

What is Colonial Science?

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Reviewed: Helen Tilley, *Africa as a Living Laboratory: Empire, Development, and the Problem of Scientific Knowledge, 1870-1950*, Chicago, University of Chicago Press, 2011, 496 p. and Pierre Singaravélou, *Professer l'Empire: Les "sciences coloniales" en France sous la IIIe République*, Paris, Publications de la Sorbonne, 2011, 409 p.

Historians have long taken for granted that the modern age of empire developed “colonial” forms of knowledge, including “colonial science,” which aided and abetted imperialism. Yet there has been little consensus on what the concept “colonial science” actually designates. Two recent books by Helen Tilley and Pierre Singaravélou open new avenues for enquiry.

For many historians the term “colonial science” implicitly refers to any scientific knowledge produced in the colonies, usually by professionals trained in the metropole. Other historians eager to “provincialize Europe” have highlighted the role that colonial administrators played in creating new forms of scientific knowledge, which then returned to Europe; still other scholars have explored how subaltern subjects adopted aspects of colonial knowledge only to bend them to their own ends. Meanwhile postcolonial critics have argued more broadly that the same violent processes that produced colonial power also produced scientific knowledge.¹ These critics have brilliantly theorized the ways in which science and power were related, but paid less attention to how experts instrumentalized knowledge in particular settings, or to the unintended consequences of scientific research carried out within the asymmetrical power relations of empire.

Two new books about European agents of empire promise to further complicate our understanding of the relationship between scientific knowledge and modern European imperialism, and to open new avenues for inquiry. Helen Tilley, in *Africa as a Living Laboratory*, investigates the ways in which expertise in the domains of medicine, racial science,

¹ For examples of these different trends, see Bernard Cohen, *Colonialism and its Forms of Knowledge: The British in India* (Princeton, 1996); Lewis Pyenson, *Civilizing Mission: Exact Sciences and French Overseas Expansion* (Baltimore, 1993); Emmanuelle Sibeud, *Une science impériale pour l'Afrique? La construction des savoirs africanistes en France 1878-1930* (Paris, 2002); Oscar Salemink, *The Ethnography of Vietnam's Central Highlanders: A Historical Contextualization 1850-1990* (Honolulu, 2003); Trumbull IV, George, *An Empire of Facts: Colonial Power, Cultural Knowledge, and Islam in Algeria, 1870-1914* (Cambridge, 2009); Gyan Prakash, *Another Reason: Science and the Imagination of Modern India* (Princeton, 1999); David Arnold, *Colonizing the Body: State Medicine and Epidemic Disease in Nineteenth-Century India* (Berkeley, 1993); Megan Vaughan, *Curing their Ills: Colonial Power and African Illness* (Stanford, 1991); Ashis Nandy, *The Intimate Enemy: The Loss and Recovery of Self under Colonialism* (Delhi, 1983); Edward Said, *Culture and Imperialism* (New York, 1993) and Bruno Latour, *Nous n'avons jamais été modernes* (Paris, 1991).

social anthropology, and environmental studies developed in Britain's sub-Saharan African colonies, proving how important the continent of Africa was in the 1930s to the growth of several new field sciences. Pierre Singaravélou's book *Professer l'Empire* restores to view the all-but-forgotten field of knowledge known as the "colonial sciences" that began in France in the 1870s and faded from view in the 1940s. Both works are magisterial in the depth of their research and the sweep and originality of their arguments; both engage with the question of what is "colonial science;" both adopt a rigorously historical approach to analyzing disciplines that were deliberately mobilized to serve the interests of empire; last but not least, both demonstrate that scientists enrolled in the colonial cause were as capable of self-criticism and innovation as scientists who were not.

Challenging Europe's epistemic authority?

Despite the chronological sweep indicated in her title, Tilley is most interested in the interwar years, when the British government sought for the first time to "develop" scientifically Africa's immense resources, in theory for the benefit of colonized and colonizer alike. Officialdom in Africa now turned – often grudgingly - to experts to generate the facts needed to rationalize economic policy, and experts responded to the call, but not always with the kinds of facts expected. These experts, their networks, and their modes of reasoning ("thinking like an empire") form the heart of Tilley's study. Her conclusions, stated upfront, are sophisticated and nuanced. The sheer biodiversity of Africa's "living laboratory," along with its extraordinary range of languages, cultures, and social practices, challenged scientists to develop new specialties and methodologies, to debate among themselves, and to test and refine their results. The various ethnographers, agronomists, and botanists deployed to the Sub-Saharan colonies learned to respect Africans' unique forms of knowledge and developed a "vernacular science" that challenged Europe's epistemic authority well before certain postcolonial theorists in the 1980s. Ironically, "by misapprehending, mislabeling, and facilitating new forms of control," these sciences yoked to empire "had the potential to coerce" - but also to liberate. "In the end, they did both." (p. 25) The author admits that she came to these conclusions as a former aid worker and activist turned academic, and as a defender of science.

Responsible use of science today requires understanding past abuses committed in its name, as well as recovering its occasionally subversive transcripts. In order to explore scientific and interventionist colonialism, Tilley focuses on the most important intelligence-gathering project of the interwar era, the quasi-official African Research Survey, and its impact on the colonies of Kenya, Tanzania, Uganda, Zambia, Nigeria and Ghana. Led by Sir Malcolm Hailey, the Survey operated between 1929 and 1939. Its findings were published in 1938 in a single volume, *An African Survey: A Study of Problems Arising in Africa South of the Sahara*; a spin-off volume also appeared, *Science in Africa: A Review of Scientific Research Relating to Tropical and Southern Africa*. A collection of pro-empire academics, officials in the Colonial Office, and public intellectuals conceived the Survey, to assess the state of knowledge about Africa, develop strategies for further research, and recommend ways to integrate this research into policy-making. In their search for "reliable" information, the organizers helped to grow and shape such newer field-based sciences as ecology, botany, tropical medicine and anthropology. Tilley follows the Survey's members into the field, tracks their scientific debates, and charts their encounter with local administrators, African social and cultural practices, and specific

environments. She also investigates the patronage systems and professional structures that conditioned the production of knowledge nationally and internationally. Scientists certainly benefited from the unprecedented opportunity to work in Africa that late European colonialism provided them. But the knowledge they gathered did not only dehumanize the peoples they came to investigate.

The book is divided into seven chapters. Chapter One traces the interwar fascination with inventorying Africa's tropical resources back to the growth of geographic societies at the end of the nineteenth century; while Chapter Two chronicles the genesis of the Survey. The remaining chapters provide case studies of groups involved in the Survey. Chapter Three explores how agricultural departments (second only to medical departments) adopted an ecological perspective to revise earlier assumptions about the fertility of African soil and wasteful African farming methods. Growing anxiety about soil erosion, overstocking of grazing lands and the general spread of diseases led the authors of *Science in Africa* to issue warnings about the perils of capital-intensive, large-scale production and "to take subaltern knowledge more seriously." (p. 168). Chapter Four analyzes technical officers' research into the correlation between the spread of new infectious diseases and deteriorating living standards. A major insight was that "the mere treatment of disease is insufficient." (p. 212) Interactions within the human body and among populations and their surroundings, as well as the economic context, had to be understood to improve the health of Africans. Here too, European experts began to learn from Africans and reconsider their initial assumptions, albeit without challenging the rights of the colonizer. Chapter Five takes up the question of why interwar fact-gatherers devoted so few of their resources to research on racial difference, given that all colonial regimes were based on racial foundations. Taking Kenya as a case study, Tilley rejects the idea that race was regarded as so "true" as to not need investigating. Rather, colonial administrators were becoming wary of the destabilizing effects of racial prejudice, while scientists internationally were questioning the ontological reality of race as biologically meaningful. Both factors, coupled with colonial states' limited resources, dissuaded officials from investing funds in trying to prove that their subjects were mentally inferior due to race.

Was this retreat from race also due to the development of social anthropology, which offered an alternative explanation of colonial peoples' different lifeways? The methodologies of a nascent field-based social anthropology loom large in Tilley's book, even though anthropologists were the least numerous experts in tropical Africa. With Malinowski leading the charge in the 1920s, a new generation of functionalist anthropologists sought to understand and explain existing conditions in African societies – not to freeze them in a timeless present, but to mitigate the destructive impact of colonial capitalism. In the process, interwar anthropologists became empire's fiercest critics: "anthropologists who had worked for so long to stake out a claim to be included among the empire's experts" then "used their tools to chip away at [the empire] once on the inside." (p. 311)

Collectively, Tilley's case studies lead her to jettison the term "colonial science" altogether. The history of the African Survey, she argues, proves that all scientific research circulates both locally and globally in ways that its producers cannot control – even when this research is sponsored by imperial governments seeking solutions to problems of colonial governance. From this perspective, defining any "science" as specifically "colonial" obscures

more than it illuminates. Her point is not that “good” science triumphed over “bad” science in Britain’s African colonies, but that the outcome of the appeal to science was never absolutely predetermined by the fact of empire. Professionalizing scientists in the field could and often did maintain their distance from policy-making: their training encouraged them to they look for the very kind of complexity in human societies that overburdened administrators or their superiors did not have time to consider. Particular political contexts and historical actors shaped the kinds of debates that occurred, sometimes for the better. One of the striking features of the particular development ethos of the 1930s was its inauguration of a new tradition of coordinated interdisciplinarity “that stressed the heterogeneity of Africa’s environments and the interrelations among the various problems studied.” (p. 5).

Tilley makes a persuasive case that historians of empire need to consider not only “the anomalies, exceptions and egregious examples” of science that turned imperial subjects into subjects of observation and experimentation, but also the “vast body of scientific literature produced during the colonial period that did *not* fall into these patterns.” (pp. 322-323) Studying the full range of modern scientific practice in Africa is not just a matter of historical accuracy, but also essential to understanding the role played by ideas in the dismantling of empires.

The birth of “colonial sciences”

Pierre Singaravélou also recovers a neglected history of a group of colonial scientists, albeit a very different group than Tilley’s; his book is devoted to the leaders of a professionalizing domain of French humanist knowledge known as “the colonial sciences,” which was established in the early Third Republic but failed to survive the Second World War. In the 1880s, so-called amateurs still produced most of the knowledge about the peoples, resources, and administration of France’s colonies; or, to put it another way, such knowledge had no recognized status within institutions of higher learning. Certain experts tried to change this situation by founding such disciplines as colonial geography, colonial history, colonial legislation and economy, and colonial psychology – all with an aim to making French imperialism more scientific. Through an exhaustive examination of two generations of such experts and their networks, Singaravélou demonstrates that a new science of colonialism did become unevenly entrenched in France between 1870 and 1920, only to then be stymied. *Professer l’Empire* is part a new wave of French scholarship bringing together the social and intellectual history of the human sciences with colonial history. This body of work seeks to understand the ways in which an academic or “savant” culture of empire interacted with a broader popular one, and to move beyond an analysis of elite colonial discourse to study its vectors of dissemination and impact.

Singaravélou divides his book into two equal parts, each containing four chapters. Part One examines the institutionalization of the colonial sciences, broadly defined, and explores the reasons for their early “success” and subsequent decline. A shorter Part Two analyzes the content of these new disciplines. Between 1880 and 1940 a constellation of academics, imperial officials, and lobbyists committed to the empire– what Singaravélou calls a *République des lettres coloniales* - helped create a range of positions in the university in the colonial sciences throughout France and the empire. The 1880s and 1890s were a period of university reform and growth of the human sciences, expansion of commercial and applied sciences, and renewed

imperial aggression; all three developments facilitated the institutionalization of these new disciplines. Courses in “colonial geography and history,” “colonial economy and law,” “comparative colonization,” and “native psychology” began to appear in new schools for the training colonial administrators, public and private business schools, *facultés de droit*, and to a lesser extent, *facultés des lettres*. Within France, a regional division of imperial work obtained: Lyon specialized in instruction relative to Southeast Asia, Bordeaux targeted West Africa and Morocco, Le Havre emphasized the Americas, and Marseille provided courses on East Africa, Algeria and the Near East, and Madagascar. Several university chairs were also founded in Paris, and in 1926 a long-dreamt of Académie des sciences coloniales was created to coordinate colonial research efforts and offer advice to overseas governments.

The colonial sciences, then, found their way into the heart of France’s institutions of higher learning. Who taught these sciences, and who financed the new positions? Singaravélou has profiled a hundred or so professors of empire. Some came from the same prestigious schools – the Ecole Normale Supérieure, or the Faculté de Droit at the University of Paris -- that educated France’s better-known intellectuals. Social scientists with no direct colonial expertise from other disciplines – e.g. economists, or law professors – would occasionally teach courses with colonial content. Several were graduates of military schools, such as St. Cyr, or of the Ecole Coloniale in Paris. Whatever his background, the typical expert was a « polymath whose complex career combines teaching, colonial administration, expertise and sometimes political and business responsibilities » (p. 135) Structurally, the Colonial Ministry, various Governments General, local municipal councils and chambers of commerce, and the colonial lobby funded the colonial sciences, hoping to attract talented youth to careers in the empire and to win over public opinion. A larger *nébuleuse* of Parisian, provincial and overseas learned societies, colonial research institutes, publishers specializing in colonial subjects, and scientific journals provided the intellectual spaces, erudite forms of sociability, and peer review that any new discipline requires to professionalize.

One of Singaravélou’s most interesting chapters studies why during the interwar years – usually deemed the highwater mark of France’s empire - this dynamic new field should begin to stumble, to the point of collapsing a generation later. Several obvious culprits are to blame: the onset of the Depression and the “hollow years” in the wake of the bloodletting of World War I, the sclerosis of the conservative French academy whose denizens refused to acknowledge the seriousness of non-traditional scholars who embraced practical outcomes, and a lack of post-secondary students for the colonial sciences in general. The fact remains that due to the Third Republic’s declining birthrate, few bourgeois males chose to immigrate to the colonies. Instruction in the colonial sciences also suffered from a lack of overall coordination – three different Ministries (Colonial, Education and Commerce) shared responsibility for the domain. Singaravélou detects a profound crisis of identity in the 1930s for those who had pioneered the field, because “it remains difficult to place educated graduates in the colonies” (p. 227).

If the goal under the Third Republic was to elevate the colonial sciences from a largely “amateur” status to that of a truly “professional” field of knowledge, the evidence amassed by Singaravélou suggests that the desired transformation occurred. What then was the relationship between these newly professionalized colonial sciences and the disciplines of geography, history, law and political economy, and psychology already in the academy? Did the colonial sciences

form a single “colonial science” that always reinforced the empire? Here again the answers are complex. Academic geographers were “colonial” in spirit if not in name before 1880; seeking to free themselves from the influence of historians, they had avidly embraced the opportunity to map natural and human landscapes in the expanding empire. These scientists thus welcomed the creation of a field labeled “colonial geography.” Colonial geographers, however, never spoke in one voice, and a few learned to overcome the mesological determinism that dominated the larger discipline at the turn of the century. In contrast to geographers, only a small subset of professional historians developed an interest in the history of colonialism. Eurocentric and always pro-empire, these experts were also among the first in France to study twentieth-century and oral history, and to challenge the racial determinism of conservatives at the Sorbonne.

Colonial law and colonial economics proved too “eclectic” to become disciplines in their own right. Each juridical specialty within French law developed instead its “colonial” complement, preventing a separate “colonial science” from emerging. Colonial economics was always a hybrid construct. For business schools, it designated colonial agricultural methods; for law schools, comparative colonial economic systems. Colonial psychology made the least institutional headway and left the fewest traces. The well-known administrator-scholar, George Hardy tried to invent this science from scratch in the crisis-ridden 1930s. By borrowing more from literary than hard science models, at a time when French academic psychologists were resolutely experimental, Hardy’s attempt was doomed to failure; only two courses in the subject were ever taught, at the Ecole Coloniale of Paris and at Le Havre. Singaravélou concludes that the Third Republic represented at most a “colonial moment” in the French human sciences. Interest in shared objects of study – the “native,” the colony, and colonization – produced too great a diversity of approaches, methods and scientific norms among a wide variety of disciplines for historians today to speak of a single colonial paradigm obtaining within the human sciences in France between 1870 and 1940.

Unlike Tilley, Singaravélou did not set out to investigate the impact of research carried out in a specific colonial field (Africa) on experts. Adopting the structuralist approach of his mentor Christophe Charles, he focused instead on the social conditions responsible for the emergence of the colonial sciences within higher learning. One of his most significant discoveries is that the world of teaching about the empire became a stimulating “place of encounters and exchanges between academics and administrators, politicians and advertisers” (p. 31). Hovering on the fringes of the more orthodox disciplines of history, geography, law and political economy, and psychology, colonial scientists contributed new subjects (the comparative history of empires, legal anthropology, tropical geography) to their “parent” fields that would flourish after World War II; they were also among the first to practice interdisciplinarity, due to their long exiles in the field. As in Britain, their contributions have been lost from view because modern scholars have dismissed the “colonial sciences” as too tainted to be worth revisiting.

Taken together, Singaravélou and Tilley make clear that without a complete picture of how *all* scientists functioned in the past, historians cannot understand -much less counter-act - the ideological and rhetorical power inherent in science itself. Considerable debate persists over the extent to which scientists facilitated colonialism, and colonialism facilitated science. While neither of these two richly contextualized books explores the question of how science translated

into policy on the ground, they nevertheless remind us that there can be no foregone conclusion about the content of the scientific expertise promoted under colonialism. Both authors breathe new life into the history of dead white scientists attached to empire in the interwar era without in any way eulogizing or apologizing for them. What is most striking to this reviewer is the dynamic view of human societies and cultures acquired by many French and British scientists with field experience in the 1920s and 1930s, as opposed to the essentialist understanding of culture that would prevail among many of their successors during the Cold War. How and why this subsequent shift occurred amidst the debates and struggles of decolonization awaits its historian.

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