies as varied as Wellcome Trust, the NHS and the department for Business, Innovation and Science, I will explore the social impact of archaeology and tools that can be used to record, measure and compare impact. I will demonstrate the growing role of social enterprise in the economy, and how the Social Value Act could light a bonfire under our

entire industry, impacting upon tenders, government contracting and the wider role of community archaeology.

Adopt-a-Monument: a tool for change?
Cara Jones, (Archaeology Scotland)
Archaeology Scotland's Adopt-a-Monument is community-led stewardship project that supports local communities to take a lead role in conserving and promoting heritage sites that are important to them. The scheme supports groups by providing training and guidance for activities, such as project planning, fundraising, site survey, recording, interpretation and dissemination. These Adopt-a-Monument projects have been successful at increasing the conservation, interpretation and awareness of sites important to them, as well building capacity within the voluntary sector at a local level.

With this new phase of the Adopt-a-Monument Scheme we also have increasingly been working with those groups that do not normally engage with their heritage. To do this we facilitate heritage themed outreach projects specifically aimed at developing audiences amongst the particular under-represented groups and communities that want to learn more about archaeology. Through these projects we offer chances for active engagement and participation, and provide opportunities for these non-traditional groups to learn about their local heritage within a supportive learning environment.

This paper will look at two themes - one, the work of our traditional Adopt-a-Monument groups on conserving and promoting their local heritage, and the impact this has on wider issues being addressed within Scotland today; and two, the impact of our outreach programme both on the heritage and the participants we work with.

'Relevance' as the new 'Significance' - the social and environmental value of archaeology
Jon Humble, (Inspector of Ancient Monuments (Programmes & Projects) & Senior National Minerals & Environmental Adviser)
The archaeological resource must be valued for its intrinsic value. It is clear, however, that it also has wider social and environmental value to individuals, to local communities and to society - however defined.   The wider, so-called 'heritage economy' also has immense economic value, recognised by the UK Government as about 2% of GDP - to put that in context, about four times the contribution of the UK's farming economy to GDP.

Nevertheless, the UK minerals industry, for example, has characterised nature conservation as a low risk, high opportunity activity that it likes to engage with - and archaeology as a high risk, low opportunity activity that it has to engage with, and usually not out of choice.

Mindful of the gaps between perceptions and reality, together with the pressing need for a public and political mandate, English Heritage has invested significant resources in collating, analysing and presenting the evidence. On behalf of the Historic Environment Forum, since 2002 it has published the annual Heritage Counts report (http://hc.english-heritage.org.uk/) and used it to promote the development of smarter, evidence-based heritage / heritage-related policy and practice at all levels of local and national government.

This paper will consider the benefits and impacts that archaeology has for individuals, communities and the environment, how we measure these factors and what we might do to more effectively advocate and secure the benefits.

Closing Time: Recording a Community at Sheffield's late Castle Market
Hannah Baxter, (Project Officer for 'Trading Histories', ArcHeritage)
The Castle Market in Sheffield closed its doors for the last time in late 2013. A project led by ArcHeritage recorded the market during its last year, bringing together a disparate group of archaeologists, photographers, poets, artists and volunteers, both from existing heritage groups and from the market itself. The closing of the Castle Market, on Sheffield's 700 year old market site, and

the opening of a new market in a 'middle class' area of the city was highly contentious; many people believed that the community could not withstand such a major change.

This paper will discuss the presence of a heritage project in a controversial situation, at times seen as positive or negative we moved constantly from 'insider' to 'outsider'. I will explore the project's observational impact - what did the social historic record gain from involving the community rather than solely professionals? -and the project's social impact on the individuals involved. From the outset it was hoped that the project could be a cathartic process for volunteer's working through the loss of the centre of their community, was this just seeking 'glory' or was it truly possible?

Public Archaeology is a Martial Art 2014

Lorna Richardson, (Public Archaeologist)

This paper will discuss the role of the archaeologist and the public archaeologist, as public intellectual, and discuss the impact of intellectual elitism in archaeological practise from a Bourdueisan perspective.

Underwater Archaeology: Impact Beyond the Intertidal Zone

Emily J. Stammitti, (Underwater Archaeology, University of Edinburgh)

When an underwater archaeologist learns first in clear and then increasingly murky water how to take detailed recordings and publication quality photographs, it seldom crosses their mind how critical their upbringing was in leading them to that training and career field. Opportunities and education presented to them early in life and beyond was crucial in forming the basic skills, attitudes and ideas necessary to fuel their desire to dive, discover and then pursue such a niche academic field.

This became all the more apparent as the author launched an outreach programme in Edinburgh that sought to reach out to disadvantaged communities and offer many of the educational and participation opportunities inherent in the field of underwater archaeology. From political discussions revolving around renewable energy and the sustainable management of shipwrecks, to biodiversity around wrecks to the actual physical and intellectual skills needed to safely dive, record and assess marine heritage, the programme has flagged up the shortcomings in the current methodologies in underwater archaeology.

Access to the discipline remains firmly lodged in the echelons of the university-bound classes, with few opportunities to learn about or get involved in it otherwise. However, reaching out to communities with high rankings in the Scottish Index of Multiple Deprivation, using underwater archaeology as a focal point, has led to reduced feelings of relative deprivation, united diverse communities around commonly shared local heritage, and made a positive impact on the social and cultural lives of people across the Lothians- with just one set of scuba kit and a lot of enthusiasm.

Community Archaeology and its Impact

Paul Blinkhorn, Independent Archaeologist

This paper will explore test-pitting as a tool of social cohesion and as a means of increasing education aspiration amongst people (specifically children) from poor backgrounds with little history of academic achievement.

Op Nightingale, the recovery of people as well as artefacts

Cdre Peter Buxton OBE, (Head of Royal Navy Medicine and Senior Office of Defence Archaeology Group) and Sgt Diarmaid Walshe, RAMC (Co-founder of Op Nightingale and Project officer Defence Archaeology Group)

Op Nightingale is an MOD project overseen by the Defence Archaeology Group is designed to facilitate the recovery of wounded service personal after they have returned from active service or suffered an injury incurred while engaged in military training. The paper will explore the various elements that have contributed to success of the project with particular emphasis on the social

elements that have helped individuals to address their injuries and integration back into society. It will also consider how the experiences of Op Nightingale can be used as best practice to help address other section of our society who may benefit from a similar type of program

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(S18) 'Madness' Medicine and Material Culture
Session organisers: Dr. Katherine Fennelly, (University of Manchester) and Dr. Charlotte Newman, (English Heritage)

Institutions for the sick have been the subject of much academic scholarship of late, due to a number of factors including the archiving and/or digitisation of nineteenth century records, the mass closure and repurposing of buildings, and policy changes with regard to public welfare and mental healthcare. Twentieth century reforms in patient treatment, spatial arrangement and architecture raise questions about the intentions and effects of eighteenth and nineteenth century reforms surrounding accommodation for the mentally and physically ill in hospitals, asylums, workhouses and prisons. Furthermore, the dereliction, demolition or repurposing of institutional buildings with 'difficult' or marginal histories has attracted research on the sensory and emotional experience of patients, inmates and staff, whose spaces of hospitalisation, confinement, incarceration or labour are now undergoing significant transformation.

This half-day session aims to showcase current research on the material culture and spatial organisation of historical institutions for the physically and mentally ill, with the intention of addressing questions on regional and cultural variation, institutional remit and difference, political and social concerns, and the extent to which human experience can be determined from the material record. This session seeks to attract papers that address hospital and asylum architecture and spatiality, patient and inmate classification, patient or inmate experience and sensory environment, and the heritage potential and/or concerns surrounding problematic large-scale public buildings like hospitals, asylums, workhouses and prisons.

13:00-13:10   **Introduction.** Katherine Fennelly and Charlotte Newman.
13:10-13:30   **Buildings with boundaries? Archaeological approaches to institutional spaces.** Charlotte Newman (English Heritage)
13:30-13:50   **Treatment - staff in Irish lunatic asylums in Victorian and Edwardian Ireland.** Katherine Fennelly (University of Manchester)
13:50-14:10   **Message from a bottle – archaeological evidence for the Chiswick House asylum.** Keith Woolridge (English Heritage)
14:10-14:30   **Commercial Archaeology and Institutional Buildings: Characterisation of NHS Architecture.** Deirdre Forde (Oxford Archaeology)
14:30-15:00   **Questions**
Break
15:20-15:40   **Yorkie-kidding, Rowntrees' provided what? -Investigating variation in twentieth century health-care provisions.** Suzanne Lilley (The Rowntree Society)
15:40-16:00   **Disability in Time and Place.** Rosie Sherrington (English Heritage)
16:00-16:15   **Questions**
16:15-17:00   **Discussion** Professor Eleanor Casella (University of Manchester)

Buildings with boundaries? Archaeological approaches to institutional spaces
Charlotte Newman, (English Heritage)
Archaeological approaches to the material culture of institutional space, offer a unique insight into changing social values and human experiences over time. This is particularly evident in the study of facilities used to treat the mentally ill. Contemporaneous attitudes towards mental illness were firmly embedded within the very fabric and form of the built environment, and architectural features shaped the experience of every individual to pass through. This paper will focus on two contrasting case studies, which highlight the unique contribution of historical archaeologists exploring medical history. Firstly the paper will focus on Brooke House, an 18th century private 'mad' house, which explores the materiality of early institutions using English Heritage's Architectural Study Collection. Secondly, the paper will focus on the experiences of mentally ill paupers using a series of Yorkshire workhouse buildings dating to the 19th and early 20th centuries, which created a very distinct institutional landscape. Through these case studies, this paper will demonstrate how archaeological approaches to the materiality of institutionalisation can map changing attitudes towards mental illness. This paper explores the complex correlation between architectural choices and values, reflecting the impact on patients, their day-to-day life and social identity.

Treatment - staff in Irish lunatic asylums in Victorian and Edwardian Ireland
Katherine Fennelly, (University of Manchester)
The Richmond District Lunatic Asylum in Dublin had over 200 staff members in their employ in 1901. These people came from across Ireland (and some parts of England), contributing to the management of the asylum and bringing with them sports, dialects, management techniques, and material culture. Despite their significant impact on the surrounding streetscape and the management of the institution, the memory of a vast majority of these people survives only in the census returns for the asylum. This paper will examine the staff of Dublin City's pauper lunatic asylum between 1851 and 1901 through a pleathora of material culture and fragmentary historical data. Through the identification of three individuals – a laundress, a keeper, and a clerk – this paper seeks to repopulate the history of mental health with the people who supported its management.

Message from a bottle – archaeological evidence for the Chiswick House asylum
Keith Woolridge, (English Heritage)
In 2008 an intact glass bottle was recovered from an archaeological excavation adjacent to Chiswick House, London. Analysis of the bottle's residue showed it to contain both mercury chloride (Calomel) and a copper sulphate mineral (Brochantite), combined to form a patent medicine with a variety of potential purposes, not least as an emetic, a laxative and as a treatment for syphilis. Chiswick House and its surrounding estate were the location of a private asylum from 1891 until the late 1920s and it seems likely that the contents of the bottle were prescribed as treatment for patients of the asylum. Analysis of the form of the bottle itself however showed it to have been manufactured before 1845, close on 50 years prior to the date that the Chiswick asylum was established. The paper will report on subsequent research stimulated by the archaeological artefact and particularly that relating to the use and users of the Chiswick House asylum.

Commercial Archaeology and Institutional Buildings: Characterisation of NHS Architecture
Deirdre Forde, (Oxford Archaeology)
Since the early 1990s, the gradual sale of the NHS estate has severely increased the vulnerability of historic institutional buildings. The archaeological surveys carried out by commercial archaeology units are often the last opportunity to make detailed records of these structures prior to total demolition. RCHME volumes published in the 1990s initially highlighted the significance of these

buildings and created a national record. Since then, English Heritage Selection Guides have continued to ensure that institutional buildings continue to be recorded at the point of demolition or significant alteration. Increasingly, archaeologists are sought to survey relatively recent medical buildings that bridge the gap between localised treatment and the foundation of the NHS. These surveys expose new and important hidden histories that continue to challenge our interpretation of this building type. This paper details the results and possible interpretations of two surveys undertaken by Oxford Archaeology's buildings department.

Firstly, St. Chad's in Staffordshire, a fine example of institutional architecture dating to the turn of the last century. This building represents an intermediary period of design between the more austere 19th century institutional architecture and the Modernist architecture that began to emerge in the 1930s. Initially the design reflects a purpose built residential facility for the mentally ill. However, over time, the function of the building changed, and it was almost entirely a daycare facility in recent decades. This change is reflected in subtle phases of alteration in the internal spaces and architecture. Secondly, Surbiton Hospital, which was constructed in the early 1930s and formed part of the early Modern movement in Britain. Its architect, Wallace Marchment, specialised in hospital buildings but whereas those that were designed in the 1920s such as Peterborough and Watford were Neoclassical in style, for Surbiton, he adopted the new International Modernist style. This style better accommodated the changing attitudes to the needs of patients and introduced more light and air into the structure.

These case studies expose the gradual spread of Modernist architecture into Britain as well as reflecting the optimistic sentiment and changing attitudes to welfare that was a characteristic of much early 20th century architecture.

Yorkie-kidding, Rowntrees' provided what? -Investigating variation in twentieth century health-care provisions
Suzanne Lilley, (The Rowntree Society)
Rowntree's is world renowned for inventing some of our best-loved confectionery. During the early-twentieth century, as the public developed an affinity for all things chocolate-y: Smarties, After Eights, Aero and Kit-Kat all emerged from a single factory site. However, for the former Rowntree's workforce the success of these products represented only half the story. This paper focuses on another legacy left by this York-based institution- modern industrial benevolence. From early pension schemes to adult education, dancing, high wages and subsidised meals, the Rowntree's name has become synonymous with 'enlightened' and 'altruistic' forms of employment. At the heart of this was a practical concern for the health of the workforce. This was demonstrated in an array of facilities offered both within the factory complex and off-site at "Dunollie", a convalescence home by the sea at Scarborough.

Using evidence gathered from first-hand testaments (as part of the "York Remembers Rowntree" oral history project) alongside buildings survey, this paper presents a preliminary account of the effect of established health-care provisions on former employees. Crucially, this interdisciplinary approach reveals the subtle nuances in the medical arrangements made by Rowntrees' and allows us to reflect upon the individual narratives of those experiencing this type of 'industrial' care.

Disability in Time and Place
Rosie Sherrington, (English Heritage)
Rosie Sherrington was the project manager for Disability in Time and Place: a major web resource exploring the relationship between disabled people and place from the early medieval period to the present day. The project covered the whole spectrum of disability and impairment from leprosy to learning disability, and included a substantial amount of research on buildings associated with 'insanity'. Rosie will talk about how English Heritage approached the subject of presenting the history of disabled people and buildings made by, for, or used by them, while trying to avoid telling a story focussed solely on institutionalisation and incarceration. The project aimed to present

disability as an everyday, core part of our heritage, and involved disabled people telling their stories as much as possible. It was designed as an introduction to the untapped English Heritage resources such as photographs and listed building information which are available to anyone keen to explore disability history from a new angle. The project aimed to encourage much further research and discussion, and Rosie is particularly keen to hear about any archaeological projects that are related to this subject.

Discussant: Professor Eleanor Conlin Casella, (University of Manchester)
Eleanor Conlin Casella is a specialist on historical and colonial archaeology in Australasia, North America, and Europe. She has directed fieldwork excavations on 19th century British colonial prison sites in Tasmania, Australia, and post-medieval period workers' cottages in Alderley Edge, Cheshire. She is the author of The Archaeology of Institutional Confinement (University Press of Florida, 2007), and Archaeology of the Ross Female Factory (Queen Victoria Museum and Art Gallery, 2002).

(S19) Mesolithic Britain and Ireland: 10 years on
Session organisers: Chantal Conneller (University of Manchester) ang Graeme Warren (UCD)

Speakers will follow the same format in each talk. They will start by reviewing key changes and key challenges in their thematic area over the last decade or so, focusing on our two primary questions. They will then draw on case studies to address the session's primary questions:
-       Can we still see a distinctive theoretical approach to the period or has a subsequent generation of researchers taken work on the Mesolithic in new directions?
-        How has new research and new discoveries over the past decade created a new set of issues and concerns for Mesolithic archaeologists?

09:30-09:50	**Introduction to the session**: Chantal Conneller (Manchester) and Graeme Warren (UCD)
09:50-10:15	**Chronology**: Seren Griffiths (Manchester Metropolitan University)
10:15-10:40	**Mobility**: Thomas Kador (Bristol University)
Break	
11:10-11:35	**Settlement**: Paul Preston (Lithoscapes)
11:35-12:00	**Lithic technology**: Killian Driscoll (University of Montreal)
12:00-12:25	**Tool use**: Aimee Little (York University)
12:25-12:40	**Discussion**
Lunch	
13:40-14:05	**Organic material culture**: Ben Elliott (Leicester University)
14:05-14:30	**Animals**: Nick Overton (University of Manchester)
14:30-14:55	**Landscape**: Barry Taylor (University of Chester)
Break	
15:25-15:50	**Gender and Identity**: Hannah Cobb (University of Manchester)
15:50-16:15	**Ritua**l: Ed Blinkhorn (Independent Researcher)
16:15-16:40	**Death**: Amy Gray-Jones (University of Chester)
16:40	**Discussion**

(S20) Networks of dominance – Aspects of Inclusion and Exclusion in Archaeological Approaches to Social Connectivity
Session organisers: Dr Toby Martin (British Academy Postdoctoral Fellow, Institute of Archaeology, University of Oxford) and Kathrin Felder (Division of Archaeology, University of Cambridge)

Recent theoretical work on the nature of human-object relationships increasingly informs the study of past social networks. As a consequence, archaeology is embracing the view that studying past human connectivity is not just a matter of reconstructing the static material traces of social networks but an attempt to understand how people and objects interacted in a dynamic fashion to physically and mentally furnish the fabric of human society. Networks can be used in the pursuit and maintenance of social dominance through strategies of inclusion and exclusion. Simultaneously, networks of dominance can be resisted, contested or transformed through intentional non-participation or counter-activities. Such strategies are performed in arenas that are inescapably material, including access to (or prohibition from) objects circulated in exchange networks, or intentional segregation in the built and natural environment. We are interested in the archaeological study of such social and material strategies in the formation, maintenance and disintegration of networks and invite papers from various fields of archaeological and interdisciplinary research that deal with, but need not be limited to, the following themes:
Strategies of dominance through social networking, their successes and failures;
Socio-material practices of networking (trade, gift exchange etc.) and material culture as a means of enabling dominance;
Biographies of networks of dominance;
Forms of participation and non-participation and their intended and non-intended consequences;
Inclusion and exclusion by access to (or prohibition from) specific material culture;
Methodological approaches to inclusion and exclusion in the study of human connectivity, including formal network-analytical approaches.

- **Introduction.** Kathrin Felder (University of Cambridge) and Toby Martin (University of Oxford)
- **Ever looking outward: indigenous Caribbean strategies in power networks across the historic divide (AD 1000-1800).** Angus A. A. Mol, (University of Leiden)
- **Networks of power and control: harbor-city dynamics at Miletos in the Hellenistic Greek world.** Lana Radloff, (University at Buffalo, SUNY)
- **Networks of power in early England: a case study from North Hampshire.** Matthew Austin, (University of Reading)
- **Perceiving is believing: towards a better understanding of the role of animals in prehistoric exchange networks.** Nathalie Ø. Brusgaard, (Leiden University)
- **Round table discussion.**

Abstracts

Ever looking outward: indigenous Caribbean strategies in power networks across the historic divide (AD 1000-1800)
Angus A. A. Mol, (University of Leiden)
Despite the transformation and destruction of autochthonous communities across the historical divide and the introduction of colonial power structures, indigenous communities survived and exist as political units to this day. In this paper I develop a trans-disciplinary and systemic understanding of indigenous leadership strategies and political groups. The framework incorporates social network theories as well as recent insights on the nature of "leadership" in Amerindian communities and couples this to qualitative and quantitative data from archaeological and historical studies.
By discussing a number of short case-studies from the period AD 1000 to 1800 we will zoom in on one continuous aspect of power in Caribbean indigenous systems: the fact that leaders and their

communities were part of a political economy in which it was imperative to always look outwards. This pattern of connectivity was based on a constellation of geographic, cultural and socio-cosmic factors that characterize Caribbean indigenous power networks. However, this need to look outward was counterbalanced by benefits that were afforded to leaders who were successful in keeping communal interactions contained to the local level. Simmelian concepts of the triad and Burt's theory of structural holes will be used to provide a more general social network theoretical framework for this power paradox. This shows that indigenous Caribbean political economies were based on open-ended yet balanced network strategies by AD 1492. Nevertheless it was exactly this open-enededness of the political system that was partly responsible for the disastrous effects the colonial encounter had on the autonomy of indigenous communities.

Networks of power and control: harbor-city dynamics at Miletos in the Hellenistic Greek world
Lana Radloff, (University at Buffalo, SUNY)
After the death of Alexander the Great in 323 BC, the cities of Asia Minor were used as military and economic power bases by his successors to establish their own dynasties. As a result of exchanging royal patronage for civic goodwill, urban plans became mechanisms for negotiating socio-political relationships between the Hellenistic kings and the local inhabitants. Miletos, located on the west coast of Asia Minor, recovered from its sack by the Persians in 494 BC to become a prosperous city once again in the 4th century BC and Hellenistic period (323-31 BC). Its strategic location, ties to an important oracular sanctuary, and status as an important centre for maritime trade made it the subject of competing dynastic ambitions among the Seleucids, Attalids, Ptolemies, and Antigonids, as well as local tyrants. Through their benefactions, the Hellenistic kings not only curried Miletos' favour but also wove themselves into its urban fabric, thereby, associating themselves visually and symbolically with the established political, religious, social, and economic ideologies of the city. To elucidate the role of the maritime environment in the negotiation of socio-political relationships between the monarchs and local residents, I draw from scholarship on urbanism, the maritime environment, and social space theory to examine the harbour-city matrix of Hellenistic Miletos. As a main point of entry, Miletos' Lion Harbour was a liminal public space that arbitrated access between the city, outside world, and urban interior, where socio-political and religious structures were situated in and around marketplaces. By utilizing the spatial connection between the harbour and urban interior, the Hellenistic kings intertwined their visual and symbolic propaganda with Miletos' past and thus legitimized their claim to civic power and control.

Networks of power in early England: a case study from North Hampshire
Matthew Austin, (University of Reading)
This presentation considers socioeconomic networks in fifth- to eighth-century Anglo-Saxon England. The approach taken is twofold: important themes such as communication, power and state formation are initially considered at a broad and conceptual level before certain concepts and methods of analysis are tested on a case study in North Hampshire. As part of the speaker's doctoral thesis, which is devoted to the study and analysis of the geopolitical landscape of early England, results are presented from a preliminary study centred on the high status settlement of Cowdery's Down and its surrounding locale.

The methodology is informed to a large extent by 'central-place theory', which is conceptualised here with closer affinity to Christaller's original theory than more recent Scandinavian writing. Researchers in Scandinavia have persistently focused on 'central places' but have generally failed to engage with the broader and more important notion articulated by Christaller: that of the 'central-place system'. Christaller had never envisioned the study of central places in isolation from their broader system and network of influence.

In an attempt to redress the balance, the study considers not only the central place of Cowdery's Down, but also its broader 'central-place system' – envisioned here as a 50km x 50km study area surrounding the site, both for the purposes of data collection but also corresponding roughly to the

distance traversable on horseback in a day. In doing so, this presentation is therefore able to reconcile theoretical discussions of networks of dominance with quantitative analysis at a regional scale.

Perceiving is believing: towards a better understanding of the role of animals in prehistoric exchange networks
Nathalie Ø. Brusgaard, (Leiden University)
In recent years, theories on the commensurability of person and object have gained in popularity as a way towards a better understanding of prehistoric ritual and social exchange. Yet the subject-object divide still stands strong in studies on the role of animals in these exchanges, albeit often sub-textually. This is especially the case for research on the use of cattle in Bronze Age north-western Europe, whereby they are predominantly perceived as symbols of wealth and status. However, there is much evidence to suggest that cattle were used in ritual and social spheres due to the liminal position they held in Bronze Age society.

This paper examines this evidence, combining a zooarchaeological and strontium isotopic analysis of cattle from West Frisia, the Netherlands, with ethnographic and archaeological data. It argues that our knowledge of the use of cattle in Bronze Age ritual and social exchange networks is currently being limited by our 'objectification' of animals in prehistory and our rationalisation of past actions. This paper shows that this is a product of the Western history of academic and public thought development on the human-animal relationship. Building on the concept of commensurability and on theories of instrumental and intrinsic value in environmental philosophy, this paper argues for a new perspective that moves towards a better understanding of how prehistoric peoples perceived their animals and why animals were used in prehistoric ritual and social exchanges.

(S21) OK computer? Digital Public Archaeologies in Practice
Session organisers: Seren Griffiths (Manchester Metropolitan University), Lorna Richardson (University College London), Chiara Bonacchi (University College London, UK) and Gabriel Moshenka (University College London)

Community or public archaeology has often emphasised communities defined by an attachment to place, often defined by the archaeological site (cf. Simpson 2008); increasingly digital technologies allow a breakdown of this privileging of physical place and the concept of 'community' (cf. Waterton 2005; 2010), to connect geographically disparate populations. Digital public archaeology projects have emphasised crowd-sourcing, engagment, dissemination, and publicity using blogs, social media, webfeeds and so on (*e.g.* Richardson 2012; Bonacchi et al. 2012). As well as the challenges and opportunities relevant to other public archaeology projects, work which includes a significant digital public archaeology component has a series of more specific concerns. Increasingly the need for archaeologists to engage thoughtfully with digitally technologies has been recognised by a number of organisations (Archaeological Data Service 2010; Heritage Lottery Fund 2012; Institute of Archaeologists 2012), and greater numbers of projects are defined by their predominantly digital work. As a result there are implications both for local site-specific practice by people working as archaeologists — where we are "…progressively transforming a ''world of scarcity'' into one of ''saturation'', where space is no more an issue…" (Bonacchi 2012); the wider political context in which people interested in heritage operate (Richardson 2012); and how different interest groups including intelligent and critical consumers work in the historic environment "…without any professional or academic input whatsoever…" (Moshenka 2008).
As with other aspects of public archaeology, projects can include both 'bottom up' and 'top down' approaches (cf. Tully 2007; Moshenka 2008; Belford 2011) to engagement with aspects of the archaeological record. There are also webfora and projects which include the co-production of

resources by interest groups who might define themselves not as archaeologists, but who have a strong interest in the historic environment (neopagans, historical re-enactors, and metal detectorists for example).

This session will discuss aspects of digital public archaeology, including the challenges and opportunities offered by social media and webfora, ways of encountering and engaging with digital communities; the role of explicitly 'digital public archaeology' projects, how these communities are constructed and maintained; how a range of authoritative voices use the internet (cf. Hodder 2008; Faulkner 2000; Grima 2002); wider issues in terms of sustainability and management (cf. Moshenka *et al.* 2011); and how they interface with more traditional aspects of archaeological practices.

14:00-14:20	**Introduction.** Lorna Richardson and Chiara Bonacchi, (University College London)
14:20-14:40	**Paranoid Android? The future of archaeological research in the collaborative and digital economy.** Brendon Wilkins and Lisa Westcott Wilkins, (DigVentures)
14:40-15:00	**The ACCORD Project (Archaeology- Community Co-Design and Co-production of Research Data).** Mhairi Maxwell, (Digital Design Studio) and Stuart Jeffrey (Digital Design Studio); Alex Hale (Royal Commission on the Ancient and Historical Monuments of Scotland); Sian Jones (University of Manchester); Cara Jones (Archaeology Scotland).
15:00-15:20	**Digital heritage interpretation and engagement**. Richard Lewis, (University College London)
15:20-15:40	**Scaling the archaeological digital data mountain.** Emily La Trobe-Bateman and Sian James, (Gwynedd Archaeological Trust)
Break	
16:10-16:30	**The Greatest Digital Public Archaeology Tool... that we never use.** Doug Rocks-Macqueen, (Landward Research Ltd. and University of Edinburgh)
16:30-16:50	**Power to the People**. Jamie Stone, (Independent Researcher)
16:50-17:10	**Heritage Together: The Crowd-Sourcing of Digital Photographic Data for 3DModelling**. Ben Edwards and Seren Griffiths, (Manchester Metropolitan University)
17:10-17:30	**Digital Communities of the Dead: Mortuary Archaeology Online**. Howard Williams, (University of Chester)
17:30-17:40	**Discussant.** Gabriel Moshenska (University College London)
17:40-18:00	**General discussion**

Abstracts

Paranoid Android? The future of archaeological research in the collaborative and digital economy
Brendon Wilkins, (DigVentures) and Lisa Westcott Wilkins, (DigVentures)

Numerous community archaeology projects are undertaken every year in the UK on a wide range of sites by a variety of public, private and third sector organisations. Building on this provision, a new social, digital and collaborative economy is also emerging, creating an access step-change that has made it radically easier for communities to form. The emerging field of digital public archaeology has struggled to adequately theorise these new developments, assuming that all community archaeology projects can be simplified into one of two overarching methodological orientations: 'top down' or 'bottom up.' In the former, projects can be conceived as a stage-managed collaboration between expert and public, with the expert retaining control over design, fieldwork and analysis. In the latter, the agenda is set according to the needs of communities themselves, with the expert relinquishing control of the process into the hands of non-professionals.

Drawing on our 'Digital Dig Team' innovation, in this paper we will consider new approaches that enable archaeologists to co-fund, co-design, co-deliver and co-create value with their respective

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communities – innovations that make no sense in terms of top down or bottom up, and demand a rethink of community-based models that rely on economic theory. The digital and collaborative economy is more akin to an ecological system, where socially embedded technologies (often bracketed under the term 'citizen science') present archaeologists with a multitude of opportunities to do things radically differently; they open new vistas for archaeological knowledge creation, ultimately realising the value of research through a truly social method.

The ACCORD Project (Archaeology- Community Co-Design and Co-production of Research Data)
Mhairi Maxwell (ACCORD RA, Digital Design Studio, GSA), Stuart Jeffrey (ACCORD PI, Digital Design Studio, GSA), Alex Hale (ACCORD Co-I, RCAHMS), Sian Jones (ACCORD Co-I, the University of Manchester), Cara Jones (ACCORD partner, Archaeology Scotland)
The ACCORD project explores the opportunities and implications of digital visualisation technologies for community engagement and research. Our ethos is co-production and in partnership with communities, together we create three-dimensional models of heritage sites and objects. It has been said that we are all archaeologists now! (Shanks 2014), which leads to the question of why has this not yet rung true in the world of 3D modelling and 3D printing, despite the accessibility and ubiquity of many of these technologies? These techniques have remained firmly in the domain of specialists and expert forms of knowledge and/or professional priorities govern their usage. Expressions of community-based social value are rarely addressed through their application. ACCORD seeks to address this through the co-design and co-production (with the support of visualisation technologists, researchers and practitioners in community engagement) of a permanently archived and open-access research asset which integrates co-produced digital models, user generated contextual data and statements of social value. This paper will first address the barriers to community co-production of 3D visualisations and records; for example the language used and user-interface design can often be off-putting, know-how is not innate to those unfamiliar with digital platforms, and copyrights of the results are not well understood. We will then, however, go on to present the broad range of opportunities that co-production can offer; for the enhancement of community enskillment, ownership and sense of belonging.
Funded by the AHRC, ACCORD is a 15 month partnership between the Digital Design Studio at the Glasgow School of Art, Archaeology Scotland, the University of Manchester and the RCAHMS. ACCORD is one of eleven projects across the UK to be awarded funding from the Arts and Humanities Research Council's Digital Transformations in Community Research CoProduction programme and is a partnership between the Glasgow School of Art, Archaeology Scotland, University of Manchester and the RCAHMS. For more info email Mhairi Maxwell (RA on the ACCORD project): M.Maxwell@gsa.ac.uk

Digital heritage interpretation and engagement
Richard Lewis (University College London)
Among other outcomes, the archaeology sector aims to engage a wider audience with archaeological data. Increasingly, digital technology is used within the heritage industry to interpret sites, following a global trend towards increased digitisation. Rising sales of portable digital technology and members of social media websites have created a new audience for engagement with issues from politics to humanitarian causes. Accordingly, heritage smartphone apps and social media pages are becoming commonplace. These developments raise concerns regarding how digital technology engages the public. To measure this, several factors must be considered, including the nature of digital engagement strategies, their appropriateness within their settings and effectiveness in achieving their aims. This allows for modification of engagement strategies to better suit the intended audience. This talk examines various digital heritage interpretation techniques for promoting interaction with the public. Based on the studies conducted during my MA dissertation, I will highlight the issues raised through an intensive desk-based analysis of digital heritage interpretation techniques. For example, top-down versus grass-roots methodologies, the utilisation

of social media and some concerns raised by so-called 'techno-dystopians' are considered. The points raised here will be analysed in conjunction with a central case study of the *Stonehenge Audio Tour* app, by English Heritage. Forming the basis for my dissertation research, this study compares site visitors with online social media respondents to understand to what extent the public utilise available digital interpretation tools. The conclusions will examine why digital engagement appears to be low, and what can be done to combat this.

Scaling the archaeological digital data mountain
Emily La Trobe-Bateman and Sian James, (Gwynedd Archaeological Trust)
With the majority of archaeological records in the UK being created in digital formats, there is widespread expectation that access to them should be open and user-friendly. For development-related archaeological work this expectation is embedded in the term 'preservation by record'. Where academic work is supported by research and funding bodies, open source and linked data standards are required, along with the need to include costs for long-term data management. Despite this there is insufficient clarity across the discipline over digital data standards, including metadata standards. The mechanisms for ensuring access to information are poorly developed, and too little consideration is given to the responsibility of meeting the costs of long-term digital storage. Set in a context where there are scarce resources, specialist expertise in Knowledge Organisation is unevenly distributed, and the current reward structure within the discipline is based on individual authorship, how can the importance of archaeological digital data in the public sphere be secured?
This paper will discuss the way these issues have been negotiated as part of a recent collaborative project between the University of Bangor and Gwynedd Archaeological Trust (GAT). The project, *Visualising the Archaeology of* Gwynedd, sought to develop a way of managing and sustaining archaeological digital data held by partners based in north-west Wales. An online image-library has been created, incorporating large collections of analogue and born-digital photographs and other digital visual data, held by GAT, the University and the Snowdonia National Park Authority. The participation of volunteers in the digitisation process, including the creation of metadata, has been vital to its success, helping to shape the project and create a model for sustainable data management.

Heritage Together: The Crowd-Sourcing of Digital Photographic Data for 3D Modelling
Ben Edwards and Seren Griffiths, (Manchester Metropolitan University)
This paper will explore the results and methodology of the AHRC Connected Communities funded 'Heritage Together' project, a collaboration between Bangor, Aberystwyth and Manchester Metropolitan universities. The project, which is currently entering its final phase, is a crowd-sourced photogrammetric recording project focused on the megalithic monuments of north-west Wales and Anglesey. Members of the public join the project through the web portal, upload photographs of standing stones, burial monuments and other features, and the 3D models are automatically produced. The resulting textured models and the raw data are available open-access to members of the public and academics for their own unlimited use. Whilst the results of the photogrammetry are interesting in their own right, especially to prehistorians and surveyors, this paper will focus on the design and maintenance of the public element of the project, and the challenges and successes experienced in engaging people with digital archaeology.

Power to the People
Jamie Stone, (Independent Reseacher)
From an outside perspective it seems to be a given within the archaeological community that Community Archaeology is something that is driven by Archaeologists for the good of the People. Motivations seem to range from using the community as a fundamental part of the project (for example the "Heather and Hillforts Landscape Partnership Scheme"), as a navel gazing goal in itself, or as an afterthought presumably to ensure funding is secured ("Oh yes, of course we Engage"). I

intend to talk about a couple of archaeology related organisations founded and run by non-archaeologists with very little archaeology involvement beyond normal membership of those organisations. I'll give a potted history of two organisations I have personally been involved in from inception, how the lack of archaeologists has helped us and where we are now. Then I'll finish with what the archaeology community could do to help make us more effective.

The Greatest Digital Public Archaeology Tool… that we never use.
Doug Rocks-Macqueen
It was on a Monday in 2001, the 15th of January, when one of the greatest tools for digital public engagement in Archaeology was launched, Wikipedia. The term 'great tool' is a bold one but the first half of this paper will lay out how Wikipedia lives up to such a term through:
Reach
Funding
Digital best practices
Principle of co-creation
Yet, more than a decade later we archaeologists barely utilise this tool. The second half of this paper looks at how we can encourage and maximise use of Wikipedia by archaeologists and those interested in Archaeology. Some of the ideas presented include:
WikiClub
Wiki Loves Archaeology style competition
Integration into the curriculum
Wikipedia as part of commercial archaeology

Digital Communities of the Dead: Mortuary Archaeology Online
Professor Howard Williams, (University of Chester)
This paper aims to explore the interaction of digital public archaeology with mortality. I aim to sketch the current widespread and varied online reporting and discussions of archaeological discoveries, analyses and syntheses of human remains, mortuary deposits and contexts, as well as the mortuary dimensions of materials cultures, settlements, monuments, architectures and landscapes. Realising that most public engagement with mortuary archaeology is online rather than via museums, books or site-visits and participation, itself overhauls the foundations of our ethical and socio-political debates in mortuary archaeology.
I then propose that archaeologists need not only to recognise the value of digital media for appraising and enhancing public engagements with mortuary archaeology, but also to consider the challenges and consequences of mortuary archaeologists deliberately or unwittingly creating digital communities of both the living and the dead online through their research. In particular, I propose that the valorising of individual corpses creates particular kinds of 'ancestor-orientated' and 'celebrity cult' digital communities of widespread appeal, whereas other potential forms of digital communities with distinctive and alternative affinities and engagements with mortality have yet to be recognised, theorised and actively engaged with by archaeologists. Somewhat perversely, it seems that it is those digital communities that have spatial and temporal moorings that have been most thoroughly neglected by mortuary archaeology online.

(S22) Rethinking Comparison in Archaeology
Session organisers: Ana Vale (University of Porto/CEAACP), Irene Garcia Rovira (University of Manchester), Joana Alves-Ferreira (University of Porto/CEAACP)

Comparison in archaeology is used in a multitude of ways and on various different levels, and in some sense we are always comparing. We know that an object is a something and not something

else because we can compare previous examples of objects to the object we are trying to understand. Whether we compare archaeological material between sites or general site plans, we establish correspondences of similarity and draw lines of connection between forms that can fit in the same morphological type, even when what we intend to do is compare to demonstrate the differences. Comparison necessitates the selection and hierarchy of archaeological features and things in order to structure what we are comparing. We compare in order to classify and to define parallels but also, and very often, in order to explain archaeological sites and objects as if the fixed form described by the archaeologist (by putting forward the similarities or studying the differences) brings with it its own explanation.

If we take the walled enclosures of the Iberian Peninsula as an example, we can see that they have been interpreted as fortified settlements because of the similarity of their ground plans (although a comparative study by Susana O. Jorge problematized this approach in 1994). However, when we compare site plans (for example), are we just comparing the similarities of the architectonic devices or do we want to understand similar social practices which were materialized in comparable buildings? In many cases, the comparison of similar site plans is undertaken as a routine exercise in archaeology without a reflection on the methods and the limits of the exercise.

This session aims to promote reflection on comparison in Archaeology, its methods, contexts of use and limits. We welcome papers that address these questions with more theoretical approaches as well by the presentation of particular case studies.

- **Comparing the incomparable – The Chalcolithic walled enclosures of the Iberia Peninsula and beyond.** Ana Vale (University of Porto)
- **The Art of endangering the bodies: a first movement on "*how to read what was never written"*.** Joana Alves-Ferreira, (FLUP/ FCT/ CEAACP)
- **Comparative Approaches to Ancient and Modern Urbanism in the New World** John Walden, (University of Pittsburgh)
- **Found in Translations: Challenges and Prospects for Jointly Contextual and Comparative Approaches** Stephanie Koerner (University of Manchester, University of Liverpool)
- **Archaeology: a discipline of inference, a discipline of things.** Irene Garcia-Rovira, (University of Manchester)
- **Comparing in archaeology through a quantitative approach: dealing with similarity and dissimilarity iusses.** Katia Francesca Achino (Quantitative Archaeology Lab (LaQu) Autonomus University of Barcelona), Stéphanie Duboscq (Autonomus University of Barcelona), Berta Morell Rovira (Quantitative Archaeology Lab (LaQu) Autonomus University of Barcelona), Joan Anton Barceló Álvarez (Quantitative Archaeology Lab (LaQu) Autonomus University of Barcelona)
- **Nothing compares to you... Comparison of small scale sites.** Andrew May (Baixo Sabor – ACE)
- **Discussant:** Julian Thomas (University of Manchester)

Abstracts

Comparing the incomparable – The Chalcolithic walled enclosures of the Iberia Peninsula and beyond.
Ana Vale, (University of Porto)
During the first half of the twentieth century, comparative exercises attempted to establish sets of parallels in order to study the diffusion of specific cultures. However, with the advent of carbon dating in the 1960's, archaeologists like Colin Renfrew were able to question the contemporaneity of the similarities identified by culture-historical archaeology. Today, regardless of the theoretical framework, archaeology compares general plans in order to study possible contacts and networks of exchange and to study the general tendencies of ways of inhabiting enclosed spaces. However, it looks like the comparative method is widely used just to study patterns and regularities, or as a tool

to emphasize the similarities between features that could fit in the same type, and less often as a way to stress the uniqueness of a context.

Although most comparative studies of the Chalcolithic walled enclosures in the Iberian Peninsula are the foundation of valuable archaeological synthesis, they seem to obscure the particularities of each element in being compared. Other comparative studies have been made which stressed the different contexts of use and meanings present in each site. However in some ways, this line of research seems to limit further comparison.

Recognizing the interesting and creative insights that the use of comparison in archaeology can bring us, how do we deal with the difference? Is it possible to deal with the singularities of what seems similar? If we study the general plans as the process of a formation and not as a finished form, as the drawing of growing and changing constructions rather than finished buildings (after Ingold, 2013), and as the result of practices of design and not as the concretization of a project (after McFadyen, 2013), is it still possible to compare general plans? Or are we comparing the incomparable?

The Art of endangering the bodies: a first movement on "*how to read what was never written*".
Joana Alves-Ferreira, (FLUP/ FCT/ CEAACP)
«Lire ce qui n'a jamais été écrit». Ce type de lecture est le plus ancien: la lecture avant tout langage, dans les entrailles, dans les étoiles ou dans les danses.
Walter Benjamin | 1933
In an interview granted in 2013, the philosopher and art historian, George Didi-Huberman, apropos of two of his works - *Images malgré tout* and *Atlas ou le gai savoir inquiet (L'œil de l'histoire)* - claimed that "analysing old images is like walking through a ruin: almost everything is destroyed, but *something remains*". The important thing, says Didi-Huberman, is how our gaze puts *that something* in motion: those who cannot gaze go through the ruin uncomprehendingly. Drawing inspiration from Walter Benjamin and Aby Warburg thoughts and writings, Didi-Huberman made clear his preference for what he designates by "archaeological eye" as a way of looking into the images and into the world, and points out Warburg (both his work and method) as one of the founders of an "*archaeology of images*".

Considering Warburg's method, which broadly consisted in conceiving the images as archaeological objects devoid of any kind of hierarchization, i.e., displacing them from an orderly reading, one witnesses the emergence of a new writing technique, that by acting at the level of the extracts and through the montage process, leads to an ethical an political commitment with a new way of thinking the possibilities not yet given, that is, to search in every image we look and relate to other images and texts for unheard relations, and hence for points of convergence with different and multiple temporalities.

In this regard, Didi-Huberman defines the "archaeological eye" as the ability to compare what we see in the present, *that which has remained*, *with what we know to have disappeared*. Thereby, in the wake of this approach that considers the problematic and complexity of the image, as well as their ethical and political aspects, we place ourselves in a site from where one questions history itself: its causal chains of actions, its one-way network and, finally, its art of correspondences. Like Benjamin, we too expose ourselves to such a risk of reading the world. In this disquietude, which brings into play all our space of thinking against history, we are called for *a reading after everything*. At the heart of our desires for the future, and of our present struggles, how to read, then, such *constellations* – those *fragile house of cards*?

Comparative Approaches to Ancient and Modern Urbanism in the New World
John Walden, (University of Pittsburgh)
For some scholars the divide between the ancient and modern world presents a chasm which cannot be traversed; the processes of industrialisation, modernisation and the emergence of capitalism represent a threshold of departure from all that had occurred before. Other scholars posit similarities between the ancient and modern examples and suggest that the comparative

investigation of these parallels can serve to elucidate archaeological material. One of the most controversial areas of study in this regard is the city. The factors promoting the process of urbanisation in the modern world are a product of the capitalist world system, industrialisation and modern technology. This presentation explores two phenomena which compose the process of urbanisation. Firstly, the process of migration to an urban environment shall be explored with reference to the push and pull factors often cited by political geographers. Secondly, the formation of the urban landscape shall be examined; the approach taken sees urban development as the result of the dialectic between the action and nature of the established rule and the migrant body. This paper examines these themes in the context of the cities of Latin America in the 19th and 20th century. This shall then be cautiously compared to several ancient New World states to explore potential ways in which analogy can be used to illuminate both the processes of urbanism and the formation of the urban landscape in ancient times.

Found in Translations: Challenges and Prospects for Jointly Contextual and Comparative Approaches
Stephanie Koerner (University of Manchester, University of Liverpool)
The truth of the doctrine of historical of cultural (or historical relativism – it is the same thing) is that we can never apprehend another people's or another period's imagination neatly, as though it were our own. The falsity of it is that we can therefore never genuinely apprehend it at all. We can apprehend it well enough, at least as well as we apprehend anything else not properly ours; but we do so not by looking behind the interfering glosses that connect us to it but through them
(Geertz 1983: 44)

The founding of TAG in 1979 around aims to promote debate and discussion of issues in theoretical archaeology may have figured amongst key turning points in the dynamics of archaeology and the 'parting of the ways' of the 20th century's most influentially opposed paradigms for theory and philosophy in the humanities and social sciences. In both cases, the diversity of issues at stake has been difficult to overstate. The most influentially opposed positions have diverged on issues ranging (at least) from those centring on questions about whether the methods and theories of the humanities and social sciences can or should be modelled on physical sciences – through questions about whether modernity should be interpreted as a triumph or as a tragedy. Today such polemic is often summarise by the idea of 'two cultures' – that is, the idea that the arts and the humanities, on the one hand, and the so-called 'hard' sciences belong to mutually uncomprehending 'two cultures'. What bears stressing in the context of the present TAG session are the variety of problematic presuppositions, which have been shared by the most influentially opposed paradigms. These include not only the highly problematic caricatures of the art – science dyad, which are now key foci of efforts to rethink both utopic and dystopic versions of 'standard' account of modernity. They also include notions that see contextualisation and comparison as incompatible methodologies.
In these lights, it is perhaps not a coincidence that major steps in archaeology towards 'going beyond' obstacles posed by 'two cultures' polemic have been taken (as evidenced by numerous TAG session over the last decade) in tandem with innovations that are connecting contextualisation and comparison in new ways. In this short presentation, examples from research on 'alternative voices' in Mediterranean and Mesoamerican prehistory are used to illustrate contributions that innovations centring on connotations of translation can make to 'rethinking comparison in archaeology.'

Comparing in archaeology through a quantitative approach: dealing with similarity and dissimilarity iusses.
Katia Francesca Achino (Quantitative Archaeology Lab (LaQu) Autonomus University of Barcelona), Stéphanie Duboscq (Autonomus University of Barcelona), Berta Morell Rovira (Quantitative Archaeology Lab (LaQu) Autonomus University of Barcelona), Joan Anton Barceló Álvarez (Quantitative Archaeology Lab (LaQu) Autonomus University of Barcelona)

Archaeologists usually deal with the so-called "reverse problems", thus our aim is to infer the causal mechanisms that produced the observable archaeological record, a difficult task in light of the fact that different social practices can lead to similar material traces. Whilst this is perceived as a problematic issue, archaeologists continue to establish inferences drawing parallels and comparisons between objects (in micro scale) and archaeological context (in a macro scale), simply ignoring whether patterned contexts resulted from the same causes or intentions. This situation is aggravated by vague definitions of what is comparable. Finally, we highlight the possibilities offered by learning algorithms from Computer Science, as a tool that could allow us to infer the causal mechanisms which produced the archaeological record in a probabilistic point of view. These could be a useful methodologies to improve our analysis and comparisons.

Nothing compares to you... Comparison of small scale sites.
Andrew May (Baixo Sabor – ACE)
Four years of archaeological field work carried out due to the construction of a hydroelectric dam in the Sabor river valley (northern Portugal) resulted in the discovery of numerous archaeological sites from various pre-historic chronologies in an area of the Portugal (eastern Tras-os-Montes) trad
itionally thought almost bereft of archaeological remains from these periods. Although in recent times it has been recognised that the region was occupied in pre-history, very few sites are identified, and even less are excavated and well-studied. Thus a general overview of the regions pre-historic occupation, and regional inter-site comparison was all but impossible.
This paper will attempt to discuss the use of comparison in archaeology by presenting several sites discovered during the archaeological work in the Sabor valley, focusing specifically on three chalcolithic sites. All small sites, and what we would typically term "small scale occupation" when held against the light of the typically chalcolithic sites present in other regions.
Here we will try to discuss some practical application of comparison and how we are to make sense of the individuality of archaeological sites. Should we always try to find a comparison, and must there always be one? Or should we be satisfied with noting that at one time these places held a significance to someone?

Archaeology: a discipline of inference, a discipline of things.
Irene Garcia-Rovira, (University of Manchester)
The introduction of Object-Oriented philosophies has resulted with the development of two main attitudes to the study of the past. A number of scholars have suggested the development of archaeologies that focus on the fragmentary nature of the archaeological record, inviting to approach more descriptive ways of doing archaeology. Others have used new philosophical frameworks to revitalise the study of processes of change. In both instances, these tendencies lean towards archaeologies that embrace ontological inquiry and trigger an opposition between ontological and epistemological matters. In a reflection regarding things, pastness and the archaeological record, this paper strives for enquiries which disassociate the aforementioned opposition in favour of theoretical examination which encompasses the study of reality as well as the study of the ways in which archaeologists gain knowledge about the past. To this end, it is suggested that inference is a constitutive element of archaeology and should therefore be a matter of theoretical contemplation.

(S23) Rubbish and Ritual Revisited
Session organiser: Andy Valdez-Tullett (Southampton Archaeology Unit)

Pits are one of the main features found on all types of Iron Age site and are the primary source of anthropogenic data. This material, and hence the pits themselves, is fundamental in understanding all aspects of the Iron Age (Daly, Gosden and Lock 2005). A comprehension of formation processes

and disparities in the discard, curation and deposition for the different kinds of material is therefore extremely important.

The publication 'Ritual and Rubbish in the Iron Age of Wessex' (Hill 1995) investigated the depositional processes on a number of Iron Age enclosures in Hampshire. It recognized a number of statistically significant artefact associations that were interpreted as resulting from observable social practices. The implication was that objects continued to be socially relevant after they had reached the end of their initial functional life and that biases existed in the material selected for deposition. More recently, the concept of structured deposition during prehistory has been questioned (Garrow 2007; Brudenell and Cooper 2008) whilst archaeozoologists have challenged explanations for articulated bone groups favouring more functional explanations (Hambleton and Maltby 2008; Morris 2008; Morris and Maltby 2010). One possible area of discrepancy lies in the fact that no systematic study of the sort conducted by Hill has been conducted outside of Hampshire or for other forms of Iron Age settlement.

This session will look at patterns of deposition from other regions of Britain during the Iron Age to explore the ordinary pattern of practice shaping deposition and the way that structured deposits are at variance with this.

14:00	Introduction
14:05-14:30	**The meaningless ritual.** Frank Hargrave, (University of Leicester)
14:30-14:55	**Pits and practice, contexts and coins – current approaches to depositional practices in Iron Age and Roman Britain.** Adrian Chadwick, (University of Leicester)
14:55 – 15:20	**Beyond Ritual, Rubbish and the 'Hill effect'.** Dr James Morris, University of Central Lancashire
15:20 – 15:35	**Revisiting the ritual and rubbish debate.** Andrew Valdez-Tullett, (Southampton Archaeology Unit)
15:35 – 16:00	**Round Table Discussion**
16:00	**End**

Discussion

Abstracts

The meaningless ritual
Frank Hargrave, (University of Leicester)
The identification of rituals in the archaeological record is challenging for any period and is more so in Prehistory in the context of societies in which the sacred and the profane were profoundly interwoven. However, once an identification is made, the archaeologist is offered the tantalising opportunity to attempt to understand the beliefs and the meanings that are represented within the archaeological record. This attempt, however assumes that ritual is either directly or indirectly communicative in some way. It also assumes that rituals mean something.

Intuitively these assumptions seem fair and yet for many years, in Anthropological circles considerable doubt has been expressed. As Humphrey and Laidlaw observed in 1994, 'it is an easy but fallacious step from observing rituals to suppose that the purpose of ritual is to communicate or express ideas to other people who already know them' (1994, 73). Likewise, referring to Goody's note that rituals experience, 'cultural time lag' (1977, 32), they go on to argue that meaning within rituals rarely reflect current belief. Arguably, the nature of ritual – unthinking, formalised repetition – does not require participants to understand their meaning.

If then, meaning is immaterial to rituals – why do they occur at all? Likewise, if they do not reflect contemporary cultural beliefs, where does that leave their interpretation? Humphrey and Laidlaw went on to make one further observation, that although the performers need not agree on the meaning of a ritual, the correct performance of it was sacrosanct. Accepting their theories, this

explains why rituals can survive centuries, if not millennia, spanning cultures and surviving religious upheaval and change.

The application of these theories to Iron Age structured pit deposits leads to a number of interesting observations. In particular, the conformity that might typically be expected if this depositional practice was ritualised is not there – Hill himself notes significant local difference and regionally the differences are starker still. Trends, when it comes to ritual do not cut it. However, as Hill observes, the irregularity, form and procedure do indicate something out of the ordinary was happening. If Humphrey and Laidlaw's theories are correct, can they be applied to prehistory and specifically to structures pit deposits?

Pits and practice, contexts and coins – current approaches to depositional practices in Iron Age and Roman Britain.

Adrian Chadwick, (University of Leicester)

Since the publication of Hill's seminal work on deposition in Iron Age Wessex, and follow up work on both Iron Age and Roman Britain by Hilary Cool, Michael Fulford and Richard Hingley, the notion of 'structured deposition' has become widely accepted in British archaeology. Even within the theoretically conservative confines of commercial developer-funded archaeology, 'special', 'placed' or 'structured' deposits are now routinely identified and record during excavations of later prehistoric and Romano-British sites. Yet this apparent orthodoxy is misleading. Several researchers have criticised the tendency to uncritically accept excavation evidence, without subsequent, more detailed post-excavation analyses (Brudenell and Cooper 2008; Garrow 2007). Some assemblages of pottery, bone, stone, metalwork and other items may not, despite initial appearances, have been deliberately placed or structured at all. Other workers have highlighted the futility in many instances of attempting to distinguish the 'everyday' deposition of refuse from the 'special' deposition of particular objects and materials during more ritualised practices (Brück 1999; Chadwick 2012).

There are several reasons for this disquiet and discrepant voices. Many practitioners have misunderstood what Hill was originally proposing, and only have caricatured views of his ideas. To my knowledge no-one has examined depositional data from regions outside Wessex to the same level of detail, despite the growing corpus of information from developer-funded sites in particular. Understandings of taphonomic processes and stratigraphy seem to be dwindling, especially amongst younger practitioners in commercial archaeology. There are of course institutional reasons for this. Some published studies have focused on particular materials such as metalwork or animal bone, without examining all deposited objects as interlinked and entangled assemblages. Object types such as brooches and coins in particular are often reified and considered independently of landscape and depositional context or associated objects/materials. There has also been a failure to engage with the practices and movements of everyday life. A wide-ranging, multi-disciplinary study looking at intra- and inter-regional patterning is long overdue, but in the meantime archaeologists also have to re-examine their theoretical and methodological approaches.

This paper investigates some theoretical and especially methodological problems behind current approaches to rubbish and ritual in British archaeology. It uses case studies of pit groups from Yorkshire and the midlands to highlight these issues, but will also draw upon some of the initial results from 'Hoarding in Iron Age and Roman Britain', a joint AHRC-funded research project between the British Museum and the University of Leicester. Normative numismatic approaches distinguish between 'site finds', hoards, and coin assemblages that accumulated as a result of ritual activity. More nuanced contextual approaches to these deposits often reveal more complex, overlapping practices behind their formation, with coins often just part of wider meshworks and flows of materials, agencies and energies.

Beyond Ritual, Rubbish and the 'Hill effect'.
Dr James Morris, (University of Central Lancashire)
Hill's seminal work, cumulating in the 1995 publication of Ritual and Rubbish, remains influential to this day. However, it is often, in this authors view, mis-quoted and misunderstood. Hill suggested and highlighted a number of important approaches in 1995. For example that a universal litmus test for ritual was impossible, that we should instead concentrate on the interpretation of specific material, and the need to outline clearly what we by 'ritual'. Within zooarchaeology Hill's work was of immense importance and marked a turning point, particularly in the interpretation of animal remains. It is therefore unfortunate that the majority of zooarchaeologists have failed to take Hills advice, and instead Hill 1995 has become short hand for 'ritual'.
This paper shows what happened in zooarchaeology after 1995. It also discusses how zooarchaeologists are striving to move away from ritual and/or rubbish to interpretations concerned with the above ground human actions rather than the final act of deposition.

Revisiting the ritual and rubbish debate
Andrew Valdez-Tullett, (Southampton Archaeology Unit)
Hill's seminal 1995 publication 'Ritual and Rubbish' came to form one part of the concept of an Iron Age belief system played out through everyday practice. Hill's detailed examination of depositional practice in Hampshire was limited to a certain form of site set within the same economic and social regimes but quickly gained an orthodoxy within the study of the British Iron Age. His caveats and call for further work have largely been ignored with an unchallenged acceptance and extension of his work across the British Isles. More recently the uncritical acceptance of 'structured' deposition has started to come under more scrutiny (Brudenell and Cooper 2008; Garrow 2012; Morris 2010).
This paper explores the issues surrounding the idea of structured deposition and everyday practice. It aims to promote debate on how the study of depositional practice during the Iron Age can be progressed.

(S24) General Session
Chaired by Robert Matthew (University of Manchester) and Jennifer Chow (University of Manchester)

- **Prehistoric Tipping Points: Understanding how we understand the past.** J. W. P. Walker (University of Durham); And D. T. G. Clinnick (University of Durham)
- **Reframing the Neolithic.** Nigel Spicer (Independent Researcher)
- **Applied Meaning to Meaningful Pots.** Daniel Calderbank (University of Manchester)
- **Talking to gods through things. Material engagement in Minoan religion.** Natalia Zhuravska (University of Amsterdam)
- **Remembering to Forget: The Mnemonics of Earlier Metal Objects in the Late Bronze Age.** Matthew G. Knight (University of Exeter)
- **Break**
- **Tapestries of the Body: Entanglement of Traditional and Contemporary Body Modification.** Mai Walker, (University of Manchester)
- **Animals as a means of social expression.** Caroline Barclay (Independent Researcher)
- **Horns and Axes.** Helene Whittaker, (University of Gothenburg)
- **Possible reconstruction of Scandinavian female dress in Grobin.** Santa Jansone (Independent Researcher)
- **Man, Ships, Harbours and Towns.** Thomas Dhoop, (University of Southampton)

Abstracts

Prehistoric Tipping Points: Understanding how we understand the past

J. W. P. WALKER (University of Durham); and D. T. G. CLINNICK (University of Durham)

We explore in this presentation how Malcolm Gladwell's concept of tipping points (2000) serves archaeologists in contextualizing momentous developments in human history. In constructing origin narratives, we, as archaeologists, are responsible for identifying key moments and events in the past that had a fundamental impact upon the development of our species. These are the critical moments in our shared history: the emergence of behavioural modernity, migration out of Africa, the earliest colonisation of the New World, and the adoption and spread of agriculture. Discussion of how we should conceive of these events as well as cautions against deterministic narratives are nothing new, and yet we are constantly at risk of invoking teleological interpretations.

Our presentation follows similar inter-disciplinary work conducted by Durham University and partner institutions as part of the Tipping Points Research Project. In using the 'tipping point' analogy for change, we elucidate the manner in which prehistoric archaeologists talk about significant moments in the past through invoking metaphors that contextualize them in the present.

Reframing the Neolithic

Nigel Spicer (Independent Researcher)

In seeking to reposition the Neolithic within contemporary archaeological theory, the paper presents a partial summary of the themes informing my recently completed doctoral research at the University of Bradford.   Here, two interrelated aspects of that research are considered.   The first centres upon the effects generated by the movement to an interpretative reading of the period. Whilst such movement has clearly advanced archaeological understanding through the emphasis it accords to the recovery of those experiential frameworks informing its lived existence, it is argued that the knowledge it produces is necessarily constrained by a methodology centred upon the conceptual privileging of the individual.   Framing this movement in methodology is the related theme of post-processualism and its translation of postmodernism as a critical reaction to the Enlightenment in contemporary archaeological theory.   Here, in examining the form of this reaction and the nature of its archaeological transposition, it is argued that rather than abandoning the epistemological frameworks of modernist knowledge, it is their inflection with a teleological reading of the past as progress that represents the postmodern within contemporary archaeological theory and it is through their separation that the conditions are established for the recovery of the Neolithic as an integrated object.   In effecting this recovery not only is a contextual framework provided for the reading of those experiential frameworks informing its lived existence and the wider asymmetries they express, but, in advancing an integrated conception of the Neolithic, they are simultaneously positioned within the changing dynamic configurations of its economic and cultural interface with the natural world.

Applied Meaning to Meaningful Pots

Daniel Calderbank (University of Manchester)

My presentation will explore small-scale expressions of identity amongst some of the earliest pottery vessels in the Near East. Applied decoration – the application of a clay motif to a vessel prior to firing - was a short-lived tradition that stretched across the entire region in the late 7th millennium, and is one of the distinguishing elements of the Proto-Hassuna culture (c.6400-6250 BC). These motifs came in a host of enigmatic anthropomorphic, zoomorphic and abstract styles, sometimes described as "figurines applied to the pottery" (Kirkbride 1972: 5). Unfortunately, study of these designs has rarely stretched beyond simple chronologically centred discussion, with applied motifs considered to represent just another interchangeable form of decoration.

Detailed contextual analysis of the material's production and consumption, however, offers valuable insights into the situated engagements between people and their pots. The site of Umm Dabaghiyah

in the Sinjar Plain area of northern Iraq adopted applied decoration as a material practice and performed it in a distinctive manner to its surrounding sites. Study of these applied decorated vessels in comparison with contemporary painted wares suggest they operated in entirely different social arenas; whilst the portability and visual vibrancy of painted decoration meant these motifs had the capacity to transmit social messages at an inter-site level, applied decoration was restricted to the household, serving to reinforce social values internally. This paper forwards one particular stage of the production process – *the act of application* – as a key mechanism for understanding these vessels as social objects. During this process, not only were pottery vessels transformed physically, they may also have been conceptualised socially and instilled with specific identities.

Talking to gods through things. Material engagement in Minoan religion.
Natalia Zhuravska (University of Amsterdam)
In this paper a cognitive approach will be applied to the subject of Minoan religion in an attempt to grasp the underlying meanings of religious practice and experience. The main aim is to investigate ritual as an interaction between people, objects and deities. The focus lies on the material remains (pottery, figurines, personal items, *etc…*) found on Cretan peak sanctuaries (dating to Middle and Late Minoan periods), which serve as the main evidence for religious activities. Material Engagement Theory (Malafouris 2013) will be used as a theoretical model for interpretation of the archaeological record and getting an understanding of the meaning of objects within ritual contexts. These objects will be approached as extensions of the human minds and bodies and active agents participating in the rituals. Furthermore the general topic of prehistoric religion and its origins in human cognition will be discussed.

Remembering to Forget: The Mnemonics of Earlier Metal Objects in the Late Bronze Age.
Matthew G. Knight, (University of Exeter)

The role of 'the past in the past' in British prehistory has been a popular topic of discussion in the last two decades with much interpretation of the role of monuments and the landscapes in which they are situated. The potential mnemonic properties of objects have however been mostly overlooked.
In 2009, Richard Hingley highlighted the deposition of Bronze Age metalwork in Iron Age contexts as representative of ancestral links and/or commemorating place. This paper builds on Hingley's study by exploring the phenomenon of earlier Bronze Age objects deposited in later Bronze Age contexts and how this might enable archaeologists to gain an insight into the role of memory in prehistoric societies. A preliminary survey identified nineteen examples of earlier metal artefacts in later Bronze Age contexts across southern Britain, of which three are discussed in detail in this paper. Identifications are made with reference to the well-established typological and chronological frameworks that exist for Bronze Age metalwork; material aesthetics, object life-histories and the depositional contexts of the "out of time" artefacts form the focus of the discussion. It is found that, similarly to Hingley's original findings, Bronze Age examples from settlements are linked with concepts of place and certain instances in hoards likewise indicate ancestral links or represent an heirloom. Overall this study emphasises the role of already ancient objects in constructing or deconstructing prehistoric ideals based on memory and the past.

Tapestries of the Body: Entanglement of Traditional and Contemporary Body Modification.
Mai Walker (University of Manchester)
Body modification consumes much of our world; tattoos, piercings, branding and scarification have become increasingly prevalent within the modern west. Paraded by media and celebrities, body modification catches the public eye. But where has this trend developed from? This paper explores the modern west's adoption of traditional practices, and the subsequent links established between colonial and non-colonial peoples.

Archaeological and Anthropological examinations have produced understandings of traditional pre-colonial body modification art styles, techniques and meanings that can be used to explore the evolution of contemporary modern western body modification. Within a framework of entanglement (Hodder, 2012), the ties between colonial and non-colonial peoples in the evolution of body modification can be considered. The cyclical revisiting of trends suggests this entanglement is multidirectional, rather than unidirectional, and traditional practices are intrinsically imbricated within modern colonial body modification.

This paper will discuss the linking of native and colonial identities through practices of body modification; although body modification is conceived of as a contemporary trend, its roots lie in traditional, geographical and temporal ancestries. If we acknowledge these links, we can explore how the traditions of conquered peoples are evoked and embodied within modern western culture and consider these powerful ties as manipulating cultural identities. These corporeal tapestries are powerful processes of hybridisation, linking colonial and traditional through the use of traditional body modification.

Animals as a means of social expression
Caroline Barclay
This paper will investigate the role of animals within people's lives in the Pre-Pottery Neolithic of the Near East, examining how the ways in which they interacted can provide insights into their changing relationships, and into how the people viewed and interacted with the world around them, both natural and constructed. By looking at art and mortuary practices, we can ultimately come to a better understanding of how animals may have been a means of both expressing and reflecting the changing roles of the people, as well as the societal changes of the time.

Horns and Axes.
Helene Whittaker (University of Gothenburg)
This paper is intended as a contribution to the discussion on the symbolic relationship between humans and animals in prehistory. My main focus will be on the representation of cattle in Cretan iconography in the Late Bronze Age. The starting-point for my discussion will be the association between double axes and cattle, which can be seen in different types of representations, and would seem to have a very particular meaning. Very often only the head of the animal is depicted and there seems to be a specific emphasis on the horns. It is also noticeable that the horns can be shown in many different ways. Comparative evidence, in particular from eastern Africa, suggests that the association between horns and axes can be interpreted as a reference to the shaping of the horns of the animal. This practice has a long time-depth and it is believed that it can be traced far back into prehistory. I will discuss the significance that the practice of shaping the horns of cattle into desirable shapes may have played in the Cretan Bronze Age. In the last part of the paper, I will discuss more generally the modification of the appearance of animals for aesthetic and other reasons in the context of the relationship between animals and humans.

Possible reconstruction of Scandinavian female dress in Grobin
Santa Jansone (Independent Researcher)
The aim of this paper is with the use of available knowledge from graves, from literature, and images (especially from Gotland) to draw the possible look of the well going Grobin woman in the 7th and maybe 8th century. Unfortunately mainly cremation burials are used for this period for women, thus making reconstruction very hard - and even almost impossible. Also some later evidences from Sweden and Denmark are used, although with limitations. It must be noted that this is only hypothetic version lacking definitive proof in form of actual archaeological finds, although backed by strong supporting evidence. In the process also local evidence to Scandinavian fashion has been detected and further analysed, thus trying to determine how far one has influenced the other. It

must be noted that this is only hypothetic version lacking definitive proof in form of actual archaeological finds, although backed by strong supporting evidence.

Man, Ships, Harbours and Towns
Thomas Dhoop, (University of Southampton)
Over the years, the study of shipwrecks of ancient cargo vessels has proven to be an excellent instrument to study changes in past economies (*e.g.* Unger 1980). The size of the ships and the artefacts retrieved from their cargo-holds inform us about the amount and types of goods they transported. But also the changing technology of the ships themselves have the potential to inform us about the societies and economies in which they were built (Adams 2013; Rönnby 2013).

In this paper, the archaeological potential of shipwrecks is explored to a new extent. The main question posed is: How do changes in shipping reconfigure urban structure and social life in 12th to 14th century northern Europe? Admittedly, the relationship between ships and cities might not appear straightforward at first. Therefore, the aim of this paper is to illustrate the impact shipping has had on our cities and demonstrate the archaeological potential of shipwrecks to answer bigger questions about our past (Dhoop 2014). To answer this question, I propose an approach that looks at the associations between ships, town topography and the interface which connects the two: the waterfront with its harbour installations.

After illustrating the entangled nature of these four actors (Fig. 1), the focus will shift to a concrete case study: (New) Winchelsea. A planned geophysical and auger survey at the location of the medieval harbour of Winchelsea will be presented with the intention of inviting feedback on the project from the conference audience.

(S25) Stoking the Flames: Towards an Archaeology of Fire
Session organisers: Lauren Doughton, Ellen McInnes, Rhiannon Pettit, (University of Manchester)

Session Abstract
Fire can be perceived by archaeologists as both phenomenon and artefact, subject to experimental recreation, scientific analysis and philosophical discussion (Gheorghiu 2002). This session seeks to explore fire as a material force by thinking about the range of practices in which people, materials and fire interacted. Fire is relational and understood in specific contexts and worldviews. To explore these understandings, Sørensen and Bille (2008) suggest that archaeologists should think about what fire does, rather than what it is: they argue that a study of the transformations fire brings about, rather than discussions of its nature, can tell us more of how fire was understood. Within their approach, fire can be studied from the perspective of space, the human body, material culture, the creation of place and the environment.

However, there is also a place for a consideration of fire itself in these interactions in terms of different types of fire, how they manifest and how they behave. This session also considers how the material experiences of interactions between people, smoke, flames, embers can be explored through archaeology. Papers use these interpretive narratives to explore the ways in which fire was understood by people and communities.

09:00-09:10   **Introduction.** Rhiannon Pettit
09:10-09:30   **Fire & Smoke – People, Materials and Beliefs.** Ellen McInnes (University of Manchester)
09:30-09:50   **Watery Depths and Fiery Deaths: Ritualised Transformations of Axes During the Scandinavian Funnel Beaker Period (TRB)** Mathias P. B. Jensen (Aarhus University)
09:50-10:10   **Born of Fire: An exploration of the role of fire and fragmentation in the creation and use of burnt mounds.** Lauren Doughton, (University of Manchester)

| 10:10-10:30 | **Prehistoric Burnt Mounds at Hoppenwood Bank, Northumberland.** Tom Gardner, (University of Edinburgh, Bamburgh Research Project) |
| 10:30-10:45 | **Questions & Discussion** |

Break

11:35-11:45	**Beyond Cremation: the Plurality of Fire in Mediterranean Funerary Practices.** Emily Wright (University of Cambridge)
11:45-12:05	**Fire and memory: transforming place using fire at henge sites in Scotland.** Rebecca K. Younger, (University of Glasgow)
12:05-12:25	**Build and burn: public engagement through the spectacle of fire.** Kenny Brophy (University of Glasgow), Corinna Goeckeritz (National Trust for Scotland) and Gavin Macgregor (Northlight Heritage).
12:25-12:45	**Incendiary Memories: Fire and Cathedral Monuments.** Howard Williams (University of Chester)
12:45-13:00	**Questions & Discussion**

Abstracts

Fire & Smoke – People, Materials and Beliefs
Ellen McInnes, (University of Manchester)
In ancient times there lived very small people … [t]hey were naked, ate raw meat, and did not know how to make fire. It started to get cold … [t]hen Jesus came flying from the sky with a torch in his hand. He gave it to the small people, who thus came to have fire. The smoke from their fires made them grow bigger and bigger and they became humans.
(A creation myth of the Upper Kolymar Yukaghir in Willerslev 2007, 83)

This paper will discuss interactions between fire, people and materials in the late Mesolithic and early Neolithic and suggest that experiences of the properties of fire would have been key to its place within cosmological schemes. Engagements with fire both contributed to, and were guided by, cosmological beliefs that in turn formed a practical knowledge drawn upon in both a range of contexts. Case studies will demonstrate that the specific experience of interactions with fire can be considered in detail through the remains of fires, the structures associated with them, traces of activities centered on these features, and treatment of burnt material, to offer a more nuanced discussion of how those fires may have been experienced and understood. The complex and multi-faceted understandings of fire recorded in ethnographic literature are drawn upon alongside these case studies to challenge preconceptions and open up avenues of interpretation allowing the relationship between experience of these practices, and cosmological schemes to be explored.

Watery Depths and Fiery Deaths: Ritualised Transformations of Axes During the Scandinavian Funnel Beaker Period (TRB).
Mathias P. B. Jensen (Aarhus University)
During the South Scandinavian TRB thousands of axes were intentionally deposited in wetlands or on dryland locales. Much of the research into these axes has concentrated on the often-perfect axes found in wetland hoards. Increasingly it has become apparent that flint axes were also intentionally burnt and then deposited, often in large quantities, in particular locales that differed from the locales of unburnt axes (Larsson 1989, 2004). The flint axes were not simply thrown in a fire, which would lead to a dramatic shattering of the flint, but were carefully heated up, causing the flint to first change colour and then fracture into several large pieces (Larsson 2004). This paper seeks to understand the relationships between (i) the medium of transformation, i.e. wholeness vs. fragmentation, and fire vs. water, (ii) the conceptual functionality of flint and axes, as well as (iii) the deposition locations. These relationships are explained using 4 different structuralist-based models,

emphasizing the variety of possible ways these entwined conceptual and physical relationships can be understood.

Born of Fire: An exploration of the role of fire and fragmentation in the creation and use of burnt mounds.
Lauren Doughton, (University of Manchester)
Burnt mounds are enigmatic heaps of fire shattered stones found throughout Britain, Ireland and parts of Scandinavia. Their presence has been attributed to a number of different functions, including cooking, bathing, brewing and hide working. The uniting factor in each of these processes is the transformation of materials through the combination of fire and water.

This paper will explore the role of fire in the creation and use of burnt mound sites in the Northern Isles. Drawing on a series of experimental firings undertaken at a replica burnt mound site on Bressay, Shetland, I will examine the interplay between fire and other materials at various stages of burnt mound usage. In particular, I will explore how interactions with fire at burnt mounds afford a range of transformative experiences, both physical and social. I will also explore the role of these transformations in the creation of the mound itself, and begin to examine what the presence of these sites might contribute to our understanding of fire during the Neolithic and Bronze Ages. Finally, by comparing the fiery activities taking place at burnt mound sites with other transformative and fragmentary processes taking place during these periods, I will attempt to shed some light on the nature of burnt mounds themselves.

Prehistoric Burnt Mounds at Hoppenwood Bank, Northumberland.
Tom Gardner, (University of Edinburgh, Bamburgh Research Project)
Fire as a transformative entity is represented in the archaeological record through a variety of mediums, some direct, others in-direct. At burnt mound sites, heat from fire is transferred through several mediums, preserved energy in wood and peat, then flame, through heated stone, and into heated water or steam. Burnt mounds open up a questioning of the cognitive perception of fire in prehistory. Was fire viewed as the unique entity of flame, or as a more transient concept of heat and light, available in several mediums?

Excavations by the Bamburgh Research Project at the site of Hoppenwood Bank in Northumberland have revealed a series of prehistoric burnt mounds set within a wetland environment dating from the Neolithic through to the Bronze Age. These monuments have now been subject to lab-based, experimental, and theoretical analyses, and will be used as a springboard for discussion upon the various mediums through which fire is transferred. For example; experiments on-site with hot stone preparation, cooking, and brewing provides an interpretative and subjective quality to the experience of burnt mound use and deposition, and the transference of fire from fuel to finished edible or drinkable product. Equally, palaeobotanical analyses of plant macrofossils and microfossils from the site at the University of Edinburgh provide a more objective image of site ecology, fuel exploitation, and environmental impacts of fire use and transference.

This paper will forward an experiential and evidence based or scientific analysis of the concept of fire. Focus will be upon the concept of fire through the various transformative stages involved within the burnt mound process, the evidence for each of these stages, and the social, environmental, and cognitive impacts of fire and heat in such a complex technological process.

Beyond Cremation: the Plurality of Fire in Mediterranean Funerary Practices.
Emily Wright (University of Cambridge)
This paper will discuss the different ways in which fire, its products and its effects were employed by people in the past for different forms of interaction between the living and the dead. Bodies are material, cultural artefacts mass-produced by every human society, and fire is selected for a variety of responses to the biological reality of the corpse and its transformation through decomposition; besides cremation practices, fire allows desiccation, fumigation, purification, fragmentation, and

manipulation of human remains. The illusive materiality of fire – its physical, material effects and products but its immaterial embodied experience – is paralleled by death. The use of fire in the social response to a corpse is also both material practice and immaterial experience, with sights, sounds, smells, tastes, tactile experiences, and other sensations that are unique to the circumstances. It will be argued that fire is specifically selected for use in funerary practices for its ability to create this new materiality and immateriality of interaction between the living and the dead. While funerary practices, as a form of ritual practice, both reflect and create communities, fire and its effects may also serve as mnemonic devices that tie the deceased and their conception as ancestor to the lives of the surviving members of the group. Using examples of Bronze Age and Iron Age Mediterranean funerary practices it will be demonstrated that fire is a multipurpose tool, with a range of applications in the mortuary sphere.

Fire and memory: transforming place using fire at henge sites in Scotland.
Rebecca K. Younger, (University of Glasgow)
Many henge sites have long biographies of monument construction and reuse. At some henge sites, fire plays a role in the various transformations henge sites undergo, particularly in place-making activities which establish such sites as significant places centuries before they are monumentalised.
This paper reflects on the roles of fire-lighting and the use and deposition of fire-related materials in the early biographies of two henge sites in Scotland: Cairnpapple Hill in West Lothian, and Balfarg, Fife. At Cairnpapple and Balfarg, the earliest uses of the sites included lighting fires in hearths, and the deposition of fire-affected materials including cremated human bone, pottery and burnt animal bone.
It is suggested that, just as fire can be used to transform materials (cooking food, firing pottery, and cremating bodies), so fire-lighting transformed people's relationship with henge sites such as Cairnpapple and Balfarg. Fire – paradoxically transformative, potent and 'magical', and something which was encountered during everyday life - may have created links between different spheres of Neolithic life, creating relationships between special places such as monumental sites, and quotidian activities. People's experiences of henge sites like Cairnpapple and Balfarg were therefore mediated through fire, a dramatic sensory experience which, it is argued, would have provided a powerful trigger for memories. Fire thus transformed henge sites during the Neolithic, both physically and visually, but also in people's imaginations and memories.

Build and burn: public engagement through the spectacle of fire.
Kenny Brophy (University of Glasgow), Corinna Goeckeritz (National Trust for Scotland) and Gavin Macgregor (Northlight Heritage).
Over the past 18 months we have held two public events focusing on the power and experience of fire in prehistory. Carried out near Brodick Castle on the Island of Arran in Scotland, these events were entitled 'Burning the circle'. In 2013, we erected and tried to burn down a timber circle, while in 2014 we built five experimental pyres, each containing different material residues, and set them alight. Both twilight experiences generated spectacular images and memorable experiences for spectators, and generated some surprising outcomes lurking in the embers and ash the following mornings. However, our events are not examples of 'hard experimental archaeology' but rather soft experiments, focusing on the power and impact fire can have to evoke prehistoric experiences but also generate memorable occasions ('flashbulb memories') for spectators from near and far (the fires could be seen from miles away). In this paper, we would like to present, through images, video and narration, an account of our two build and burn events. We will focus on the collaborative nature of our projects; the visceral impact 'Burning the circle' has on those who attended the events; the ongoing transformation of our burning site; and reflect on the potential for similar build and burn events in a range of different contexts and settings.

Incendiary Memories: Fire and Cathedral Monuments
Howard Williams (University of Chester)
This paper explores the hitherto unexplored, and yet rich and profound, relationships between fire, material culture and memory in the commemoration of the Christian cathedral dead. Focusing on a sample of English and Welsh cathedrals explored through the *Speaking with the Dead* project funded by the Leverhulme Trust, I identify how fiery transformation and fiery destruction is materialised and utilised in mortuary commemoration. This archaeological approach to fire in the cathedral reveals how fire facilitates commemoration and is itself subject to commemoration, through church monuments. Moreover, we can chart shifting relationships between fire and memory in cathedrals from the Middle Ages to the present day, offering a new narrative on how fire ignites and reignites memories through time, actively creating and recreating cathedrals as sites of memory.

(S26) Students in Archaeology: Understanding and Engaging the Next Generation of Archaeologists
Session organiser: David Altoft (University of Bristol)

Students are essential to the development of archaeology, today as well as in the future. Understanding this formative demographic is important for allowing us to comprehend the current foundations of archaeological theory and practice and how those will develop under future generations of archaeologists. This session will critically ask what the discipline knows about its current students and whether it effectively engages and works with this particular demographic, and if not, how it can realistically improve.

Participation is welcome from people of all demographics of archaeology, including students (of any level), academics, non-academic practitioners, and others. Eight papers offering a diverse range of perspectives on students in archaeology will act as case studies to facilitate discussion. Amongst other issues, this session will explore methods of teaching, engagement, collaborative working, and initiatives that promote employability and skills development.

From looking at the concerns of students, their access to academic and commercial archaeology, participation in research, debate and other opportunities, this session will aim to reach a collective understanding between all participants of the barriers to student involvement in archaeology, and agreement on the ways forward to overcoming those barriers.

14:00	**Introduction** David Altoft (University of Bristol)
14:05-14:25	**40 years of statistics on archaeology students: so what do we actually know?** Doug Rocks-Macqueen (University of Edinburgh)
14:25-14:45	**A chartered profession: CIfA and the next generation.** Amanda Forster (Institute for Archaeologists)
14:45-15:05	**Preparing for professionalism: is a degree in archaeology really enough?** Lauren McIntyre, (Elmet Archaeological Services)
15:05-15:25	**Careers and skills: bridging the gap.** David Connolly (British Archaeological Jobs and Resources).
15:25-15:40	**Discussion**
Break	
16:10-16:30	**Archaeology for all: the role of students**. Mike Heyworth, (Council for British Archaeology)
16:30-16:50	**Learning by leading: working to encourage ownership in seminar settings.** Alison Leonard, (University of York)
16:50-17:10	**Talking to students: forums for initiatives, innovations and development.** Alex Westra, (University of Edinburgh)

17:10-17:30   Underwater Explorers: becoming an ambassador for underwater archaeology.
Emily Stammitti, (University of Edinburgh)
17:30-18:00   Discussion

Abstracts

40 years of statistics on archaeology students: so what do we actually know?
Doug Rocks-Macqueen, (University of Edinburgh)
Since 1994, when UK archaeologists have needed statistics on our university students we reach for the Higher Education Statistical Agency (HESA) data. But, we have completely ignored HESA's predecessor, the Universities Statistical Record (USR), which has data from 1972 to 1993. Essentially we only ever talk about the last 20 years of students. This paper takes the first-time step of using both HESA and USR data to look at 40 years of students in UK archaeology statistics. The goal of which is not to reminisce about the past, but to see the long trends flowing through higher education archaeology teaching in hopes of better understanding what the future holds. Like many archaeology papers this one looks at the past to help guide our future. It lays out what we might expect from the next 40 years of teaching students archaeology at UK universities.

A Chartered profession: CIfA and the next generation
Amanda Forster, (Institute for Archaeologists)
The Chartered Institute for Archaeologists will be launched in December 2014 after 32 years developing the professional body for our sector. We have just over 3,200 members, of which 2,200 are accredited professionals and around 500 are student members. Recently we have been focusing our attention on early career archaeologists with a new IfA network for new generation archaeologists (NGSIG) – an umbrella which encompasses students, graduates and those archaeologists on the first few rungs of their career ladder. Following the development of National Occupational Standards (NOS), the setting up of an NVQ in archaeological practice and the HLF-funded Workplace Bursaries Scheme, IfA has provided a framework for graduate training which we feel has not yet been taken up as fully as we would like by industry partners – or perhaps not understood in this capacity. Our most recent practice paper (An introduction to providing career entry training in your organisation) sums up this approach to structured workplace learning and our hope is that – on the back of economic recovery – archaeological organisations will look seriously at developing much-needed graduate training to bridge the gap from student to archaeologist.
Our next focus will be in supporting students before they enter the industry. As we move a step closer to having the option of one day being a chartered archaeologist, we know we have to develop pathways towards professional accreditation as early as possible. This means helping students identify which departments will best prepare them for a career in archaeology, helping them take control of their own professional development at an early stage in their learning and providing mentorship through those early stages. Professional institutes have an important role to play in supporting our future archaeologists and we want to help those forging a career in archaeology by ensuring they begin their career as they mean to go on – recognised as professionals with a future in archaeology.

Preparing for professionalism: is a degree in archaeology really enough?
Lauren McIntyre, (Elmet Archaeological Services)
Students are the future of archaeology, or are they? In an archaeological world that is rapidly changing as a result of Britain's economic situation, graduates are finding it harder and harder to get their professional archaeological 'break'. However, there is increasing evidence to suggest that today's degree courses may not provide opportunities for students to develop the practical skills necessary for a career in certain professional sectors. Many find this increasingly frustrating, particularly considering the rising financial output required to get a degree.

This talk aims to examine whether current UK degree courses provide the requisite skills necessary for today's undergraduates to find a job as a professional field archaeologist after graduation, discussing characteristic methods of teaching and subjects covered by typical UK degree courses, types of skills (academic and practical) that undergraduate students are likely to learn at university, how this compares to commercial unit expectations and working standards, and the types of jobs that today's archaeology undergraduates actually take on after their degree.

Furthermore, this talk will discuss student attitudes to working as a professional archaeologist (focussing on, but not limited to the commercial sector), professional archaeological attitudes towards students and new graduates, and suggestions for the future about how degree courses and universities could better prepare students for life after university.

Careers and skills: bridging the gap

David Connolly, (British Archaeological Jobs and Resources)

The reported chasm that lies between academia and a commercial career is real enough, with contractors, consultants and heritage bodies all reporting a lack of practical skills in archaeologists at entry level. A misunderstanding of what university is for by some, and reluctance of companies to take on the role of early career trainers on the other hand, has led to the recent graduates being forced to sink or swim in an unfamiliar environment with little applied training and even less time to learn.

A forced gap in this process creates a progressively de-skilled workforce. However, with the recent introduction of the skills passport there is an opportunity to accredit and record skills required by contractors prior to employment. On a wider forum regarding training however, there is the potential for a practical exchange between academics, students and contractors. This paper seeks to explore closing the skills gap, and the creation of a comprehensive cross-sector bridge that benefits all parties.

Archaeology for all: the role of students

Mike Heyworth, (Council for British Archaeology)

In a graduate discipline where over 99% of the workforce has a relevant degree it is absolutely appropriate to say that students are the future. This paper will review the opportunities for students to engage with archaeology groups and projects across the UK, both in a professional and voluntary capacity, using opportunities to develop new skills and experience. Suggestions will be put forward for ways in which students can support the archaeological discipline, both individually and collectively, whilst at the same time enhancing their own career prospects and life skills.

Learning by leading: working to encourage ownership in seminar settings

Alison Leonard, (University of York)

Tutors often complain of students who expect to be 'spoon-fed' and who might not grasp the importance of taking responsibility for their own learning until their third year – if then. This talk will focus on teaching archaeology in the Higher Education classroom, specifically in a seminar setting. A case study taken from an experimental seminar structure implemented in second-year Historical Archaeology seminars at the University of York provides a way into considering how we might help students become better learners by encouraging leadership and ownership of learning.

Over the past three years, several tutors in the Department of Archaeology at York have been trialling the use of students as 'discussion leaders' in second-year seminars. The principle is that having students chair their own seminar provides them with important practice in leading others in discussion, and the opportunity to take ownership over a specific topic. It is also designed to build confidence. Since chairing is something that they are expected to do regularly during assessed lectures and seminars in the third year, it is also viewed as a means of incrementally increasing their levels of responsibility. We have received mixed results and responses from the students regarding the discussion leaders and further adjustments are being made for the 2014-15 academic year. The

shortcomings and benefits to the approach, as well as the perceived future benefits, are outlined here, as we continue to work to improve the implementation of seminar 'discussion leaders'.

Other examples of encouraging students to take ownership for their learning will also be referred to, including making better use of research-led teaching – a strength of archaeological education. The overall aim is to consider how best we might extend student initiative and ownership within the seminar setting.

Talking to students: forums for initiatives, innovations and development
Alex Westra, (University of Edinburgh)
An archaeology student's university experience is diverse, though not all students have access to the same opportunities. A well-known and recurring theme of discussion is that many students leave their institutions with a strong feeling of inadequacy in terms of having acquired the necessary skills for their careers. One aspect of it is that they (or we) do not often have the opportunities of taking on independent or semi-independent projects. Such projects can only sustain themselves through the interest and dedication of the student body. However, outreach projects, journals, discussion groups and other independent projects that take place at Edinburgh University, and further afield, demonstrate how these projects foster initiatives and innovations. They provide the impetus for students to generate ideas and independent thought without the onus of excellence in performance usually expected in academia. These can then translate into skills, experience and professional development. By taking control of a portfolio of their own making, students develop specific and general skills which will carry them in their prospective careers. This paper aims to present certain case studies from recent and current University of Edinburgh student projects, some of which I was involved with, in order to provide some points of reference for discussion about the session's themes.

Underwater Explorers: becoming an ambassador for underwater archaeology
Emily Stammitti, (University of Edinburgh)
In the autumn of 2013, an underwater archaeology outreach programme was launched in Edinburgh and the Lothians, to engage communities ranked high on the Scottish Index for Multiple Deprivation. What began as a series of public engagement sessions evolved into a long-term, council-funded educational programme called Underwater Explorers; its aim is to provide skills development and participation opportunities to children and adults of these disadvantaged communities in underwater archaeology.

A doctoral student in underwater archaeology, the skill set and teaching methodology of the developer of these programmes had to evolve to fit not only the demographic of students involved, but also take on a transformative quality that allowed easy modification from the theoretical approaches of archaeology undertaken in the lecture theatre to more innovative approaches appropriate for the community centre setting. As a constant on-site ambassador from the academic world of underwater archaeology, all discussions surrounding the discipline remained on the table with a diverse and always curious 'non-archaeological' public, who equally want information as well as hands-on opportunities.

The results of this year-long case study from one of the community centres indicates relieved feelings of relative deprivation, an increased sense of local pride and historical awareness, and the development of the basic educational and social skills necessary to pursue a career in archaeology. Greater still, lessons taken from the community centre setting indicate how the public perceives underwater archaeology, the teaching of it, and how students can overcome perceived barriers to teaching through motivation, adaptability and a touch of on-site innovation.

(S27) TAG's Next Top Model
Session Organiser: Daniel Brown

Clothing and bodily ornamentation are major vehicles for self-representation and, far from playing a merely decorative role in history, they are increasingly being recognized as central to debates concerning gender, morality, and the human body. They stand on the watershed of the past and the future, conveying a stronger sense of their present than do most other forms of material culture. Clothing then is one of the most easily recognized cultural signs – it is both public and private, material and symbolic, it is the 'social skin', and its two sided quality invites us to explore both the individual and collective identities the dressed body enables. It is eminently malleable and a window through which we can perceive a substantial proportion of the self – be it family affiliation, occupation, religion, ethnicity, legal and economic status, class, age, sex or a sense of style. How then are we to interpret and understand the dress of Minoan ladies, Scythian warriors, Etruscan princes, Viking marauders, medieval saints, Renaissance noblemen or Danish peasants? How do we go about using the variety of literary, iconographic and textile evidence to dress the past? This session aims to discuss just that, and we invite contributions that interweave the potential of 'dress' from any period or place to re-tailor our understanding and appreciation of clothing and adornment in the past.

13:00-13:30	**Not taking people's word for it: developing a 'socio-archaeological' approach to clothing.** Dr. Sophie Woodward (University of Manchester)
13:30-14:00	**Fashion in the Roman Empire.** Dr. Ursula Rothe (The Open University)
14:00-14:30	**"The Emperor's New Clothes"? Finding the cloth that made the clothing in Iron Age Italy.** Dr. Margarita Gleba (University of Cambridge)
14:30-15:00	**Textiles and wealth: a reassessment of the research potential of clothing and iconography in Italian situla art of the 6th century BC.** Dr. Susanna Harris (University College London & Visiting Scholar, University of Cambridge)
Break	
15:30-16:00	**Poems without words? Clothing and adornment in the tomb paintings of Tarquinia.** Mr Daniel Brown (The University of Liverpool)
16:00-16:30	**Why no jewellery? Portraits of women from Rome and elsewhere in the Roman world.** Dr. Glenys Davies (University of Edinburgh)
16:30-17:00	**Baltic tribes men's archaeological clothing in territory of modern day Latvia – some remarks from theoretical perspective and practical use.** Mr. Artis Aboltins (Independent Researcher) and Ms Santa Jansone (Independent Researcher)

Abstracts

Not taking people's word for it: developing a 'socio-archaeological' approach to clothing
Dr. Sophie Woodward (University of Manchester)
Archaeologists researching clothing are often faced with the challenge of how to understand clothing through textual and material traces; sociologists who are interested in current dress practices would appear to be fortunate in having access to people's interactive verbal accounts of the clothing. However, when we have access to people's verbal narratives around clothing, these narratives are often used as the basis for subsequent theories developed at the expense of understanding the materiality of the clothing. Given that much of our relationship to clothing is embodied and material, sociologists need to engage with methodological and theoretical approaches which allow an understanding of the mutually constitutive relationship between people and clothing. Drawing from theories of material culture (Miller, 2005), materials and their vitalities (Ingold, 2010) and ideas of assemblages (Harrison, 2011) I will outline the possibilities for adopting a 'socio-archaeological' approach to clothing that emphasises the materialities of space and of things.

This has been explored through work carried out in women's wardrobes, which include things women wear all the time as well as things that are no longer worn, as clothing carries personal and social histories. I am developing this socio-archaeological approach to consider the accumulations of dormant things in domestic spaces which can be approached as archaeological assemblages.

Fashion in the Roman Empire
Dr. Ursula Rothe (The Open University)
Fashion is a distinctive phenomenon that tends to relate to specific societal and cultural circumstances. As such, it has traditionally been linked in the social sciences to Western culture and the rise of mercantile economies in late medieval Europe. But it actually existed long before this in a variety of forms; for example, in the Roman Empire. This paper will look both at fashion in Rome and in the north-western provinces, where scholars have tended to refer to the array of indigenous dress styles in terms showing traditional and backward-looking attitudes when in fact there was a great deal of change over time in some of the dress elements. The paper serves to question some of the Western and modern-centric theoretical frameworks surrounding dress and to put some of our modern dress phenomena in a wider historical context.

"The Emperor's New Clothes"? Finding the cloth that made the clothing in Iron Age Italy
Dr. Margarita Gleba (University of Cambridge)
Textiles have been used as material for making dress articles in Central Mediterranean at least since the Neolithic. Textiles from the loom were shaped on and around the body using various devices, such as belts, pins, fibulae, and decorated with appliques in various precious materials. These inorganic objects are usually the only part of dress that survive archaeologically and are particularly noted in high status burials. When judged on the basis of this material, dress of Iron Age Italian populations appears rather localized and regional, and has been used to delineate not only social but also cultural boundaries. But what about the textiles, which remain largely invisible in such discussions and are represented at best rather generically in reconstructions of dress or assume that the cloth was coarse and primitive? The preliminary analysis of numerous mineralised textile fragments on those fastening devices presented here demonstrates that Italian populations from Veneto to Basilicata were familiar with the same textile technologies and demonstrate the use of fine fabrics and complex weaves. However, in contrast to the fastening devices, these textiles would have had a homogenous appearance across large geographical areas. This then presents an interesting observation, did the fastening elements of clothing create and retain the distinctive local character of dress, and if so, of what importance is the homogeneity of textiles?

Textiles and wealth: a reassessment of the research potential of clothing iconography in Italian situla art of the 6th century BC.
Dr. Susanna Harris (University College London & Visiting Scholar, University of Cambridge)
This paper presents a new methodology to study the iconography of clothing in Iron Age Europe as a means to investigate the development of wealth and social hierarchies in early urban contexts. To achieve these ends a method of analysing the iconography of cloth and clothing is proposed that is theoretically based in evaluating textile wealth. This theoretical approach requires a method that moves away from identifying and classifying garments and garment combinations as costume, towards charting both qualitative and quantitative information on the cloth and clothing portrayed in iconography. The case study presented investigates the textiles and clothing represented in the situla art (figurative scenes on buckets and their covers, knife sheaths, belt clasps, helmets and mirrors) of the Po Plain and northeast Italy from the end of the 6th century BC. The method builds on current studies of iconography which focus on identifying items of clothing to inform theories of social identity or individual personhood.

Poems without words? Clothing and adornment in the tomb paintings of Tarquinia
Mr. Daniel Brown (The University of Liverpool)
If a picture paints a thousand words then the Etruscan tomb paintings of Tarquinia represent an extensive library of pictorial poetry. These paintings are undoubtedly some of the most expressive remains of Etruscan art and culture. They allow for the investigation of otherwise undetectable elements of everyday Etruscan life, and thus their special significance lies not only in their splendid colors and rich iconography, but also in the valuable information they provide about Etruscan society, religion, death, taste and, most intriguingly, their fashion. This paper proposes that these paintings be examined through the lens of clothing and adornment by utilizing a textual analogy akin to what has been termed 'the fashion system'. The use of such personal adornment, or fashion, as an extension of the body, is a crucial component in the dynamic system of communication within and between societies. It is used to shape and communicate identity, facilitate interaction, negotiate difference and to create or even cross cultural boundaries. The active process of adorning the body draws from a shared linguistic repertoire that can be used to communicate, or to conceal, a whole host of socio-cultural identities, such as age, marital status, class, ethnicity, sex, gender, or social status. This paper then seeks to demonstrate the theory and methods that can be deployed to examine the communicative potential of clothing and adornment within the tomb paintings of Tarquinia. It will investigate the pictorial forms and modes of dress, what might be called style or fashion, or a lack thereof, and will explore how such an approach can develop our understanding of Tarquinia throughout the Archaic and Classical periods of ancient Italy.

Why no jewellery? Portraits of women from Rome and elsewhere in the Roman world.
Dr. Glenys Davies (University of Edinburgh)
Portrait statues of Roman women typically represent them wearing opulent amounts of clothing, but little or no jewellery. Yet the literary evidence (written by elite men) insists that one of women's failings was a love of finery and adornment, including jewellery, especially pearls, gold and gemstones. It is possible, of course, that jewellery was represented on such statues in a medium that has not survived (such as painted or even real jewellery). Women represented in other media (such as wall painting, mosaic and engraved gems) were more routinely represented wearing some jewellery, especially pearls, and women at Rome were buried with jewellery. It is noticeable, however, that the statues without jewellery were overwhelmingly found in Roman Italy and provinces bordering the Mediterranean: the same restraint did not apply elsewhere or in earlier periods (such as Archaic Greece or pre-Roman Spain): the most dramatic use of sculpted representations can be seen in the funerary portrait reliefs of Palmyra (but also the Northern provinces). Was the lack of jewellery on Roman portraits from the central areas of the Roman world merely an artistic convention (rather than a reflection of reality), and was it an expression of the attitudes of the moralists who wrote the literature most critical of women's wasteful and destructive love of luxury? This paper explores the various ways and contexts in which jewellery was represented in portraits of women in various areas of the Roman world and the possible reasons for its presence and absence.

Baltic tribes men's archaeological clothing in territory of modern day Latvia - some remarks from theoretical perspective and practical use.
Mr. Artis Aboltins (Independent Researcher) and Ms Santa Jansone (Independent Researcher)
There are a significant number of publications dedicated to the research and possible recreation of Viking age Scandinavian costumes - both male and female, but relatively minor number of such works have been published regarding Baltic people costumes of the same time period, despite rather distinctive character of those costumes and the culture they are related to Most of those publications have been done in either Latvian or Russian language, thus limiting their accessibility to the international community. Another problem with the purely academic approach to the recreation of such costumes was discovered, once practical recreations of those are made, as sometimes, what

looks good and workable in theory, turns out less than optimal in practice. It is the goal of this paper to look at the recreations of the men's costumes from Baltic tribes (primarily - Lethgallian and Semigallian) and how they fit with the purely theoretical reconstructions and practical demands placed upon them during use, as well as the similarities and differences with the male costumes from the neighboring cultures. Another aspect is how the recreations of those costumes have altered from the first attempts to the stage they are nowadays, based on increase of our knowledge on the subject as well as dismissal of certain erroneous ideas that used to plague previous research.

(S28) The Everyday Assemblage: Routine and The Ordinary in Archaeology
Session organisers: Helen Chittock and Mhairi Maxwell

Archaeological research is often focussed on the extremes of human behaviour. Media coverage of our discipline constantly reports finds of the biggest, the smallest, the oldest and the most valuable. Museum displays, similarly, tend to feature objects that are selected not only to provide information but also to engage, amaze and draw in the viewer. While these exceptional narratives are highly valuable to our discipline, it could be argued that the quests for extremes and 'the amazing' pursued by archaeologists have the ability to skew our pictures of what people in the past were experiencing on a day-to-day basis.

Theoretical work on relational identities has stressed the role of encounters with people, places, animals, materials and objects during everyday life in producing and cumulatively building identities (Ingold 2011, Fowler 2004, Giles 2012). This idea has been taken a step further with the suggestion that repetitive actions reiterate and maintain social categories (Jones 2012), thereby bringing a new significance to the monotonous routines undertaken on a regular basis. Ordinary and everyday activities and encounters may, therefore, have been more significant in producing these social categories than exceptional events and objects.

This session aims to further explore and redress the balance between the ordinary and the extraordinary through looking holistically at the material remains of everyday life in relation to human scales of experience. Particular focus will be on routine and repetition, the way these are expressed archaeologically, and their potential effects on producing identities and social categories.

	Introduction
13:00-13:20	**Reprehensibly Perfect? Evaluating the evidence for 'everyday' Beaker pottery production and non-funerary deposition in Britain**. Neil Wilkin, (British Museum)
13:20-13:40	**Daily dramas, mundane movements and average assemblages – towards a rhythmanalytical approach to prosaic praxis in Iron Age and Romano-British landscapes**. *Adrian Chadwick,* (University of Leicester)
13:40-14:00	**From the Ordinary to the Exceptional - Archaeology on the island of Blå Jungfrun (Blue Maiden).** Dr. Anna-Karin Andersson, Kenneth Alexandersson, Dr. Ludvig Papmehl-Dufay
14:00-14:20	**Discussion**
14:20-14:40	**Dwelling on things – repetition in house design as an approach to understanding everyday domestic and agricultural practices.** Tanja Romankiewicz (University of Edinburgh)
14:40-15:00	**Architectural studies and social identities: A new approach to earthen architecture.** Marta Lorenzon (University of Edinburgh)
1500- 15:20	**Discussion**
Break	
15:40-16:00	**Bronze Coinage from the Parthian Empire in the 2nd Century BC - Local Identities Forged within the Imperial Order** Alex Magub (SOAS/ The British Museum)

16:00-16:20   Ordinary versus Extraordinary: Everyday Aesthetics in Iron Age East Yorkshire.
Helen Chittock (University of Southampton/ The British Museum)
16:20-16:45   Everyday heterarchies in the Iron Age of South East Scotland. Mhairi Maxwell (The
ACCORD Project, Digital Design Studio, Glasgow School of Art)
16:45-17:00   Discussion

Abstracts

Reprehensibly Perfect? Evaluating the evidence for 'everyday' Beaker pottery production and non-funerary deposition in Britain.
Neil Wilkin (British Museum)
Chalcolithic and Bronze Age Beaker pottery is a major feature of many museum galleries in Britain and North West Europe and a staple of academic and popular syntheses. In most cases the vessels selected for display and discussion are from graves, often with elaborate associations and a particular role to tell regarding the idealised message and symbolism of Early Bronze Age funerary practices. But these vessels were originally selected from - or at least understood in the wider context of - a pool of domestic, 'everyday' and (non-funerary) ceremonial and social practices. These spheres of activities, and the important interactions between them, have received surprisingly little attention in recent decades, despite considerable advances in our datasets and theoretical approaches.
This paper evaluates the evidence for the everyday and the routine in Beaker pottery production and deposition in Britain, with particular reference to East Anglia. It argues that an appreciation of the everyday and routine aspects of Beaker potting is essential for a more holistic and a less singular and exceptional reading of the Beaker phenomenon in Britain.

Daily dramas, mundane movements and average assemblages – towards a rhythmanalytical approach to prosaic praxis in Iron Age and Romano-British landscapes
Adrian Chadwick (University of Leicester)
Since the 1990s there has been interest within many disciplines in the quotidian dimensions of human life, and its everyday experiences and rhythms, stemming from earlier phenomenological explorations by Bachelard, de Certeau, Lefebvre, Merleau-Ponty and others. The everyday is notoriously difficult to theorise, however, with many authors noting the irony involved in trying to explicitly articulate and critically examine what is normally implicit, unspoken, pre-reflective and pre-theoretical (e.g. Sandywell 2004: 169). Everyday life has often been regarded in terms of 'what it is not' (Lefebvre 1991: 97), which within archaeology has usually meant what remains once more topics such as economy, ritual and identity have been explored. The everyday has thus usually been characterised in terms of subsistence practices, and within Iron Age and Romano-British landscape and material culture studies has led to some highly normative accounts of the lives and experiences of people in the past. Within these descriptions, there is little room for the agencies, memories and materialities of humans, animals and other actants.
I have previously called for archaeologies that examine the 'minutiae of the mundane' (Chadwick 2004: 9), but with certain notable exceptions (e.g. Cooper and Edmonds 2007; Giles 2012), this form of research and writing has made surprisingly few inroads into most archaeological publications. Nonetheless, I believe that it is possible to write such accounts, without regarding everyday existence and mundane material encounters as part of an ahistorical continuum of 'peasant' practices.
This paper will investigate why so many archaeologists have been reluctant to engage with the everyday, compared to the willingness of colleagues in subjects such as social/cultural geography to embrace it. In order to explore the myriad mundane dramas of daily life, rhythmanalytical approaches are required (q.v. Lefebvre 2004; Sturt 2006), which investigate the changing spatial and temporal flows of activities and assemblages. The ditches, banks and hedges of fields, trackways and

enclosures, and the manufacture and use of artefacts such as ceramics, imposed habitual patterns on the embodied encounters of people and beasts (q.v. Ingold 2011; Jackson 1989), but these features and objects emerged out of the very same activities, assemblages and taskscapes. For Iron Age and Romano-British people, temporality, historicity, identity and agency resided in complex constraints and affordances with animals, objects and the landscape, and materiality and memory. The everyday is a fascinating place to be.

From the Ordinary to the Exceptional - Archaeology on the island of Blå Jungfrun (Blue Maiden).
Dr. Anna-Karin Andersson, Kenneth Alexandersson, Dr. Ludvig Papmehl-Dufay
The island of Blå Jungfrun (Blue Maiden) is situated 20 km from the mainland off the eastern coast of southern Sweden. The island reaches 89 meter above present day sea level, indicating that it has been visible on the horizon ever since the first people arrived in the area c. 9000 B.C. The island consists of moraine blocks, cliffs steeping in to the ocean, rock shelters, caves and amazing natural formation. Because of the horrific landscape and the natural formations the island has frequently appeared in folk lore as an evil place.
In May 2014 we undertook the first archaeological surveys and excavations ever on the island with some amazing results. It could be confirmed that the island had been used from the Mesolithic throughout the Stone Age. The landscape was clearly divided in profane and ritual spaces: A rock shelter was used as a gathering site with repeated occupations resulting in a 70 cm thick cultural layer. Two of the caves, each c. 150 meters from the rock shelter, contained on the contrary significant traces of ritual activities.
Ordinary and seasonally based activities as well as remains of exceptional events can therefore be found within the very restricted area of the island. In this presentation we aim to further discuss the implication that this may have had for producing identities and creating social categories.

Dwelling on things – repetition in house design as an approach to understanding everyday domestic and agricultural practices.
Tanja Romankiewicz (University of Edinburgh)
The house providing a home is inevitably interlinked with everyday life. Detailed architectural analysis of prehistoric houses has been able not only to link their construction and use directly with domestic and agricultural practises, but suggests that the house itself became part of a cycle of sustainable subsistence and played a key role in providing surplus. Rebuilding of houses on the same stance or within an immediate territory, with the same details and to similar plan layouts, and on occasion interleaved with periods of abandonment, acknowledges and reinforces continuity and traditions. Success was seemingly ensured by repetition. By here taking an utilitarian perspective on non-monumental houses in Scotland, meaning is approached by interpreting this repetition in prehistoric house design, whether site-specific, regional or supra-regional, as an intent to be associated with a certain message or memory, created and reinforced by this architecture and its place in the community. In this way houses are studied as objects of everyday material culture, according to their production/construction, use and deposition/abandonment.

Architectural studies and social identities: A new approach to earthen architecture.
Marta Lorenzon (University of Edinburgh)
Earthen architecture in archaeological contexts is often presented as a finished cultural product, frequently praised for its monumentality and exceptionality, as in the Merv or Thmouis site. The construction process behind any architecture is, indeed, more subtle and the product of cumulative actions. The creation of earthen buildings is based on the reiteration of the same activities, repetition of simple processes and consolidation of social roles. This paper aims to present how the architectural process is responsible in building identities due to the reiteration of simple actions, which are the fundamental elements of the architectural chaine operatoire. In earthen architecture two different construction routines are combined: mudbrick production and mudbrick construction.

Both routines had always been part of the building process and helped to create and maintain strict social categories: manufacturers and builders. This paper will explore fully the balance between the ordinary aspect of earthen architecture manufacturing and the extraordinary results achieved in construction techniques in order to detect where the ordinary and the extraordinary intersect and combine. Two principal themes will be explored: materiality of architecture and creation of identities. The mudbrick chaine operatioire based on routine and repetition (search for raw sources, selection of tempers, mudbrick production) is based heavily upon the idea of establishing social categories. The main focus will be on the possible to investigate, through archaeological data, how the construction process impacts upon society through a comparison of different sites and practices in the Mediterranean.

Bronze Coinage from the Parthian Empire in the 2nd Century BC - Local Identities Forged within the Imperial Order.
Alex Magub (SOAS/ The British Museum)
Coins are an excellent demonstration of routine and repetition within the Parthian Empire: for coins to be accepted as legal tender across the expanse of territory (stretching between modern Afghanistan and Iraq at its greatest extent in the 2nd century BC), these objects were minted with this "function" necessity in mind. Designs struck onto coinage were largely conservative, and denominations static. Due to this recurrence of established coin types, Parthian merchants were able to penetrate international trade routes and markets accustomed to the same monetary conventions.

Unfortunately, the more valuable and extraordinary silver denominations have become the focus of researchers, while smaller bronze issues are largely excluded from discussion. Although bronze coins were manufactured less precisely and exchanged over smaller distances than their silver counterparts, they demonstrate more iconographic variety. This is significant as they were exchanged predominantly amongst local populations.

A second presumption surrounding the study of Parthian coins focuses on the autocratic aura of the Parthian King as the main agent in monetary design. As a result, the motives of the individual bureaucrats who minted petty coins are taken for granted, as well as the role of the native populations who trusted the authority behind these issues and used them in everyday environments.

This discussion will use bronze coins and their archaeological contexts in order to explore these presumptions and open the debate on agency behind coin design. Was the iconography chosen for these objects influenced by higher, imperial powers or by local-level populations? Do these bronze coins display universal symbols, or do they reflect local ideas surrounding authority, tradition and identity?

Ordinary versus Extraordinary: Everyday Aesthetics in Iron Age East Yorkshire.
Helen Chittock (University of Southampton/ The British Museum)
The material culture of Iron Age Britain is famously plain and unembellished. Pots and bone tools, for example, are occasionally decorated with geometric or ring-and-dot designs but are generally undecorated. The body of material culture traditionally considered Celtic Art, often associated with ceremony and status, presents a significant contrast to the general assemblage of plain objects from Iron Age Britain. These metal objects, such as horse gear and weaponry, are highly decorated with swirling La Tene style patterns and often embellished with colourful beads and inlays.

The juxtaposition between plain and decorated objects is particularly apparent in East Yorkshire, during the period 400-100BC. Commonplace everyday items such as pots and bone tools are particularly plain, while a small number of unique and highly decorated metal objects are also found, generally within funerary contexts.

This paper will be the exploring the overlapping aesthetic traditions of East Yorkshire between 400 and 100 BC, using a holistic approach to material culture and considering rare Celtic Art objects in

the context of the plain and everyday material culture that dominates the archaeological record in terms of quantity. Discussion will be focussed on the design and production of particular aesthetics, what it means to comply with or break from tradition and the effects of the combination of everyday and extraordinary aesthetics on individual and communal identities.

Everyday heterarchies in the Iron Age of South East Scotland.
Mhairi Maxwell (The ACCORD Project, Digital Design Studio, Glasgow School of Art)
This paper will examine the everyday biographies of material culture from the south-east Scottish Iron Age, including from the recently published assemblage from Broxmouth Hillfort (Armit and McKenzie 2013), to argue for a heterarchical society (Crumley 2005). This is the idea that horizontal and vertical relationships were in flux, or have the potential to be, within the social order. Understanding heterarchy requires looking at the mundane and not a blinkered focus on the exceptional which highlights only hierarchies. This paper will present findings from my doctorate research which has made primary attempts to examine everyday material culture throughout the Iron Age (Maxwell 2012).
The social contexts of everyday activities, illuminated by mundane material culture of coarseware pottery, worked bone and stone tools, clearly needs further research for the Iron Age of south-east Scotland. Instability, changing relationships and adaptive roles in society become more visible in the archaeological record where there is the appearance of more diagnostic material culture in tandem with Roman withdrawal from the region in the later 1st and 2nd Centuries AD. However, scientific analyses of non-diagnostic material also have the potential to build up biographies which illuminate adaptive heterarchical realtionships within the south-east Scottish Iron Age.

(S29) The Watchful World; Animate Environments in Hunter-Gatherer Archaeologies
Organisers: Nick Overton (University of Manchester) and Barry Taylor (University of Chester)

Archaeology has become increasingly comfortable in exploring concepts of non-human agency in our narratives of past hunter-gatherers. Many of these accounts have taken inspiration, either explicitly or implicitly, from a wealth of ethnographic and anthropological literature that discusses animist ontologies of contemporary hunter-gatherers. But whilst these anthropological accounts highlight environments that are made up of a rich and diverse admixture of animate agents, including bodies of water, the weather and a rich variety of plant species, archaeological studies have concentrated on the agentic potential of objects or non-humans.
This is problematic, as it perpetuates a view of the physical environment as a passive backdrop to human action, and fails to appreciate how humans engaged in significant and meaningful relationships with the other agentic elements of the environment. As a consequence, our narratives also lack consideration of how these relations actively affect the wider interactions and engagements within particular environs. Archaeology, therefore, needs to acknowledge the agentic potential of all things in hunter gatherer environments, paying particular attention to as-yet overlooked human-environment relations as potentially socially meaningful engagements.
This session welcomes any discussion of archaeological hunter-gatherer human-plant-nonhuman-environment relationships that seeks to explore how humans engaged with elements of the wider environment in socially meaningful relationships. Of particular interest is how archaeology might combine increasingly accurate and rich data from palynological, paleoenviromental and zooarchaeological analyses with discussions of animate worlds, in order to produce detailed and informed archaeological narratives of human-environment interactions and relationships in the past.

9.00-9.15	**Introduction to the Session**
9.15-9.40	**Engaging with an animate world: the significance of caves in Mesolithic South West Britain.** Caroline Rosen, (University of Worcester)
9.40-10.05	**'We Make Our Home by the Giving Stone': Exploring Human/Object/Animal through the Magdalenian Mobiliary Art of Montastruc, SW France.** Andy Needham, (University of York)
10.05-10.30	**Rendering the world white: hunter-gatherer engagement with living landscapes. Rona Davis and** Jodie Lewis, (University of Worcester)
10.30-10.55	**The Mountain King: pastoralist interactions during the 2nd millennium BCE with mountain environments in North-West China.** Rebecca O'Sullivan, (University of Oxford)
Break	
11.30-11.55	**The constitution of life-world and its materialisation: a study of the emergent process of certain realities from Yayoi period Japan and Final Neolithic/Early Bronze Age England, UK.** Koji Mizoguchi, (Kyushu University, Japan)
11.55-12.20	**Getting to Know You. Exploring the Role of Daily Encounters and Interactions in the Development of Human-Nonhuman Relationships in Mesolithic Britain.** Nick Overton, (University of Chester)
12.20-12.45	**Getting to know all about you. Integrating palaeo-ecological data into accounts of human non-human interactions in the British Mesolithic.** Barry Taylor, (University of Chester)

Abstracts

Engaging with an animate world: the significance of caves in Mesolithic South West Britain
Caroline Rosen, (University of Worcester)
Caves are dynamic natural places that have been the venue for human action for thousands of years. During the Mesolithic they were used for both burial and non-burial type activities yet the cave context is often seen as a passive backdrop to these practices, particularly those which did not involve burial. An examination of cave use during the Mesolithic in south west Britain is revealing that caves were not simply convenient sites to shelter or bury the dead, these were places with their own special properties and identities which were integral to the practices they staged. By thinking of the cave as an active agent of the landscape and adopting an integrated approach through the examination of practice, cave architecture/space and landscape, the cosmological significance of the cave can start to be realised.

At different times and in different places caves seem to have been conceptualised and used according to the tempo of local needs and beliefs. By understanding the cave as an active agent, the interplay between place and practice, or between non-human and human agents, can start to nurture a particularised narrative that has a regional focus.

'We Make Our Home by the Giving Stone': Exploring Human/Object/Animal through the Magdalenian Mobiliary Art of Montastruc, SW France.
Andy Needham, (University of York)
The Late Upper Palaeolithic rockshelter of Montastruc, SW France, dating to c. 13,000 BP, is situated below a 29m high limestone cliff exposure, overlooking the river Aveyron, excavated by Peccadeau de L'isle in 1864 and again across 1866-67. The site is notable for its rich corpus of mobiliary art, with over 100 decorated organic pieces and 51 engraved stone plaquettes, now curated in the British museum after their purchase in 1887. The stone assemblage is almost entirely composed of weathered limestone blocks that detached from the rock face via natural freeze/thaw action. The organic assemblage is composed of a balance between bone and antler pieces, the former likely derived from animal kills and the latter likely derived from natural shed. The relations between

humans, animals and objects are here explored through the art directly, notably the significance of naturalistic forms and a rare therianthropic form, but also through the raw materials themselves, the provenance of which is used to explore the concept of 'gifting', the significance of place, as well as animal and object agency. Finally, process and transformation are considered in relation to evidence for the burning and destruction of the stone plaquettes.

Rendering the world white: hunter-gatherer engagement with living landscapes
Rona Davis and Jodie Lewis, (University of Worcester)
 The association of Mesolithic artefacts with early to mid-Holocene tufa deposits is well established in central southern England and also in other parts of the British Isles and Europe. However, recent research at a tufa depositing site near Midsomer Norton, Somerset has revealed that the nature of this association is more complex than many accounts suggest. A range of practices, dating to the Late Mesolithic, are represented which suggest that hunter-gatherers attached importance to the particular agentic properties of tufa.
Tufa, a calcium carbonate precipitate, is found at numerous spring lines in the region and deposition was at its zenith during the Mesolithic. It is a substance that can be seen to change with the naked eye, literally transforming from water to stone, altering the landscape as it discharged from the ground to bestow the environment with new properties, often at an observable rate. This phenomenon of 'stone growing' was a geological event happening in human time.
This material: dynamic, transmutable and in some ways liminal, invited a response from hunter-gatherer communities that suggests a recognition of, and a relationship with, tufa as an animate agent. For example, small pits were dug at the boundary of the tufa and items deposited, including fossils, coloured stones, flints, bone fragments and hand formed tufa balls. The selection of materials that might also be considered to have animate qualities suggests that this was an appropriate place to bring together and manipulate different agencies, creating or reaffirming social relationships between people and environment.

The Mountain King: pastoralist interactions during the 2nd millennium BCE with mountain environments in North-West China.
Rebecca O'Sullivan, (University of Oxford)
Archaeology is one of many disciplines where it has been argued that agency is not a human attribute, however putting these arguments into practise has proven difficult. Attempts to bring nature out of its role as passive backdrop to the dynamism of humanity were made in landscape studies, with natural features integrated with the human cultural milieu. However, the human focus has proven hard to shake and the environment is often left playing second fiddle to human-made features. Carved rock images (petroglyphs) in Bogda Glacier National Park, China, are good mediators for exploring the environments agentic role. The petroglyphs here are isolated from any other human-made features usually more easily imbued with agency and this absence of human dominance allows the effects of the third- and fourth-dimensions of landscape (weather, scenery, views and time) to stand out more clearly. At this altitude, the terrain is exposed and pastures are limited, indicating that the social significance of coming here was likely more to do with what the environment offered, than any "practical" considerations. Most importantly, the petroglyphs are not at the most obvious locus of social significance to us (the mountain summit), but are concentrated in river gullies. Feasibly then, social significance was attached to the rivers that allowed humans passage up the mountain. The mountain, then, did not just exert a bit of agency by influencing human choice, but constructed itself as focus of social significance through the ways it facilitated and limited humans.

The constitution of life-world and its materialisation: a study of the emergent process of certain realities from Yayoi period Japan and Final Neolithic/Early Bronze Age England, UK
Koji Mizoguchi, (Kyushu University, Japan)
This paper examines the ways in which modes of the spatio-temporal structuration of life-world were materialised. Such materialisation takes place as an emergent phenomenon, in which the reality of a given life-world is constituted through the mutual mediation of human strategic intension, experience, memory and the materiality of artefacts of various scales. This paper will illustrate the constitutive characteristics of such process by investigating selected cemeteries from Yayoi period Japan and Final Neolithic/Early Bronze Age England, UK.

Getting to Know You. Exploring the Role of Daily Encounters and Interactions in the Development of Human-Nonhuman Relationships in Mesolithic Britain
Nick Overton, (University of Chester)
Archaeological narratives of human-nonhuman relations, particularly in periods inhabited by hunter-gatherers, have become increasingly influenced by a growing raft of ethnographic and anthropological literature outlining alternative ontological views of nonhumans. Specifically, studies of groups with animist or perspectivist ontologies have challenged previous western perceptions, which consider humans and animals as ultimately separated. In these alternative 'zoontologies' nonhumans are understood as sentient, intentional agents, with the ability to act and, more significantly, 'act back'.
How does archaeology begin to implement these ideas? Were all nonhumans agents in the Mesolithic? A recurring feature of accounts of numerous animist groups is the assertion that not all species are agents, and not all individuals within a species are agents, suggesting a blanket imposition of agency in archaeological narratives is not useful. Instead, the literature indicates that experience and encounter are key in forming understanding; only those individuals and species experienced as behaving as sentient and intentional are considered as such. This paper considers how human understanding of nonhumans in the British Mesolithic was developed through the specific character of daily interactions and engagements. However, in the 'Watchful World', perhaps significant encounters and experiences were not restricted to humans and nonhumans…

Getting to know all about you. Integrating palaeo-ecological data into accounts of human non-human interactions in the British Mesolithic.
Barry Taylor, (University of Chester)
Whilst the idea of non-human agency has been adopted in archaeological narratives of past hunter-gatherers, these have often focused on animals and objects. However, many of the ethnographic accounts that archaeologists have drawn upon also describe the agentic character of plants, and rules of behaviour relating to the use of plants that are similar to those governing the interactions between human and non-human animals. This paper will explore the idea of plant agency, and the roles plants played in the complex interactions between humans and other-than-human persons in the British Mesolithic.

(S30) 'A 3D Digital Image Can Tell a Thousand Words.' The Application of Digital Imaging Technologies beyond Documentation
Session organisers: Joana Valdez-Tullett (University of Southampton / CEAACP); Marta Díaz-Guardamino (University of Southampton); Guillaume Robin (University of Edinburgh)

During the last decades, research on archaeological material (including rock art) has benefited from the application of a broad range of digital imaging technologies. Prominent amongst these are 2D image enhancement programmes (e.g. Photoshop, D-Stretch) and 2.5/ 3D imaging techniques (e.g.

laser scanning, photogrammetry and Reflectance Transformation Imaging (RTI)). Implementation of these technologies has contributed to the recording of uncountable rock art sites and artefacts around the world, but is still limited due to the need of specialized knowledge or lack a funding and has predominantly had a 'recording-approach'. Despite the production of accurate recordings and 'pretty pictures', relevant research questions that can be explored through these imaging techniques remain largely overlooked. Thus, the contribution of digital techniques to the advancement of research questions relevant to contemporary archaeological enquiry (e.g. process and temporality in the making of rock art; micro-topography of rock art panels) is still underestimated. This session seeks to explore the application of imaging tools for the examination of specific research questions on archaeological material culture such as artefacts/portable objects and/or rock art, rather than for simple documentation. Illustrating with examples of various contexts and chronologies, the contributors will discuss how these innovative technologies can be used to, not only reproduce images, but also contribute to their interpretation, meet research goals and solve complex archaeological problems.

13:00-13:20	**Experimenting with digital techniques for the study of rock-art (1980-2014): a review of approaches and problems.** Guillaume Robin
13:20-13:40	**Photogrammetry and RTI survey Hoa Hakananai'a Easter Island Statue.** James Miles, Mike Pitts, Hembo Pagi, and Graeme Earl
13:40-14:00	**Digital imaging and prehistoric imagery: a new analysis of the Folkton Drums.** Andrew Meirion Jones, Andrew Cochrane, Chris Carter, Ian Dawson, Marta Díaz-Guardamino Uribe, Lena Kotoula and Louisa Minkin
14:00-14:20	**Whom do you trust? Recording Pictish rock-art at Wemyss Caves, Fife.** *David Strange Walker*
14:20-14:40	**Recording engravings in Central Portugal using 3D scanning and Morphological Residual Models in multiple archaeological and geological contexts.** J. C. Caninas, H. Pires and F. Henriques
Break	
15:00-15:20	**Fusing ideas and methods in rock art research. The application of MRM digital recording technique from fieldwork to interpretation.** Lara Bacelar Alves (University of Coimbra); Hugo Pires (University of Porto); Mário Reis
15:20-15:40	**Multi-technique imaging of Palaeolithic cave art paintings in Kapova Cave, Russia.** Alexander Pakhunov
15:40-16:00	**New Ways of Engaging with and Understanding Archaeological Contexts.** Suzanne Villeneuve and Julian Henao
16:00-16:20	**Dirty RTI.** Louisa Minkin and Ian Dawson
16:20-16:40	**Recording acoustics to engage with the multisensory experience of the medieval Great Hall.** Catriona Cooper
16:40-17:00	**Discussion**

Abstracts

Experimenting with digital techniques for the study of rock-art (1980-2014): a review of approaches and problems.
Guillaume Robin (University of Edinburgh)
The idea of using computer techniques to document and visually analyse rock art is not very recent, with first experimentations of digital enhancement of photographs of rock paintings and photogrammetric modelling of decorated caves being made as early as the late 1970s and early 1980s. While recording technologies have since exponentially developed and varied, especially since 2000, interesting archaeological problems have emerged, in particular at the meeting point between technological and human factors. Digital documentation techniques have been immensely useful

and permitted to answer questions that were not possible to answer before, but what exactly do we want from them? How much can we learn on rock art from these techniques? How new technologies have influenced research strategies in the last 30 years? Conversely, to what extent have human factors been impacting the conceptions, processes and results of digital applications? The paper will briefly review the development of digital applications in the field of rock art studies and will discuss the impact of these technologies on archaeological practices and approaches.

Photogrammetry and RTI survey Hoa Hakananai'a Easter Island Statue
James Miles (University of Southampton and Archaeovision), Mike Pitts (British Museum), Hembo Pagi (University of Southampton and Archaeovision) and Graeme Earl (University of Southampton)
Hoa Hakananai'a is the larger and better known of two Easter Island statues in the British Museum, both taken from the island by a Royal Navy ship in 1868. Though relatively small, at 2.4m high, and carved atypically in basalt, it is widely regarded as one of the finest and best preserved statues from the island. It is further distinguished by a group of exceptional petroglyphs on the back, apparently carved at some time after its manufacture. It has a strong place in modern western culture, inspiring prominent writers and artists, and was selected by museum director Neil MacGregor as one of the 100 objects with which he told the history of the world. Yet the statue has received little attention from archaeologists. Its original context has never been examined, and contradictory interpretations of the petroglyphs mostly rely on the evidence of photos taken by others rather than first-hand study. A 3D laser scan conducted in 2006, with a quoted resolution of 3mm, remains unpublished (Van Tilburg 2007) and is unavailable for investigation. The paper will focus on the capture of photogrammetry and Reflectance Transformation Imaging as tools to investigate, for the first time, a systematic study of the petroglyphs. The combination of photogrammetry and Reflectance Transformation Imaging allows for a three dimensional model that contains photographic results from the RTI overlaid as textures. Discussed within this paper will be the acquisition and processing of the data, highlighting the difficulties found within both stages due to limited access and the size of the statue. The results will discuss how these methods can aid academic examination through the disproval of observed petroglyphs found within some academic papers and highlight through documentary evidence new and undiscovered petroglyphs; it will discuss how these tools, as recording techniques, can contribute to wider dissemination of the Easter Island statue through online access, not only through a virtual model of the statue but also through web RTIs. The paper will furthermore discuss how these techniques can be used within conservation and reproduction of its original form through the addition of colour once associated with the statue.

Digital imaging and prehistoric imagery: a new analysis of the Folkton Drums
Andrew Meirion Jones (University of Southampton), Andrew Cochrane (Cardiff University), Chris Carter (University of Southampton), Ian Dawson (Winchester School of Art), Marta Díaz- Guardamino Uribe (University of Southampton), Lena Kotoula (University of Southampton) and Louisa Minkin (Central Saint Martins)
The Folkton 'Drums' are the most remarkable decorated artefacts from Neolithic Britain. A new analysis using Reflectance Transformation Imaging (RTI) and photogrammetry (PG) reveals significant new evidence for previously unrecorded motifs in addition to plentiful evidence for erasure and reworking. A case is made for understanding the decoration of these chalk artefacts as an ongoing process of working involving experimentation. The authors also argue that such practices of making may have been more widespread in Neolithic Britain and Ireland. Additionally the study demonstrates the ability of these new techniques to not only record visible motifs, but to clearly document erased and reworked motifs.

Whom do you trust? Recording Pictish rock-art at Wemyss Caves, Fife.

David Strange Walker (Trent & Peak Archaeology / York Archaeological Trust)

In 2013 the York Archaeological Trust and the SCAPE Trust began recording rock art at Wemyss Caves, Fife. These sandstone caves, open to the sea, contain the largest number of Pictish carvings in Britain, and are at serious risk of destruction from ongoing coastal erosion. The YAT team used a suite of recording techniques including laser scanning, photogrammetry. structured light scanning and RTI photography to record the carvings within their landscape context, and have made their work accessible through an innovative interactive web portal at 4DWemyssCaves.org. This work has been nominated for the British Archaeological Awards in 2014. However comparisons between the super-accurate recording work in 2013 and previous records of the carvings from the last two centuries have shown some oddities and inconsistencies. This paper will consider the strengths and weaknesses of the project's chosen recording techniques, compare the 2013 work with that of previous scholars, and ask the question: *Whom do you trust?*

Recording engravings in Central Portugal using 3D scanning and Morphological Residual Models in multiple archaeological and geological contexts.

J. C. Caninas (CHAIA - Center of Art History and Artistic Research, University of Évora, Portugal), H. Pires (CICGE - Research Centre for Geo-Space Sciences, University of Porto, Portugal), F. Henriques (AEAT - Upper Tagus Studies Association, Portugal)

In this paper we present and discuss the results of the tests carried out to assess the suitability of the Morphological Residual Model (MRM) approach as a recording system for carvings and engravings in multiple archaeological and geological contexts. The selected case-studies are located in four counties of the central region of Portugal (Ansião, Sabugal/Guarda, Proença-a-Nova and Vila Velha de Ródão) and illustrate three common lithology types in this region (limestone, granite and greywacke). They also include a significant variety of engraving techniques, thematic and chronologies from recent Prehistory to the Contemporary Era, and have all been previously recorded by direct tracing in transparent film.

The 3D scanning surveys used for the MRM calculations were accomplished using a digital SLR camera for capturing overlapping sequences of photographs. Photogrammetry and dense image matching were later used for calculating dense 3D point-clouds from the image sets. The MRM was used to increase the contrast of micro-topographic features of the 3D models, thus enhancing the visual perception of the surface morphology. Using this method, the depiction of engravings becomes an automated and objective procedure, increasing the amount of available information for archaeological interpretation. The results are compared to those obtained in the past, using conventional tracing methods. From this experience we discuss the advantages and limitations of this new documentation technique.

Fusing ideas and methods in rock art research. The application of MRM digital recording technique from fieldwork to interpretation.

Lara Bacelar Alves (University of Coimbra); Hugo Pires (University of Porto); Mário Reis (Parque Arqueológico do Vale de Côa)

Three-dimensional recording techniques and digital manipulation of images are currently fulfilling the major revolutionary shift in rock art research probably since the first use of photography for the recording and public presentation of cave art by Emile Rivière, in 1897, or the use of polythene film for tracing in the 1950s. Many actors involved in the development and application of these new techniques have been emphasizing their importance in terms of site recording and preservation yet the benefits of these technologies go well beyond them. They may start at the very beginning of a rock art fieldwork project and accompany the whole process of interpretation. Thus, to what extent do 3D digital recording techniques contribute to the current epistemological debate in rock art studies?

A recently developed technique for enhancing visual perception of shape in 3D models, the Morphological Residual Model (MRM), is being tested in the context of a research project on the open-air rock art assemblage of Monte Faro (Valença, Portugal). Here, the large majority of carved rocks exhibit cup-marks, cup-and-ring motifs and animal figures typical of the Iberian Atlantic Art tradition. The results achieved so far emphasize the ability of the MRM approach not only to reveal fainted images but also as an innovative and effective way of depicting morphology, expanding its application to the dialectical analysis of rock carvings from the landscape to the rock face.

The original character of this project lays on the fact that it was designed after our belief that the use of new technologies in Archaeology can only contribute to real advances on methodological grounds if they are able to fully merge with the practice and essence of archaeological research. In other words, new technologies should not be seen as mere additional tools in site recording but as devices that are actively and fully embedded in the dynamics of Archaeology as a science.

Multi-technique imaging of Palaeolithic cave art paintings in Kapova Cave, Russia.
Alexander Pakhunov.
Over fifty paintings from Kapova Cave (Southern Ural, Russia) created using different paint recipes on numerous substrates have been described and extensively characterized by our team. It was found that the microclimatic and hydrological regimes vary progressively throughout the cave. This led to the formation of multiple unique locations each possessing its own set of features. Multispectral imaging, reflection transformation imaging (RTI) and photogrammetry as well as microanalysis of the samples were used to study and classify the influence these features exerted on the state of the paintings. Due to the mineral deposition/growth on the surface of some paintings resulting in significant changes in immediate visibility, it is of paramount importance to circumvent this obscuring factor.

In 1960s a painted panel in the chamber of Signs was uncovered from under thick calcite deposits. We successfully applied RTI to studying even minor changes in the surface micro topography of this painted panel and tracking down the general course of previous restoration attempts. Digital infrared imaging allowed us to virtually "peel" away thin layers of calcite and observe the presence or absence of painted motifs that are closely related to the paint recipe and that serve as a basis for further classification studies. UV Fluorescence Imaging was used to determine the approximate date and areas of the conservation works as well as the extent of bio-degradation of the paintings in different zones in the cave. Photogrammetry proved valuable for recording of the three-dimensional relief of the paintings on the walls. It also provided us with some information about relative contamination of the walls with soot formed from burning torches or wildfires.

New Ways of Engaging with and Understanding Archaeological Contexts
Suzanne Villeneuve (University of Toronto & Simon Fraser University) and Julian Henao (Simon Fraser University)
Digital and 3D methods can help to advance recording, analysis and ultimately interpretation of complex stratigraphy and challenging interpretive contexts such as ritual structures. At the prehistoric pithouse village site of Keatley Creek on the Canadian Plateau, the current research program focuses on the timing and conditions surrounding the emergence of large aggregated villages and understanding the relationship of ritual developments in relation to the emergence of complexity. This has involved a large-scale effort requiring a much finer resolution of recording and analysis than is possible to achieve through traditional methods. Being able to correlate and examine results in real time through digital and 3D methods provides a critical feedback benefit for the excavations and enhances the quality of the interpretative process. Integrating various digital methods in the field can be structured so as to require excavators to continually engage in the critical evaluation of deposits thus also providing positive feedback between the excavations and excavators. Digital and 3D methods are paving a new way of engaging with and understanding archaeological contexts and sites. This presentation will highlight combinations of methods

(involving 3D scanning, Photogrammetry, GIS, auxiliary software, video, high resolution imaging and image processing, and other techniques) that illustrate how interpretive processes benefit from a digital approach.

Dirty RTI
Louisa Minkin (Central Saint Martins) and Ian Dawson (Winchester School of Art)
How can artists work with new visualization technologies?
How do the instrumental tools of technologized vision, techniques such as photogrammetry, reflectance transformation imaging [RTI] and 3D scanning, inflect knowledge production?
What happens when we 'look' at historic objects with post-epistemological hardware? Can we use cooperative digital technologies to construct a communal optic?
In trying to grasp how we might put these technologies to work, we used them against the grain, taking cultural heritage recording practices to the Aylesbury Estate in South London. Taplow House on the Aylesbury had a row of forgotten shops – a cab office, a laundrette, a butcher's - a street in the sky that was closed up in the early seventies: our recent past eroded, a stratigraphy of the mundane. This site is currently under siege: demolition has begun.
Our archaeological colleagues referred to our recording attempts at Taplow House as 'dirty RTI'. We had become interested in the artefacts of the process itself, the shiny black ball used to register each shot, the camera recording itself in a mirror, dirt on the screen, clouds and ripples in the processing; excitable and sensuous surfaces. Constructing the buildings in Photoscan produced ruined monuments from the future, unstable depopulated sites, 'inadequate descriptive systems' of expropriation and dispossession.

Recording acoustics to engage with the multisensory experience of the medieval Great Hall
Catriona Cooper (Archaeological Computing Research Group/University of Southampton)
Understanding the experience of sound in the past is becoming a rising field of interest in archaeology. As in 3D imaging, the tendency has been to record the properties of a space (room, landscape, site) without engaging with how that recording can be used to investigate complex archaeological questions. In this paper I present a case study detailing the recording of the acoustical properties of the Great Hall at Ightham Mote and the 3D modelling of the same space towards the simulation of the acoustical properties. I present how the results of this acoustical recording and 3D modelling can inform our understanding of the multisensory elements of a space which has largely been understood according to its visual experience.
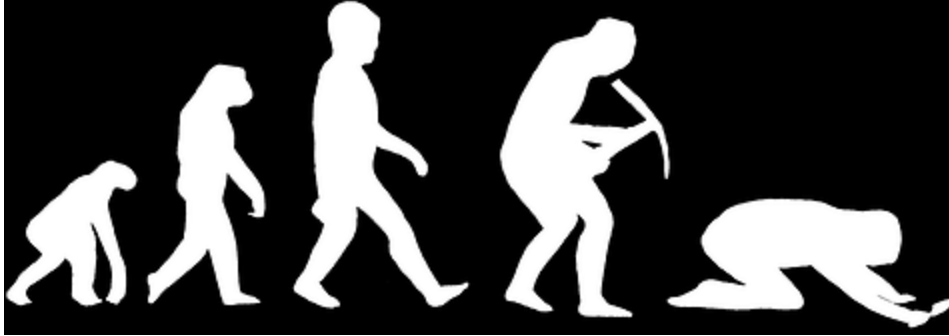
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