

An enormously rich body of work in art and media history addresses the work of constructivists, rationalists and filmmakers from the Soviet 1920s. This book's contribution is to discuss in historical detail the interweavings, and not just parallels, in practice mediated by psychotechnics, in the sciences of physiology and psychology and the new arts. Architects, for example, analysed spatial effects, in order to manipulate the movement of people crowding into the Moscow Metro. There was a search for shared scientific rules for the design process. In film, Pudovkin sought not just to understand the seeing eye but to put viewers 'into a condition of disorientation that ultimately made them conscious of all the processes that determine their perception' (p. 106). The artist understood that being "neutral" thus implied the unveiling of the active author and his manipulative methods, that is, his apparatuses' (pp. 128–9). He used film itself as stimulus to shape the world, the film describing reflexes itself experimenting with reflex processes. The film, with pioneering montage and scenes (e.g. of a syphilitic patient) subsequently judged disturbing, enacted a materialist view of the psyche rather than constructing a theory about it. 'Pudovkin used the film not only for experiments but also as an experiment in the public sphere – as an applied scientific experiment in cinemas' (p. 144). For example, he used the camera lens to imitate the opening and closing of the pupil. Experimentation took heroic, or foolish, form with Bogdanov's research on blood exchange (with himself as well as others as a subject, ultimately with fatal results), asking 'which scientific and artistic practices, experimental objects and techniques had to be inter-linked in order to be able to bring about the optimization of bodies, brains and genes under the name of human collectivism?' (p. 155). Bogdanov represents an extreme in experimentation on new forms of living together, seeking to change culture by experiments with physiological nature and not only seeking rejuvenation – a not inconsiderable concern of the Bolshevik leadership.

In the construction of 'the new man', the person realizing being human through the development of the collective, 'it was experimental technology that had to be researched most' (p. 208). This the book explores in lively and fascinating detail.

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Mark Thurner and Jorge Cañizares-Esguerra (eds), *The Invention of Humboldt: On the Geopolitics of Knowledge*

London: Routledge, 2023. Pp. 342. ISBN 978-1-032-13916-6. £96.00 (hardback).

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The Invention of Humboldt, edited by Mark Thurner and Jorge Cañizares-Esguerra, critically exposes the anti-Hispanic assumptions that characterize popular and academic 'cults' surrounding the Prussian Alexander von Humboldt. The volume's titular focus 'on the geopolitics of knowledge' is meant in this sense: as a study of the apparent eclipse of Hispanic colonial sciences (p. 9), first by itinerant Europeans, like Humboldt, who obscured their enormous debt to the science of Hispanic Americans, then by the Creole

elite of new American states who ‘recast Spain not as an empire of science and exploration but of inquisition and ignorance’ (pp. 7, 18–19, 308). Transatlantic in nature, such myths have served an insidious brand of neo-colonial (North) European supremacy, which continually reinvents Humboldt as a cosmopolitan conqueror of the world. Indeed, the glorification of an abolitionist who benefited materially from enslaved labour says much about the geopolitics of knowledge in our own time.

Yet *The Invention of Humboldt* cannot be reduced to its namesake. Its twelve contributions (four of them translated from Spanish to English) are much more than a counterweight to hagiography. Answering from the Andean slopes of Chimborazo – the site of a Quito-based workshop held in August 2019 – key contributions reintroduce a world of Ibero-American science in which Humboldt made but a brief incision between 1799 and 1803. The wanderings and archival plunder of Humboldt and his French companion Aimé Bonpland stimulated a traffic in ‘profitable nonsense’, as Irina Podgorny’s and José Enrique Covarrubias’s chapters explain, ranging from skewed readings of the Mexican mercantile economy to floral trophies for West European cabinets (p. 296). Other contributions reassert the priority of Spanish colonial intellectuals. Well before Humboldt drew his Andean tableaux, Hispano-Peruvian cosmographers repurposed an Indigenous view of the Andes as a cross section of the globe. Of a Creole iteration by José Hipólito Unanue, Mark Thurner writes, ‘The Inca’s sun spanned the globe without abandoning Peru’ (p. 208). The Creole naturalist Francisco José de Caldas had been developing a barometrically mapped plant geography of the northern Andes already six years before Humboldt drafted his first *Tableau physique* of the region. Alberto Gómez Gutiérrez’s masterful reckoning of ‘Caldasian biogeography’ puts Caldas’s Imbabura, the volcanic setting of his own cartography, on a level equal to Humboldt’s Chimborazo (p. 86). Indeed, ‘levelling’ (*nivelación*) is an apt term. Used by Caldas to arrange vegetation in terms of elevation, it might also evoke the volume’s rearrangement of Humboldt’s place among Andean experts and other American hosts whose work he brazenly expropriated in Parisian publications.

Several compelling chapters redress the erasure of Hispanic American sciences through textured studies of the people and objects Humboldt encountered. One especially poignant passage by Miruna Achim and Gabriela Goldin Marcovich describes Humboldt’s works as ‘curated displays’, which reveal little of the fragmentation and mistranslation of knowledge during its extraction from the Americas. ‘There is little trace in this new, Humboldtian order of things of the fragility and precariousness of things themselves or of the human relations articulated by those things’, write Achim and Marcovich, ‘nor do we get a good sense of the kinds of work involved in moving air, rocks, antiquities, and manuscripts from Mexico to Paris’ (p. 234). Thus a new kind of metal identified in Mexico by the Spaniard Andrés Manuel del Río was renamed in Paris. There, too, some hundred colour plates gifted to Humboldt by the formidable Bogotá botanist José Celestino Mutis were assimilated into Humboldt and Bonpland’s plant geographies, shorn of their origins. The move evoked sharp rebukes from Peninsulares and Creoles alike, which form key sources for José Antonio Amaya’s brilliant archaeology of the disappearance of Mutis’s *Flora of Bogotá*. The case of Mutis’s plates, like del Río’s metal, highlights an understated aspect of the volume dealing with (mis)translation across Ibero-American and West European scientific geographies. Some American-based savants regarded Humboldt as a ‘broker’ capable of circulating their work and name beyond Spanish realms and sought to leverage his transatlantic circuit accordingly (pp. 123–4, 238).

This volume ably dismantles the cultish legacy of Humboldt, whose many tomes and atlases testify to the extent of his appropriation of Hispanic American knowledge. But the book’s preoccupation with hagiography should not detract from what it offers instead.

Key passages hint at a still deeper, more reflexive, engagement with the ‘geopolitics of knowledge’, which would scrutinize the extractivism of alien adventurers like Humboldt alongside a corresponding cast of the European-descended colonial elite. In part, the book’s explicit aim is to reposition these ‘towering figures’ of Ibero-American science at the heart of the first global modernity (p. 229). Yet in some of its most compelling contributions, *The Invention of Humboldt* suggests a complex layering of power relations in the making and breaking of Spain’s colonial empire, whose prodigious scientific culture was critically linked to the subordination of Indigenous populations and mobilization of coercive, racialized labour systems to exploit resources. The implicit claim of the Humboldt cult is a kind of intellectual regime change, which asserts new modes of domination (e.g. free-trade global capitalism) over the old imperial forms.

Notable in this vein is Cañizares-Esguerra’s closing chapter, a vivid account of the global physics that Humboldt ignored. Here was a ‘planetary’ science of wind and tide, precise instrumentation and hemispheric cartographies. This model was crafted by Spanish luminaries Juan Bautista Muñoz and Martín Fernández de Navarrete, drawn from the archives of an ‘Iberian maritime modernity’ that was itself generated through centuries of mercantile capitalism, slaving and mineral plunder (pp. 306–15). Humboldt manipulated the works of Muñoz and Navarrete to sculpt his own image of romantic discovery in the figure of Columbus, radically decontextualizing Iberian conquest as an enlightened enterprise of the sort he wished to replicate. Thus the so-called ‘second Columbus’ scouted the commercial potential of the Americas for the predatory markets of the North Atlantic. That he did so in collaboration with Creole patriots reveals a broad anti-Hispanist coalition (p. 8). The invention of Humboldt and the erasure of Ibero-American enlightenments were one and the same process. This ingenious book sets both within the extraordinarily complex and fractured political geography of the Iberian Atlantic.

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Anna Marie Roos and Vera Keller (eds), *Collective Wisdom: Collecting in the Early Modern Academy*

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Collective Wisdom: Collecting in the Early Modern Academy is at once historical and contemporary. An output from a series of three AHRC-funded Collective Wisdom: Collecting in the Academy conferences, this edited volume explores the motivations, practices and debates around collecting at a time when learned societies were coalescing as vehicles for knowledge production. What makes this absorbing volume much more than a reflection on the way in which collecting was carried out between 1660 and 1760 is the distinctive lens employed to grapple with the notions of public and private: who is doing the collecting and why, the nature of the collections and the nature of the anticipated public