

Humboldt/Princeton Strategic Partnership Proposal

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“Material Culture and the History of Science” – Narrative Proposal

Introduction: “Material Culture” and the History of Science

The historical study of material culture has a long pedigree. In the history of science particularly, “material culture” has been a major scholarly interest at least since Steven Shapin and Simon Schaffer placed it at the center of their investigations in the 1985 *Leviathan and the Air Pump*. To name but a few landmarks in the development of the field, Peter Galison’s *Image and Logic*, Norton Wise’s paper “Mediations,” and Otto Sibum’s work on experimental history of science all in some way or other turn to material technologies to understand the production of scientific knowledge. In the work of early modern historians, the intervention has perhaps been even more radical. Historians such as Pamela Smith, Paula Findlen and Lisa Jardine have refigured the origins of the so-called Scientific Revolution by drawing attention to a set of profound changes in material culture in the sixteenth and seventeenth centuries that provoked a revolution of knowledge at both the practical and theoretical levels.

The interest in material culture in the history of science is exemplary of a broader trend in the humanities and social sciences. In fact, the study and discussion of material culture has been taken up by a variety of fields (archeology, sociology, anthropology, in addition to history and history of science) focusing on a dizzying array of objects (books, tapestries, ruins, scientific instruments) from across human history. The diversity of the field, however, is matched by its relative lack of theoretical unity. Debates center, for example, on the possibility of an historical agency for material objects, and on strategies for avoiding a “human/world” binary. Even the question whether the study of material culture requires theoretical elaboration is contested; for some, “material culture” is a more or less self-evident category, others think that it requires the appeal to a complex range of thinkers to bring out its potential.

The need to find some coherence to the methodology motivated a 2009 forum in the *American Historical Review*: “Historians and the Study of Material Culture.” In the discussion, the

editor posed three essential questions about the approach: he hoped that the forum would bring clarity to the relationship between things and words, between things and humans, and between things and broader culture. These three questions draw attention to the promise of the field: it is only because material culture sits at the nexus of language, life, and society that its relationships to all these elements need clarification. And yet at the same time because the editor felt these questions to be so pressing, he recognized the need for a thorough-going re-thinking of the project to unlock its potential.

As part of the Humboldt-Princeton Partnership, we intend to address the study of material culture as a central question in the history of science. We are proposing two workshops: “Soul Catchers – A Material History of the Mind Sciences” (Guenther, Hess) and “Childhood – Between Material Culture and Cultural Representation (Rietmann, Schildmann).” Both workshops confront the issues raised in the AHR forum. They move beyond and interrogate the textual by examining the materiality of inscription systems. They address questions about what it means to be human by looking at constructions of “mind” and “childhood” in a range of material contexts (such as hospitals, schools, laboratories). And they allow us to re-assess divisions between groups of people (e.g. public and private, lay and professional) and their cultural activities by looking into the materialities of “soul catching” (scanners, the writing hand, the psychoanalytic couch) and of managing children (from furniture to writing devices and exercise regimes).

More broadly, the choice of our workshop topics makes them a test case for the historical study of material culture, through which we hope to provide the opportunity for reflection on the methodology and open up new avenues for its future development. Applying a material culture approach to two extreme cases – the immaterial category of “mind” and the seemingly natural or biological category “childhood” – we hope to probe its limits. The “Soul Catchers” workshop looks at historical technologies of “soul catching” in different cultural, social, and institutional contexts to shed light not only on the volatile object caught, but to understand better the material conditions of the catching process. In the “Childhood” workshop, the organizers seek to critically engage with an older scholarship on childhood by locating a “material turn” in the history of the concept around 1900, a move that calls into question older narratives that focused on the development of ideas. In working out when and where our methodology encounters difficulties, we hope to better define its potentials and limitations. Such research opens up the possibility to redefine what we mean by material culture in the history of science, extending the methodology beyond the experimental objects that have so far

guided analysis. It will suggest new ways in which material culture can impact upon and shape knowledge production. Finally, because both projects examine the investigation of humanity, it might suggest new ways for rethinking the articulation of material and social cultures in science.

Our dual workshop project will draw on the opportunities provided by the Humboldt-Princeton Partnership in various ways. First, it engages scholars of different professional levels, i.e. junior and senior faculty members as well as graduate students from both institutions. Second, it draws upon the complementary profiles and interests of the contributing departments. Because in the German and US academic contexts the history of “knowledge” and “science” has different emphases and institutional affiliations, the joint Humboldt-Princeton workshops cut across disciplinary as well as national boundaries. History of science in Germany, and especially at Humboldt, has a closer intellectual connection to cultural and media studies, and emphasizes textuality and the mediatization of knowledge. In the US, and especially at Princeton, history of science remains more firmly embedded within the field of history, which is reflected in its attention to the institutional, political, economic, and social contexts of knowledge-making. The transatlantic venture thus brings to bear trans-disciplinary perspectives on the problem. Putting the two traditions into conversation will provide a valuable exchange and mobilize a number of approaches to the analysis of the material conditions of knowledge production.

Our collaboration will result in a number of concrete long-term benefits for the Princeton-Humboldt Partnership: building upon the intellectual and institutional foundations laid down in their workshop, Guenther and Hess will establish ties with the 5-year ERC (European Research Council)-funded “Paper Technology” project at Humboldt, at the level of graduate students (a two-way exchange, dual PhDs, and a planned summer school in 2015), postdoctoral researchers (via the ERC-NSF initiative), and faculty (summer school). The focus on material culture, which extends to the materialities of inscription, will give these projects a coherent intellectual frame. Rietmann and Schildmann will initiate a long-term, self-organized topical graduate network devoted to “childhood,” which plans to meet regularly, and will maintain a website to further exchange and update progress on the project. More broadly, our thematic workshops will lay the foundations for a transnational cooperation that will provide important opportunities for graduate students, especially those undertaking transnational projects. For a detailed explication of these long-term benefits, see the end of this Proposal (“Looking Ahead”).

Workshop I: “Soul Catchers – A Material History of the Mind Sciences” (Guenther, Hess)

A soul catcher is a piece of incised bear femur decorated with animal heads. It is plugged with cedar bark on both ends, to catch and contain those ephemeral things that are often described by the term “soul” – a lost soul or an evil spirit. While the soul catcher today strikes us the work of superstition, and the product of an animistic culture, it resembles in both its form and function other, more mainstream, objects. Many technologies in the modern world, in daily life and in science, in the clinic and in the laboratory, might also in their way be labeled “soul catchers.” The psychoanalyst’s couch, the writer’s pen and paper, or the heavy machinery of scanners, processors, or EEG machines that populate our hospitals and research centers all try to catch that elusive object, which in the eighteenth-century was still called rather unproblematically the “soul.” Two hundred years later, the epistemic object caught in notebooks, photographs, film, PET scans, brain sections or electric circuits shows itself to be just as indeterminate as the soul caught in the hollow femur of the shaman.

This is not to downplay differences between these technologies of “soul catching,” which are indeed impossible to miss. Only a short glance reveals differences of complexity and scale, of cultural authority and plausibility. These differences also reflect many of the oppositions that structure the modern world: science versus superstition, mainstream versus marginal, and the finer differentiations between psychoanalysis, psychology, neurology, brain science, and criminology amongst others. But as the history of science teaches us, some of these divisions are new, and others have been constantly renegotiated over the past two hundred years. To use them to delimit the object of analysis would thus also pre-determine many of the results, and keep the research anchored to the categories of the present, upon whose genesis and constitution it might otherwise shed light.

For this reason, in their workshop the organizers will try to lower the disciplinary boundaries that have traditionally kept these technologies separate, in order to examine the workings, problems, and futures of the technologies and the souls that they are catching. All these technologies confront the problem of how to use material objects in order to grasp something usually considered immaterial. Spirit photography attempts to capture traces of a departed spirit, a physical mark left on the photographic plate, as a sign of something we otherwise cannot see. So too, a PET scanner visualizes brain activity, representing “neural correlates” of depression, ethics, and more recently, love. Souls can be visualized, but they can also be written. The medical case history captures the mental disease of a psychiatric patient, the

pen held by the writer of *écriture automatique* offers a point of access to the creative mind. Others have tried to grasp the soul through the expressiveness of the body. The measure of stress hormones in a laboratory animal allows us some access to its experience of stress, the lie detector is sensitive to minor vegetative changes in the body which supposedly can separate truth from falsehood.

While our project tries to break down certain distinctions, it also has the potential of providing new taxonomies. Would it be possible to divide up these soul catchers by the type of soul caught (emotional, pathological, spiritual, etc.)? Are the key divisions marked by the functions of the devices deployed (machines that make the invisible visible, that capture the ephemeral, that cultivate or produce certain mental states)? Or do the goals for which the catching process is deployed matter most (to analyze, to heal, to police)?

The workshop both builds on existing institutions and programs in Humboldt and Princeton and looks forward to new cooperative projects between the two universities. The workshop will be held in Princeton on two consecutive days in February 2014, with 12-15 speakers, and will draw on the infrastructure of the annual History of Science Workshop at Princeton. The support of the Partnership, however, will allow them to expand their workshop, making it an international event and inviting about half the contributors from Europe. Moreover it will allow the organizers to involve graduate students from both Humboldt and Princeton, with the goal of initiating and supporting intellectual exchange between the two doctoral programs. The organizers envision bringing in 6-8 graduate students from Germany, selected through competitive application process.

The organizers plan to publish the main results of the workshop in a special issue for which they have already made preliminary inquiries with the editors of the journal “Science in Context.”

Workshop II: “Childhood – Between Material Culture and Cultural Representation” (Rietmann, Schildmann)

According to Philippe Ariès seminal book “Centuries of childhood”, the history of childhood only begins with modernity: childhood is not a natural stage of human development but a cultural construction that emerged with the formation of the bourgeois nuclear family around 1800. As contested as Ariès’s thesis may be, it proves fertile for delimiting the unstable epistemic position of childhood as an object of study. The question of the nature of childhood – which is linked to the self-understanding of humanity itself and is often heavily charged with

ideological overtones – now becomes a question of its conditions of possibility: how are young human beings codified as representatives of childhood? Under what conditions do certain humans gain an infantile identity, and how do these conditions shape that very identity?

Around 1800, the interest in childhood stemmed from anthropological and historiographical perspectives, thus offering itself as a model object for the study of mentalities and the history of ideas. In the early nineteenth century, as scholars combined ontogenetic and psychogenetic processes of development, they came to see the child as a *Leitfigur*, whose characteristics and development would inform the search for human origins. The child became a symbol for the history of both the individual and mankind. This process not only laid the foundation for the hypostatization and mythologization of childhood that reached its climax during romanticism, but the child also became a medium for arcane knowledge. On the one hand, the child represented anthropological and historical continuity of the human being; on the other hand, it constituted a categorical otherness, that was to be investigated, observed, understood, and tamed.

Around 1900, in contrast, the child became the center of a material revolution. With the rise of the human sciences, the question of the nature of childhood increasingly shifted to empirical scientific investigation. A multitude of new scientific disciplines, including pediatrics, child psychiatry, pedagogy, and ergonomics, participated in an experimental and psychophysical investigation of the child. Part and parcel of this endeavor was the development of an arsenal of new research technologies and analytic procedures: the efficiency of children was measured by new technological devices such as the ergograph and the *Ästhesiometer*, the working of their minds was analyzed in drawings and toy-usage, their learning abilities assessed in laboratories and experimental settings, and their behavior disciplined by educational programs and ergonomically designed working environments.

This developing material culture focused on the “child” – comprising scientific, experimental and pedagogical instruments – was mirrored, multiplied and opposed in artistic, cultural and social discourses. Be it in the booming genre of “school-literature,” reform pedagogical projects, or political agendas of “*Staatsbürgerliche Erziehung*,” knowledge of childhood figured center stage in the public sphere. The reform pedagogical movements thereby demonstrate that the empirical scientification of the child did not necessarily destroy its salvific idealization: the “liberation of the child” (Ellen Key) was both scientifically authorized and social-utopianly romanticized.

The rich interaction between scientific material culture and cultural representations of

childhood around 1900 demands an approach to the history of childhood that pays close attention to the material conditions and mediatization of knowledge. It demands that we expand the focus beyond the history of ideas that has guided the current historiography of childhood. The project “Childhood” seeks to accomplish this by bringing together approaches from the history of science and cultural studies. It will pose the problem of the relationship between the knowledge of childhood that was produced in the social scientific laboratories and the developing discourse on childhood in literature, arts and politics. How did, for instance, observation and assessment practices in experimental sciences relate to educational programs in pedagogical institutions such as nurseries and schools? And how did their proliferation restructure both the material environment and cultural identity of children?

To address these questions, the organizers will, among others, investigate the materiality of text production and its role in the generation of knowledge: on the one hand, material arrangements that regulate the access of children to scripture and language (writing on paper or blackboards, learning of different typologies, working with ergonomic bureaus and ribbons); on the other hand, paper technologies and processes of note-taking, writing, and arranging that enable teachers, parents, psychologists, physicians and writers to produce and conceptualize “childhood” as an epistemic object. The organizers will thus explore the way in which scription- and inscription-systems (Friedrich Kittler) generated professional and popular knowledge about the condition of childhood and its pathologies (e.g. aphasia, alexia).

While their point of entry is the material boom around childhood in Western Europe around 1900, in the long term the organizers encourage an extension to other geographical areas and historical periods. They hope that a focus on the material basis and mediatization of concepts of childhood will also open new venues for re-assessing continuity and breaks in accounts of the history of childhood.

For the coming academic year, the organizers are planning two workshops: first, a one-day graduate workshop in Berlin at the end of July 2013. This workshop will give a first opportunity to present the projects of participants from different departments and lay the foundation for future collaboration. For the larger conference with both graduate students and faculty, envisioned for spring 2014 at Princeton, the organizers plan a two-day workshop with 12-14 speakers, half visiting from Europe. Rietmann and Schildmann will seek departmental support and apply to outside sources of funding. But since funding sources for such a project are limited, the Princeton-Humboldt-Partnership will offer a unique opportunity for the establishment of transatlantic and interdisciplinary exchange

among junior researchers.

Building Bridges Through Travel (Angela Creager)

In addition, some additional travel funds would help us build more informal connections between historians of science from our two universities. This is crucial in order to think further about the next steps of our collaboration. For this reason, Angela Creager would like to travel to Berlin for one week in the summer of 2013, in conjunction with attending a conference in Montpellier, France. (She will use her conference funding to cover the cost of getting to Europe.) While in Berlin, she would meet with historians of science associated with Humboldt that we have been in contact with, and would be available to meet any interested graduate students there. She will make her availability to students known via Jochen Brüner and Anke te Heesen, as well as through Lorraine Daston at the Max Planck Institute for History of Science. Creager will be spending her next sabbatical leave, 2014-15, at the Max Planck Institute for the History of Science, and so will continue the conversation and possible collaborations in person then.

Looking Ahead: Long-Term Benefits for the Princeton-Humboldt Partnership

In an emerging Partnership like ours, it is of course difficult to determine the scope and content of future collaboration. Such collaboration emerges from the connections and synergies between our respective intellectual projects, which can be fostered most effectively through conversation and scholarly exchange. These considerations motivate Creager's meetings in Berlin, and provide an important justification for the two workshops, which are an opportunity for faculty and graduate students from both institutions to learn more about each other's work and build the personal and professional connections that are at the heart of any partnership.

The organizers do, however, have more concrete plans for the future development of the Humboldt-Princeton Partnership in the history of science, whose foundations are laid in the two workshops: Looking forward beyond the "Soul Catchers" workshop, the organizers intend to build on existing funding and research structures at Humboldt to support the future development of the cooperation. Volker Hess's European Research Council (ERC)-funded "How Physicians Write: Paper Technology" runs over five years (2012-17), and will help build up and sustain a longer-term transatlantic initiative. Hess and Guenther are tentatively planning a graduate summer school on the topic in Berlin in 2015. The summer school will build on the insights gained and personal connections formed in our "Soul Catchers" workshop, and aims to develop the Partnership by involving additional scholars and PhD students from both sides,

from such fields as the history of the book, intellectual history, and early modern history.

We see great potential for the Partnership at the level of PhD students, both in terms of internationalization and long-term History of Science programming in the US and in Germany. A lively exchange and close structural ties between the two Universities will facilitate the flow of graduate students in both directions. This seems particularly relevant for a fields like history/history of science and cultural and media studies; many of our graduate students work on transnational topics – a field of great future promise – and the Partnership promises a transnational structure that will support their work. Specifically, we will encourage the exchange of early-stage graduate students, for semester-long visits to the other institution. Such an exchange will allow students to take seminars, attend lectures and colloquia, participate in the local research communities (the Princeton History of Science Program Seminar and the *Studientage* at Humboldt), and work as teaching assistants. At Humboldt, exchange students could be offered work space as part of Hess's different working groups (Psychiatry, Paper Technology); at Princeton, students will find their institutional base in the History department, and the nearby Firestone research library. In addition to paving the way to such exchanges, Guenther and Hess are exploring the possibility that two ERC graduate students would apply to the Humboldt-Princeton dual PhD program.

Hess's ERC project also opens up possibilities for collaborations at the post-graduate level. For instance the ERC-NSF initiative, which invites NSF-funded researchers (CAREER awardees and postdoctoral fellows) to undertake research visits to ERC projects, could provide support for the on-going partnership. As these plans develop they will both benefit from the Partnership between the two Universities and support its continuing development.

Workshop II, in its interdisciplinary focus, aims at uniting junior researchers from different departments at both Princeton and Humboldt universities, including history of science, literature studies, and pedagogy. In the long term, Rietmann and Schildmann intend to establish a transatlantic, self-organized working group of graduate students that provides a forum for discussing and exchanging ideas, studies, and new approaches to childhood. Since the topic addresses a research field which has only recently received significant attention from both history of science and cultural studies, the network will allow scholars from different disciplines at both universities to participate actively in the development of the field. The organizers envision that the working group will plan one or two meetings per year in Princeton or Berlin, and a number of larger initiatives. Such initiatives might include graduate workshops, larger conferences with faculty and guests, preparation of joint publications about childhood, and the

establishment of a webpage as both source of information and forum for discussion.

Mapping out the future development of the partnership in the history of science, we look to draw on the many strengths of the Humboldt-Princeton community. Our focus on material culture and the materialities of representation will allow us to bring into conversation and mediate between such fields as the history of science, *Germanistik*, and media and cultural studies; to draw on the skills and interests of a diverse group of scholars (at the junior, senior and graduate students levels); and to capitalize on the differing emphases of the two home institutions. The opportunities afforded by the Princeton-Humboldt Partnership will allow both the development of a number of exciting research projects and promote a long-term, sustained exchange between the two groups of scholars.