



Weaving

Cognition, Technology, Culture

3rd Annual Embodied Cognition Workshop

April 5-8, 2017

Columbia University in the City of New York

Organizers: Pamela H. Smith (Columbia), Carol Cassidy (Lao Textiles), Patricia Greenfield (UCLA)

Sponsored by: The Center for Science and Society (CSS), the Dorothy Borg Research Program of the Weatherhead Institute, and the Department of History, Columbia University

IN his quixotic search for a mechanical calculating machine, the great nineteenth-century British polymath Charles Babbage was inspired by French textile entrepreneur and manufacturer Joseph-Marie Jacquard's punch cards that "programmed" complex designs into his silk textiles as weavers moved their shuttles back and forth at their looms. The cards determined the up and down movement of warp threads in the correct order to allow weft threads to weave over or under them. Punch cards could do this because weaving is one of the oldest binary systems. Babbage's patron and supporter, Ada Lovelace, recognized this, writing "We may say most aptly that the Analytical Engine *weaves algebraical patterns* just as the Jacquard-loom weaves flowers and leaves." Jacquard's punch cards mechanized a system already performed for millennia by skilled weavers, who had conceptualized and woven by hand these complex either-or, up-down patterns, often by means of "drawboys" and girls sitting atop the looms, the pattern sometimes codified in songs sung while weaving, the rhythm indicating when to draw up the warp threads.

The craft of weaving can thus be seen as foundational to the digital revolution, just as it was central to the Industrial Revolution. Yet, weaving, and its necessary prerequisite, spinning, are ancient human activities, possibly older than the cultivation of grains and the domestication of animals. Like other human crafts, they developed out of human interaction with the material world—the exploration, experimentation, problem-solving, innovation, improvisation, and predicting about the environment that humans must do in order to survive. In the complexity of their designs, however, textiles make clear that out of this physical interaction with the



environment, conceptual representations emerge. In other words, human bodily skills give rise to cognitive capacities. This intertwining of bodily skill and cognition is indicated by the deep embedding of textiles into our conceptual language: we speak of textiles and texts, both rooted in the verb “to weave,” fabrics and fabrication, and when we spin a yarn, we imagine, create, or, as cognitive neuroscientists might put it, we engage in metacognition.

By and large, the bodily techniques, skills, and tools of craft are not understood to have this deep connection to mental cognition. The conference aims to challenge this assumption by examining weaving and skill from a variety of perspectives. Questioning the relationship between the mind, body, and tools of the weaver invites a re-examination of the social and political status of such knowledge and crafts. The program thus brings together scholars from history, economics, sociology, anthropology, psychology and cognitive sciences, experts in textile and craft, textile entrepreneurs, artists, and weavers to investigate broad questions about craft as cognition, cognitive change over time, innovation in craft and the role of “traditional” crafts in the modern era. It will consider the preservation of craft practices and their cultures, as well as issues concerning individual autonomy, sustainability, and dignity in craft-making.

Free and open to the public, the program consists of two parts: Two days of sessions with expert weavers around the loom, with demonstrations of weaving techniques, and opportunities to learn at the looms; and two days of lectures and discussion by speakers from the academic, art, and commercial realms. In addition, there will be a display of historic and contemporary hand woven textiles, and artist [Marshall Reese and Nora Ligorano](#), NYC, will display a woven fiber optic work of art.



SCHEDULE

Tuesday, April 4, 2017

Embodied Cognition Reading Group Meeting: Weaving and Cognition (open by request and invitation). Making and Knowing Laboratory Tour.

Workshop day 1: Wednesday, April 5, 2017

10am-12pm Weaving Demonstration

2pm-4pm Weaving Demonstration

Weavers:

Carla Childs, backstrap loom

Lao Masterweaver Ms. Bouakham Phengmixay, Lao Textiles frame loom

Lao Ikat Master Ms. Simone Khamdypaphanh, Lao Textiles, frame loom

Workshop day 2: Thursday, April 6, 2017

10am-12pm Weaving Demonstration

2pm-4pm Weaving Demonstration

5-8pm: Exhibition Viewing & Reception, featuring Nora Ligorano and Marshall Reese (LigoranoReese, NYC)

Conference day 1: Friday, April 7, 2017

8:30am-6pm Weaving Conference, see schedule below

6pm Dinner for conference speakers

Conference day 2: Saturday, April 8, 2017

9:30am-6:30pm Weaving Conference, see schedule below

Conference day 1: Friday, April 7, 2017

Time	Topic	Speakers
8:30-9:00	<i>Breakfast</i>	
9:00-9:45	Why Weaving and Cognition?	Pamela H. Smith (History, Columbia)
9:45-10:45	How are Habits and Skills Learned? A Perspective from Neuroscience	Daphna Shohamy (Psychology, Columbia) <i>Respondents: Carla Childs (Weaver, Germantown Friends School), Somphone Pasithiphone (Weaver, Lao Textiles)</i>
10:45-11:00	<i>Break</i>	
11:00-12:00	History, Culture, Learning, and Development in Weaving Apprenticeship	Patricia Greenfield (Psychology, UCLA) with Ashley Maynard (Psychology, U. of Hawaii) and Carla Childs (Weaver, Germantown Friends School)
12:00-1:30	<i>Lunch</i>	
1:30-2:30 (Talk) and 2:30-4:00 (Demos)	Weaving Code and the Original Mobile App followed by Weaving Demonstrations	Carol Cassidy, Bouakham Phengmixay, Somphone Pasithiphone, Simone Khamdypaphanh (Lao Textiles)
4:00-4:15	<i>Break</i>	
4:15-5:45	Needle and Thread in Surgery and Tailoring: A Cross-Disciplinary Conversation	Roger Kneebone (Surgical Education and Engagement Science, Imperial College) and Izzy Dabiri (Freelance costume tailor)
6:00	<i>Speaker dinner</i>	

Conference day 2: Saturday April 8, 2017

Time	Topic	Speakers
9:30-10:00	<i>Breakfast</i>	
10:00-11:00	Weaving as a Sociotechnical System	Annapurna Mamidipudi (History of Science, Maastricht University) <i>Respondent: Andrew Goldman (Presidential Scholar in Society and Neuroscience, Columbia)</i>
11:00-11:15	<i>Break</i>	
11:15-12:30	Keynote: The Indian Loom, Climate Change and Democracy	Uzamma (Independent scholar, goldsmith and handloom activist) <i>Respondent: Maurie Cohen (Director, Science, Technology, and Society Program, New Jersey Institute of Technology)</i>
12:30-2:00	<i>Lunch for speakers</i>	
2:00-3:00	Cognition and Creativity in High-End Fashion Design	Barbara Faedda (Italian Academy, Columbia) <i>Respondent: Dorothy Ko (History, Barnard College, Columbia)</i>
3:00-4:00	Practice, Design, and Innovation with Textiles	Clare King (Propel, LLC) <i>Respondent: Paul Sajda (Biomedical Engineering, Columbia)</i>
4:00-4:30	<i>Break</i>	
4:30-6:30	Response and discussion	Discussants: Ulinka Rublack (History, Cambridge), and Stephen Flusberg (Psychology, SUNY Purchase) <i>Moderator: Pamela Smith</i>