

It takes two

Publishing Proceedings on experimental archaeology

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• **The compilation of articles on experimental archaeology divides the subject into different fields according to a theoretical template and presents a comprehensive introduction to it, unfortunately only from an American perspective.**

Introduction

Out of the blue, a compilation of (mostly American) articles on experimental archaeology was published in 2002. This volume grew out of a symposium session on Experimental Archaeology that was co-organized by James R. Mathieu and Andrew W. Pelcin for the Society for American Archaeology annual meetings in Chicago, Illinois in 1999. Mathieu continued searching for more authors for these Proceedings and ended up with 11 articles (**fig. 1**). Ten of those were written by Americans or Canadians; he found only one in Great Britain and clearly could not get any further. How come, that there were no other European experimental archaeologists involved in the discussions, as this book witnesses? Where are the Scandinavians, Germans or French to mention just a few? How can we all pursue developments in our field when the different regions in the world or even Europe are hardly in contact with each other? At the 2004 European convention of archaeologists (EAA) in France, a session on experimental archaeology was organised. Five of the seven lectures were on French subjects and the other two Italian. At the European convention on experimental archaeology in Germany (Tagung) in the same year, 13 lectures are foreseen, all of the authors

originating from the Germanic speaking countries.

Both the French and German groups could have connected, but Europe is still too regional. Our future lies in connecting, not reinventing the wheel, but performing again and again experiments with other peoples' theories and methods. If we are serious about experimental archaeology and want to move beyond the personal or group experience, we should make connections, both between the different language regions in Europe as well as intercontinental. The two tools for this are: use of English as a *Lingua Franca* and the use of the internet. EX-ARC can promote both of these goals excellently, among others through their website at www.exarc.net.

A new grid for experimental archaeology

Besides witnessing a geographical division that separates so many, Mathieu gives us a division in the different fields of experimental archaeology that leads to more control over the field. Such a division does not have to depend on material categories but on a theoretical template. But this is not the main objective. He wishes to offer a reader for teaching at university. This volume should be welcomed all across Europe and maybe we should try

to connect with the interesting thoughts and projects of our colleagues.

Mathieu's opening address (*Experimental Archaeology: Replicating Past Objects, Behaviours, and Processes*) offers the framework, the rest of the book is based upon. In fact, after reading the introduction, one should be able to have a better understanding of experimental archaeology in general, being able to pin down any experiment one encounters to a specific category and therewith, understand its potential and individual value.

Mathieu uses the same line of reasoning when considering the hypothesis forming and testing experiments as used in other places (like Richter 1991) and concerns the idea of providing or enhancing analogies for archaeological interpretation. He takes a further step by defining

a hierarchical typology of experimental archaeological research. Many have gone before him and at first sight his categories seem slightly similar to other approaches. Mathieu is not the first and his hierarchical division solves only part of the problem experimental archaeology has. A clear methodology is still lacking.

Without describing the typology in detail, the logic is made clear by the names of the categories themselves. Hopefully, the short list of catchwords will encourage further reading of the book (fig. 2).

Not all work is experimental

Thankfully, Mathieu suggest declassifying of certain kinds of activities, which others label as experimental archaeology. Methodological experiments

<p>Introduction Experimental Archaeology: Replicating Past Objects, Behaviors, and Processes by James R. Mathieu</p> <p>Section 1: Object replication Monitoring Developments: Replicas and Reproducibility by Genevieve LeMoine; Musical Behaviors and the Archaeological Record: A Preliminary Study by Ian Cross, Ezra B. W. Zubrow, and Frank Cowan; Distinguishing Metal (Steel and Low-Tin Bronze) from Stone (Flint and Obsidian) Tool Cut Marks on Bone: An Experimental Approach by Haskel J. Greenfield;</p> <p>Section 2: Behavioral replication Controlled Experiments with Middle Paleolithic Spear Points: Levallois Points by John J. Shea, Kyle S. Brown, and Zachary J. Davis; Reconceptualizing Experimental Archaeology: Assessing the Process of Experimentation by James R. Mathieu and Daniel A. Meyer; Seeing What Is Not There: Reconstructing the Monumental Experience by Alexei Vranich; Space, Place and Inka Domination in Northwest Argentina by Chad Gifford and Félix Acuto;</p> <p>Section 3: Process replication This Little Piggy Went to Cumbria, This Little Piggy Went to Wales: The Tales of 12 Piglets in Peat by Heather Gill-Robinson; SMELT: Economies of Scale by Carl Blair; Experimenting with Migration: Simulating Population Growth and Continental Migration by Ezra B.W. Zubrow</p>
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Fig. 1 List of contents of the book under review. ■

(for example to test the usefulness of new excavation techniques) have always been set aside from ‘regular’ experimental archaeology. ‘Social interpretations’ are also disregarded by Mathieu. Indeed, noting how much effort it takes ‘us’ to build a life size model of an Iron Age house might tell us nothing of how it was in the past because there is no feed back possible with archaeological data. A good reason to have these “modern experiences” removed from experimental archaeology. They might lead to experiments, but are not experiments themselves.

Getting a grip

Mathieu also addresses the problem of the qualities of controlled experiments and repeatability. It is clear that Mathieu tries to give a method for those searching to control (their own) experiments. He succeeds in this by describing his ideas in very clear language. The introduction is well built, but it needs to be continued. The articles that follow are not this continuation of Mathieu’s line of thought, but an illustration that it is possible to use the hierarchical typology.

Examples

Example Section 1: Object replication

Genevieve LeMoine: Monitoring Developments: Replicas and Reproducibility, pp 13 – 19.

LeMoine’s trade is the use of wear analysis, in this case on bone, antler and ivory. Her activities discussed here are the making and use of tools, followed by microscopic examination to identify traces of use. She produces and uses visual replicas of surfaces of artefacts, which hold use wear traces.

Like a botanist, a use wear analyst needs a reference library. But for an analyst like LeMoine and her colleagues this is a never-ending story: too many possible actions, tools and materials. Descriptions in word of specific use wear traces are not enough to identify a specific type of wear and in contrast to what most outsiders may believe neither are photos. The same traces may look different, even when using two microscopes of the same kind.

LeMoine discusses the advantages of using highly detailed surface replicas of authentic and experimental use wear traces. The technique she describes (using acetate tape instead of silicone rubber) enhanced her research and analytical flexibility. Now she can make “prints” with such ease, that she is able to record different stages of use on an experimental tool as well as making different sets of “prints” to share her data with others.

LeMoine gives a clear description of the problem, the history as well as possible solutions.

Object replication

visual replicas
functional replicas
using real artefacts or “full replicas”

Behavioural replication

functional replication
comparative experiments
phenomenological studies

Process replication

formation process replication
technological process replication
simulation studies

System replication

Ethno archaeology
Ethnology

Fig. 2 Short list of catchwords to understand Mathieu’s division of experimental archaeology. Figure from reviewed book. ■

Example Section 2: Behavioral replication

James R. Mathieu and Daniel A. Meyer: *Reconceptualizing Experimental Archaeology: Assessing the Process of Experimentation*, pp 73 – 83.

This presentation included a case study and is very clearly written while the information is helpfully stuffed away in 8 figures to which one can turn.

Mathieu and Meyer use the case study, which was research into the effectiveness of different kinds of axes, as an example to make their point. It is true that some foreign literature was used, as it should be because this project is a large case study. Obviously, they have read the Draved experiments in Denmark on the effectiveness of different kinds of axes, but what about more recent work in Europe? The usability of flint tools was tested in Lejre in 1997 (although published only in a small circle), and have they not seen the “Bilanz” books themselves? In the 1991 volume, a comparison was made between flint, bronze and steel tools and at the latest ‘Tagung’ conference in Oldenburg 2002; a presentation was given on forest clearance.

As Mathieu and Meyer argue, most experiments start off with one aim and end up at a quite unexpected point. Experimenters should have more realistic goals in mind before starting their experiments. This way they would not get disappointed so easily and reject experimental archaeology as useless. ‘The washing powder itself is not to blame’ (after *Flamman 1991* - unpublished)!

Experiments tend to be focussed on technological matters but during the process, other aspects start to intervene, broadening the research into more economic and / or social focuses. Does this disappoint the archaeologist who realises

that not all aspects are quantifiable?

The authors want to step away from the impossibilities. Using an example, the paper indeed goes through the stages of experimentation: design, trial and analysis.

Experiments are either run by empiricists looking for data or processualists looking to delineate processes and / or test hypotheses.

Mathieu and Meyer suggest that in all three stages of experimentation, identification of variables and refining the context takes place as well as the forming of new hypotheses. Seen this way, an experiment is a major experience gaining and idea-collecting activity! In the trial phase, the researcher is confronted with tangible situations. To quote from the gentlemen as an illustration: *“our dealing with a number of practical problems, such as the density of the under bush [during their experiment they cut 100 trees, rp], the proximity of obstacles prohibiting the full swing of the axe, and finally problems with the axes themselves gave us a good appreciation of some of the human variables such as frustration, anger and relief.”* Only in the final stage, the analysis phase, previous hypotheses can be assessed.

Following their suggestions, most experiments are mainly hypotheses generating and to a less extent hypothesis-testing. Gaining first hand technological experience is another positive.

The most important quality of this paper lies in clarifying the need for (experimental) archaeology to look beyond the technological, or as they state: *“experimentation provides a better understanding of the context of past human behavior.”*

It is a pity, however, that this issue is only paid attention to in the conclusion of the article, even though it is exactly this why this article is added as an example of “replicating behaviours”.

Example Section 3: Process replication

Heather Gill-Robinson: This Little Piggy Went to Cumbria, This Little Piggy Went to Wales: The Tales of 12 Piglets in Peat by, pp 111 – 126.

Mrs Gill-Robinson's investigation was concerned with prehistoric human bog bodies in Northwestern Europe. She wished to determine which environmental factors may contribute to the preservation of mammalian soft tissue in bogs. This meant an investigation into a bio-natural process, not a process in past human society.

Besides her experiments, she set up a database with information on this much talked of category of archaeological finds.

Her research is reminiscent of the Lejre research on the microclimatic factors, which lead to the favourable preservations of human bodies in Bronze Age grave hills in Denmark. Just like in Lejre, Gill-Robinson decided to bury "fresh meat" in order to excavate it later. The Lejre research (*Breuning-Madsen, Holst & Rasmussen 2001*), was executed roughly in the same time frame as this research.

Most articles on bog bodies have a narrow focus; their conclusions are based on the non-representative and small group of well preserved samples. Setting up a bog-body-database and evaluating it was necessary to draw more balanced general conclusions. In total, the database included 369 individuals, which lead the author to state that: "*the commonly held belief that most humans in peat bogs were subjected to tortuous rites and vicious deaths does not seem to be supported by the evidence (...)*". It is a small minority

of the bodies, which carry evidence of such actions.

During World War I experiments were already being executed to understand the preservation of bog bodies. In Denmark, Ellerman (*Ellerman 1917*) even subjected human skin to various peat mixtures in his lab. Gill-Robinson decided not to work under controlled laboratory conditions but used fully functioning peat bog ecosystems. Especially if one cannot determine all factors beforehand and one wants to qualify, not quantify the variables, approaching the original circumstances as close as possible is a good step to take. When selecting the modern burial locations for her experiment, one of the criteria used was that the site had produced preserved material in the past, the presence of sphagnum moss was a constant factor. Three locations were selected where a number of specimens were buried. As a substitute for human remains, piglets were chosen. Obviously, they lack some characteristics of adult human bodies, but what was the alternative? (**Fig. 3**)

One of the results of excavation between 6 to 36 months later was that the



Fig. 3 Piglet, excavated after having been in the bog for six months. Picture kindly provided by Mrs Gill-Robinson. ■

Table 6: Brief Summary of Excavation Results

LD. NUMBER	LOCATION	DURATION OF BURIAL	EXCAVATION RESULTS
PL1	Tregaron, Wales	36 months	Recovered approximately 40 piglet bones - severely demineralized - bones could be pressed flat; discoloured dark brown; very small pieces of skin recovered, tanned very dark brown and adipocere clinging to back.
PL2	Tregaron, Wales	6 months	Easily identifiable as a piglet. Anterior upper portion - white adipocere-like mass, rear limbs disarticulated and "floating" within white mass; front well-preserved; preserved organs retrieved.
PL3	Glasson Moss, England	17 months	Small bits of skin. Tiny pieces of flesh - liquefied. Small, demineralized bones.
PL4	Glasson Moss, England	17 months	Bits of skin - several pieces up to 1 inch long. Several large (limb) bones - demineralized.
PL5	Glasson Moss, England	17 months	Skeletal material mixed in peat, demineralized. Few pieces of skin. No flesh.
PL6	Glasson Moss, England	17 months	Limb and fragments of cranial bones mixed in peat, demineralized. Few bits of skin. No flesh.
PL7	Glasson Moss, England	17 months	Well preserved on sight, pink and plump - exploded upon gentle touch. Liquefied organ leakage. Some cranial fragments and ribs. Translucent skin. Melted through fingers on touch.
PL8	Glasson Moss, England	17 months	As PL7
PL9	Whixall Moss, English/Welsh border	17 months	Not recovered due to very high water levels on site - area under more than 3 feet of water.
PL10	Oaf's Orchard, English/Welsh border	17 months	Wrapped in coarse weave cotton tea towel - towel preserved: dark-stained, strong and flexible. Animal well-preserved head and rump, deteriorated abdominal region. Internal organs present. Flexible bones.
PL11	Bettisfield Moss, English/Welsh border	17 months	Not found - presumed scavenged as animal interference, probably fox.
PL12	Tregaron, Wales	11 months	Not found.

Fig. 4 One of the tables belonging to Gill-Robinson's "This Little Piggy Went to Cumbria, This Little Piggy Went to Wales: The Tales of 12 Piglets in Peat". Picture from reviewed book. ■

bodies had moved. This was not just because of their shrinkage, but clearly, bogs are in flux. Another result was the opinion that water level and its temperature are among the determining factors in the preservation of soft mammal tissue in bogs.

When describing the excavated piglets, it was not in each case immediately clear what the readers should focus on: the author decided to add more primary data than might at first seem necessary. With these primary data presented, the readers can draw their conclusions themselves, but some of it could have found a place in the tables and even then, some of the information presented in tables could have been transformed into or augmented by graphics as well. (Fig. 4).

Conclusion

With over 150 large sized pages on experimental archaeology at academic level, this book offers food for thought. It is a great introduction into academic

experimental archaeology, albeit constrained to "the American Way". The weakness of Mathieu and his authors is that they did not seek any influences from Europe. Our weakness may be that we do not inform ourselves on what is happening across the ocean. I see the book as an invitation for an exchange of and discussion on experimental archaeology across the world. We can all benefit, not just the academics.

The price of this BAR is not as scarily high as the last 'big' book on experimental archaeology (*Stone & Planel 1999*) which now tops out at about € 150,00 (excl. P&P). For less than 1/3rd of this price the Mathieu book is yours.

Book information

James R. Mathieu (editor) (2002): *Experimental Archaeology – Replicating past objects, behaviors, and processes*, BAR International Series S1035, ISBN 1 84171 415 1. £26,00 (about € 39,00). 158 pp, numerous photographs, charts, drawings. Published by Archaeopress, available through Hadrian Books: Gordon House, 122 Banbury Road, Oxford OX2 7BP, England, Tel +44 1865 310431, Fax +44 1865 316916, e-mail: bar@hadrianbooks.co.uk Web: www.archaeopress.com

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Summary

Es gehören zwei dazu. Zur Veröffentlichung von Ergebnissen zur experimentellen Archäologie

Dieser Band ging aus einem Symposium zur Experimentellen Archäologie hervor, das von James R. Mathieu und Andrew W. Pelcin für die Gesellschaft für Amerikanische Archäologie auf dem Jahrestreffen in Chicago, Illinois, im Jahre 1999 mitorganisiert wurde.

Sie liefert uns eine Einteilung der verschiedenen Arbeitsbereiche der Experimentellen Archäologie, indem Sie eine klar definierte, hierarchische Typologie der experimentalarchäologischen Forschung aufstellt. Das Problem der Qualität von kontrollierten Experimenten und ihrer Wiederholbarkeit wird ebenfalls behandelt. Einzelthemen dienen dabei als Illustration für die Nutzung der hierarchischen Typologie.

Der Band war ursprünglich "nur" als Compendium für den universitären Unterricht angelegt, er ist aber gleichzeitig ebenso eine hervorragende Einführung in die akademische Experimentalarchäologie, auch wenn diese dabei auf die amerikanische Perspektive beschränkt ist.

Cela nécessite les deux

Cette publication est composée des exposés prononcés au symposium sur l'archéologie expérimentale. Organisé par James R. Mathieu et Andrew W. Pelcin, il a eu lieu à Chicago, Illinois, en 1999, à l'occasion de la conférence de Society for American Archaeology.

L'archéologie expérimentale y est divisée en divers domaines à l'aide de la typologie hiérarchique élaborée pour la recherche archéologique expérimentale. Le livre traite les problèmes de la qualité et ceux de la répétition de l'expérience contrôlée. Les différents articles servent d'illustrations de la typologie hiérarchique appliquée.

Le livre est envisagé comme manuel pour les écoles supérieures. Il s'agit d'une bonne introduction dans l'archéologie expérimentale académique quoique restreinte sur la voie américaine.

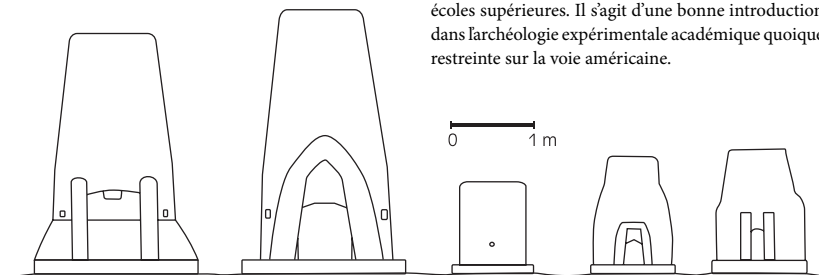


Fig. 5 Drawing used to clarify the subjects of the SMELT project in the UK. Picture from reviewed book. ■