

HIST G8906: Craft and Science: Making Objects in the Early Modern World
Spring 2016
Monday 10:10am-2:15pm
Chandler 260

Co-Instructors:

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This course will study the materials, techniques, settings, and meanings of skilled craft and artistic practices in the early modern period (1350-1750), in order to reflect upon a series of issues, including craft knowledge and artisanal epistemology; the intersections between craft and science; and questions of historical methodology and evidence in the reconstruction of historical experience. The course will be run as a “Laboratory Seminar,” with discussions of primary and secondary materials, as well as hands-on laboratory work. This course is one component of the Making and Knowing Project of the [Center for Science and Society](#) and more information on the Project can be found [here](#). Thus, in its first years, this course contributes to the collective production of a transcription, English translation, and critical edition of a late sixteenth-century manuscript in French, Ms. Fr. 640.

Making and Knowing Online: You can follow the project on Twitter @makingknowing and tweet any photos from the laboratory (which we can then re-tweet).

Students are encouraged to take this course both semesters (or more), but can receive full credit only once. Different laboratory work and readings will be carried out each semester.

A course prerequisite is to complete laboratory safety training. No registration is required for safety training; you may simply show up and attend. Your attendance will be recorded and stored electronically in the RASCAL system, where you will be able to print a training certificate as proof of training.

Course Organization

This course will be conducted by discussion of readings and hands-on work in the laboratory. Readings will include primary sources and literature drawn from material culture studies, anthropology, history of science and technology, and art history, as well as an introduction to historical reconstruction and to BnF Ms. Fr. 640. Students will contribute to the research on Ms. Fr. 640 by finding and comparing contemporaneous primary sources and discussing their value for a better understanding of the recipes and methods described

in the Ms. Fr. 640. At the same time, a series of introductory lab sessions on making and materials will be conducted. The course will then turn to the reconstruction of the techniques in Ms. Fr. 640. Using a transcription and English translation, the laboratory portion of the course will focus each year on a single set of related techniques described in the manuscript. In 2014-15, the focus was on mold-making and metalworking, including sand and plaster casting. In 2015-16, the focus is on color making, including dye and paint pigments, coloring woods and metals, varnishes, and artificial gem making.

Work in the laboratory each semester will include a two-week residency by an expert maker, who will participate in the seminar and lead demonstrations and experiments in the lab. This semester's expert practitioner is Erma Hermens (University of Glasgow). She will be in residence February 29- March 11. Participants are expected to schedule extra time for lab work during this period.

On May 25-28, 2016, an international meeting of experts in colors and color-making (Working Group Meeting) will be held at Columbia in order to review the progress made on the project. Students from both semesters will be expected to present at this meeting.

On June 6-24, a Renaissance French Paleography and data visualization seminar will be offered at Columbia in order to finalize the digital version of the manuscript transcription and translation for publication, and to explore the possibilities for data visualization.

Assignments and Evaluation

Discussion

All students are expected to come prepared for discussion. **Discussion participation accounts for about 10% of the total grade.**

Hands-on Assignments

Students will keep field notes (in written, visual, or podcast form) on their experiences and experiments in the Class Wiki, documenting their experiments in reconstruction, as well as their methodological reflections on the uses of hands-on work and reconstruction as historical sources. They will upload their photos to the [Flickr photo repository](#).

Open lab times will be announced throughout the semester, but will generally be held Monday afternoons, Wednesdays, and Fridays. On average, students should expect to spend at least two additional hours in the lab per week. **The laboratory component of the course will be worth 30% of the grade.**

Written assignments

Students will contribute to the decipherment of the text of Ms. Fr. 640, and they will contribute annotations to the translation and critical edition of the manuscript. They will assist in contributing to the course Wiki and Field Notes, and they will make every effort to take part in the Working Group Meeting to be held in May (May 26-28).

Working in groups, students will contribute two annotation essays (750-3000 words) to the critical edition, similar to a catalog entry for an exhibition. These essays will make use of a whole range of visual and textual sources, and will integrate the students' laboratory experiences into a written or visual presentation that makes an argument about what

research (both textual and material) into the recipe revealed about process, materials, sixteenth-century culture and society, or the identity of the author. One of the most important components of this assignment is the research students undertake on the relationship of recipes in Ms. Fr. 640 to other earlier and contemporaneous recipe collections. Because the annotations will be published in 2019 as part of the edition's critical commentary, they must be in publication-ready shape by the final due date. This is achieved by means of a series of annotation workshops towards the end of the semester. **The annotation assignment comprises 60% of the grade.**

Student research essays resulting from this semester are contained in [*Secrets of Craft and Nature in Renaissance France. A Digital Critical Edition and English Translation of BnF Ms. Fr. 640.*](#)

- [Apprenticeship of the Painter](#)
- [Black Color for Dyeing, and the Place of Textiles in Ms. Fr. 640](#)
- [Dragon's Blood](#)
- [Gilding on Paper and Parchment](#)
- [Imitation Marble](#)
- [Rouge Clair: Glass or Paint?](#)
- [Shadows Beneath the Skin: How to Paint Faces in Distemper](#)
- [Sleight of Hand Tricks](#)
- [Sulfuric Acid for the Scribe](#)
- [What is Esmail in Ms. Fr. 640?](#)
- [What is Or Mat in Ms. Fr. 640?](#)

Reading

The following required course books are available at Book Culture and on reserve at Avery Library.

The following provide an introduction to color making:

- Jo Kirby, *A Closer Look: Techniques of Painting* (London, 2011).
- Daniel Varney Thompson, *The Materials and Techniques of Medieval Painting* (Courier Dover Publications, 1956)
- François Delamare and Bernard Guineau, *Colour: Making and Using Dyes and Pigments* (Thames & Hudson, 2000)—may not be available, in which case substitute David Bomford, A. Roy, *A Closer Look: Colour* (London, 2009)

The following provide an introduction to the history of the relationship between craft and science:

- Pamela O. Long, *Artisan Practitioners and the Rise of the New Sciences, 1400-1600* (Oregon State UP, 2011)
- Pamela H. Smith, *The Body of the Artisan: Art and Experience in the Scientific Revolution* (Chicago and London: The University of Chicago Press, 2005)

The following will be useful as reference texts throughout the course:

- Theophilus, *The Various Arts. De Diversis Artibus*, ed. and trans. Hawthorne (Dover, 1980)
- Benvenuto Cellini, *Two Treatises*, trans. C. R. Ashbee (repr. 2006)

- Mary P. Merrifield, *Medieval and Renaissance Treatises on the Arts of Painting: Original Texts with English Translations* (Courier Dover Publications, 2012)
- Cennino Cennini, *The Craftsman's Handbook, 'Il Libro dell'Arte'*, trans. by Daniel Thompson (New York: Dover, 1960)
- Giorgio Vasari, [*The Lives of the Artists*](#) (Paperback), Translators: Julia Conway Bondanella, Peter Bondanella (Oxford University Press, USA, 2008)

Recommended:

- Tim Ingold, *The Perception of the Environment: Essays in Livelihood, Dwelling and Skill* (London and New York: Routledge, 2000)
- Robert Tarule, *The Artisan of Ipswich: Craftsmanship and Community in Colonial New England* (Johns Hopkins University Press, 2004)
- Pamela H. Smith, Amy R. W. Meyers, and Harold J. Cook (eds.), *Ways of Making and Knowing* (University of Michigan Press, 2014)
- Christy Anderson, Anne Dunlop, and Pamela H. Smith, *The Matter of Art: Materials, Practices, and Cultural Logics, c. 1250-1800*.
- David Bomford, A. Roy, *A Closer Look: Colour*, London, 2009.

Class Schedule

Below you will find what to prepare for class in **the week before** the class meeting, and what to expect on **the day of** class. Please be sure to ask in advance if anything is not clear!

Week 1: ART AND SCIENCE

In preparation for January 25:

To watch:

- Watch the introduction to the manuscript and the project [here](#) (ca 1 hour)
- Watch "Lions, Dragons, and other Beasts" (ca. 1 hour) [here](#)
- Watch Ian Hankey, [*Working with Venetian style glass*](#) (ca. 25 mins)

To read:

- Kirby, Jo, *A Closer Look: Techniques of Painting* (London, 2011)
- François Delamare and Bernard Guineau, *Colour: Making and Using Dyes and Pigments* (Thames & Hudson, 2000), or David Bomford, A. Roy, *A Closer Look: Colour* (London, 2009)

To do:

- Explore the Project's Google Drive collaborative space
- Browse the manuscript [here](#)

What to expect in class on Monday, January 25:

- **Bring your laptop or tablet**
- 10:10-11:15 Introductions all around, and introduction to the project (brief lecture by P. Smith)
- The course in brief, expectations, skills, and your contribution to the project. Come with questions!
- 11:15-12:00: Discussion of Home Culinary Reconstruction Assignment (division into groups). **Due Monday, February 1 in class.**
- 12:15-1:00: Navigating and reading BnF Ms. Fr. 640.
- 1-2pm: **Safety training** (Kathy Heinemann)

- Assign historical culinary recipe reconstruction
- Hand out recipe for making verdigris: copper and vinegar, as well as jars and string/twine, for verdigris.

Week 2: HOME CULINARY RECONSTRUCTION AND CONSUMPTION

In preparation for Monday, February 1:

You will want to start on the Historical Culinary Recipe Reconstruction (HCR) right away, by reading the assignment carefully, exploring and using the websites listed on the HCR assignment sheet to search for comparable recipes in contemporaneous sources, and doing the following reading **BEFORE** starting your reconstruction:

Required Reading and Watching:

- Ken Albala, "Cooking as Research Methodology: Experiments in Renaissance Cuisine," *Renaissance Food from Rabelais to Shakespeare: Culinary Readings and Culinary Histories*, ed. Joan Fitzpatrick (Aldershot, UK: Ashgate, 2010), pp. 73–88.
 - See also Ken Albala's blog on: <http://kenalbala.blogspot.nl/>
- Ad Stijnman, "Style and technique are inseparable: art technological sources and reconstructions," *Art of the Past. Sources and Reconstructions. The proceedings of the First Symposium of the Art Technological Source Research Study Group*, ed. by Mark Clarke, Joyce H. Townsend, and Ad Stijnman (Amsterdam: Archetype, 2005): 1-8.
- Francisco Alonso-Almeida, "Genre conventions in English recipes, 1600-1800," *Reading and Writing Recipe Books, 1550-1800*, Michelle DiMeo and Sara Pennell (Manchester: Manchester University Press, 2013), pp. 68-90.
- Syrup of Violets and Science: <https://www.youtube.com/watch?v=pdEbMBe0aa8>
- Maartje Stols-Witlox, "Sizing layers for oil paintings..." *Proceedings of the Second ATSR Symposium* (2008), pp. 148-163.

February 1, in class:

We will meet in The Studio at Butler (Butler 208b), where the groups will present on their HCR.

- Bring the material results of your HCR. We will consume them, if safe!
- 10:10-11:30 Student presentations (and consumption of the results)
- 11:30-12:15 Introduction to field and lab notes with Dr. Joseph Ulichny, Chemistry
- 12:30-1:15 Wiki practice and profiles
- 1:15-2:15 **Discussion of annotation topics:** drawing instructions; panel preparation; tool-making; painting and pigment application; dyeing; varnishes; optical observations; observation of different styles and techniques; others?

WEEK 3: PAINTERS' MANUALS

This week, we'll think about how Ms. Fr. 640 resembles other books of practice.

In preparation for February 8:

Reading:

- Read entire Cennino Cennini, *The Craftsman's Handbook, Il Libro dell'Arte*, trans. by Daniel Thompson (New York: Dover, 1960) – keep in mind the different processes and categories of processes for which he provides instructions.

- Read the pdf of the entire text of Ms. Fr. 640 (French or English translation) – how does this text replicate, or not, the categories and divisions of Cennini’s text? Keep a list of categories and divisions of the text and recipes relevant to a painter’s manual.

February 8, in class:

- 10:10-11:00 - Annotation Discussion, including discussion of full Ms. fr. 640 and Cennini
- 11:00- 12:00 Safety protocol work: Introduction to MSDS (Material Safety Data Sheets) with verdigris, etc. Write up safety protocol. Paint out verdigris onto prepared gessoed panels.
- 12:15-1:00 Fire extinguisher practice with Harry Oster in front of Chandler.
- 1:00-2:00 Wiki practice, write up field notes from painting out. Upload photos to Flickr.

WEEK 4 February 15 : THE MEANINGS OF MATERIALS: COLORS

Required Reading and Watching:

- Marcia Hall, *Color and Meaning: Practice and Theory in Renaissance Painting*, pp. 1-18, 47-57, 69-74, 92-116, 222-230.
- Leonhard, Karin: "Painted Poison. Venomous Beasts, Herbs, Gems, and Baroque Colour Theory. " *Nederlands Kunsthistorisch Jaarboek* (NKJ) (2011)
- From Christy Anderson, Anne Dunlop, and Pamela H. Smith, *The Matter of Art: Materials, Practices, and Cultural Logics, c. 1250-1800*, **the essays by Anne Dunlop, Spike Bucklow, and Brigitte Buettner:**
 - Anne Dunlop, 'On the origins of European painting materials, real and imagined'
 - Spike Bucklow, 'Lead white's mysteries'
 - Brigitte Buettner, 'Precious stones, material beings: performative materiality in fifteenth-century northern art'
- Ann-Sophie Lehmann, "Wedging, Throwing, Dipping and Dragging – How Motions, Tools and Materials Make Art," *Folded Stones*, eds. Barbara Baert and Trees de Mits (Institute for Practice-based Research in the Arts: Ghent 2009), pp. 41-60.

Optional:

- Michael W. Cole, "Cellini’s Blood," *The Art Bulletin* 81.2 (1999): 215–35.
- Pamela H. Smith, "Knowledge in Motion: Following Itineraries of Matter in the Early Modern World," in Daniel Rogers, Bhavani Raman, Helmut Reimitz, eds., *Cultures in Motion* (Princeton: Princeton University Press, 2014), 109-33.
- Karin Leonhard, "Pictura’s fertile field: Otto Marseus van Schrieck and the Genre of Sottobosco Painting," *Simiolus. Netherlands Quarterly for the History of Art* 34 (2 2009/2010)
- Ulinka Rublack, "Matter in the Material Renaissance," *Past and Present*, 219 (May 2013): 41-85.

Optional on color and meaning of gems:

- Bernard Palissy, *Recette veritable* (recent French edition) and *The Admirable Discourses* (Engl. edition)
- Marbode, *Liber de lapidibus* (English version)
- Albertus Magnus, *De Mineralibus*, (English version) Call Number: QE362.A613
- Forsyth, Hazel, *The Cheapside Hoard: London's lost jewels* (Philip Wilson Publishers, c2013).

- Marjolijn Bol, "Coloring Topaz, Crystal and Moonstone: Gems and the Imitation of Art and Nature, 300-1500," in *Fakes!?: Hoaxes, Counterfeits and Deception in Early Modern Science*, ed. Marco Beretta and Maria Conforti (Sagamore Beach: Science History Publications, 2014)
- Watch as many as possible of the videos collected on the Wiki on pigment- and color-making, as well as on the TAH website, and other online pigment resources.

February 15, in class:

- 10:10-11:30: Discussion of readings
- 11:30-12:00: ANNOTATION DISCUSSION
- 12:15-1:45: Canvas Preparation
- 1:45- 2:15: Rabbit skin glue prep

*** Finish your sewing and lacing at home, then come into the lab for about 1-½ hours at some point before Friday to apply rabbit skin glue to canvas. This must be done before Friday, otherwise you cannot move on to the next step on Monday.***

Week 5: RECIPES

Preparation for February 22:

See [A New Look at a Van Eyck Masterpiece](#) at the Met, curated by Maryan Ainsworth

This week we'll continue our consideration of how Ms. Fr. 640 resembles other books of practice and recipe collections. We shall examine several recipe books in the Rare Book room in Butler library. In preparation for this class, read this article on (art-technical research) sources for materials and techniques:

- Arie Wallert et al., "Still-Life Sources," ch. 2.

and then look for relevant recipes for your annotations in the following online databases (keep track of the recipes you find) and check out the [CU Library Tool](#) (available on the wiki) that Meredith Levin, Western European Humanities Librarian put together for us. She will be present at the RBML next week and can answer questions :

- Alessio Piemontese, *Book of Secrets* (1555); various English versions on EEBO; French versions on Gallica; Italian versions—you find them!—different groups use different editions BEFORE 1600. (For English: Search for Ruscelli, Girolamo, *The secretes of the reuerende Maister Alexis of Piemount Containyng excellent remedies against diuers diseases, woundes, and other accidents, with the manner to make distillations, parfumes, confitures, diynges, colours, fusions and meltynge. ... Translated out of Frenche into Englishe, by Wyllyam Warde* (1558).
- Hugh Platt, *The Jewell House of Art and Nature: Containing divers rare and profitable Inventions, together with sundry new experimentes in the Art of Husbandry, Distillation, and Molding* (London, 1594).
- Arie Wallert, "Libro Secondo de Diversi Colori e Sise da Mettere a Oro: A Fifteenth-Century Technical Treatise on Manuscript Illumination," *Historical Painting Techniques, Materials, and Studio Practice* (Getty pre-print, 1995), in GD.
- The COLOUR ConTEXTdatabase
- Cologne database of recipes
- Also see instructions here (in GD): Doris Oltrogge, "The Cologne database for painting materials and reconstructions," *Art of the Past. Sources and Reconstructions. The proceedings of the First Symposium of the Art Technological Source Research Study Group*, ed. by Mark Clarke, Joyce H. Townsend, and Ad Stijnman (Amsterdam: Archetype, 2005): 9-15.

In class on February 22:

10:10-12:00 **Meet at the Rare Book & Manuscript Library in Butler.** Consuelo Dutschke, Curator of Medieval and Renaissance Manuscripts, RBML

12:30-1:15 Lab: 1st priming layer of **canvas** (red earth)

1:15-2:15: Apply RSG and oil layers to **panels**.

Record your work in the field notes in the Wiki.

Meet on Thursday, Feb 25, 3-5pm: transfer portrait images to panels.

Week 6 & 7: EXPERT MAKER VISIT: Pigments and Painting (Feb 29-March 11)

Prof. Erma Hermens will be leading the course. Be prepared to spend more time in the lab during these two weeks; you will have individual group time with her)

In preparation for February 29: An introduction to Technical Art History

Required Reading and Watching:

- **Watch the powerpoint**, entitled 'PPT Red Lakes Analyses and Recipes,' by Jo Kirby and colleagues showing the way they worked with recipes and connected them to scientific analyses.
- **For research into recipes in order to reconstruct them, followed up by scientific analyses see:** J. Dik, E. Hermens, R. Peschar, H. Schenk, 'Early Production Recipes for Lead Antimonate Yellow in Italian Art', *Archaeometry*, Volume 47, Issue 3, pages 593–607, August 2005.

Required: Sources and techniques for reconstructing pigments:

- Arie Wallert et al., ch. 1
- Jo Kirby, Painter's Trade
- [be sure to have read] Arie Wallert et al., "Still-Life Sources," ch. 2.
- Jo Kirby et al, *Natural Colorants for Dyeing and Lake Pigments: Practical Recipes and their Historical Sources* (Archetype Publications, London, 2014). This key book discusses the various dyes stuff, their preparation as dyes and pigments. The text contains many recipes as well as reconstructions up till the 19th century. Focus on the 16th-17th century sections for the workshop.

(re: Kirby chapters on lakes:)

Kirby, Natural Colourants Ch.3 Chemistry

Kirby, Natural Colourant, Ch. 5 Lakes

also:

Kirby et al Red Lakes 2005

Kirby and White 1996

Willem Beurs, 1692, painting flowers

February 29, in class:

10:10-11:25: Introductions, Erma Hermens lecture

11:30-12:30: Apply white lead priming layer on CANVAS

12:45-2:15: fol 93v: experimenting with distemper portraits on PANELS

Meet on Thursday, Mar 3, 4-5pm to transfer print to **CANVASES** IF THEY ARE DRY; paint in the “dead layer” on the canvases, if they are dry.

Week 7: Painting in oil on canvas

In preparation for March 7 and 10:

On March 7: We will paint the “dead layer” and add detail to our flower paintings on canvas, so be sure you have read and taken in the readings from the last two weeks, i.e.,

- Arie Wallert et al., ch. 1;
- Jo Kirby, Painter’s Trade;
- Arie Wallert et al., “Still-Life Sources,” ch. 2;
- Willem Beurs, 1692, painting flowers; AND the excerpts of recipes on flesh color from Ms. Fr. 640 (in GD)

On Thursday, March 10, we’ll work further on your panels and canvases. To prepare for this, be sure you understand how lakes are made.

Required Reading on Red Lake Making:

- Jo Kirby et al, *Natural Colorants for Dyeing and Lake Pigments*:
- Kirby, Natural Colourants Ch.3 Chemistry
- Kirby, Natural Colourants Ch. 5 Recipes for Lakes

On Red Lakes: Optional reading:

- Erma Hermens and Arie Wallert, ‘The Pekstok Papers: Lake Pigments, Prisons and Paint Mills’, in E. Hermens et al. eds, *Looking through Paintings*, De Prom/Archetype, Baarn/London 1998, pp. 269-294.
- Jo Kirby and Raymond White, ‘The Identification of Red Lake Pigment Dyestuffs and a Discussion of their Use,’ *National Gallery Technical Bulletin*, Vol. 17 (1996), pp. 56-80. Kirby and White 1996
- Jo Kirby, Marika Spring and Catherine Higgitt, ‘The Technology of Red Lake Pigment Manufacture: Study of the Dyestuff Substrate,’ *National Gallery Technical Bulletin*, Vol. 26 (2005), pp. 71-87. Kirby et al Red Lakes 2005

By Thursday: Solidify Annotation Plans

At the end of Erma’s visit, we will discuss your proposed annotations, so please be ready with annotation ideas. Begin thinking about the historical question your annotation will answer, begin compiling a materials list for experiments, and start developing a protocol for experimentation on your recipe(s). Identify the recipes that your group will annotate in BnF Ms. Fr. 640. Search relevant source materials for more information on color making recipes that relate to your annotation experiments. **For our last meeting in Week 7, all students must upload to their Wiki page a full list of all the relevant recipes they have found in Ms. Fr. 640 and in other sources (SEE BELOW)**

March 7, in class:

10:10: Erma Hermens lecture on oils

10:40-12: apply dead layer (in acrylic) on CANVAS

While waiting for the dead layer to dry, we will experiment with oils in flesh tones on PANEL, to compare with our experience of distemper (choose between acrylic or oil base tone, depending on drying time you want)

12-12:25: break

12:30-2:00: details on CANVAS

2-2:25: Discuss annotations

Thursday, March 10, 3-5:30pm

4-5: annotation discussion. In preparation for this discussion please **make a page in your Field Notes entitled "Annotation Plans," that**

- Names your group of 2
- Describes your annotation plans (2 annotations)
- Lists the recipes from MS Fr. 640 (and any other source) that you have identified so far (include full recipes if practical)
- Lays out a schematic plan for the historical, object-based, and hands-on research that will shed light on these recipes.
- List of materials you expect to need, are they in the lab inventory?, where you will source them, and safety considerations.
- A safety protocol for your materials, based on the template in GD Student Files in the folder labelled Safety - Workflow and Protocol. Your document should describe your workflow, and what safety measures you will need to take. Your file in this folder should be linked to your Wiki field notes.

For Thursday, Mar 10, please complete #1, 2, and 3 (if possible)

Week 8: UNIVERSITY HOLIDAY March 14

Week 9: ANNOTATIONS

Required reading:

- Pamela H. Smith, *The Body of the Artisan: Art and Experience in the Scientific Revolution* (Chicago and London: The University of Chicago Press, 2005), entire.

In preparation for March 21:

Over the break, you should make sure that your materials lists are finalized and sourced, and that your protocol and safety protocol are written. Be completely ready to implement your experiments on March 23.

Annotations now have their own section in the Field Notes. Groups and individuals should enter their field notes in these Annotation pages.

- Names your group of 2
- Describes your annotation plans (2 annotations)
- Lists the recipes from MS Fr. 640 (and any other source) that you have identified so far (include full recipes if practical)
- Lays out a schematic plan for the historical, object-based, and hands-on research that will shed light on these recipes.
- List of materials you expect to need, are they in the lab inventory?, where you will source them, and safety considerations.
- A safety protocol for your materials, based on the template in GD Student Files in the folder labelled Safety - Workflow and Protocol. Your document should describe your workflow, and what safety measures you will need to take. Your file in this folder should be linked to your Wiki field notes.

In class, March 21:

- Finish CANVAS flowers with red lake glazes (with Erma)
- Intro to writing your annotation in Google docs
- Short report of finalized annotation plans and update on research over break
- Start your research and/or experiments

Week 10: EXPERIMENTING

March 28: Giorgio Riello visits the class to speak on color and textile as an entry point to the study of material culture.

Reading (all uploaded to Student Files):

- A. Gerritsen and G. Riello, 'Introduction', in A. Gerritsen and G. Riello, eds., *Writing Material Culture History* (London: Bloomsbury, 2015), pp. 1-13.
- 1678 source for Printing on Cotton (labelled "Riello visit" in GD)
- Beverly Lemire and Giorgio Riello, 'East and West: Textiles I and Fashion in Early Modern Europe', *Journal of Social History*, 41/4 (2008), pp. 887-916

Optional:

- A. Gerritsen and G. Riello, 'Spaces of Global Interactions: The Material Landscapes of Global History', in A. Gerritsen and G. Riello, eds., *Writing Material Culture History* (London: Bloomsbury, 2015), pp. 111-133.
- G. Riello, 'Things that Shape History: Material Culture and Historical Narratives', in Karen Harvey (ed.), *History and Material Culture* (London: Routledge, 2009), pp. 24-47.
- Craig Clunas, "Local and Global: Consumption and the Rise of the West," *The American Historical Review*, 1999.

In class on March 28:

10:10-12: Discussion

12:15-2:15: Work on annotation experiments

Week 11: EMBODIED KNOWLEDGE

Preparation for April 4:

Reading:

- Pamela O. Long, *Artisan Practitioners and the Rise of the New Sciences, 1400-1600* (Oregon State UP, 2011), Intro-ch. 2 (p. 1 - 62)
- Raymond Tallis, *The Hand: A Philosophical Inquiry into Human Being*, (Edinburgh: Edinburgh University Press, 2003), Ch. 1.
- Julian Thomas, "Phenomenology and Material Culture," in *Handbook of Material Culture*, ed. Christopher Tilley et al. (Sage 2006), 43-59.

OPTIONAL:

- Tim Ingold, *The Perception of the Environment: Essays in Livelihood, Dwelling and Skill*, (London and New York: Routledge, 2000), Ch. 18-19 (pp. 339-361).
- Erin O'Connor, "Embodied knowledge in glassblowing: the experience of meaning and the struggle towards proficiency," *Sociological Review* (2007): 126-141.

In class, April 4:

- discussion of readings
- work on annotation experiments

Week 12: First draft of annotations due this week

April 11: Work on annotation experiments and writing.

April 15: Annotation first drafts due today by midnight. All class members read all annotations in order to discuss them.

Week 13: Annotation Workshop

April 18: ALL STUDENTS READ ALL ANNOTATIONS AND COME WITH QUESTIONS AND SUGGESTIONS.

Week 14:

April 25: Further lab and writing work on annotations.

11:30-1: Web meeting with V&A group working on varnishes

Week 15

May 2: Further lab and writing work on annotations.

May 4: Annotation second drafts due today by midnight. All class members read all annotations.

Week 15:

Monday, May 9: Final Annotation workshop. Exit interviews.

FINAL ANNOTATIONS DUE ON May 13 by 5pm.

May 26-28 - Working Group Meeting, attendance required, if at all possible.

June 6-24 - Paleography and Text Analysis Workshop

Four questions to consider in working with objects and materials:

1. **Materials:** What material(s) make up your object? What are that material's properties? Where was it sourced? What determined its quality? How is the material described today (scientific analysis, material safety description (MSDS sheet))? How was the material described in written sources of the time (e.g., "unctuous," composed of water and earth, etc)? In addition to "workability," properties might also include the availability of materials in certain locales (by virtue of natural morphology or of trading patterns). How was knowledge of materials transmitted and disseminated (orally, by group working conditions, in writing, by templates)?
2. **Technology:** What tools, instruments and techniques were used for the transformation of your material in different places at different moments? How did that technology move and change over time? What were the consequences of these changes?
3. **Performance:** How did a specific conjunction of materials and technologies give rise to certain practices of making? In what ways did they constrain makers or require know-how? How did makers work against these limits (for example by manipulating the materials to vary their properties)? What were the circumstances for the display of skill: did makers change their practices when working in different places or when

being watched by particular audiences? What were regarded as the signs of virtuosity, and how did these vary at different places at different moments? What was the role of the individual maker as opposed to the collaborative team? How does an object generate a "personality" or "sensibility" for the person or workshop that produced it? How did new technologies change bodily experiences and gave rise to specific forms of practical expertise? How do embodied practices vary through time? Under which conditions might our bodily experience when reconstructing a pre-modern experiment be comparable to what practitioners have experienced in the past?

4. **The system of the arts:** What were the social structures that supported certain forms of production and consumption (e.g., associations such as guilds, workshops, manufactories)? How were practices of making limited by the law? Reshaped by ambition? What practices of making were interdependent? Which were siblings)? What was the relationship between making and status? How was the meaning of an object made manifest by its use, which could occur in rituals, through written treatises, or through daily use of the object?"

Two further issues to consider throughout:

Evidence: How do we know what a thing was made of and how it was made? What do texts tell us, what can we learn directly from objects or from present-day practices? How does one kind of evidence affect the way we understand another? What is the status as historical evidence of the emergent knowledge produced by reconstructions?

Historiography: How have historians treated these materials and their transformation? = What kinds of narratives have historians constructed around and about materials and processes that give them meaning (whether bound up with professional and national narratives, with issues of identity or of rationality, or something else)? How have historians of science reflected on experimental reconstructions as a tool to recreate historical experience?