

Double Humboldt: Thoughts on The Digital Twinning Of The Humboldt Brothers

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ABSTRACT: ab 2019/20 im Humboldt Forum werden die Brüder Humboldt im Wesen und im Programm des Hauses wiederbelebt. Im Berliner Kulturrhythmus wie in der akademischen Mode wird es nicht das erste Mal sein, wohl aber das digitalste. Am Beispiel von zwölf Spiegelungen (Problemstellungen, Projekten und konkreten Touchpoints zwischen dem Analogen und dem Digitalen) möchte ich erläutern, wie im Humboldt Forum-Projekt die Charaktere, Leben und Denken dieser gepaarten Figuren für eine Übertragung (Metempsychosis?) ins Digitalen vorbereitet werden. Meine Auflistung erzählt die Anfänge einer Umgang mit Geistern und die Suche nach neuen, auch virtuellen Verkörperungen einer unvergleichlichen Kulturerbe.

Beginning in late 2019, the Humboldt Brothers will be undergoing a rebirth in the substance and program of the new Humboldt Forum. While in Berlin's cultural rhythm or in the cycles of academic fashion this won't be the first time, it will be the most digital. Drawing on 12 mirrorings (challenges, projects, touchpoints) between the analogue and the digital, I hope to shed light on how the character, life and thought of these siblings are being prepared for a transition (metempsychosis?) into the digital. My listing tells of the search for a way of getting along with spirits, and of the search for new, even virtual embodiments of this incomparable cultural heritage.

1. LEITBILD - the role of digital concept in the physical construction of the humboldt forum

In the 21st Century it is self-evident that to exist an institution must exist digitally. We can start our encounter with the phenomenon of digital twinning from this point, that the digital for most institutions has become a condition of existence - in the sense of a pre-condition for existence – so, anything that is, or would be, in this 21st Century world is in need of its digital twin.

This can produce some challenging situations, since like Esau and Jacob in the Bible story no twins are really born at the same time. In the case of the Humboldt Forum, which we can take as an example here, digital is the one that came later and has had to catch up. It is

precisely in this moment of starting late that I would like to start my story of digital twinning.

The process of digitalizing the Humboldt Forum, in which I have been involved full-time for over three years now – together with tremendous colleagues – offers I think an instructive case for considering the phenomenon of digital twinning, in the general meaning I give it of specific digitalizations performed on cultural and/or intellectual heritage.

One factor strongly shaping this process from the start has been the experience of the Humboldt Forum's digital design being born behind or later than its sibling, the “interior design”, in the traditional sense understood as the physical exhibition and display design exclusive of digital media. In fact, Ralph Appelbaum Associates began planning [1] the

exhibition spaces of the Staatliche Museen zu Berlin/SMB two full years before the first positions were funded for media concept and planning. Nathalie Keurmeur and I were hired into the project in April of 2015, working within the SMB/SPK for the “Stabsstelle Humboldt Forum” under Bettina Probst until June of 2016, when we were taken up into the Humboldt Forum Kultur GmbH (part of the Stiftung Humboldt Forum im Berliner Schloss), where we continue our work with a growing team, including Manuel Fischer, Cornelia Fanslau, Patrick McDonough and Conrad Mücke, today. Plans going forward are for the digital department to grow for handling additional needs through implementation and into the operations phase. In November 2018 a new department director is coming on board to manage this enlarged portfolio of functions.

In this process, the digital has had to catch up to the physical and analogue layers of the design process, often having to fight for space in the planning priorities, and for inclusion in discussions on the content and messaging. Every child has its growing pains, second-born twins their own particular ones. These difficulties of coming later are common to digital departments nearly everywhere and in a way to our age in general; it is what we in large part mean when we name this central dynamic of our evolving media society “digitalization”. Certainly, the “analogue” side of the exhibition design process, i.e. Tim Ventimiglia and his team at RAM, felt similarly impacted, from their beginning, by the spectre of this troubling unborn twin, coming after, for which space would have to be made, and very probably later remade.

For us, tasked with entering the project late, understanding what was being proposed and what was going on as this Humboldt Forum, and then conceiving and planning the same/? thing in its digital dimensions, the challenge came down in large part to searching, sensing for and concentrating an image of what the Humboldt Forum was or was supposed to be. Especially in the structural situation of a small staff unit inside a much larger machinery of acting institutions and stakeholder groups (ultimately the people of Berlin and the world) this orientation onto the core or heart of the project was going to be vital. Working in close parallel with all these partners, but due to the hierarchy of communication channels always

at risk of becoming isolated from them, we needed an assurance that the work we were carrying on in between briefing rounds and periodic committee meetings stayed true to the mark, i.e. on target, toward realizing the right/?, the real/?, the true/?, the best/?, or the same/? Humboldt Forum in sync with the other arms of the project. One word for what we, and everyone else in the project, needed and searched for is a Leitbild, the guiding image or idea held in mind to direct an activity, often involving some dimension of copying or transferring a likeness. The role a Leitbild can play in a design process is vital, because it is double, mediating between the receptive function of perceiving or fielding a given idea and the active function of concentrating and specifying an idea in formalizations that can be presented, discussed and evolved in constructive and contractual practice, guiding day-to-day project work. The Leitbild in this sense specifies the terms of an identity, the details or aspects that a new image would need to have to be said to resemble (enough) the first, or to carry its spirit or express its character.

It was in this sense that our very first task in starting on this project was the task of preparing a twinning. It was clear we would need the most broadly informed (and regularly re-informed) image of what the Humboldt Forum (as planned, imagined, hoped for) was, in order to think the experiences and systems that could bring exactly/? that to life (in 21st Century terms) by giving it digital existence. Then we would need an effective concentration of this (certainly complex) image as a practical instrument for reflecting it back to project partners, to test for recognition, consensus, disagreement, and then for incrementally adapting and evolving it to perform the ongoing work of directing collaborations under a common idea.

Where is this Leitbild, where should it come from, what should it include, and how can it be used to manage the twinning of an idea or a heritage from analogue to digital realizations? If our concept [2], or a concept in general, in the sense of an institution’s digital concept or strategy paper, can answer this question, I would say it can and does in essentially the same role as an architectural planning document or drawing does: by finding, forming, holding, negotiating and evolving an image, ultimately to guarantee a twinship, between an

idea and its realization, or between one realization and a next one.

2. PROFILE – our first attempt at a digital concept of the humboldt brothers 2015-17

As a way of keeping track of the core themes and messaging that a concept for a truly “Humboldt” Forum project would need to reflect, we captured for ourselves, and later invoked regularly in our presentations and briefings, a few main aspects of what necessarily remained for us a complex, composite and ultimately contractual image, our Leitbild or *Herleitung*. Its purpose was to help keep our eye on this “Humboldt Forum” as it was taking shape and as we were seeking to realize it digitally.

The image remained, by nature of the project, complex and multi-dimensional. We distinguished between a general idea of the Forum as it seemed to appear in cultural discourse and in the public mind, specific formulations of the project or its Leitbild from those in the position to set these as a function of their role (first the Grundungsentendanz, then the Generalintendant), further ideas or images set in the design processes of the participating partner institutions, and, as one necessary dimension, the Humboldt Brothers. Whatever tendencies or biases of interpretation (Deutung) might emerge in the work of defining the Humboldt Forum, the Humboldt Brothers would/should inevitably play a core role. Correspondingly, for us, finding the “Humboldt” in the digital concept was going to be a key measure of success in the task of digitalizing the Humboldt Forum. How can a media concept be Humboldtian? How Humboldtian can it be? How Humboldtian do we want it to be? These were questions that concerned us from the beginning.

Our way of dealing with this was to condense for ourselves, out of sustained research and readings, a minimal core “profile” of the Humboldt Brothers. I proposed it as a helpful way of keeping the core elements of this important identity material in mind, simplifying a presentation of the content without losing a sense of the full spectrum each brother covers, and the two cover as a pair. The aim was to counteract natural tendencies to reduction in how we deal with the brothers. With figures each in his own right so multi-faceted, and

together presenting an even more complex picture, it is easy to leave aspects out. Especially in the case of Wilhelm, who is both less deeply and less widely known than his brother, it is an effort at rendering and sustaining a balance in the guiding image through a good visibility of his core traits. Taking fairness and comprehensiveness as fundamental Humboldtian values, we were concerned precisely with doing justice to a “full” span or spectrum of aspects that would need to be taken into account if we are interested in taking the brothers into account as wholes and/or as a whole. The principle we apply to the study of these figures should no doubt be the same as that we apply, following Wilhelm’s urging, to the study of people, or humanity in general: “Eine philosophische Anthropologie... muss immer ein Ganzes, eine vollendete Gestalt aufsuchen.” And even where totality is impossible, this totality requirement” applies, because

Ohne sie ist die Mannigfaltigkeit nur verwirrend.... Alles Bekannte ist, und bleibt ewig nur Bruchstück. Jene Bedingung der Totalität aber wird erfüllt, wenn die Behandlung systematisch ist, das Verwandte zu verbinden, das sich Fremde zu trennen strebt, und wenn der Geist ununterbrochen tätig ist, nach den Datis der Erfahrung immer den ganzen möglichen Raum zu überschlagen, die unausgefüllt bleibenden Fächer anzudeuten, das Vorhandene nie als zufällig abgerissenes Bruchstück, sondern als integrierenden Teil des Ganzen zu betrachten [...] kurz wenn einmal durch die wahre Richtung des Studiums die Bahnen vom Einzelnen zum Ganzen, und von diesem zurück wirklich geöffnet sind, so gehet die Anzahl der möglichen und nützlichen Verknüpfungen wahrhaft ins Unermeßliche. [3]

Applying this approach in a digital twinning of the Humboldt Brothers means seeing them both in their unity and in their uniqueness and contrast, evolving an image of both out of an image of each, and back around again. A certain Yin-Yang symmetry or dynamic emerges in viewing them this way, taking them conceptually as diametrical twins, identical opposites, the “brandenburgische Dioskouri”. In particular, this profile has proven helpful in responding to the most frequent reductions we encounter in how people think about the brothers, which are, very markedly: 1) the tendency, when hearing “Humboldt”, to only think “Al-

exander” and to forget or undervalue Wilhelm as a referent in the designation, 2) when thinking “Wilhelm”, to only think the university and school reform, or “language” as a specialist science, neglecting his larger central narrative of *Bildung* [4] as generative human unfolding through interactive exchange and 3) when approaching objects and topics of “culture” to forget that for *both* Humboldts “nature” is always a necessary part of the equation. For example, in his

Im ersten Horen-Aufsatz entwickelt Humboldt sein Prinzip der physisch-moralischen Natur-einheit In dem Gleichnis, das er zur Verdeutlichung dieses Prinzips erzählt, spricht er nämlich von der physischen und der moralischen Natur des Menschen als von den Flanken eines einzigen Berges, die ein imaginärer Naturforscher und ein imaginärer Menschenkenner in ihrem Zusammenhang als die Flanken ein und desselben Berges nur von dessen unerreichbarer Höhe aus erkennen könnten (wenn sie nämlich dort hinauf könnten (1. HA, I, 271). [5]

The ideal of knowledge at the heart of this intellectual heritage insists on this striving to keep the whole in mind by keeping the mind whole, balanced in its approach to things between its best natural and cultural scientific perspectives.

<p>ALEXANDER: (Natur) VERNETZUNG</p> <p>Forschung – Daten – Kosmos</p> <p>Reisen – Abenteuer – Austausch</p> <p>Seine Originalität: <i>Ansichten der Natur</i> 1807 <i>Karten und Infografiken</i> (mit Heinrich Berghaus u.a.) <i>Kosmos</i> 1845</p> <p>- Claim (A. Wulf): Invented our idea of nature „The world as a living whole“</p> <p>Seine Aktualität: Klimawandel (A. Wulf) Geological Turn – Antirassismus</p> 	<p>WILHELM: (Kultur) VERBINDUNG</p> <p>Begegnung – Wechselwirkung – Bildung</p> <p>Sprachen – Denkweisen – Lebensweisen</p> <p>Seine Originalität: <i>„Die Grenzen des Staates“</i> 1793 <i>„Theorie der Bildung“</i> 1793 Geschichtstheorie Vergleichende Anthropologie Völkerverständnis des Sprachmanns 1826</p> <p>- Claim (HF): Invented our idea of culture “Self-education” “The well-rounded person” “Growth through encounter with the other”</p> <p>Seine Aktualität: Whorf – Chomsky – Deleuze Interkulturalität – Intermedialität – Cognitive Science</p> 
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Failing to keep the larger balance of their identities and interrelations in mind in the design process, and allowing realizations and instantiations that reproduce a reduced image of these wholes, would mean missing out on the larger message the Humboldt Brothers have for the world. Zooming in on “language” as Wilhelm’s science, without establishing that for him all science comes back to the comprehensive science of being human, is to risk reproducing just one more stuffy scholar, rather than

bringing to life a still undiscovered, cosmopolitan visionary. That Alexander invented our idea of *nature* and can teach us to view (and manage) the world ecologically we know by now, thanks if nothing else to Andrea Wulff’s recent, very successful book, *The Invention of Nature* (2015). But the extent to which Wilhelm’s vision of *Bildung* – as the story of the self’s unfolding in dynamic interplay (*Wechselwirkung*) with encountered others and the material surroundings – presents us with an equally inspiring and potentially regenerative, also ecological, idea of *culture*, has still barely been noticed. What might close down as the specialist disciplinary categorization “education reform” or “language studies”, can be held open by means of a profile like this, to tell the greater story of how we become who we are through the encounter with others and with the world.

3. AS PORTRAIT OR AS PRINCIPLE

- expectations of a traditional representation in practice and policy

The genesis of cultural institutions very often involves a project of memorialization, a reviving of some specific, nameable heritage designated to represent the content or values of the institution. There is a lot to observe in how this cultural heritage comes to take perceptible form in the new establishment, in branding and identity elements, in programming, in the press and in the public imagination. One pole of how a cultural or intellectual heritage can manifest, take life, is in a direct portraiting, in detailed fidelity to an historical original, another is in a more abstract, iconic referencing. The closer an institution identifies with a historical character or personality, the more specific and selective (whether inclusively or exclusively) it will feel compelled to become about the representations, which in the logic of corporate identity now “belong” to it, are available to it as cultural capital or associated with it as cultural baggage. Establishing a “true” portrait, a rendering we can consider by convention or tradition as true to life, that we can use to check or guarantee a claim of identity, involves a specification and a narrowing of the image we use to underwrite the identity. Every detail specified excludes possible other specifications and shapes the space of possible interpretation to focus on a most favorable set and framing of features.

One of our key observations, looking ahead into this process of participating in the digital realization of the cultural heritage “Humboldt”, was that many hands were going to be at it, of course already were on many levels and fronts, and under the assumption that it will really matter to those dealing with the theme, the best strategy would be one of leaving a constructive *Spielraum* for different facets, focus and framings of the heritage to co-habitate and interact in a looser space of reference. If the “Humboldt” was going to make it into the digital “alive”, we suggested, it would have to happen through an abstraction from the personal particularities of the two historical men, to focus instead on the general “character”, “spirit”, way of thinking or way of seeing things they, or each of them separately, can be shown to stand for.

Für eine wirksame Nutzung der Humboldt-Brüder im Medieneinsatz, wie auch im Forum als Ganzes, müssen auch Humor, Spiel und Poetik Charakteristika des Ansatzes sein. [6]

If twinning is an interesting concept for tracking movement between analogue and digital realms, it is not for the benefit of preserving dead likenesses in the new media, but rather for mirroring something to extend the living likeness into a further sphere of existence. Approached in an open manner, flexible enough to tolerate inevitable polyvalence and contradictions, the guiding image or idea of an intellectual heritage can do more than show us what we already knew about that heritage; it can extend it, establishing the means for that heritage to be taken over into new environments, reveal new aspects of itself by activating in new contexts, and take on new life there, producing new ideas in new hearts and minds.

4. DISPLAYING THEIR THINGS - the digitalization challenge 1

Twinning, via digitalization or any other way, does not occur all at once. Different dimensions of what it might mean to twin an intellectual and/or cultural heritage like the Humboldt Brothers can be thought of all at once, but they can be explored concretely only as different projects of engaging with the material come up. One opportunity the Humboldt Forum brings up and is acting on consists in the digitalization of objects, Humboldtian objects in the sense of having been owned or collected by the Humboldt Brothers (and here principally

Alexander), but more commonly in the sense of having been collected by other researchers or scholars working in the Humboldtian tradition (e.g. of comparative anthropology or comparative plant biology), or in the tradition of the Berliner Kunstkammer, vital current of the tradition in which the Humboldts worked and which their model can be seen as extending and further-activating in new institutional mediations.

Through the history of collecting and museum practice there is a strong identification of collectors with their collections, and in a very generalized way the owner’s, collector’s or scholar’s aura hangs over their things. Displaying their things is something close to displaying *them*. Each object brought over therefore adds to the digital body. This much twinning remains at the level of *digitization*, the body of analogue things brought over into a digital environment without yet bringing them to fuller digital life there. More is possible once the twinning goes as far as a *digitalization*, where the new digital thing is exposed to the new modes of processing and new speeds of computation available in the digital environment. Digitalization supplies new dimensionalities for connecting information to an object and objects among each other. The gap between the library and the showcase is collapsed. With the digitalization of Alexander’s or Georg Forster’s or Adolf Bastian’s research collections, we know we will have more than just a portraiting of each object, even of each object and its catalogue entry. We will have more of that person, materialized in the digital. Digitalization of a collection brings the logic, the knowledge structure, in a practical sense the active mind of the collection/collector over into the digital along with the objects. These same contents, understood as metadata, were already accessible in analogue form in the card catalogue. In digital form, the digitalization latent in the cataloguing can be activated by machine intelligences, and carried further. A good digitization advances the twinning of a collection/collector in the sense of giving them more body/greater presence in the digital. But digitalization activates the fuller computational potentials offered by the new environment. With a digitalized collection, something more than a body (of objects, of science, of knowledge) is twinned: namely, the knowledge, the intelligence, the thinking itself, which can now continue in the new medium,

applied to new material (or old) and producing new thinking either way.

5. ONLINING THEIR WRITINGS AND ARCHIVES - the digitalization challenge 2

The other major track for digitalization of the Humboldtian intellectual heritage is in the digitalization of their writings and archives. In the case of Alexander this aspect of his digital twinning is far advanced, with the online publishing of his collected writings, including the entirety of his grand oeuvre, *Kosmos* at http://www.avhumboldt.de/?page_id=469, and the excellent digitization of his cartography and information graphics in the *Physical Atlas* produced with Heinrich Berghaus at <http://www.atlassen.info/atlassen/perthes/berpa01/berpa01p.html>. In the case of Wilhelm, the main body of his published works is also available, digitized if not digitalized, with much of it collected at https://de.wikisource.org/wiki/Wilhelm_von_Humboldt.

Similarly to digitalized objects and collections information, it is the new life taken in a digitalized existence that extends the twin beyond potentials that had already been there in the analogue existence. The texts that are preserved in digitized bodies, already instantly and ubiquitously accessible and infinitely shareable, once they are digitalized, i.e. made machine-readable, also become infinitely re-processible, semantically and operationally re-enterable and re-combinable. As with objects and their catalogue cards, this allows the linguistic, semantic, authorial intelligence inherent or emergent in texts to be made discernible, distinguishable, extendable and applicable, in organizing patterns and principles, in algorithms, to new material, or to old material, producing new. Automatically, new knowledge is produced and something even closer to persons than things is reproduced in the digital twin: an intelligence, ways of thinking, ways of making meaning. The potentials for digital twinning via textual material are, if anything, even closer than in the digitalizing of objects, particularly because the linguistic form pre-codes them for access by informed search, machine learning agents, or artificial intelligences. On the other hand, visual search and analysis software has advanced recently to in part overcome this distinction, by now also supporting highly segmented, semantic analy-

sis through image processing. Artificial intelligence and the digital humanities are just beginning to show us what we can learn by applying methods of digitalization to the mass of analogue heritage digitized so far. Our sense of what is or must be possible in this field, as I commented already at the end of a presentation to the EVA conference in 2016 [7], extends at least as far as the inspiring goal Martin Grossmann urges [8], of using new possibilities in the digital to embody foreign worldviews, not in new digital representations, but in the operating systems themselves.

6. THEIR MIND ON THE COLLECTIONS - distilling the spirit into search and association categories

Twinning the stuff of their thought and work brings the Humboldt Brothers into a digital existence, while twinning the intelligence in these wakes the brothers, or their spirit, to digital life there. The magnified computing power digital processing makes possible consists in large part in the ability to section and recombine parts, to re-structure access and reference function to anything digitized via machine intelligence and perceptual interfacing. Once we separate an ordering system from the object-set it orders, digitally, whether in card catalogues or in a metadata scheme like RDF for semantic processing [9], we activate that ordering system as an active intelligence. We can apply it to other materials, and others can have the experience of applying it to material of their own. It becomes a logic and ordering engine users can inhabit and think from the inside, not only learning better “about” it through the active participation, but bringing it itself to life as a way of thinking, applied experimentally, hopefully critically and creatively, to new material in new minds. Achieving this we do more with digitalization than bringing old stuff over for storage in new formats. Twinning the Humboldts this far, we are not just capturing and doubling an image of them, we are preserving living potentials in their thought and scholarship by enabling an interfacing through which visitors/users can activate these in a new (Humboldtian) experience of perceiving and thinking, comparative, comprehensive and egalitarian. How access is prepared to these materials, how computable they are in their twinned form, will be decisive for the unfolding of these twins in the digital space. The metadata structuring and data maintenance that code and cultivate these po-

tentials will decide how freely this twinned thinking can apply itself to its material in the enhanced space of digitality. What digital products or resources are made available to visitors of the Humboldt Forum, and whether these support the greater activations possible to this heritage in a full digitalization, will be decisive in determining how far, or with what image, the incomparable Brothers Humboldt are twinned into the (highly digital) 21st Century.

7. THE FIRST DOSSIERS - condensations for briefing project partners

The main reproduction actually going on over these years, dedicated to finding digital ways of getting the “Humboldt” into the Humboldt Forum, has been in the meeting of hearts, minds & design teams among those working on the project. On the project level, the question of a Leitbild recedes into the background, or when it is made explicit takes the pragmatic form of asking how to communicate the Humboldt Brothers – as a content segment, as principles, as minds or ways of seeing the world, rather than as historical figures – to our project partners, engaged in the concrete work of planning and installing the expositions. Understanding the Humboldts as material and as message has been the repeated task of dozens of engaged professionals, restating the question through their new starting point at the start of each new project or project phase: What Leitbild can we/should we follow in pursuing a digital twinning of the Humboldts in a Humboldt Forum? Since the Humboldt Forum Kultur GmbH took form in the summer of 2016, various briefings and hand-offs of research results have taken place. My profile from 2015 has no more official status today than it did then, but it has been applied in numerous transmissions, including two staff breakfast presentations, one reading circle presentation together with Jürgen Trabant, in briefing and advising on the first research contract and evaluation of the first two Humboldt dossiers, in the advising and drafting of a detailed concept for a module on language research in the exhibition „[laut] Die Welt hören“ (22. März - 16. September 2018, Humboldt-Box, Berlin), in consulting for Land Berlin as a “critical friend” on their “Weltdenken” room dedicated to the spirit of the Humboldt Brothers, in briefing and concept phases for a collaboration with the Humboldt University’s Zentrum für allgemeine Sprachwissenschaft (ZAS), and in brief-

ing and concept development on the topic of the Humboldt Brothers for the Kosmograp project with media artist Ali Hossaini, creating core messaging media for the Medienturm or LED Media Tower to stand in the main Foyer of the Humboldt Forum.

Since summer 2018, the Kultur GmbH has its own work unit devoted to the centralization of messaging and interpretation work at the scholarly level (Wissenschaftliche Dienste). With a research mandate covering the principal objects or “highlights” and a broad list of “overarching themes”, these colleagues are contracting, editing and synthesizing dossiers to serve running and future Humboldt Forum projects in communication around its core objects, stories and ideas.

8. THEIR PRESENCE IN THE VOR-PROGRAMM – tracking appetizers on the berlin cultural calendar

In this preparatory phase, where analogue and digital project aspects have been coming much further into sync, a sophisticated exchange has been taking place outside of both, in the program of live (analogue) events (concerts, talks, readings, performances) that have accompanied the later construction phases and previewed the live programming that will be bringing Humboldt Forum topics to life daily in the finished Forum – all based on physical presence, live engagement and transitoriness. Even leaving aside the question of what can become of the digital twins of these events, the digital trace of this activity, e.g. on the events page of the Humboldt Forum website, provides a very informative listing, descriptive and indicative of the balance of attention paid to different aspects of the Humboldt “Whole” so far:

- Sept 2 2018 *Humboldt – Matinée mit drei Humboldt-Biografen*; Daniel Kehlmann, Andrea Wulf und Rüdiger Schaper
- Jun 8 2018, *Sprachen bewahren*; Sprach- und MusikwissenschaftlerInnen in Gespräch und Konzert; hosted by Mandana Seyfeddinipur; curator, Sebastian Klotz
- May 2 2018, *Weltberühmt und pleite – Alexander von Humboldt und Berlin*
- Oct 9 2017, *Schutz durch Bildung? Wilhelm von Humboldts Bildungsideal im digitalen Zeitalter*
- Jul 16 2017, *Die Erfindung der Natur*: Andrea Wulf und Neil MacGregor treffen Alexander von Humboldt
- Jun 27 2017, *Die Erfindung der Natur*. Andrea Wulf und Neil MacGregor treffen Alexander von Humboldt
- Jun 24 2017, *Humboldt 2.0 – Wilhelms Sprachansichten damals und heute*

Jun 18 2017, *Die Erfindung der Natur. Andrea Wulf und Neil MacGregor treffen Alexander von Humboldt*
May 27 2017, *Erste Amerikareise. Ulrich Matthes liest Alexander von Humboldt*
Mar 24 2017, LEIPZIG LIEST: *Die Erfindung der Natur*
Mar 12 2017, lit.COLOGNE: *Die Erfindung der Natur Alexander von Humboldt*
Dec 5 2016, „*Being a Humboldt*“ – Ein Abend mit Andrea Wulff und Neil MacGregor

9. THEIR PRESENCE IN THE BASIS PROGRAMM - the main ingredients of a humboldtian programming in the forum

How the Humboldt Brothers will ultimately be embodied in the Humboldt Forum is up to the direction of the Humboldt Forum Kultur GmbH and the Stiftung Humboldt Forum im Berliner Schloss, together with the board of participating institutions. The process of getting Humboldtian contents and values into digital products is being steered into a structured workflow of content definition and strategy, though the complexity of the project continues to leave many questions open and some outcomes uncertain. Dossiers are being produced to underwrite all interpretive activities on the core “highlight” objects. These are being further inflected by structured research on a range of *übergreifende Themen* or “connective” themes, which in turn inform the selection of topics for a *Basisprogramm* or “Basic content program” for education and interpretation activities in the Humboldt Forum, defining how and where different core themes are presented and elaborated in the visitor experience. Many lists have been made, with different scopes and logics, beginning with various groupings over many years by the curators and directorship of the museums (Ethnologisches Museum and Museum für asiatische Kunst) and continuing in the communications and education work of the Humboldt Forum Kultur GmbH. An initial matrix of topics and research strands drafted by the GmbH was narrowed for focus and to adapt to real limitations on what the project could produce with the time and resources available. Preserved in every list for a Basis Program, however, almost as a topic that could cover all the rest if it came down to it, have been the Humboldt Brothers. It is in the substance and experience of this basic program, as it is applied to content and programming in the living Humboldt Forum, that the “character” or “spirit” of these Humboldt Brothers can be expected to be given the most explicit expression and activation in interpretive activities.

10. A HUMBOLDT A.I. - digitalizing the humboldtian mind, both of them

The twinning of a cultural or intellectual heritage, considered as a kind of transmigration of a character, spirit, mind or way of thinking onto a fundamentally different substrate and there-with into a different, expanded reality, currently sees its furthest future in the claims and promises of artificial intelligence.

This is a step we can see on the horizon, as the question of what Humboldtian means or can mean in digital products or services gets asked anew at further stages of design, planning and management. There are experiences out there from a number of different applications and experiments [10] which can guide our thinking on how the knowledge-set and intelligence inherent in an image, text or data set can be exploited to surface information in a form and style embodying the “character” of that person, matching them as some adequate or plausible twin. The example of the science museum in Milan that set out to program Da Vinci as a chatbot is very informative, namely that expectations are everything, and to seem intelligent an AI may have to play dumb. In that project [11], an avatar Da Vinci could only come off as dumb when it sought to resemble Da Vinci, the historical personage, whereas as a cartoony mascot figure performing a limited but plausible interactivity it would be perceived as effectively intelligent and “Da Vinci-like” in spirit. I expect we will see Wilhelm and Alexander brought to digital life as artificial intelligences one day, perhaps before very long, as we see chatbot design and interpretive AI applications proliferate and find their way further into the museum experience. We know the first step here and can already make it, namely: reading the collected works of either or both Humboldt Brothers into a semantic engine, and seeing what query and sorting interactions the material can support there. If anyone wants to partner with us in attempting this, let me know after the session.

11. A KOSMOS 4.0 - revealing the world as they (would) see it

Another dimension of the twinning of the Humboldt legacy, available eventually in the convergence of potentials set up with digitalization, I call *Kosmos 4.0*. Just as I can digitize a library (e.g. as jpg scans) without gaining the enhancements and acceleration of fully digitalized texts, I can digitize visual or graphical

content, even in 3D, without having more than photocopies. Fully *digitalizing* the graphic production in Alexander von Humboldt's *Kosmos* will expose its contents (not just his facts, his science, his thinking and his imagination) to the enhanced processing and accelerations digital encodings make possible. The information design Alexander promoted and used to popularize his science makes for beautiful scans, but it will make for even more beautiful animated and interactive infographics. These proto-digital graphic presentations prepare their own instrumentalization in a digitally computable environment. The project that suggests itself is to activate the Humboldt/Berghaus maps with live data and interactivity, updating the data sets and modularizing their output in displays that apply Humboldt's science to produce new knowledge. These potentials were the basis for one project produced for the Humboldt-Box exhibition, *Extreme: Natur und Kultur am Humboldtstrom* (from November 2nd 2016 to Mai 1st 2017). While no more than a graphic mock-up, displaying an animation of real climate data for the entire last El Nino event (2015-16) over a global map of air currents drafted in the 1830's, it served to show how little stands between the digitized bodies of these works, and the digitalized, live intelligence in them, prepared for further applications and further learning. Adding interactivity would bring the digital twin of Alexander's cartography even more fully to life, providing an interface for applying his science and continuing, evolving, perhaps challenging his thinking in the minds and experiences of visitors engaging with this content. If anyone would like to help us make this happen, please also let me know after the session. Here, too, there is the possibility not only of bringing fascinating intellectual and cultural heritage to life in the digital, but of extending it, bringing it to *more life* there via these new potentials. For example, a *Kosmos 4.0* project could go further than Alexander was able to in his lifetime, and fill out the human, social and cultural layers of his universal "Weltbeschreibung". This would bring the Humboldt Brothers even further together in their diametric identity, by drawing even further the consequences of the integrative principle at work in both of their thinking. Here the culturally-minded natural science of the one could flow into the nature-minded cultural science of the other, activating both their sepa-

rate thinking on the world, and the integrated dynamic the two form together.

12. GENERAL SPIRIT - humboldtian traces in the popular mind

The goal of building a digital Humboldt Forum involves as one dimension the challenge of realizing, through a kind of patchwork and collective midwifing, a digital twinning of the Humboldt Brothers. The assignment for a team charged with content strategy or concept design in such a project involves seeking, discerning, assembling and negotiating a guiding imagery for this twinning, finding or defining the principles or patterns to follow, putting ideas and information into forms that can guarantee the identity in a reproduction, and perhaps secure new life in new mediation. Ideally, we can ensure the transfer not just of materials, the heritage of objects, works and writings copied, but of a "character", "mind" or "spirit" alive, or once alive, in those materials. If digitalization is worth doing, I would argue, it is not only for the storage value of historical contents in new, virtual vaults, but more for the chance of bringing these contents, and the knowledge and intelligences they embody, into new life, exposing them to new activations beyond prior analogue potentials. Can the spirit or character of historical projects or persons really take life, or root, in new minds, in new characters today? Can the Humboldtian spirit(s) appeal to a general spirit or to our particular minds today? Asking this question is asking about the ripeness of enlightenment ideas for our time and of our time for enlightenment ideas, and about the possibility of museums to do what they promise. How far can we carry our cultural or intellectual heritage over into new forms of embodiment and activation? How far should we? Where will it lead us? How can we get there? How can we find out? And can digital twins help? I look forward to answering these questions together.

13. REFERENCES

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