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## Interview

**Kapil Raj and Thomás A. S. Haddad**

### Following the Actors Beyond Science and Empire

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Delbourgo. In collaboration with Hans Otto Sibum, he co-directed *Histoire des sciences et des savoirs, Tome 2: Modernité et globalisation* (2019), one volume of the *Histoire des sciences et des savoirs* series, edited by Dominique Pestre.

**Thomás A. S. Haddad** was born and educated in São Paulo, Brazil. He obtained his Ph.D. in Sciences from the University of São Paulo in 2004, where he has held a professorship in the History of Science since 2005. His broad interest is in the cultural and political history of stargazing in the seventeenth and eighteenth centuries across the colonial Americas. He is also interested in Moon maps and mapmakers, and his monograph *Maps of the Moon: Lunar Cartography from the Seventeenth Century to the Space Age* was published by Brill in 2019. He was a fellow at the John Carter Brown Library and the Linda Hall Library, and a visiting professor at Brown University. His service to the profession in numerous roles, such as editor in chief of *Revista Brasileira de História da Ciência*, member of the council of the Division of History of Science and Technology (DHST/UNESCO) of the International Union of History and Philosophy of Science and Technology (IUHPST), and president



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of its Science and Empire Commission. His current project investigates comet sightings in the Americas in the second half of the seventeenth century from a trans-regional perspective, bringing together Brazil, New England, New Spain, and Peru.

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Recently Raj and Haddad edited the book *Beyond Science and Empire: Circulation of Knowledge in an Age of Global Empires* (2023) in collaboration with Matheus Alves Duarte da Silva.

**Sabina Luz (SL):** You were the editors, with Matheus Alves Duarte da Silva, of a recent book entitled *Beyond Science and Empire: Circulation of Knowledge in an Age of Global Empires* (2023). In your now classic book *Relocating Modern Science* (2007), you, Kapil, had mentioned this group of researchers who looked beyond the “West,” but pointed out the group’s Eurocentric vision by leaving out regions such as China or Persia. In your edited collection there is a chapter dedicated to analyzing a case in China, for instance. Do you think the book has succeeded in moving away from the initial Eurocentrism of such discussions? And can you tell us a little bit about the organization of this book?

**Thomás Haddad:** I see the book as a step in the direction of addressing what Matheus, Kapil and I saw as unresolved issues in the so called “Science and Empire” project. Perhaps the most important among those issues is our feeling that despite its central commitment to a critique of European imperialism and the role of science in enabling it, the Science and Empire movement still operated – and this may sound paradoxical – within an ultimately Eurocentric framework. The original set of preoccupations of the movement turned around unveiling the many ways in which European science was imposed on the rest of the world as a consequence or even as a pre-condition of imperialism. This comes from a place of experiencing the damage wrought by imperialism or an uneasiness, in the case of people based in old metropolitan centers, with Europe’s hubris about its own past. Don’t get me wrong: those are completely legitimate reasons for trying to write a history of science that makes sense of things in a different way.

But in the end, it’s still Eurocentric, even if scathingly critical of European imperialism. What I mean is that the project highlighted how Europeans did a lot of indisputably terrible things around the world and imposed their science along the way, thus universalizing it – but the crucial part is that we’re still talking about *their* science and how it replaced presumably alternative ways of knowing and systems of knowledge. So, the idea is that there is this discrete, culturally bound entity called “European science” that was forced down the throats of everyone else, who had no means of fighting back, let alone of being agents in the construction of whatever we call modern science. But the problem is that proud Eurocentrists and apologists of European imperialism would have no problem agreeing that yes, modern science came from a place of origin and that place was Europe. Of course, they would then go on and say that European science dislodged other forms of knowledge because of its inherent epistemic qualities, that Europeans were special enough to give birth to the only truly universal form and to the social institutions solely capable of fostering its growth and other such nonsense. Critical thinkers such as the scholars associated with Science and Empire rightly rejected this absurd notion of European exceptionalism. However, by stressing how *European* science won (by force and violence, and not by any kind of built-in superiority), they were inescapably bound to keep centering Europe as the “birthplace” of modern science. It’s in this sense that I say it’s still Eurocentric:

not in an arrogant or racist way, of course, but in the sense that Europe remains the driving force and the gravitational center of the history of science.

The fact that Science and Empire took shape in the 1980s and 1990s, in the high tide of incredibly exciting work coming from science and technology studies (STS), didn't help either: STS was all about demonstrating how all knowledge is local and that the only sound methodological approach to the study of science is to focus on extremely localized cases. Historians of science largely embraced this vision, making it very difficult to ask a question like "wait, what if this thing we call modern science wasn't solely a European production to begin with?". If you can't question the Europeaness of modern science, all you're left with is really the problem of how it became the only game in town. Well, we saw the answers: because it's inherently great, which we all agree is bogus, or because it was forcibly imposed along with imperialism. (At this point I must admit that there is in reality a third alternative, which is to attempt to prove that Europeans stole everybody else's knowledge, but in my opinion this approach hasn't resulted in solid historical work.) To be totally fair, the STS people were on to the problem of "how does science move away from its places of origin" already in the late 1980s, and their solutions were more complicated than simply "science moves along with European colonial depredations." Some historians of science and empire were early adopters of nuanced, STS-like explanations such as science moves because of standardization, metrology, technologies of inscription or whatever. But the point is that Europe remained, as usual, the prime mover and ultimate reason. However, if you start to doubt the axiom that modern science for good or for worse "came from" Europe, there's a lot of different questions to ask.

**Kapil Raj:** Yeah, well, you're absolutely right. A pity that Matheus isn't with us here, because he was instrumental in organizing a panel discussion at the biennial conference of the European Society for the History of Science in London in 2018 and in our book that followed. But let me go back a little bit to where "Science and Empire" started from – remember the title of our book is "*Beyond Science and Empire*". Without this reference one can't understand where we're going: beyond what? In one sense, as Thomás has already pointed out, it is beyond Eurocentrism, of course. But the "Science and Empire" current which emerged in the mid-1980s was also ostensibly pushing against Eurocentrism. Thus, we must ask whether a larger agenda was there.

In order to answer these questions, let us go back to the original agenda of Science and Empire. Firstly, it was a vigorous reaction to "diffusionism," that Thomás has just mentioned without naming. This notion, already current since at least the nineteenth century, was famously resurrected and thematized for the history of science in an article published in *Science*, the journal of the American Association for the Advancement of Science in 1967, that is, at the height of the Cold War. I'm talking here of George Basalla's "The Spread of Western Science" (1967).

This much-cited piece explicitly assumed the non-existence of proper scientific thought outside of Europe, proposing a schematic account of the rise of modern science through the Scientific Revolution in Europe and its subsequent diffusion to the rest of the world. Basalla's model received significant criticism from many non-Western historians and sociologists of science, from India and the Arab world to Latin America with strong resonances in Australia. Three major themes dominated this critique: the non-European world as a scientific tabula rasa; diffusionism as a model for the movement of knowledge; and colonial scientific policy. From the start, they stressed that diffusionism overlooks the active processes of reception and appropriation by receiving groups in scientific and technological transfers and brought attention to racial and economic discriminations in science within the colonial context.

At the initiative of a group of Indian historians and sociologists of science, an international academic network called “Science and Empire” took shape in 1985, following a workshop that also brought together scholars from France, Australia, Britain, and Turkey. The title Science and Empire was chosen to highlight European imperialist silencing of non-Western scientific knowledges which devalued both their knowledge forms and practitioners. However, the focus was largely on the French and British empires. The Dutch and Iberian empires, and thus Latin America, were totally absent (Kumar 1991).

In 1991, a significantly larger conference was convened in Paris under the auspices of UNESCO, attracting broader participation from Latin America. Contributions included papers on Brazil, Colombia, and Mexico, although these primarily focused on the nineteenth and twentieth centuries, that is in the emergence of national traditions post-independence. Consistent with the philosophy of United Nations organizations, the conference culminated in a round-table discussion on policies aimed at better integrating the non-Western world into mainstream scientific activity. “Science and Empire” ultimately gained recognition as an official commission within the Division of History of Science and Technology of the International Union of History and Philosophy of Science and Technology in 1997.

That said, the network shared a largely positivist vision of science as hypostatized and based on mathematical and experimental verification – in itself a Eurocentric perspective. This is fairly explicit in the title of the publication from the Paris conference, where “Science” was singular, and “Empires” was plural – although limited to early modern and modern Western European empires, excluding other imperial formations such as those in China, Persia, Russia, or even, to a considerable extent, Spain and Portugal (see Petitjean and Moulin, 1993). Moreover, the critique of Basalla’s thesis was largely restricted to showing that science did indeed exist beyond Basalla’s premise that only a “small circle of Western European nations provided the original home for modern science during the sixteenth and seventeenth centuries.” The network generally accepted the notion of the *diffusion* of scientific ideas and practices between different cultures and civilizations, just adding diffusion processes existed already before European expansion.

Our volume, however, examines the relationship between science and empire in dialogue with recent contributions to the history and social studies of science on the one hand, and to imperial, global and relational histories on the other. Eschewing theoretical discourse, it is based on detailed case studies from across several empires covering as much of the globe as possible, Africa and Japan and China included. These studies examine the circulatory and interconnected nature of knowledge flows within and between imperial formations from the mid-eighteenth to the mid-twentieth century. By focusing on the trajectories of less prominent figures who were distant from traditional European learning centers, our collection aims to highlight some of the lesser known, but nonetheless crucial, practices and processes that contributed to the construction of modern scientific knowledge and scientific careers. Overall, it underscores the mutual interdependence and co-construction of science and empire in both early modern and contemporary contexts.

Knowledge formation involves not just the circulation of knowledge but the convergence of various elements to create it. Our book’s subtitle reflects this by examining knowledge circulation between empires that singly and together spanned the globe. These interconnected empires, like Britain in India or France in Africa, formed a web of interactions that extended into the Americas through the Iberian empires, and vice versa. Everyone, including colonized peoples, observed each other’s actions. This interconnectedness started early in history, and our work modestly attempts to address these complexities. Notably, it tries to highlight the fact that



individual agency still exists even if, given power asymmetries, their horizon of choices is limited.

As for our enterprise to find new and promising paths to render scientific knowledge making in the modern era intelligible, I do think we have succeeded. But we must leave it to our readers, to you all, to decide. The proof of the pudding is in the eating, as we say in English!

**SL:** Kapil, your historical contribution has largely influenced a great number of works here in Brazil in the postcolonial approach to the history of science. One of the main concepts reproduced and currently used is circulation and the context related to the analyses of circulation. Could you comment a little on the repercussions of this in your current work? Do you think this is still a key point for understanding the construction and co-construction of scientific knowledge?

**Kapil Raj:** To answer your question, circulation and the construction of knowledge are indeed a key analytical framework for understanding the history of science beyond the context of empire. While it was through my own research in the context of the British empire in South Asia that I developed my conceptual framework, it offers a significant window into the spread of science and knowledge practices to other imperial configurations and indeed more widely. So, let me go back for a brief instant to its origins in recent historiography of science and my own intellectual evolution. Now, as the positivist foundations of the history of science weakened in the 1970s and 1980s, attention radically shifted from recounting its inexorable progress grounded in a perception of knowledge as being disembodied and universal, and thus spreading through diffusionist mechanisms. In the postpositivist vision, science is instead locally created, and only subsequently, through a series of investments and deliberate strategies, does it become transferable to the outside world. In consequence, the process of the spread of science in a broad sense to other parts of the globe has been reformulated and has itself become an object of historical, social and political inquiry. Circulation has thus become a crucial problematic for historians of science who then have to identify the investments and strategies for knowledge to become mobile and circulate beyond its site of elaboration. These have been variously identified in technologies of dissemination, the standardization of measurement, corporeal discipline, and centers of calculation. In my research, I had to deal with encounters between practitioners who embodied knowledge forms from different and geographically far-removed regions, societies, and sociabilities, in other words, with intercultural encounter. What I discovered was that these encounters frequently gave rise to new knowledges that resulted from their interactions. These in turn could then travel either in written or in incorporated form. So unlike in the diffusionist model where there is an active emitter and a passive receiver. Constructive interaction is a circulatory process, with the possibility of a vector of “return,” thereby questioning not only diffusionism, but also “center-periphery” and “knowledge transfer” models. It seeks to take each set of actors on their own terms while at the same time putting power relations into the equation.

However, this call to examine circulation should not be confused with a vision of science freely moving across spatial, temporal, cultural, and social boundaries. Circulation is not to be taken as a phenomenon, much less as a model. And, importantly, it is not to be confused with fluidity. Despite all attempts to make knowledge move, it remains bounded within *spaces of circulation*, which I have explored in some later research. Moving knowledge also requires investments and “cross-cultural brokers” to connect different individuals or groups.

While my work has largely focused on intercultural interaction and negotiation across imperial frameworks, that is, encounter between geographically distant cultures, it is equally important to examine broader intercultural encounters, such as between socially distinct groups in close proximity. For example, a botanist in a botanical garden in Rio de Janeiro or Belo Horizonte must collaborate with gardeners who belong to distinct cultures of practice and in all probability have different conceptions of plants and their handling. Their interaction requires negotiation, as neither can completely impose their methods on the other, institutional hierarchies notwithstanding. To provide a historical understanding of the flora in such botanical gardens an understanding of the interactions between gardeners and botanists, among other things, is essential.

Finally, the focus on intercultural encounter, no matter how close or distant the cultures in question might be, implies moving away from a laboratory-centered history of science towards “open-air sciences,” (Callon, Lascoumes and Barthe, 2001) and reconsidering the traditional timeline of the dominant historiography of science which takes the mathematization of nature and emphasizes laboratory-based experimentation, that is calling into question the Scientific Revolution as the central organizing principle of modern science.

**SL:** Thomás, could you also comment about the influence of circulation and co-construction in your recent work?

**Thomás Haddad:** Well, let me start by going back to what Kapil has just said about the botanist and the gardener. They are not necessarily people from two different cultures, at least in the most straightforward (and relevant) sense. I mean, let’s say we’re talking about a Brazilian gardener and a Brazilian botanist discussing something in the botanical garden of Rio de Janeiro in 1850. The botanist wants the gardener to plant a seed in some way, the gardener says this is not going to work, the botanist gets mad, the gardener proves the point with a surprising example, the botanist gets madder, whatever. They may have all kinds of social differences, there are clear asymmetries in agency, power, educational background, social capital, you name it, but in a very basic sense they are members of the same culture. Period. It sounds preposterous to say otherwise. Well, why did I bring this up? Because I want to problematize an idea that’s central to Kapil’s work, and thus to the influence that work has exerted on many historians of science including myself, which is the idea of the “contact zone.” My contention is that, for some of us, this notion of the contact zone may be more limiting than liberating.

Kapil’s work is focused on *intercultural* contact zones in South Asia. Here, I contend that intercultural should be understood in that straightforward way: it refers to people to whom we ascribe very different cultural, ethnic backgrounds, and who, because of empire, are forced to interact, to live together or kill each other, to negotiate, to trade, to learn new languages, to observe or spy on each other, etc. They are condemned to live – and sometimes to die – like this. Kapil has explored in great depth the many profound consequences of a number of South Asian contact zones for scientific knowledge production over four centuries. Things like, what happens when a Dutch Protestant military official is eager to learn about some prized medicinal plants from a group of Malayalam-speaking doctors and they must hire a Catholic Indian guy who can translate from Malayalam into Portuguese, which the Dutch captain can’t understand, but some other Dutch official can and on and on! In my own work, though, I find that I simply don’t have those kinds of contact zones to investigate. Instead, I think I have much more what we could call *trading zones*, in the sense given to the term by Peter Galison (1997), something Kapil and I have been sparring over for about a

decade. Note that since he knows me well, he anticipated my reservations and said that the botanist and the gardener may belong to distinct “cultures of practice,” preemptively implying that theirs is also an intercultural contact zone – but I’m not convinced!

To be concrete, over the last few years I’ve been engaged in writing a book that will be, I hope, a global history of comet observations in the second half of the seventeenth century. Much of what I can address is not related to contact zones in the sense of people from different cultures exchanging (or selling, copying, even stealing, it doesn’t matter) ideas about comets, or data, observation techniques, instruments, fears, hopes, anything – what I view as the true intercultural contact zones. Rather, I can say a lot about different people from the *same* culture being compelled to exchange information because of empire: think a missionary, a quack doctor, a ship pilot, and a colonial judge who all have this comet before their eyes. Fate or fortune, constrained by empire, had all of them be born in or move to Mexico City or Lima or elsewhere. They are completely different from one another: one is rich, the other is fleeing from creditors, one is friends with the viceroy, another knows a lot of mathematics, yet other thinks comets are made of cotton, etc. But they are all Catholics, their mother tongue is Spanish, they see themselves as the real lords of the land. This is obviously not an intercultural contact zone of the kind Kapil has so thoroughly explored. What happens between those individuals is much more akin to Galison’s account of the negotiations that take place between theoretical and experimental physicists, engineers, programmers, electricians, etc. in a twentieth century particle accelerator – his model of the trading zone. Those people – just like my guys – are going to set their scores, and perhaps even stabilize the meaning of what counts as a “successful experiment,” a “machine failure,” a “computational error,” etc., based not on cultural mediation but on *social* factors, like pure and simple workplace hierarchy. Perhaps some won’t be convinced, but will shut up, nevertheless. Others may be genuinely converted.

Kapil’s account of circulation is deeply tied to the contact zone. Circulation for him is not, as many people seem to (wrongly) consider, the boilerplate formulation that equates it with a “movement of ideas, people, and artifacts.” Circulation *creates* new things by modifying the old ones; it doesn’t just move them around. And the contact zone is where the new is created. In the case of the comets I’m looking into, though, I’m increasingly uncertain about what is it that circulates, how, why, and where – if anything at all, at least in the strong sense I’ve delineated. Of course, knowledge about comets *moves* within the Americas, within South Asia, Europe, from one place to another. There are global flows taking place here, and the fact is that I’m increasingly more interested in those flows than in whether they are to be considered as examples of circulation in the strong sense.

Anyway, none of this implies that circulation isn’t an incredibly fruitful approach to the global history of science. Note only that I refrain from labeling it as a concept or category; I believe it is something you look for, something whose existence you may or may not establish. It’s not a grand theory of how science necessarily unfolds in history, something that has to be there otherwise nothing makes sense.

**SL:** We’d like to ask you a question that’s more focused on methodology. Considering the conjunctural variations of colonial and post-colonial experiences, which extend over a long period of time, between the sixteenth and twentieth centuries, do you think it is possible from a methodological point of view to approach these different periods with the same methodological tools? What precautions do we need to take and what mistakes should we avoid?

**Thomás Haddad:** First and foremost, I believe there is a lot of work to be done in dismantling *methodological nationalism*, which remains a powerful force. By methodological nationalism, I refer to the projection of contemporary nation-states onto historical contexts, even during the imperial era. Of course, we are always bound to interrogate history from our present conditions, but we must avoid taking the latter as meaningful in the past. It would be grossly teleological to suppose that the colonial experiences you rightly mentioned as variable were nevertheless lived as simple anticipations of the nation-states that later came into being. People were subject to imperial orders, not to proto-nation-states. Collaborating with historical sociologists and scholars from political science could be beneficial, as we must confront the conceptual ambiguities inherent in defining an empire. Is an empire an alternative political formation to nation-states? What precisely is the relationship between them?

Latin America serves as a crucial “testing ground” for exploring these questions. The region has experienced a colonial and imperial phase, under the Portuguese and Spanish empires, each with its unique characteristics. Following this, the nineteenth century witnessed the formation of nation-states. Notably, the Brazilian Empire can be considered part of this process of nation-state formation, indicating a complicated coexistence of empire and national state. It also reminds us of the limitations of the traditional idea of empires as always seeking territorial expansion. Throughout the nineteenth and twentieth centuries, significant territorial conquests occurred in Brazil, but internally, at the expense of Indigenous peoples, who lost land and lives. Even today, we observe similar processes of dispossession.

Another key question that resonates within our discussions in Latin America pertains to contemporary forms of imperialism, as well as cultural colonization and neo-colonial dynamics in the twentieth century. Modern cultural imperialism in particular is a significant concern throughout Latin America. Even though most of the continent has been formally independent for more than 200 years, the discourse around imperialism and national liberation persists, with important consequences for the history of science – but it’s simply wrong to think about the sixteenth or seventeenth or eighteenth centuries in terms of “Brazilian science,” “Mexican science,” “Argentinian science,” and so on.

In conclusion, I think we must be rigorous about what we mean when we refer to an empire, a colony within an empire, a post-colonial nation-state and so forth. In my view, one of the problems with the Science and Empire project – and I have to admit that our book hasn’t solved it either – is that historians of science are still struggling to refine our understanding of the *empire* component of the pair. Additionally, the by-now obvious notion that science serves as a tool of empire – facilitating administration, exploration, and territorial control – should be complemented by recognizing that science *itself* is a result of empire, which doesn’t mean it is culturally bound to an empire’s rulers or their property.

**MF:** So, Kapil, do you think it’s possible, from a methodological point of view, to approach these different periods with the same methodological tools? Or the global history approach has offered a new path? What kind of precautions do we need to take, and what kind of mistakes should we avoid when we are talking about global history, especially for historians of science who must be very careful with context and historical processes?

**Kapil Raj:** Well, as I said before, circulation is one of the central problems in the history of science and STS: that is, how do scientific knowledge, practices, texts, representations, etc., which are produced in one locality, move beyond it? As such, the investments it takes, the alliances that must be made, and above all, what happens



when they move, what transformations or mutations do they undergo, are central to this approach. These questions, might I say, are transhistorical, they form the bedrock of what I call the problem of circulation. However, they need to be translated into terms that make sense in different times and spaces.

Yes, *spaces* – a central variable for circulation, one which brackets the history of circulation with what are called transnational, or relational, histories and historiographies, those which do not share with the traditional approach what Thomás just referred to as methodological nationalism, and its correlate, comparatism. The administration of imperial spaces; international migrations; the formation of globalized elites; the construction of knowledge in processes of cultural interaction; cultural, scientific, and technical transfers... – these are all examples of phenomena that traditional national or local historiographies are unable to address. In recent decades, a whole gamut of approaches has been fashioned to address these and similar questions: cross-roads history, connected history, *histoire croisée* and circulatory history are some examples of these relational historiographies. Rather than simply drawing agonistic comparisons between different societies, particularly between the West and the Rest, these recent approaches seek to break free from the boundaries of nation-states and “cultural areas” to bring to light the interconnections between them. In this way, they have sought to shed light on the inextricably intertwined nature of the world's cultures.

Circulatory history as a method thus demands that we follow the trajectories of scientific actors, practices and objects as they move and encounter other communities and practices and, through the interaction between these different communities, that we look at how connections are constructed, producing new objects and practices which, in turn, serve to construct new connections and reconfigure the spaces of circulation of the knowledge practices in question. What's more, circulatory history identifies the feedback effects and differentiated appropriations of the new on either side of the encounter. What seems to me to be crucial in the contribution made by circulatory history is the emphasis placed on circulation as a method of analysis. In order to track the trajectories of the players, it is necessary for the historian to follow their traces in different archives and adjust one's perspective in accordance with the movements of the players. It is thus a “grounded globalization” approach, in sharp contrast to the “everywhere and nowhere” vision characteristic of most global histories which also rely heavily on secondary sources to reconstruct their stories (see Burawoy 2000; Shapin 1998).

**Thomás Haddad:** For me, global history is much more an “attitude” than anything else; it's not really a methodological toolbox or something that you can simply select tools from and apply to your sixteenth-century problem, a nineteenth-century one, or whatever. That attitude is really just “I'm going to follow this wherever it takes me.” As Kapil said, why should we impose, from the outset, the nation-state or even a so-called cultural area as the unnegotiable boundaries of our investigations? Consider the comets: when I talk about a global history of those comets, I obviously don't mean I'm writing about every single observation that took place anywhere in the world and was recorded in any language. That would be simply nonsense; at best, it would be a catalogue. What happened in my case is that starting from a few comets that were observed from Salvador (having learned what I know about them from the pathbreaking works of Carlos Ziller Camenietzki), I was led to investigate things that took place in Rome and London; following the “paper trail,” from Rome I was taken to Chile and Peru and Goa, and from London to Maryland; Peru forced me to look at Mexico (where I unexpectedly met Goa again), Maryland to Boston, Boston back to London, and so on. I'm following things that are truly connected to one another, not

just randomly accumulating whatever I put my hands on. One could retort “well, this won’t have an end, because everything is connected,” but that’s silly. Of course, it’s not the case that everything is connected, this isn’t what the “global” means.

So, that’s the “attitude” of global history for me. You have to accept the trade-off between following the long-distance flows and focusing on the thickness of the local. I know I’m not going to be able to place, say, the comet observation that occurred in Lima in 1665 in the thick of vice-regal Baroque culture, but yet I’ll have something meaningful to say about how that observation is concretely related to another one that happened in Mexico or Goa or Gdansk.

**Kapil Raj:** It’s an attitude, but also a reaction against historical traditions. Methodological nationalism should not be replaced by methodological globalism. In both cases, historians seek to limit frontiers a priori to those of the nation-state in the former and to the whole world in the latter. Space itself is not the issue. Claiming that one is a national historian or a global historian is unreasonable because it arbitrarily rejects one framework while imposing another. These approaches do not allow the subjects, actors, or problems to define themselves and their context. For instance, a Brazilian historian cannot set themselves to only study Brazil; events in Brazil may be influenced by those in Argentina, India, or Japan and need to be taken into account to make sense of them. The focus should be on the *questions* being examined and allowing the questions to define the space for providing a credible understanding.

**Thomás Haddad:** We’re in full agreement here. I would even extend this point further. I believe that the global, the nation-state, or any notion like those ones are in no way more fundamental than categories such as power, agency, and experience. I think they are what we’re after when we engage in historical inquiry. The scale of analysis is determined by the range of the actors themselves – by their experiences, agency, and the power relations in which they are embedded.

I think we should be looking for “big enough histories,” to use the expression of anthropologist James Clifford. The point is not to focus on those ultra-local histories of science that were prevalent in the 1980s or on global histories in the sense that Kapil just alluded to, of histories that take the whole world as their spatial scope from the outset. The idea that one must discuss everything because everybody contributed to modern science is ludicrous, but so is the idea that one must absolutely stick to a nation (even before it existed), a city, a space within a city, and so on. The key is to seek out big enough histories – those that can accommodate the range of experiences, agency, and power of your actors, agents, the people you’re interested in, as well as the problems you are pursuing and the themes you are exploring. For instance, if the comets I study lead me from New Spain to New England, so be it. In this sense – despite the criticisms that his oeuvre has been subjected to, often rightly so – I think Bruno Latour’s dictum remains as illuminating as ever: follow the actors! This is what we do as historians.

**Kapil Raj:** Absolutely! That’s exactly the point! As a historian, your primary concern should be identifying a specific problem to address, rather than focusing on the scale of the issue.

**MF:** And how do you think the movements of postcolonial and decolonial thought are now connected? What do you see as the differences between them? Furthermore, do you consider it valuable to think about the colonial perspective from a methodological standpoint, like postcolonialism, and not just from a political viewpoint or in terms of placing things into categories they should belong to?

**Kapil Raj:** Both postcolonial and decolonial studies (or decoloniality?) are vast theories that embrace many dimensions – society, gender, politics, culture, and of course knowledge – while standing on very shaky historical grounds. This makes it difficult to answer your questions with the thoroughness they deserve.

Anyway, very briefly: these movements have their roots in two very different non-European socio-historical contexts and intellectual traditions – South Asia for the one, and Latin America for the other. Postcolonial studies were born in the early 1980s to question the relevance of the very categories within which the humanities and social sciences operate, which were fashioned during the peak of European imperialism and thus held to be overwhelmingly Eurocentric. Decolonial studies, on the other hand, entered the intellectual scene only about twenty years ago, as a reaction both to Euro-U.S. domination and to the perceived pusillanimity of postcolonial thought, which was considered to be too apolitical. Decolonial studies cover various approaches, all linked to the historical importance of 1492 with Columbus's arrival in the Americas marking the beginning of European colonization and creating a lasting pattern of power called "coloniality." Decoloniality then is a self-proclaimed political movement that aims to shed not only prevailing theoretical categories, but also to regain those of the world before European expansion and colonization. My problem with postcolonialism is its obsessively agonistic worldview which exalts the "subaltern" and resistance to "Western" values; with the decolonial thinkers it's their struggle to regain a precolonial past which they believe was paradisiacal. For them, the world is essentially composed of cultures which are crystalline wholes that are autarkic, a world destroyed by European colonization which initiated a dissolution of precolonial cultural boundaries.

Historical evidence, on the other hand, points to a different understanding of human societies and cultures, which are neither entirely characterized by resistance and struggle nor circumscribed by watertight frontiers. In other words, a world not composed of crystalline wholes which can be understood by isolating them from each other, but one in which cultures (which are inherently hierarchized) and their members interact with each other and change as a result. In other words, we need to bring to light and understand the transcultural dynamics always at play in history. So, while I share the postcolonial desire to rid ourselves of deeply entrenched conceptual and temporal frameworks within which we as scholars work, I think we need to provide more adequate frameworks to understand our world, past and present, and find the adequate words and concepts that emerge from such understandings rather than impose them a priori. For the history of science, we need to call into question foundational concepts such as the Scientific Revolution, diffusionism, and even our understanding of modern science. Ironically, these consciously West-centric concepts were forged by Anglo-U.S. historians of science in the Cold War era. This is what I have striven to do with my own work on circulation and intercultural encounter in the historical construction of science and knowledge.

However, as I mentioned in my talk in Rio, decoloniality has played a significant role in museum studies because it involves revisiting and re-labeling objects to indicate their origins and understanding the historical and market mechanisms that facilitated their entry into these museums (Raj 2024). This does not imply returning the objects, as the communities they originated from have also evolved over time. For instance, an object looted in the eighteenth century cannot be returned to its original owners if their descendants and communities have changed. Nevertheless, collaborating with these communities to comprehend the historical significance of these objects and providing accurate labels can help us make better sense of them and contribute meaningfully to our contemporary world. In my view, decolonial efforts are particularly relevant and valuable within the context of museums. I believe that

decolonial movements for museums have considerable potential, and there is much to learn from them.

**Thomás Haddad:** Yes, I agree completely with this, especially regarding museum studies and collections. It's one of the few examples of decolonial thought moving beyond mere programmatic manifestos. In the history of science, we're still at the stage of saying, "We should be paying more attention to this and that." You could write a 300-page manifesto in book form, without any case studies or tangible evidence. This is my problem, and it's precisely what I meant by performative.

Something that really bothers me is how this rhetoric allows people here in Brazil – I've experienced this more than once – to say things like "I, as a colonized person, find this or that unacceptable." Bad news: many of us are the colonizers here. Many of us are the ones benefiting from land expropriation, extractivism, the destruction of Indigenous lives, and so on. Being Brazilian, or Latin American for that matter, doesn't automatically grant anyone the birthright of claiming "colonized status" (and the attending "epistemic privilege") for oneself. It's not our right to call ourselves that and then blame the Portuguese or the Americans for everything. Positionality is way more complicated than the country that's marked in one's birth certificate.

**MF:** I would like to finish this interview with a more informal question. It's important for me, as a historian of science, to contribute to those who are now beginning in the field of history of science. So, thinking about the first approach to the history of science, I would really like you to recommend some books or readings to people who are just starting their research, or who are having their first contact with the field of history of science.

**Kapil Raj:** I could think of several articles. One of them is by a sociologist named Georg Simmel and it's called "The Stranger." (1971) There's another one by Alfred Schutz also called "The Stranger." (1944) And these are two extraordinary texts for me – they're short.

I would also recommend four other pieces: Laura Hostetler's *Qing Colonial Enterprise: Ethnography and Cartography in Early Modern China* (2001); Amitav Ghosh's *In an Antique Land* (1992); Arnaldo Momigliano's "The Rules of the Game in the Study of Ancient History" (2016), and Richard White's *The Middle Ground: Indians, Empires, and Republics in the Great Lakes Region, 1650-1815* (1991). Finally, on the question of decoloniality, there's Gaya Makaran and Pierre Gaussens's excellent *Piel blanca, mascararas negras. Crítica de la razón decolonial* (2020).

**Thomás Haddad:** I'm going to add some recommendations. First, on global history, I think there's a lot of great work out there. Some are classics and it's always worth going back to them. I've been revisiting Christopher Bayly's *The Birth of the Modern World, 1780-1914* (2004). I think we still have to face many questions he raises.

Also, Bernard Cohn's *Colonialism and Its Forms of Knowledge* (1996) – for all its shortcomings – is immensely important. It established a common language for many of us, a point of departure for interesting and exciting criticism. On the decolonial theme, I think everyone should read Silvia Rivera Cusicanqui's chapter "Ch'ixinakax utxiwa: A Reflection on the Practices and Discourses of Decolonization" (2012), which was truly an eye-opener for me. I've also found much to think about in Olúfémi Táíwò's *Against Decolonisation: Taking African Agency Seriously* (2022).

I would also suggest, as a good starting point for many discussions, the collection edited by Dominique Pestre, *Histoire des Sciences et des Savoirs* (2015). I think it's currently the best collective work, with a truly all-encompassing aspiration. Unfortunately, it hasn't been translated into any other language. It also points to



something that didn't come up in this conversation, but it's something we should be aware of: the tension between the history of science and the history of knowledge. This is something that could lead to a couple of hours of discussion about the limitations of those terms and approaches, and what they really mean, but I think we have to leave this for another day!

**SL and MF:** Thank you both!

**Thomás Haddad and Kapil Raj:** Thank you!

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