



MATERIAL PROPERTIES

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*Friday Forum of UCL's Arts & Humanities and Social & Historical Sciences Faculties Institute of Graduate Studies (Joint FIGS)
28 February 2014*

*Slade Research Centre
Woburn Square
London WC1H 0HB*

Properties are often ascribed to materials and are distinct from the kinds of qualities which apply to objects as forms. The cultural variety between material properties is particularly difficult to unpack and can appear in a scientific sense to be inevitably associated with or fixed to particular materials.

Rather than being fixed in materials, properties comprise ways of knowing and ways of experiencing potentialities and limitations, which become relevant at specific moments, places, times, and with particular people. Thus material properties are not simple constructs, but are often socially transformative, existing in practice as a compound of persons, objects, practices and knowledge.

At a time when new materials are being created and used inventively and experimentally, this Forum asks what we can learn in both historical and contemporary contexts by examining materials first and foremost, as opposed to starting with artefacts or processes.

Presentations are centred around the 3 following themes:

Extension - Substitution

In what ways can materials be used as extensions or substitutions within conceptual or physical domains? How do materials allow us to push against and alter boundaries between human, non-human and environmental concepts?

Embedding and extracting information

How is information embedded in, or extracted from materials? Do new formats of information emerge through researching materials?

Methods of interrogation

What kinds of research methods are used to investigate materials? How do these methods differ across disciplines and how can they be applied in different contexts?

More info:

<https://www.ucl.ac.uk/ah/figs/figs-friday-forum/material-properties>

Contact camilla.sundwall.11@ucl.ac.uk for any enquiries.

IMMATERIAL - concurrent exhibition

Artists from the MPhil/PHD programme at the Slade School of Fine Art explore a range of views, approaches, and ideas in relation to material manifestations of creative thinking and research. Tours of the exhibition will take place during registration and lunch.

<http://www.ucl.ac.uk/slade/events/immaterial>

PROGRAMME



09.30-10.00 **Registration and coffee/tea**
Tour of exhibition

10.00-10.10 **Introduction**
Camilla Sundwall (organizer)

Strand 1 **Extension and Substitution**
Chair: Dr Leonie Hannan

10.10-11.05 **The Art Exhibition as a Site of Transformation**
Naomi Siderfin, The Slade School of Art, 10 min.

Creating a Second Life for Museum Collections through 'Souvenirialisation'
Yunci Cai, Institute of Archaeology, 10 min.

Hacking you better
Lydia Nicholas, Anthropology, 10min

Architected Materials
Sarat Babu, The Bartlett School of Architecture, 10min.

Defining Coolness and Accessing Creativity Through Studio Practice
Sarah Fortais, The Slade School of Art, 10 min.

11.05-11.25 **Discussion**

11.25-11.45 **Break**

Strand 2 **Embedding and Extracting Information**
Chair: Dr Adam Drazin

11.45-12.40 **Sustainable Materials and Knowledge Transfer: The Death of the Sensuous Materials Salesman**
Dr Sarah Wilkes, Institute of Making, 10 min.

Free from Censure: Material Meanings Embedded in Nineteenth-Century Presbyterian Communion Tokens
Ruth Mason, Geography, 10 min.



Unlocking Past Human Behaviour Using Flint

Josephine Mills, Institute of Archaeology, 10 min.

Continuous Weaving: tales of spiders, threads and making across species

Dr Eleanor Morgan, The Slade School of Art, 10 min.

Exploring barkcloth with the Royal Botanic Gardens, Kew

Emily Brennan, Anthropology, 10 min.

12.40-13.00 **Discussion**

13.00-14.00 **Lunch** (provided)
Tour of exhibition

Strand 3 Methods of Interrogation

Chair: Dr Martin Holbraad

14.00-14.55 **Assessing the stability of archival cellulose acetate films**

Dr Emma Richardson, History of Art, 20 min.

Experimental and Analytical Investigation of Black Bronze Alloys

Agnese Benzonelli, Institute of Archaeology, 10 min.

Follow the Thing: Poppies, Geopolitics and the Circulation of Meaning

Joseph Thorogood, Geography, 5 min.

Complex materials: the hidden fabric of digital life through cables

Nadia El Mrabet, Anais Bloch, Anthropology, 10 min

Material Histories of Chemistry

Dr Simon Werrett, Science and Technology Studies, 10 min.

14.55-15.05 **Short break**



Strand 3 continued

- 15.00-15.30 **The Law of the Good Neighbour**
Jin-Woo Choi, History, 10 min.
- Hand in Glove: Archival Paperwork, Method and Materiality**
Maryanne Dever, Department of Information Studies, 10 min.
- Heritage Smells! Using Volatile Emissions to Understand Historic Objects**
Katherine Curran, Centre for Sustainable Heritage, Bartlett School of Graduate Studies 10 min.
- 15.35-15.55 **Discussion**
- 15.55-16.15 **Coffee/tea**
- 16.15-16.25 **Summary**
Dr Sarah Wilkes
- 16.20-17.05 **Round table discussion**
Chair: Dr Haidy Geismar (Anthropology)
Professor Michael Rowlands (Anthropology); Dr Petra Lange-Berndt (History of Art), Dr Simon Werrett (STS)
- 17.05-17.25 **Open discussion**
- 17.25-17.30 **Closing words**
Camilla Sundwall
- 17.30-18.30 **Drinks**
- 18.30- late **Slade research week reception** (doors open to the public)
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ABSTRACTS



Strand 1 Extension and Substitution

Chair: Dr Leonie Hannan

The Art Exhibition as a Site of Transformation

Naomi Siderfin, The Slade School of Art, 10 min.

Given the context in which we will be considering “Material Properties”, I’d like to consider the material properties of the ‘exhibition’: the conventional forum where art meets its public within the arena of Fine Art. In this case, the matter from which a thing (the exhibition) is or can be made comprises support and medium – although the list of materials that make an exhibition could be extended in my mind to include many more factors, such as artist(s), marketing, interpretation and public: all of which might be considered immaterial.

With another inflection (‘material’ as in ‘significant’), the material properties of the exhibition might be considered as a site of encounter, experience and communication: a space of transformation. I’d like to situate these thoughts within the context of the Woburn research week, the framing of the exhibition, the collaborative experience and collective installation.

Creating a Second Life for Museum Collections through ‘Souvenirisation’

Yunci Cai, Institute of Archaeology, 10 min.

In most heritage studies, it is often argued that the commoditisation of culture leads to the loss of authenticity, and its inherent meanings and values. Through the case study of the retail products made by MuseumLabel, a heritage retail consultancy operated by the National Heritage Board of Singapore, which also manages the National Museums in Singapore, this presentation argues that ‘souvenirisation’ – the making of thoughtful memorabilia - from museum collections can lead to the preservation of the traditional meanings and values associated with museum objects, and a re-enactment of situated authenticity associated with the objects. Rather than portraying the museum as a final destination to an object’s social life, a museum object can be re-invented into a new object form, which takes on a new social biography on its own through the process of souvenirisation. The creation of thoughtful memorabilia from museum objects that retain the object meanings subtly in its new form, can be far more powerful in conveying the object’s intangible properties, than its portrayal in the museum setting. Using examples of products created by MuseumLabel such as the National Day Tote Bag, the Walter the Rabbit series of memorabilia, I demonstrate how museum objects take on a new life form through souvenirisation, and how such an extension-substitution of its object properties into a museum souvenir can make art, heritage and culture more relevant and interesting to museum audiences today.

Hacking you better

Lydia Nicholas, Anthropology, 10min

This paper investigates the process by which the politics and affordances of digital culture influence physical making and mending practices through the use and marketing of Sugru. Sugru is a self-setting silicone rubber sold under the slogan ‘hack things better’ and ‘the future needs fixing’. The material is not advertised conventionally but instead promotes practices of repairing, reusing and repurposing products instead of buying new; practices for which it is an ideal tool. Both the users and marketers of sugru overtly draw analogies between the power relationships surrounding ownership which are expressed in digital ‘hacks’ and the use of Sugru, so that political slogans and tools developed within free/open source software culture can be drawn from as a resource. In this paper Miller’s work on rendering mass-produced products inalienable, Campbell’s craft consumption, Shove et. al’s work on DIY and Coleman on Hacking and Free/Open Source Software are referenced to place consumers’ efforts to physically alter their possessions in the wider context of a struggle for control over what the products they own can do and can be. Ideas about empowered, creative consumption, openness and ‘hacking’ which had emerged in the digital sphere were found to have been translated to physical objects, both organically and within Sugru’s marketing. Informants expressed a strong desire for conceptual and practical tools with which to resist mass-consumption which they described as wasteful, expensive and homogenous, and many responded positively to Sugru’s apparent fulfilment of these desires. However, factors such as gender, education, experience and cultural capital were found to affect informants’ ability to translate these desires into practise.

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Strand 1 Extension and Substitution

Chair: Dr Leonie Hannan

Architected Materials

Sarat Babu, The Bartlett School of Architecture, 10min.

New technologies are changing the way we synthesis materials. These processes afford additional spatial complexities which force us to reconsider the engineering of material from one driven by properties to one set by behaviour. Developing future products that take advantage of this opportunity requires a concpetual shift in design both in terms of our thinking and our methods.

Defining Coolness and Accessing Creativity Through Studio Practice

Sarah Fortais, The Slade School of Art, 10 min.

This talk uses two sculptures: Things Being What I Want Them To Be And Not What They're Supposed To Be (2013) and Anglomophone (2012) to distill my methodology pertaining to studio practice/art-making. I will illustrate key tenants governing my creative practice and explain them in reference to bricolage, as proposed by Levi Strauss. Moving back from bricolage to bricoleur, that is, to an artist's internal creative decision making, I propose that bricolage extends to not just to how one creates but also to how one understands (which means that bricolage can also be characterized as a kind of conceptual rigor when concepts are substituted for materials). I will then explain my current project at the Slade, which is a practice-led PhD studying coolness (as social phenomena) that blurs bricolage as research/artistic-practice. I believe that studying coolness, which many believe to be elusive/indefinable/unrepresentable, can benefit from tangible experience because this will allow me to at least gain an operational understanding, akin to drawing a map for a labyrinth while walking it. Furthermore, I believe that coolness itself is actually a kind of cultural bricolage and that continuing to make work while reflecting on my creative methodology will at times be directly beneficial. I will finish by presenting my Slade Research Centre project and isolating specific research interests related to coolness within it.

ABSTRACTS



Strand 2 Embedding and Extracting Information

Chair: Dr Adam Drazin

Sustainable Materials and Knowledge Transfer: The Death of the Sensuous Materials Salesman

Dr Sarah Wilkes, Institute of Making, 10 min.

This short discussion is based on doctoral research conducted with sustainability specialists from primary materials manufacturing companies in the steel, PVC and bioplastics industries. Part of this research explored the ways in which material scientists attempt to produce information about 'sustainable materials' and disseminate it to users (engineers, architects and designers). This presentation will briefly discuss why popular tools for transferring knowledge about materials - materials libraries that rely on sensory engagement with materials and materials selection programmes that quantify the physical properties of materials - both fall short in the face of concerns about sustainability.

During ethnographic research with interlocutors at the IOM3 it became apparent that very few of them had a hands-on engagement with materials processing on a daily basis. Assessments of relative sustainability were largely conducted in an office environment in front of a computer using environmental auditing software. Even small swatches of materials were noticeably absent. However, the sustainability professionals with whom I worked displayed distinct ethical sensibilities that varied from industry to industry, materials family to materials family, and seemed to accord with the behavioural properties of their materials. Even though these sustainability professionals had little or no hands-on engagement with their materials, the ways in which they conceived of sustainability, and the ways in which they presented their materials as 'sustainable' to users, related strongly to the behavioural properties of these substances.

I will therefore bring this fieldwork experience into discussion with the recent turn to studying materials properties in the social sciences. A phenomenological engagement with materials can undoubtedly have profound effects and certainly merits further study. However, we must also ensure we do not lose sight of the ways in which materials can have a less direct, cognitive or noumenal impact on the people who make, disseminate, manipulate and use them.

Free from Censure: Material Meanings Embedded in Nineteenth-Century Presbyterian Communion Tokens

Ruth Mason, Geography, 10 min.

Small, plain and inexpensive, the 600 communion tokens made for the Scots Church, London Wall in 1804 initially appear to have little to say. However, on closer inspection these 2 cm diameter pieces of cast pewter, are heavily embedded with social and religious meaning. Consideration of their materiality suggests how they contributed to the construction of the church's identity, as well as the identity of its leadership and congregation. The material properties of these tokens therefore provide insights into the social and religious structure of this nonconformist community, which are not communicated within the extant written sources.

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Strand 2 Embedding and Extracting Information

Chair: Dr Adam Drazin

Unlocking Past Human Behaviour Using Flint

Josephine Mills, Institute of Archaeology, 10 min.

Flint, a stone brimming with signatures of ancient environments, represents a huge untapped data source that is integral to understanding how ancient humans interacted with their landscapes. Formed on the warm shallow seabed of Cretaceous oceans, its structure, composed of tiny sea-creatures, captures signatures of prehistoric ecosystems. This configuration holds distinct and special properties that make flint a particularly effective raw material as its small fine-grained particles allow it to fracture conchoidally, like glass, in a predictable and easily manipulated manner. These features make it an obvious choice for human use and as sea level fell and the Ice Age took hold, prehistoric people discovered this dormant resource and began to interact with it, bringing it to life. Flint was used to make many different kinds of stone objects from the archetypal bifacial hand-axe to scrapers associated with butchery and hide processing. Additionally due to its propensity to preserve in the archaeological record it is all that now remains of many archaeological contexts, thus emphasising its importance as a tangible relic of past activity. In a modern context we can use these individual flint artefacts and assemblages to infer characteristics of past behaviour, for example tool use and foraging strategies, societies and ecologies. Moreover recent advances in research have sparked the recognition of both geological and biological information encoded in flint objects during the formation of their parent material. If this data could be clarified it would enable archaeologists to match artefacts to flint sources, mapping ancient human landscape use and raw material acquisition strategies. Currently two main methods have been piloted to explore this. In some cases microscopic analysis of microfossils, such as radiolarians, and their relative composition within a sample, can be indicative of a specific flint bedrock. Other studies aim to assess the geological composition of flints, locating their trace elements using mass spectrometry, and linking them to particular geographic areas. This research project aims to assess both techniques from an archaeological perspective and work towards developing a standardised process that uses the microstructure of flint to connect artefacts with their source, revealing the footsteps of our ancestors.

Continuous Weaving: tales of spiders, threads and making across species

Dr Eleanor Morgan, The Slade School of Art, 10 min.

In the time it takes a spider to build the guy-ropes of its web, I will tell tales of the human uses of spider silk: of taut strings, sticky headaddresses and buzzing membranes. A spider produces seven different types of silk, each with different properties, used for capturing prey, courtship, nest building and communication. I will discuss the ways in which this magical material has also been entangled in the material and imaginative processes of human making.

Exploring barkcloth with the Royal Botanic Gardens, Kew

Emily Brennan, Anthropology, 10 min.

This presentation will introduce some preliminary PhD fieldwork findings and ideas, exploring the material properties of barkcloth artefacts at the Royal Botanic Gardens, Kew using techniques as an entry point. The techniques which surround barkcloth at Kew are institutional practices and relate to broader conceptual frameworks that work to cultivate plants' and plant made things properties. Techniques including collections research and care, material sampling, display, morphology, and plant taxonomy and phylogeny will be introduced, based on research which has taken place in the herbarium, collections store, and micromorphology laboratory over the last couple of months. Looking at barkcloth artefacts in the wider context of the gardens reveals relatedness between activities which take place around them, helping to reveal the way that plants are approached and perceived institutionally, and highlighting the sociality in which these artefacts are enmeshed.

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Strand 3 Methods of Interrogation

Chair: Dr Martin Holbraad

Assessing the stability of archival cellulose acetate films

Dr Emma Richardson, History of Art, 20 min.

Synthetic and semi-synthetic polymers comprise an increasing portion of cultural heritage and archival collections. The growth in polymer manufacturing and engineering that occurred throughout the twentieth century inevitably led to many artists and designers employing these new and relatively inexpensive materials in their works. However, the physical instability of some polymer formulations now pose particular problems for the heritage profession, where longevity and conservation is of primary importance.

One such example is the case of cellulose acetate film, which was used extensively as the substrate for animation art works. Owing to its transparency and flexibility, cellulose acetate film was employed as the base material for animation cels between the 1920's and early 2000's, with the animation painted in reverse, the image being viewed from the opposite side to the paint layer. Over time many of these films have been found to lose their mechanical integrity, which impacts on the handling and display of the cels. Additionally, the ageing of the binders within the paint layers impacts on adhesion and when coupled with the warping and buckling of the substrate, loss of the image often results.

This research focuses on the mechanical characteristics of cellulose ester films, investigating correlations between the micromechanical properties of degraded film and non-invasive spectroscopic analysis. These analyses are being carried out on artificially aged standard material, in addition to naturally aged animation cels provided by the Walt Disney Animation Research Library. Comparisons are being made between portable spectroscopic techniques and laboratory based equipment with the aim of eventually taking analyses on site to the archival environment.

Experimental and Analytical Investigation of Black Bronze Alloys

Agnese Benzonelli, Institute of Archaeology, 10 min.

This talk is about my PhD research project in Archaeometallurgy entitled "Technological traditions and trajectories in the production of black bronze". The significance and technology of colour generation in early cultures is of major interest but polychromy in Cu-alloy has attracted relatively limited attention. One of the main types of intentional patination of archaeological interest fall within the group which is termed "black bronze" alloys, used as a decorative element on metal artefacts from the Late Bronze Age Mediterranean through to modern China and Japan. This particular class of alloy was generated by adding small amounts of gold, silver and other impurities to the alloy, then boiling in chemical solutions to develop a fine, compact and resistant black patina, which is generally considered to be different from those produced using other technologies (Giunlia-Mair 1997; Murakami 1993). References in the ancient literature suggest that these black bronzes, which appear to be rare in the archaeological record, were especially valued and it may be significant that the surface colour was modified by the "sacrifice" of precious metals such as gold accompanied by a complex patination process. This surely reflects a symbolic importance attributed to the colour black. The unusual character of the alloy and its suggested cultural importance demand require a proper understanding of the technology and its transmission.

My PhD project will use a multidisciplinary approach. It is intended to use archaeometry and material culture concepts in order to understand the social choices in the black bronze alloys production. I have produced a series of replica coupons of black bronze with controlled compositions and treated them with solutions mimicking those used in traditional methods. The patinas are being examined with a wide number of analytical techniques and are allowing the development of an understanding of the relationship between the production technologies, alloy composition and physical-chemical characteristics of the patinas. Moreover, I will draw upon several theoretical approaches to interpret my results. First, I will look at the ideas of the *Chaîne opératoire* and technological choices to guide my interpretation of the technology of the alloys. In addition, I will consider the materiality of black bronze, emphasising sensorial properties such as colour, texture, smell, and how these were intrinsic to its perception and value. Finally I will look at the theory of colour, evaluating how this colour was perceived in different societies and how this perception is related to the different technologies of production, so I can comment on the significance of "black".

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Strand 3 Methods of Interrogation

Chair: Dr Martin Holbraad

Follow the Thing: Poppies, Geopolitics and the Circulation of Meaning

Joseph Thorogood, Geography, 5 min.

The poppy is a surprisingly controversial object. In all its forms, be it natural and floral or plastic and symbolic, its presence or absence stimulates intensely emotive and (geo)political debates and encounters. David Cameron refused to remove a remembrance poppy at the behest of the Chinese on a business trip in 2010 due to its significance in the Opium Wars thus straining diplomatic tensions. A year later numerous individuals linked to extremist organisations were arrested for “malicious telecommunications” by burning poppies in public or photographing and posting images of the burning flowers online. These two incidents attest to the contradictory political relations suffused within remembrance poppies as they circulate the globe. Such accounts provide fruitful insights into the relationship between material culture and performative nature of geopolitics and international relations. Responding to recent work in Critical Geopolitics which calls for research into the everyday registers of materiality and affectivity as fruitful avenues of enquiry, this research aims to emphasise the importance of the prosaic and everyday role of material culture in how people come to understand and in turn perform geopolitics. It also considers how geopolitical meaning is circulated, contested through commodities which represent ever more complex encounters between distant individuals in an era of globalization. Using what is termed a ‘Follow the Things’ approach incorporating multi-sited ethnography this research tracks poppies on their discursive and material journeys to show the connections of people’s lives through their production and consumption to explore how geopolitics might be understood and performed in people’s mundane and daily lives. Through individual encounters with both consumers and producers of remembrance poppies, it aims to challenge understandings of globalization as an inexorable, homogenous force and explore how commodities in motion encourage globalization as a partial, local and situated project where commodities and meaning are constantly contested and re-negotiated.

Complex materials: the hidden fabric of digital life through cables

Nadia El Mrabet, Anais Bloch, Anthropology, 10 min

This presentation aims at focusing on the materiality of digital life. To illustrate this topic we will turn to cables and postulate that they act as the hidden fabric of digital life. Often represented as entangled, these crucial and dense artefacts encompass in themselves, at micro level, intricate diverse materials (metal armour, glass optic fibers, aluminum wires, numerous protecting layers of plastic, etc). At macro level they make up the infrastructure of the “entangled web” of telecommunications and bind digital devices together. In that sense, cables act as a fabric, connecting the different levels of digital life: from the devices in your room to digital superstructures such as servers, urban grids, telecommunication intercontinental or submarine cables.

The academic rationale here is to see how digital materiality is very often negated through rhetorics of immateriality and how to re-materialize it. To investigate this question, we first observed curated artefacts from the UCL collections, such as early XXth century submarine cables - a technology that has evolved up to today’s optic fibers, where light transports coded information allowing contemporary global and superfast telecommunications. We eventually moved on to making an artefact made up of discarded cables belonging to everyday devices (chargers, HDMI cables, etc.) by taking out their inside components. This presentation will thus enable us to discuss the concepts of hybrid materials, the articulation of materiality / immateriality in what can be described as “black boxes” of digital culture, as well as the role of humans in relation to contemporary digital networks.

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Strand 3 Methods of Interrogation

Chair: Dr Martin Holbraad

Material Histories of Chemistry

Dr Simon Werrett, Science and Technology Studies, 10 min.

This 10-minute presentation will showcase the work of an ongoing project on material properties in the history of chemistry, being developed by members of the Ad Hoc History of Chemistry group which meets once a month at UCL. Historians of science have long discussed material culture in science, but have paid very little attention to the history of the properties of materials. To develop new interdisciplinary methods for studying the history of properties, this group, consisting of historians, engineers, artists, and chemists, identifies a property each month and asks participants to speak for five minutes on something they have discovered about the property which raises interesting historical questions. Thus far we have investigated 'sliminess' and 'waxiness', and the history of 'somatology' or the study of the properties of matter. Working in collaboration with the UCL Institute of Making, we are also using interactions with materials themselves to generate new historical questions about visceral and emotional reactions to different properties.

The Law of the Good Neighbour

Jin-Woo Choi, History, 10 min.

Hidden in plain sight off Woburn Square in Bloomsbury, the Warburg Institute is a research institution specialising in the Renaissance and the influence of the "afterlife of antiquity" (Nachleben der Antike) in European cultures. Created from the private library of its founder, the art historian and culture theorist Aby Warburg, the Warburg Institute survived the turmoil of Nazi book-burning and imminent war by transporting its entire library and staff to London from Hamburg in 1933. Today the Warburg Library boasts a rare collection of some 360,000 books (over 40% of which are not found in the British Library) and 400,000 photographs.

In my presentation, I intend to focus particularly on the foundational principles of this very special library by exploring how Aby Warburg and his successors implemented the 'Law of the Good Neighbour' as a method of arranging books and necessitating their physical presence for the reader. The law, in effect when a student looking for a book comes across a neighbouring book which turns out to be the one he actually needs, is described by Aby Warburg in the following manner:

[I]t is precisely the acquisition of a book and its physical presence, its proximity with other books, that created the particular encyclopaedic totality and growth potential – and that this depends on a unified system for intersecting, orbiting, or tangentially touching areas of inquiry, which can only be concretely realized in such a problem-oriented library [Problembibliothek]."

This 'good neighbour' law not only dictates the way in which individual books are arranged on open shelves, but also determines the entire architectural shape of the library. For this forum especially, the law of the good neighbour is both an interesting and relevant topic in that its essential properties can be flexibly applied to a variety of different contexts, as an abstract method of investigating the tangible materiality of knowledge.

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Strand 3 Methods of Interrogation

Chair: Dr Martin Holbraad

Hand in Glove: Archival Paperwork, Method and Materiality

Maryanne Dever, Department of Information Studies, 10 min.

Digitization is rapidly changing the ways in which archives are made and the forms in which archival documents are organised, distributed and used. These technologies, however, do not herald the end of our concerns with materiality: they may in fact provide the conditions to think anew about the properties of archived paper or what paper can do. As Derrida observes, 'by carrying us beyond paper, the adventures of technology grant us a sort of future anterior; they liberate our reading for a retrospective exploration of the past resources of paper' (47). In this presentation I highlight how the 'digital turn' in archiving has been paralleled by a material turn in archive-based literary research and scholarship. The latter is examined for how it has sponsored a renewed interest not only in taken for granted and under-examined aspects of how we work with original materials, but also for how it allows us to think about the materiality of archived documents as emergent rather than fixed or given (Hayles 2004).

Heritage Smells! Using Volatile Emissions to Understand Historic Objects

Katherine Curran, Centre for Sustainable Heritage, Bartlett School of Graduate Studies 10 min.

Objects found in artistic and historic collections can be highly complex, both in terms of their composition and of the environments to which they have been exposed over the course of their lifetimes. Both factors will contribute to an object's appearance, utility, heritage value and also to the way in which it breaks down over time.

In our work, we have used the analysis of volatile organic compounds (VOCs) released from historic objects to better understand them. VOCs are airborne chemicals which are released from and absorbed by materials over time. These emissions can therefore reflect the composition of materials and also provide information regarding their degradation processes. Thus VOC analysis can help to provide a deeper understanding of historic objects, in addition to informing their conservation.

The analytical tool used in this research is solid-phase microextraction gas chromatography/mass spectrometry (SPME-GC/MS). This involves the exposure of a coated fibre to the air surrounding an object. VOCs emitted from the object are absorbed onto the fibre and can then be identified using laboratory-based instrumentation. One important advantage of this technique is that it does not necessarily require destructive sampling of an object, as it relies on the chemical information contained in the air surrounding that object.

As part of the Heritage Smells project we have analysed VOC emissions from historic plastic objects and from books. We are using the results to understand whether volatile emissions can be used to identify what plastic an object is made from, to monitor the degradation of plastic objects and to see whether we can directly relate the condition and conservation needs of books to their VOC emissions.

The project is funded by the AHRC/EPSRC Science and Heritage Programme and is done in collaboration with the British Museum and the British Library.
