Introduction: The Micro-Politics of Knowledge Production in Southern Africa

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This issue of Kronos: Southern African Histories proposes a scaling down from analyses of scientific and institutional authority toward the micro-politics in the work of knowledge production. The articles locate the operations of power and affect in the interactions of individuals situated within networks. While histories of science in southern Africa are still sparse, these essays build on the region's rich micro-historical and biographical traditions and on developments in science studies globally. The twelve articles in this issue lie in the period from around 900 through to the present and their geographical range includes contemporary Zambia, Zimbabwe, Mozambique and South Africa. This introduction discusses them thematically. The first theme 'Controlling and Classifying Nature' (articles by de Luna, Cook, Hammel, and Mwatwara and Swart) explores knowledge production before the apex of imperial rule and foreground collaborations between Africans and Europeans without defining the projects in scientific or imperialist terms. These articles expose the fragile boundaries between fact and fiction, knowledge and ignorance, in historical and natural understandings. The second theme, 'The Racial Politics of Cultural Knowledge' (articles by Wright, Bank, Hansen, and Duff) draws out the ideological, political, and affective motivations in scientific work and directs attention to the story of racial categories and racism in southern African science and its history more generally. The third theme, 'Local and Global Racial Politics' (articles by Dubow, Magaziner and Jacobs), demonstrates the potential of intellectual biographies to establish the presence of affect in a form usually reduced to equating power and knowledge. The fourth theme, 'The Micro-Politics of Science' (article by Heywood), probes how diverse actors, including molecular biologists, museum staff and conservationists, interacted in the development of a scheme to breed a look-alike of an extinct species, the quagga. Collectively, the pieces in this issue invite reflection connections across scales and about differences between the politics at different levels in the history of knowledge. They also illustrate the benefits to the history of knowledge that come from magnifying micro-dynamics.

Keywords

boundary objects, Henrika Kuklick, historiography, knowledge production, micro-politics, natural sciences, network, race, segregation, social sciences, southern Africa

Southern African Knowledge Politics: Present and Past

The past politics of knowledge have bequeathed South Africa of 2015 with a conspicuous problem. Student protesters have undertaken the largest mass demonstrations in the country since the democratic transition in 1994. As we write, they are negotiating with institutions of higher education and the state to lower fees. They have also made a call to decolonise and Africanise the universities. Most famously, they have brought the statue of Cecil John Rhodes down from its perch at the foot of the University of Cape Town. This climate of intense and outspoken critique of institutional authority turns attention toward the ever-contested politics of knowledge, the regional history of which forms the subject of this issue of *Kronos*.[1]

South Africa is a post-apartheid society and southern Africa a postcolonial context. The pairing of power and knowledge may have originated with Michel Foucault, when it comes to lands and people on the receiving end of imperial history, all thinking about power and knowledge begins with Edward Said's *Orientalism* first published in 1978. With his framing of them as Western discourse, Said forever changed understandings of intellectual traditions concerning the Orient and by extension 'Africa'. In Said's view, Christian European thinkers invented the Orient and their own civilisation through specialist expertise about debased and backward societies. Establishing the Orient as a recognisable object, they accorded authority to he subject. This discourse sustained European imperialism and moulded world history from the late eighteenth century onwards.[2]

In South Africa's past, the intellectual elevation of civilisational binaries and the condescension among European and white experts toward 'Others' has been as marked as anywhere. Yet, despite the crucial role of knowledge in the exercise of power in South Africa and the wider region, the history of science remains a curiously underdeveloped field of study. An edited collection published in 1977 to celebrate the centenary of the founding of the South African Philosophical Society, still remains the only overview of the history of science that spans the pure and the applied, the 'hard' and the 'soft' sciences in South Africa. Many of the essays, however, are self-congratulatory memoirs, heroic accounts of the allegedly linear and positivist accumulation of knowledge in particular fields, typically exaggerating the roles played by one or two male ancestors.[3] The first critical edited collection on the history of science dates to 1991. Edited by Jonathan Jansen, now vice-chancellor at the University

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1 The editors wish to thank all the reviewers who critiqued the articles in this issue. Thanks also to all the authors for their engaged editorial comments on this introduction. We are particularly grateful to two ever-modest close friends and long-time collaborators who have contributed extensively behind the scenes not only to this introduction but also to supporting our scholarship over many years. Priscilla Hall has copy-edited two books for each of co-authors. She has brought the same selfless perfectionism to seeing this volume and all its essays through to production. Jenny Sandler has worked with Andrew Bank since 2001 as designer of 15 consecutive annual issues of *Kronos*, whose pages (and hard-copy covers) bear what we hope will be lasting testimony to her aesthetic talents and professionalism.

2 E. Said, *Orientalism* (London: Pantheon, 1978). For an application of his model to Africa, see V. Mudimbe, *The Invention of Africa: Gnosis, Philosophy, and the Order of Knowledge* (Bloomington: Indiana University Press, 1988). On Foucault's influential texts, first translated into English in the five years prior to the publication of Said's path-breaking study, see M. Foucault, *The Order of Things: An Archaeology of the Human Sciences* (New York: Vintage, 1973); Foucault, *The Birth of the Clinic: An Archaeology of Medical Perception* (London: Tavistock, 1973); and Foucault, *Discipline and Punish: The Birth of the Prison* (London: Allen Lane, 1977).

3 A.C. Brown (ed), *A History of Scientific Endeavour in South Africa* (Cape Town: Royal Society of South Africa, 1977).

of the Free State, it drew stark attention to the role of race and the relationship between power and knowledge across the social sciences in twentieth-century South African history.[4] Further work revealed that racial ideology and scientific research were mutually reinforcing, for example, with the segregationist governments of the twentieth century drawing on racist physiology and applying these ideas to policies about food.[5]

A pioneering edited collection featuring leading social and cultural historians was published in 2000 under the title *Science and Society in Southern Africa*. Given its location in a series of 'Studies in Imperialism', this collection edited by Saul Dubow foregrounded the relationship between knowledge production and European domination in the social and natural sciences, with particular attention to the overlap between science and governance in twentieth century South Africa.[6] So, for example, Dubow compared the 1905 and 1929 visits of the British Association of Science to South Africa as a way of demonstrating the degree to which science had become 'South Africanised' by the 1920s. Deborah Posel revealed the state's 'mania for measurement' and statistics in the founding of apartheid.[7] The association between science and race was also the central theme of the three essays that consider knowledge production beyond South Africa. Patrick Harries showed how a Swiss missionary scientist working in southern Mozambique and the north-eastern Transvaal, Henri-Alexandre Junod, came to transfer his scholarly interest in the classification of butterflies and plants in the 1880s and 1890s to that of tribes in the 1900s and 1910s, culminating in the publication of a famous two-volume ethnography of 'the Tsonga' entitled *The Life of A South African Tribe* (1911–12). William Storey traced how the politics of racial, colonial and national identity complexly informed debates between local planters and metropolitan experts over the science of sugar cane production in modern Mauritius. Jocelyn Alexander revealed the tension between older paternalistic racial discourses about the Native, including that of social anthropology, and a modern technocratic discourse of development in white settler debates over agricultural reform in Southern Rhodesia of the 1950s.[8] These carefully researched histories of South African science gave reason to reflect on Said's vision of how knowledge was homogenised in the West.

Dubow's introduction to these essays called attention rather to ambiguities in the history of science; its character could not be reduced to a prop for imperial hegemony. Scientists sometimes engaged with African logic, their conclusions sometimes defied state interests, and their outreach worked at times against colonial interests. Recognising the contradictory relation between science and control over subject peoples, Dubow highlighted the role of science in the construction of the self-image

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4 J. Jansen, *Knowledge and Power in South Africa: Critical Perspectives across the Disciplines* (Johannesburg: Skotaville, 1991).

5 D. Wylie, *Starving on a Full Stomach: Hunger and the Triumph of Cultural Racism in Modern South Africa* (Charlottesville: University Press of Virginia, 2001).

6 S. Dubow (ed), *Science and Society in Southern Africa* (Manchester: Manchester University Press, 2000).

7 See S. Dubow, 'A Commonwealth of Science: The British Association in South Africa, 1905 and 1929' and D. Posel, 'A Mania for Measurement: Statistics and Statecraft in the Transition to Apartheid' in Dubow (ed), *Science and Society*, 66–99, 116–42.

8 P. Harries, 'Field Sciences in Scientific Fields: Entomology, Botany and the Early Ethnographic Monograph of H.-A. Junod', W.K. Storey, 'Making Canes Credible in Colonial Mauritius' and J. Alexander, 'Technical Development and the Human Factor: Sciences of Development in Rhodesia's Native Affairs Department' in Dubow (ed), *Science and Society*, 11–41, 42–65, 212–37.

of white colonial populations, an aspect which he has explored in greater detail in his book-length examination of the way in which science came to be bound up with the politically conservative centrist ideology of South Africanism that served as a potential bridge between English- and Afrikaans-speakers in a period of intense ethnic identity politics.[9] In his introduction to the edited collection, Dubow highlighted that while science could be used as a 'powerful tool' of domination, its social valence had to do with production as well as application and that we should be cautious about generalising its effects. In the years since that collection was published, histories of science in Africa have taken up this lesson, one that complicates the understanding left by Said, elaborating the argument that the alliances or distances between science and colonial projects were contradictory and historically contingent rather than linearly predetermined. Indeed, scholars have increasingly come to question the utility of the very conceptual category of 'colonial science', along with that of its supposed opposite: 'indigenous knowledge'.[10]

But if dualistic catch-all categories, like 'European discourse' and 'African knowledge', 'colonial science' and 'indigenous knowledge', are too crude to reveal much about the complex dynamics of knowledge production, especially that 'on the ground' in Africa, what alternative conceptual model might be applied to explore this theme in southern African history? What new directions in the wider historiography of the region can inform this new collaborative history of 'knowledge production'? What can be gained by using the concept of 'knowledge production'?

In the 15 years since the publication of Dubow's edited collection, the field of knowledge production has been globally dynamic. How can this dynamism be brought to bear on rethinking negotiated knowledge in southern Africa?[11]

Scaling Down

We propose a scaling down. Imperial hegemony, institutional crisis, and falling monuments lead towards understandings of knowledge as monolithic and the politics of knowledge as planting or tearing down, an image developed by Said whose stark boundary lines hold only when viewed at low resolutions. This issue of *Kronos* directs attention away from grand oppositions towards smaller, negotiated, though ever-contested, frames of reference. Subjecting the politics of the production of knowledge to scrutiny at the micro-level shows boundaries to be fuzzy, with connections across them. The articles collected here suggest how it can be misleading to read down from

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9 S. Dubow, *A Commonwealth of Knowledge: Science, Sensibility and White South Africa, 1820–2000* (Oxford: Oxford University Press, 2006).

10 The most eloquent book-length critique remains Helen Tilley's demonstration of the enormous complexity, constant dissonance and regular flow of scientific countercurrents across a wide range of development fields associated in particular with the ambitious interdisciplinary African Research Project led by Lord Hailey in Southern and Central Africa of the 1930s. See H. Tilley, *Empire, Development, and the Problem of Scientific Knowledge, 1870–1950* (Chicago: Chicago University Press, 2011). In the case of South Africa see esp W. Beinart, *The Rise of Conservation in South Africa: Settlers, Livestock, and the Environment 1770–1950* (Oxford: Oxford University Press, 2003); K. Brown and W. Beinart (eds), *African Local Knowledge and Livestock Health: Diseases and Treatments in South Africa* (Johannesburg: Wits University Press, 2013).

11 A third collection co-authored by William Beinart, Saul Dubow and Patrick Harries under the title *A Social History of Science in Southern Africa* is in the early stages of production. E-mail communication, Patrick Harries to Andrew Bank, 1 November 2015.

monoliths erected by authorities to analyses of the parties who were still hammering out authority.

As a theoretical principle, sensitivity to scale is essential. Said did attend to the personal politics of knowledge production, using Marx as an example of a humanist disciplined into Orientalist approaches. Europeans with experience in Asia, who had direct contact with people and societies there, also took on Orientalist convention when they became writers of expert texts. Richard Burton was as close as existed to an exception, but for him, too, the Orient existed as a thing to be known. His incremental acculturation into Orientalism suggests how the politics of knowledge include the struggles in and between minds.[12] In the years since the publication of *Orientalism,* scaling down has become essential to the historiography of empires, which has unearthed contradictions, tensions and negotiations between Selves and Others, whether empathetic or antagonistic.[13]

In this issue, the field of interaction is defined around 'knowledge', which is more encompassing and less ideologically loaded with its Western and positivist bias than 'science'. The politics within knowledge are traced to their points of production, to the social processes of creating it. Here the late Henrika Kuklick's new approach towards the history and sociology of science from the mid-1990s was a key intervention. In informal e-mail communication with one of the editors (Bank), Kuklick reflected on the shift she initiated in the analysis of the history of field science.

> I got sick and tired of having people ask me whether the social and natural sciences are fundamentally different … The answer that is usually given – that the two categories of science are fundamentally different – is predicated on the assumption that all sciences are like physics. They aren't. Only physics is like physics. So I said to [my colleague] Robert Kohler: 'What do you learn when you see science as a form of work?'[14]

This approach was productively applied by her students in particular case studies, most notably by Lyn Schumaker in her pathbreaking history of the anthropology of the Rhodes-Livingstone Institute (RLI) in Northern Rhodesia. Schumaker balanced the role of individuals, prominently including a cast of African research assistants, with that of small networks of collaborative knowledge producers, led (in her instance) primarily by the social anthropologist Max Gluckman, who instituted a unique model of the field school which he then took back with him to Manchester University.[15] Once the local, on-site, African dynamics of knowledge production in practice began to be explored in their own right, the conventional narrative of the expansion of imperial knowledge from European or American metropoles to the

12 Edward Said, *Orientalism* (New York: Vintage, 1979).
13 F. Cooper and A. Stoler (eds), *Tensions of Empire: Colonial Cultures in a Bourgeois World* (Berkeley: University of California Press, 1997)
14 H. Kuklick to A. Bank, E-mail communication, 14 October 2012.
15 L. Schumaker, *Africanizing Anthropology: Fieldwork, Networks, and the Making of Cultural Knowledge in Central Africa* (Durham: Duke University Press, 2001).

African periphery was unsettled or even overturned. In short, the local came to loom much larger in the study of the processes that produce knowledge.

Nowadays there is more attention to the agency of individuals, not just the primary experts but also their collaborators, and to the conventions, rituals we might say, that evolve in the disciplines that make up the field sciences. In this regard we, the co-editors of this issue, have each used the Kuklick approach extensively in our efforts to develop understanding of localised, micro-level knowledge production in the fields of twentieth-century African ornithology and African anthropology respectively.[16] Indeed, our decade-long intellectual friendship has its origin in discussions about the richness of the essays in the 1996 special issue of the journal *Osiris* co-edited by Kuklick and Kohler, dealing with scientific practices in the field sciences from the management of an astronomical expedition (Alex Pang) to Alfred Russell Wallace's collection of zoological specimens (Jane Camerini) to the disappearance of a woman scientist from the narrative of scientific achievement (Naomi Oreskes).[17] This was the period when one of us (Jacobs) published an article in a 2006 issue of *Comparative Studies in Society and History* entitled 'The Intimate Politics of Ornithology'. The other co-editor (Bank) cited this phrase in the title of an article published in *The Journal of Southern African Studies* two years later: 'The "Intimate Politics" of Fieldwork: Monica Hunter and Her African Assistants, Pondoland and the Eastern Cape, 1931–1932'.[18] Both articles drew on Hugh Raffles' understanding of intimacy as 'affective sociality in knowledge production'[19] and sought to redirect attention to the dynamics of African field research.

Our efforts corresponded with a period of heightened interest in micro-history as a significant and growing subfield in southern African history. The micro-historical approach, pioneered in early modern Europe by Carlo Ginzburg and Natalie Zemon Davis,[20] as Harold Cook highlights in his essay in this volume, has been most productively applied in the Cape colonial context. Here too it has emerged as a creative response by historians in a situation where the documentary sources are scarce but rich, particularly in the case of court records. In the hands of its most gifted practitioner, Nigel Penn, who selfconsciously locates his storytelling experiments in the Ginzburg tradition,[21] the cracks of light opened up in colonial court records are projected onto a large canvas to illuminate, in bright colours, the violent social world of the eighteenth-century northern colonial frontier. His experiment in micro-history

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16 See esp A. Bank, *Pioneers of the Field: South Africa's Women Anthropologists* (New York: Cambridge University Press, 2016 forthcoming); N.J. Jacobs, *Birders of Africa: History of a Network* (New Haven and London: Yale University Press, 2016 forthcoming).

17 A. S.-K. Pang, 'Gender, Culture, and Astrophysical Fieldwork: Elizabeth Campbell and the Lick Observatory-Crocker Eclipse Expeditions'; J. Camerini, 'Wallace in the Field'; and N. Oreskes, 'Objectivity or Heroism: On the Invisibility of Women in Science' in H. Kuklick and R. Kohler (eds), *Osiris: Special Issue: Scientific Practices in the Field Sciences*, 11, 1996, 17–43, 44–65, 87–113.

18 N.J. Jacobs, 'The Intimate Politics of Ornithology in Colonial Africa', *Comparative Studies in Society and History*, 48, 2006, 564–603; A. Bank, 'The "Intimate Politics" of Fieldwork: Monica Hunter and Her African Assistants, Pondoland and the Eastern Cape, 1931–1932', *Journal of Southern African Studies*, 34, 3, September 2008, 557–74.

19 H. Raffles, 'Intimate Knowledge', *International Social Science Journal* , 54, 3, September 2002, 325-35.

20 C. Ginzburg, *The Cheese and the Worms: The Cosmos of a Sixteenth-Century Miller*, translated by J. Tedeschi and A. Tedeschi (Baltimore: John Hopkins University Press, 1982); N.Z. Davis, *Trickster Travels: A Sixteenth-Century Muslim Between Worlds* (New York: Hill and Wang, 2006).

21 See N. Penn, *Rogues, Rebels and Runaways: Eighteenth Century Cape Characters* (Cape Town: David Philip, 1999), 1–6.

has been followedby other historians of the colonial period in South Africa, who have managed to reconstruct in similarly dense detail the hidden histories of those from the more settled regions in Cape Town and its hinterland.[22] While none of the essays in this volume explicitly refer to Penn's micro-historical approach, many adopt the same techniques, including a heightened interest in history as narrative in their density of historical detail, in peopling the past with personality, and in using the seemingly obscure, whether of sources or characters, as a way of shedding light on broader social and political themes.

Indeed, as our thematically ordered summary of the contributions to this volume will show, this collection of essays on micro-politics of knowledge production may also be associated with 'the biographical turn' in southern African studies.[23] Nine of the twelve essays deal centrally with an individual knowledge producer and their changing intellectual networks and histories.[24] They pay varying degrees of attention to the links between the intellectual and personal lives of individuals and the institutional networks within which they produced knowledge, whether these were local, national, regional or global. The biographical genre developed by authors in this volume differs markedly from the typically heroic and linear accounts in the history of Western, and not least European, science, which chart the achievements of Great Men from Da Vinci to Darwin. To begin with, we feature a wider range of subjects, including a 'free black' Mozambican trader, a frontierswoman of science, an interpreter of Zulu history from the cultural fringe, a hitherto obscure Afrikaner geneticist, and an American ornithologist of middling achievement. What the essays share, however, is their treatment of biographical subjects as socially constructed within networks, personal as well as intellectual.[25]

A widely influential article published in 1989 presented a model for the understanding of the heterogeneous character of networks among different knowledge producers. The authors Susan Leigh Star and James Griesemer developed an 'ecological' approach – to explore relationships in science rather than in nature. As they explained it, diverse actors such as research scientists, philanthropists, or specimen collectors inhabit different social worlds. Social worlds are 'meaning collectives' that have common interests, employ a shared discourse, and follow the same processes. But social worlds do not only look inward. They come together to collaborate even though their goals remain disparate. In the absence of consensus, collaborations are still possible because of flexible 'boundary objects'. Boundary objects are things such

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22 For book-length examples see A. Bank, *Bushmen in a Victorian World: The Remarkable Story of the Bleek-Lloyd Collection of Bushman Folklore* (Cape Town: Double Storey, 2006); C. Crais and P. Scully, *Sara Baartman and the Hottentot Venus: A Ghost Story and a Biography* (Princeton: Princeton University Press, 2009); N. Penn, *Murderers, Miscreants and Mutineers: Early Colonial Cape Lives* (Johannesburg: Jacana Media, 2015).

23 On the concept of the post-apartheid 'biographical turn', here in relation to post-apartheid political biography in South Africa, see C.S. Rassool, 'The Individual, Auto/Biography and History in South Africa' (Unpublished PhD thesis, University of the Western Cape, 2004). For a sense of the continued dominance of political biography in South Africa, see the six recent biographies reviewed in J. Dlamini, 'Life Choices and South African Biography', this volume. Louise Viljoen's sensitive study of the Afrikaner poet Ingrid Jonker is the only 'intellectual biography' under review: see Louise Viljoen, *Ingrid Jonker: Poet under Apartheid* (Johannesburg: Jacana, 2012).

24 Those by de Luna, Mwatwara and Swart, and Duff are the exceptions.

25 Thanks to Saul Dubow for encouraging further reflection on the approach towards biography adopted by the authors in this volume.

as specimens, or ideas such as species, that have different meanings for different parties. They 'are both plastic enough to adapt to local needs and the constraints of the several parties employing them, yet robust enough to maintain a common identity across sites'. Through their discussion of collection building at the California Museum of Zoology, Star and Greisemer developed the arguments that collaboration between parties working in different knowledge traditions does not require shared goals, and that the priorities of the scientist do not dictate the terms of others' participation. Scientist and trappers came together in the project of collecting specimens, but different worlds of meaning and motivation met at the transfer of the animal skin.[26]

As we came to rethink the structure of academic institutions, racial categories and state policy in our work and in preparing this volume, it emerged that an individual's negotiations did not always, in the first instance, qualify as 'intimate politics'. The title of this issue of *Kronos* therefore uses the term 'micro-politics' to reference a more diverse range of relationships. These include personal relations and scientific practices in the field, whether sexual, affective or otherwise; in knowledge-producing institutions, whether universities, research institutes or government departments; and in networks of knowledge distribution and preservation.

The micro-politics of knowledge extends to those of us who read these records today. Who has access to which archives? What kinds of records are left for our consideration? Which documents are lost and which have been found? Which testimonies are recorded and which have been left untold .? These are highly contingent on the micro-contexts of preservation, the small choices and dispositions of individuals. Our own renderings of 'the micro-politics of knowledge production in southern Africa' rely no less heavily than those of any other scholars or scientists, amateurs or professionals in the past or present on a range of relatively ad hoc factors, including our personal disposition and intellectual careers, our collaborative relationships, our institutional and international networks. We observed these factors at work in the framing of a call to papers which was collaboratively conceived in the communications of the editorial board of this journal. The energised response of a wide range of researchers across the disciplines confirmed our sense that the history of science and of knowledge production is a dynamic current area of scholarly interest, but again the selection of which essays to pursue relied on all manner of subjective criteria, including our shared enthusiasm for contradictory and storied lives, and for history as narrative.

Drawing the 12 selected essays together in an introduction has been challenging. They have all emerged in relation to individual research projects, in many cases spanning decades rather than years, rather than in response to a common conceptual and thematic engagement developed at a conference or workshop, as was the case, say, with the volume *Science and Society*. In the subsections below we provide a detailed overview of each essay in chronologically and thematically ordered sequence so as to highlight their collective contribution to the rapidly developing field of the history

26 S.L. Star and J.R. Griesemer, 'Institutional Ecology, "Translations" and Boundary Objects: Amateurs and Professionals in Berkeley's Museum of Vertebrate Zoology, 1907–1939', *Social Studies of Science*, 19, 1989, 387–420.

of knowledge production in southern Africa. What they share is a concern with the negotiations and contests involved in the practice of producing knowledge 'on the ground', as well as a curiosity in the connections between the local level and wider intellectual contexts, whether national, regional, continental or global.

Controlling and Classifying Nature on Precolonial and Colonial Frontiers, South-Central and South-East Africa, c. 900–1900

The opening four essays explore the many complex ways in which southern African frontiersmen, and in one instance a frontierswoman, developed techniques for controlling and classifying their environment. Collectively, these case studies of changing knowledge about the natural world span more than a thousand years of southern African history, from before the turn of the first millennium right up to the cusp of the twentieth century. The regional canvas is wide: from settled Cape Town to an outpost at Delagoa Bay in the east to the expanding northern settler frontier of Southern Rhodesia. Despite this regional diversity and temporal range, there are common themes. Firstly, they each document the attempts of the societies of southern Africa to control and classify their natural environment. Secondly, in keeping with the trend in the latest historiography on knowledge production in Africa and with the other essays here, they highlight the crucial role played by Africans in the process of knowledge production, with varying degrees of recognition for these contributions. Thirdly, they foreground the central importance of 'the historical imagination' in reconstructing distant or early colonial pasts, which involves a frank recognition of the fragile boundaries between fact and fiction, knowledge and ignorance.

In the opening case study Kate de Luna explores the emergence of 'bushcrafts' among Botatwe-speaking men in South-Central Africa between 750 and 1250 C.E. She opens up what are surely among the most challenging methodological and epistemological questions in African history. Does 'expert knowledge', or 'science', in southern African history not long predate colonialism? Yet in the absence of narrative-based documentary or oral sources for such early periods, how can we establish anything definitive about the practices of people with expert knowledge, let alone about the wider social and symbolic contexts of such practices? Can the concept of micro-politics apply to knowledge production in societies where we have no direct access to named individuals and their knowledge networks?

De Luna demonstrates that it is possible to reconstruct, albeit tentatively and provisionally, a sense of how early precolonial societies conceived of expert knowledge and its social role. She argues that 'word histories' reveal that a new lexicon was coined in the centuries around the turn of the millennium, one that associated male expertise in iron production with social status and fame – and, equally importantly, with new spaces of production: the bush that stood apart from the village. Revealedthrough dictionaries, fieldwork and ethnographic literature, the new lexicon associated the Botatwe-speaking metallurgists and hunters of South-Central Africa with creative application to the nature of wind, breath or heat. The novel spatial distinction between 'the village' and 'the bush', ambiguously conceived as a place

of creative but also potentially dangerous activity, resonates powerfully with classic modern ethnographies in the region, notably the writings on healing, witchcraft and power in Tonga cosmology by the American anthropologist Elizabeth Colson. De Luna suggests that this decisive historical transition was marked by a new assertion of masculinity and changing relationships between these 'new men' of the bush and their female relatives, whether mothers, wives or sisters. She concludes, with explicit comparative reflection on essays in this volume that deal with the colonial and modern periods, that, while word histories do not allow for 'examples' of the activities and social relations of individual knowledge-producers, the meticulous examination of new words and their changing associations can allow for the recreation of a sense, an imagined sense, of 'the kinds' of productive and social relationships that experts created in these Botatwe-speaking cultures over a thousand years ago.

Ways of reading unusual historical sources and the central role accorded the historical imagination in this process are again foremost in Harold Cook's absorbing analysis of a 1690 report that he stumbled upon while working in an archive in the Netherlands in 2011. What is particularly rare about this case is that the testimony, reproduced in original Dutch and translated English text as appendices, is not from a Dutch colonial official or a Portuguese ship-captain, but from an African trader, a 'free black' from Mozambique. If the account is to be believed, Nicolas Almede made no fewer than eight journeys into the Delegoa Bay hinterland, including a trip to the distant Rozwi Empire based at Great Zimbabwe. Challenging the 'radical merchants of doubt', Cook proposes that the most skilful means of navigating a course through this remarkable text is by locating it in relation to its original production and diverse circuits of dissemination with attention to the meanings attributed to its 'intelligence' by different readers. To begin with, the report was recorded in Cape Town at the request of the colonial governor Simon van der Stel, who was motivated to establish further information about commercial possibilities in a period of Dutch colonial expansion. In this regard the most interesting information is undoubtedly Almede's revelation about the wealth of an African kingdom in the interior, which we now associate with the Rozwi Empire of Great Zimbabwe.

Yet the importance of the document for the influential Dutch patrician and member of the Republic of Letters, Gisbert Cuper (1644–1716), was more likely Almede's passing mention that he had once seen creatures that were 'not unlike mermaids'. When viewed in this light, the document needs to be located in relation not to intelligence about southern African trade possibilities but to the humanist and metaphysical conversations between Cuper and his fellow man of letters back in the Netherlands, Nicolaes Witsen, regarding the relationship between human history and natural history in their age of classification. Were mermaids, about whom there were now myriads of reported sightings, or creatures 'not unlike mermaids' in the Dutch colonial official's rendering of Almede's testimony, to be classified in the same category as humans and apes, as their Swedish contemporary Carl Linnaeus had proposed in his all-encompassing grid of living creatures? It is most likely the shared curiosity of two Dutch men of letters about the most appropriate means of classifying 'mermaids', rather than Almede's rare testimony of the riches and peoples

of the southern African interior, that explains why the document was preserved in a prominent place in Cuper's private collection, later donated and now lodged in a public library in The Hague.

The settler quest to classify the natural world remained the cornerstone of colonial knowledge systems during the eighteenth century, reaching its height during the nineteenth century. This was because a much more powerful colonial empire had taken control of the Cape Colony with an expanding influence over the region. While it is well acknowledged that the British colonisers introduced a radical new ideology associated with free labour and free trade during the 1820s and 1830s, and dynamic market-related agricultural production associated increasingly with sheep farming in the Eastern Cape by the mid-nineteenth century, the revolutionary introduction of a colonial print culture in the form of newspapers, magazines and books with associated institutions, beginning with libraries, museums, high schools and literary and medical societies, has received less scholarly recognition.[27] Certainly the role of women in the new nineteenth-century networks of knowledge remains underacknowledged. While colonial men continued to monopolise knowledge production, at least some colonial women were able to establish a niche for themselves in the latter part of the century.

Contributing to the developing field of women in science in Southern and Central Africa,[28] Tanja Hammel focuses on a subject on the nineteenth-century Eastern Cape frontier. Later distinguished as the first woman to be admitted to the South African Philosophical Society in 1878, Mary Elizabeth Barber (1818–1899) is presented as a self-made scholar who had tentatively begun what would be a long career as a naturalist by initiating correspondence in her twenties with famous Irish and English botanists including W.H. Harvey and J.D. Hooker. From plants her attention turned naturally to the insects that fed on them and in the 1860s she corresponded energetically with the foremost colonial expert in the field of entomology (and later South African Museum director), Roland Trimen. She began to publish scientific articles on the subject before turning her attention to the birds that fed on insects. This would remain her scientific passion in the latter part of her life. While correspondence remained an aspect of her scientific work, with the director of the South African Museum, Edgar Layard, crediting her as the only woman scholar to be mentioned in his pioneering 1868 text on the birds of South Africa, she now sought to collect, classify and publish independently. Barber's deep love of birds, which she described at times as her 'friends', made her one of the most important Cape ornithologists of her time. The case also shows that her experience as a woman and sensibility as a feminist thoroughly structured her science.

Hammel shows Mary Barber to have been at the very forefront of scientific thinking in her day. From the mid-1860s, Barber enthusiastically supported Darwin's evolutionary theory of natural and sexual selection, coming to apply it in unique ways

27 For an exception, see Dubow, *Commonwealth of Knowledge*.
28 In the case of social anthropology, see A. Bank and L. Bank (eds), *Inside African Anthropology: Monica Wilson and Her Interpreters* (New York: Cambridge University Press, 2013) and A. Bank, *Pioneers of the Field*.

to the sexual roles of male and female birds. But her Darwinism was feminist and radically challenged the textual and visual representations of metropolitan ornithologists who attributed a secondary role to female birds. Barber argued that there was no separation of spheres between the sexes, and produced richly detailed ornithological illustrations designed to document their equality. For example, see the cover image of this volume showing what were most likely the male and the female African hoopoe portrayed in scale and balance. Her texts in turn documented the active nurturing role played by male birds and the typical sharing of responsibilities between both parents, which she had come to view as the social ideal. While radical on the issue of gender equality, her ideas of race were very much in keeping with the dominant ideology of the Eastern Cape frontier settlers. So, while she relied extensively on Xhosa and Mfengu assistants to collect and stuff specimens of birds, she showed no inclination to credit them in her published work or to recognise that their knowledge of birds was at all useful, let alone 'scientific'.

While a micro-political approach towards knowledge production might function most effectively at the level of the intellectual biographies of individuals, Wesley Mwatwara and Sandra Swart illustrate how it can be used to tackle ambitious historiographical issues: in particular the mid-to late-nineteenth-century encounter between traditional African systems of knowledge and the colonial system of knowledge associated with imperial governance. Through close analysis of colonial archival documents on the efforts of the colonisers and the colonised to understand and control two major epidemics among cattle in Southern Rhodesia, lung sickness in 1862 and rinderpest in 1896–8, they challenge a historiography of imperialism that tracks a linear process of domination of 'colonial science' over 'indigenous knowledge'. While their case studies do demonstrate that African systems of knowledge about cattle were increasingly marginalised during this period of intense and relatively swift British colonial conquest in southern Africa, the very concepts 'indigenous knowledge' and 'colonial science', they argue, are too crude to be of much use to historians. Vernacular knowledge of cattle and cattle disease was regionally diverse, complex and changing. Biomedical knowledge of cattle, on the other hand, was only partial and often ineffective, even by the end of the century with attempts to classify and control the rinderpest notable more for ignorance than expertise. The motivations behind 'colonial science' were also changing and varied, given the wide cast of colonial agents from missionaries to government officials, the necessity of some level of engagement with existing African knowledge on the ground, and the now well-documented complexity of motives, even of the professional veterinary specialists that were introduced belatedly. In keeping with the environmental histories of William Beinart, Karen Brown and Daniel Gilfoyle,[29] Mwatwara and Swart conclude by proposing that this encounter between 'knowledge systems' is better conceived in terms of complex and changing forms of synthesis than as the simple domination of one system over another.

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29 W. Beinart, K. Brown and D. Gilfoyle, 'Experts and Expertise in Colonial Africa Reconsidered: Science and the Interpretation of Knowledge', *African Affairs*, 108, 2009.

The Racial Politics of Cultural Knowledge: The Development of Distinct Disciplines in the Social Sciences, South Africa and Northern Rhodesia, 1900–1940

The politics of knowledge production changed radically at the end of the first decade of the twentieth century when the British colonies and Afrikaner republics united to form a single South African nation. The systematic imposition over subsequent decades of racially ordered systems of governance known as segregation or Indirect Rule meant that the newly professionalised social sciences were emphatically political and fiercely contested from the outset. The centrality of the politics of race and segregation in early to mid-twentieth-century southern African history has sometimes been muted in modern historiography: initially in service of a model of analysis that privileged class over race during the 1970s and 1980s; later in the form of postmodern or postcolonial theory, from the 1990s through to today, which tended (and still tends) to fetishise a single primary line of division; and most recently as a defensive version of ethnic history in 2003 that downplayed the centrality of Afrikaner racism under apartheid.[30]

Saul Dubow's article calling for a revised assessment of his and other scholars' recognition of the significance of racial science and racism in mid-twentieth-century South Africa, together with three other essays in the central section of this issue, makes a powerful statement for resituating the politics of race and racism centre-stage in modern South and southern African history. In this sense the case studies of research into African culture by John Wright, Andrew Bank and Karen Tranberg Hansen do more than narrate the work histories and methods of prominent individual knowledge producers. Collectively, they highlight the extent of collaboration involved in cultural conversations: those of James Stuart and Socwatsha kaPhuphu, his primary interlocutor on Zulu history and customs; of Werner Eiselen and his Hamburg University doctoral supervisor Carl Meinhof; and of the Malinowski-trained social anthropologist Godfrey Wilson and his friends and intimate relations in the field in Broken Hill (Kabwe) of Northern Rhodesia, including his wife Monica, his research assistant Zacharia Mawere and the wide cast of African informants with whom he was accused of 'fraternizing'. More broadly, these individuals and their dif-fering styles of collaborative research illustrate what developed, not least through their own significant interventions, into clearly defined and demarcated intellectual traditions.

This was because each of these research projects was as emphatically political and ideological in its underlying motivation as it was 'scientific' in its research method. The 'African traditionalism' of James Stuart was motivated by a political project to reintroduce what he regarded as the declining 'liberal segregationist' Shepstone system in Natal, by which colonial rule was conducted in separate reserves and through African institutions, notably that of chieftainship. The roots of the Afrikaner

30 H. Giliomee, *The Afrikaners* (Charlottesville: University of Virginia Press, 2003). For a direct critique see Dubow, this volume.

ethnological and linguistic tradition that became known as *volkekunde* were, to a much greater extent than has been appreciated, laid in the language laboratories, African studies seminar rooms and even the home of Carl Meinhof in Hamburg of the early 1920s. Here a young Afrikaner nationalist, Werner Eiselen, developed theories of race and racial difference that would provide the building blocks of the discipline he went on to father at Stellenbosch University between 1926 and 1936. Godfrey Wilson's research work in Broken Hill of the late 1930s was deeply informed by a radically different politics of race. Far from being blindly premised on a positivist liberal teleology of 'expectations of modernity', as James Ferguson once hypothesised,[31] Godfrey Wilson's field work in Broken Hill of the late 1930s is shown to have been notable for creative flexibility and empirical rigour. Wilson's conclusion that African urbanisation in Northern Rhodesia was irreversible was grounded, in the first instance, on his accumulated field data rather than on grand theory. Here again, it is impossible to separate his racial politics from his scientific method, for Wilson's success as a fieldworker depended precisely on a left-liberal (one might in his case say radical) antisegregationist, antiracist politics rooted in his socially activist Christian background and belief. It was his commitments to Christ and Malinowski rather than to 'Marx and Malinowski', as Richard Brown proposed,[32] that account for his remarkable ease in the field, best encapsulated in his ability 'to laugh with Africans' in a volatile political context.

The other major intellectual tradition that developed in this period, African nationalism, has yet to be productively explored in the form of a case study of the micro-politics of knowledge production, again located within the national and regional context of the intensely conflicted racial politics of the segregationist era. One way of doing so would be to analyse the still untouched field notebooks and unanalysed ethnographic essays of Z.K. Matthews (1901–1968) produced during the 1930s. The earlier anthropological career of Matthews the Malinowski-trained liberal Africanist remains unexplored and would be an important complement to recent essays that present a case for the early to mid-twentieth century development of an insider ethnographic tradition in South Africa shut down by university apartheid of the late 1950s and early 1960s. Meanwhile the African nationalist tradition is represented in this volume, if in somewhat belated form, by Daniel Magaziner's compelling exposition of the empathically contemporary and pan-Africanist philosophy of design developed by the exiled Selby Mvusi (1929–1967), as discussed below.

How do these levels of analysis – the micro-politics of cultural knowledge production and the national or regional context of contested racial politics – function in the three interlinked essays mentioned above? Wright demonstrates the importance of close and historicised readings of Stuart's notebooks. In this second richly

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31 J. Ferguson, *Expectations of Modernity: Myths and Meanings of Urban Life on the Zambian Copperbelt* (Los Angeles: University of California Press, 1999). For references to the long-running debate between Ferguson and Hugh Macmillan in the *Journal of Southern African Studies* over Godfrey Wilson's anthropological methods and some underlying ideological and intellectual influences, see Hansen, this issue, note 3.

32 R. Brown, 'Anthropology and Colonial Rule: Godfrey Wilson and the Rhodes-Livingstone Institute' in T. Asad (ed), *Anthropology and the Colonial Encounter* (New York: Humanities, 1973), 177.

detailed biography of interlocutors interviewed by Stuart,[33] Wright echoes other literature on African intermediaries in highlighting insider–outsider tension in the life history and knowledge production of Socwatsha kaPhuphu. Where South Africa's insider ethnographers of a later generation like Godfrey Pitje, Livingstone Mqotsi and Archie Mafeje were outsiders in the sense of being educated and culturally assimilated urban intellectuals studying the traditional rural cultures in which they had been brought up,[34] Socwatsha was an ethnic outsider with colonial affiliations. Born in the early 1850s, his ancestors of the Ngcobo clan were *amalala*, much despised ethnic outsiders on the fringes of the Zulu kingdom, and he was among those who grew up 'spat out' in colonial Natal, having lived the first 30 years of his life in the Colony of Natal rather than in Zululand to the north. He was 'a government man', initially a policeman and later a member of the Natal Native Affairs Department.

Of the nearly two hundred identified interlocutors of James Stuart, he was the most intensively interviewed, having conversed with Stuart on at least sixty different days across the period between 1897 and 1922. Too often read simply as 'facts' to be mined, this dense record of Stuart's interviews with Socwatsha and other interlocutors is read in relation to a succession of phases involved in the unfolding of his Great Idea with changing ideological investments at each stage. Motivated at the outset by the political belief that the wholesome Shepstonian native system of government in Natal was in decline, he sought to gather general information about Zulu culture, customs and history that would add weight to the importance of its revival. This possibility was enhanced by his appointment as assistant magistrate in Durban in 1901. The Bambatha Rebellion of 1906 pushed his research project in another direction: he was commissioned to write a history of the uprising, later published in London in 1912, relying extensively on the testimony of Socwatsha, who had spoken on the issue before the Native Affairs Commission of 1906–7. The third and most productive series of interviews involved conversations about Zulu kings and royal history with a view to Stuart's publication of Zulu readers for schoolchildren, of which five were published in 1923–6. Here the style of interviews was geared much more towards verbatim recording of stories in the Zulu language rather than the collection of historical facts about the Zulu past. With his remarkable powers of memory, penchant for performance and historically wide-ranging fount of information drawn from his youth and adulthood in colonial service, Socwatsha excelled as a storyteller. Wright concludes by suggesting that this rather remarkable quarter-century conversation could only be sustained because these two men had such strong beliefs in the importance of Zulu tradition, but for different reasons: Stuart because of his perception of the political importance of governance through native institutions and Socwatsha because of his lived experience of the moral value of Zulu tradition.

The period of their prolonged conversation coincides almost exactly with that of the childhood, school and university training of Werner Eiselen, which Bank

33 See also J. Wright, 'Ndukwana ka Mbengwana as an Interlocutor on the History of the Zulu Kingdom, 1897–1903', *History in Africa*, 38, 2011, 343–68.

34 See the essays on each of these insider ethnographers in A. Bank and L.J. Bank (eds), *Inside African Anthropology*, 'Part 3: Fort Hare and the University of Cape Town', 193–282.

revisits in the essay that follows. Bank presents a case for a radical revision of the image of Eiselen in the literatures on the history of anthropology, and on the history of segregation and apartheid in South Africa. Overturning the conventional image of Eiselen as a somewhat liberal and certainly benign cultural relativist who eschewed the language of race in favour of that of cultural self-development, this intellectual biography of his early years highlights the centrality of race and racism in his background and training, particularly through a close analysis of three ethnographic essays penned during his doctoral study in Hamburg in the early 1920s, along with his effusive reflections on the personal and intellectual influence on him of the leading German Africanist of this period, Carl Meinhof. Developing Sara Pugach's argument for the importance of the intellectual connection between German Africanists, particularly Meinhof but also Dietrich Westermann, and South African linguists and ethnologists invested in promoting tribal identities and segregationist policies, the essay documents an unusual friendship, that between a German Afrikaner nationalist in his early twenties and a pastor-turned-professor of linguistics in his mid-sixties, whose theories of African language and culture were deeply inflected by his ardent German nationalism and arrogant sense of German racial superiority.

Meinhof was, in truth, the grandfather of the hugely influential Afrikaner nationalist *volkekunde* tradition which Eiselen went on to father at the universities of Stellenbosch and Pretoria between 1926 and 1936, and then between 1947 and 1949 as superintendent of Native Education in the Transvaal. Contrary to the conventional wisdom that *volkekunde* and social anthropology shared much common ground in the early years, Bank's analysis of the intellectual lineage from Meinhof to Eiselen to P.J. Coertze (and P.J. Schoeman and others) demonstrates that *volkekunde* was a tradition apart, deeply racialised and racist from the outset.

In the case study of this first and truly foundational stage in Eiselen's career as a Bantu linguist and ethnologist, it is clear that the outlines of the tradition of Afrikaner ethnology were laid out then. Firstly, *volkekunde* was a detached and textually based 'science' of bounded or discrete cultures informed by the quest to classify and describe particular features of each culture by rendering them as characteristic of a wider Bantu cultural family. Fieldwork would play very little role beyond the verbatim dictation of native texts by aged men. Secondly, the language families, and by extension cultural families, into which Africans were classified was thoroughly informed by a concept hierarchy with a mythologised Hamitic race of European origins being considered superior to the culturally and linguistically 'mixed' Bantu languages and cultures, and the more strictly negroid races of Africa. Eiselen's writings and those of his students would remain shot through with references to these racial tenets.[35] Thirdly, there was a strong overlap between the analysis of language and culture and that of racial biology, as the Hamitic hypothesis implied. Here the influence of the Meinhof was enhanced by the influence of another of Eiselen's doctoral

35 See A. Bank, 'Fathering *Volkekunde*: Race and Culture in the Ethnological Writings of Werner Eiselen, Stellenbosch University, 1926–1936' and '"*Broederbande*" [Brotherly Bonds]: Afrikaner Nationalist Masculinity and African Sexuality in the Writings of Werner Eiselen's Students, Stellenbosch University, 1930–1936', *Anthropology Southern Africa*, 38, 3–4, September–December 2015, 163–79, 180–97.

supervisors, the physical anthropologist Felix von Luschan, who in all likelihood introduced Eiselen to the physical anthropology which came to form a distinctive core component of his teaching syllabus at Stellenbosch University for the following decade. Eiselen applied their racial theory in his public speeches and popular writings, especially in the late 1920s but also in the early to mid-1930s. He celebrated the alleged racial superiority of 'the Nordic peoples' of Protestant origin whom he identified as the effective ancestors of white Stellenbosch students, and especially the great divide between the European race and the Bantu race. These early racial influences, Bank argues, had a lasting impact on the histories of *volkekunde* and Native governance in mid-twentieth century South Africa.

Hansen's careful and sophisticated analysis of Godfrey Wilson's fieldwork in Broken Hill (Kabwe) in Northern Rhodesia between 1938 and 1940 provides as clear an illustration as any of the radical difference between the British liberal functionalist tradition of social anthropology and this Afrikaner nationalist tradition of *volkekundige*. Hansen's case for a renewed, or fresh, appreciation of Wilson's scholarly achievements in Broken Hill is perhaps best read in relation to the concepts of 'field practice' and 'theoretical contribution'. Against the backdrop of the volatile politics of colonial governance and African resistance in a period of world war, Hansen gives the first close reading of the English language sections in Wilson's field notes, alongside the letters that his wife Monica wrote to her father David Hunter during these years and the field notes of his assistants. She tells a compelling story about the progress, and ultimately the frustrating cessation, of his unusual urban research project. The challenge of his Broken Hill research related in the first instance to the mundane matters of where to work and where to live: the Copper Belt mining companies denied him access to their workers, forcing him to settle on Broken Hill to the south of the Copper Belt as the site for his case study, while accommodation was so difficult to come by that he and Monica were forced to camp in the town hotel and then take up temporary accommodation for almost the entire duration of his research. His early and swift development of fluency in chiBemba made for the kind of bonds of male friendship that had characterised his more extended earlier fieldwork in Tanganyika. His field experience meant that he was now less reliant on research assistants. He gathered his biographical sketches, or life histories, of migrants in an unusually diverse and often informal range of field spaces: from the huts in the mining compounds or railway compounds to their five-acre plots on the fringes of town; from passing conversations in the street to those during the impromptu visits of Bemba men to the Wilson's hotel room or temporary home. He commissioned his research assistant, Zacharia Mawere, to collect data. Hansen is particular interesting in demonstrating the distinctiveness of Mawere's unused field records, oriented as they were to the background and early narratives of non-Bemba-speaking migrants. The lasting impression is of Godfrey's skill as a fieldworker: one who was perceptive, mindful of his environment and, above all, open-minded and light-hearted. He was a sociable young man who was a good listener.

Godfrey's skills as a sociologist, as he liked to think of himself, are shown to have been equally impressive, even though the fit between personalised field

practice and his depersonalised published text, the two-part *Essay on the Economics of Detribalisation* of 1940 and 1941, is difficult to track.[36] His published findings were nothing short of pathbreaking. He empirically established through close statistical analysis that some 70 per cent of the male migrants in Broken Hill were what he termed 'temporarily urbanised', in direct contradiction to the claims of the mining companies and the government. This contributed in no small measure to their denying him further access to his field site, which (along with his pacifism and smoking with Africans) resulted in his resignation as the first director of the RLI. It is his argument that the urban migrants were, above all, 'dressed people', people who invested their capital in clothing and cloth in a global market of consumption, that is the largely unacknowledged pioneering insight of his *Essay*. Given his ability to accumulate extensive personal field data under intense political pressure, and the novelty and breadth of his analytical framework, Hansen asserts that Godfrey Wilson's two-part *Essay* of 1940–1941 was quite as profound a challenge to the tribal functionalist model of his mentor as the more highly celebrated 'Analysis of a Social Situation in Zululand' (or 'The Bridge'), which was published in two parts in 1941 and 1942 by his close friend and successor as RLI director Max Gluckman.[37]

Sexuality was a particularly fraught subject in interwar social science, as Bank's analysis of Werner Eiselen's darkly troubled and emphatically racist writings about Bantu promiscuity well illustrates. Building on a dynamic new international and regional literature on the history of sexuality, and focusing on the sex education of white middle-class pre-teens rather than on African converts or migrants as some other scholars have done, Sarah Duff presents a close textual and visual analysis of *Facts about Ourselves*, a 31-page sex manual published by the Transvaal Department of Health and the Red Cross in 1936. It was widely circulated in schools at a time when there was growing concern about the need to regulate and mould the attitudes of the dominant class towards sex and sexuality. The manual is strikingly silent about sexual intercourse, with no more than three pages being devoted to the subject, and its pre-teen readers being instructed not to engage in idle chatter about a potentially dangerous subject. The racial politics of sex, on the other hand, looms large. Impressionable young girls are warned of the dangers of hyper-sexed black men and the importance of maintaining racial purity and strength at a time when national health was being threatened by racial degeneration in the form of the poor white problem. The solution was cast in a language of progress and development where the normative sexual relationship was that of the child-bearing heterosexual marriage. Appropriate sexual release should take the form of family-planned monogamous sex rather than 'deviant' forms of sexual behaviour from masturbation in childhood to adulterous or interracial sex in adulthood. Duff provides a fascinating analysis of the succession of visual images which sought to transport the ten, eleven and twelve-years olds into fantasy worlds, from frolicking on beaches to striking athletic postures

36 His research assistant and informants, for example, are entirely unreferenced outside of the general categories of 'one Bemba man' or 'informant'.

37 On the anthropological significance of 'The Bridge' see H. Macmillan, 'The Return to Malungwana Drift: Max Gluckman, and the Zulu Nation and the Common Society', *African Affairs*, 94, 374, 1995, 39–65; Schumaker, *Africanizing Anthropology*.

on tennis courts, to walking off hand-in-hand into a surreal sunset landscape with echoes of Pierneef. What Duff's article shares with the three essays discussed above is an emphasis on the centrality of race and the politics of race in contemporary social science, here directed towards the moulding of the normative white middle-class adolescent Self rather than a deepening understanding of the African Other.

Local and Global Racial Politics: Scientific Biographies, 1950s–1970s

The introduction of apartheid in South Africa was another radical rupture in the history and politics of the country and region in the first half of the twentieth century. The three intellectual biographies in the last main .section of this volume share several features, in spite of their eclectic, even idiosyncratic, subject matter of 'ethnogenetics', African art and design, and 'ornithological espionage'. They all take forward the emphasis in the previous section on the centrality of the wider politics of race in the micro-politics of knowledge production in South and southern Africa. Yet where this wider context of racial politics in the previous section related primarily to debates about segregation in interwar South Africa, the framing contexts in these biographical micro-histories are continental and global as the networks of knowledge production expanded increasingly to regional and international networks. There was a re-orientation from South African connections with European former metropoles to South African connections with the United States, the dominant power in the imperial networks of the mid- to late twentieth century. There is also a chronological resonance in that each of the intellectual biographies in this section relates to the year 1958 as a late-life stage of its subject, coincidentally a symbolic marker of change in each case, and with the 1960s as the primary focus.

In addition, there is a shared approach. Each of the authors uses the stories, or historical narratives, of relatively obscure (or in Selby Mvusi's case obscured) individuals to illuminate central themes in the mid-twentieth-century history of the region. Thus Saul Dubow tells the life history of a little-known apartheid racial scientist, J.D. ('Hannes') Hofmeyr (1903–1980) as a way of reconstructing national and international networks of a significant group of white supremacists in South Africa and the United States. Daniel Magaziner uncovers the life history and intellectual development of a hitherto uncelebrated and tragically short-lived young South African artist-turned-designer, Selby Mvusi (1929–1967), whose profound theoretical questions about the relationship between African art and modernity, developed during his decade in exile, have lasting resonance for debates about the legacies of colonialism. Nancy Jacobs tells the story of a moderately talented but well-financed ornithologist of provincial American origins, W. Rudyerd Boulton (1901–1983), as a means of casting light on the race- and class-privileged networks of 'settler science' in Southern Rhodesia, and possibly even the shadowy world of American Cold War espionage in Africa.

Dubow begins with a powerful challenge to the tendency in recent South African historiography to downplay the centrality of racial ideology and racism under apartheid. His narrative centres on the late career shift of the geneticist Hannes Hofmeyr,

an Afrikaner nationalist of post-South African War republican origins who excelled in his undergraduate and graduate studies in animal genetics at Stellenbosch University before attaining a doctoral degree in plant genetics at Cornell University in the 1930s. Hofmeyr was appointed chair and professor of the newly established department of genetics at the University of Pretoria which, partly due to his efforts, succeeded Stellenbosch University as the new home of apartheid theory. In the 1950s and 1960s Hofmeyr made a decisive shift from plant genetics, as the acknowledged international expert on the papaya, to human genetics.

The micro-politics of knowledge in this fledgling field makes for an engaging study. It sharply depicts the longstanding divisions between the culture of scientific research at the historically liberal English-speaking University of the Witwatersrand, where the physical anthropologist Philip Tobias held sway, and the culture of work at the apartheid-affiliated and Afrikaner nationalist University of Pretoria. Hofmeyr and Tobias were the symbolic heads of the radically divided intellectual traditions that had been inherited from the interwar years as described above: a *volkekundige* segregationist tradition that Eiselen established at Stellenbosch University from 1926 to 1936 and then re-established at Pretoria University in 1947–1949 where he instituted his heir P.J. Coertze; and a left liberal, even radical, social science tradition at Wits University fostered in the interwar years by the historian W.M. Macmillan and, with much more success, by the social anthropologist Winifred Hoernlé. Tobias and Hofmeyr clashed over 'the meaning of race' (to use the title of Tobias's best-known publication)[38] at academic conferences and in newspaper debates and informal meetings behind the scenes during the early 1960s. Yet the divide between them on matters of race was less clear-cut than that between Werner Eiselen and Godfrey Wilson as analysed above, in that Tobias's genuine ethical opposition to apartheid was compromised by his lack of frank recognition of the extent to which his own discipline, physical anthropology, was tainted by its historic association with the racial science and the racist racial typologies of his internationally controversial, but nationally and institutionally much romanticised predecessor, Raymond Dart, the discoverer of the Taung skull.[39]

From 1958, as the founder chair of the newly formed South African Genetics Society, he mobilised his national network to arrange a series of conferences in which internationally recognised racial scientists in the field of human genetics were invited as keynote speakers and special guests. These ties, initially with racial recidivists in British intellectual circles, but increasingly from the early 1960s with white supremacists from North America, were cemented through Hofmeyr's connections with *The Mankind Quarterly*, established in 1960 as a space for the publication and dissemination of right-wing scientific racism. Apartheid-affiliated South African racial and social scientists were prominent authors and some, like Hofmeyr, served as board members, strengthening the ties established when editors were invited to attend the

38 P. Tobias, *The Meaning of Race* (Johannesburg: Institute of Race Relations, 1959).
39 On Dart and his legacy see S. Dubow, *Illicit Union: Racial Science in Modern South Africa* (Johannesburg: Wits University Press, 1995), 20–65.

conferences of the South African Genetic Society. What Dubow so deftly demonstrates is the difference between the new genetically-driven racial science of the 1960s and that of the interwar years, which he led the way in documenting. Where the science of race of the 1920s and 1930s attached itself to national politics in its concern with the poor white problem and its loose affiliation with Afrikaner Christian nationalism,[40] the new racial scientists like Hofmeyr were animated by an international quest to challenge what they saw as a mistaken global politics in which racial difference was denied. They were all hostile to the landmark UNESCO statements that the classification of humans by racial biology was unscientific and politically motivated. While the South African and Afrikaner nationalist networks remained important, not least within the University of Pretoria, with Hofmeyr's genetic racism being shown to have influenced the racial theory of Eiselen's protégé and the new father of *volkekunde*, Pieter Johannes Coertze, the international white supremacist campaign took centre stage. The science of Hofmeyr and his American allies was driven by support for continued white minority rule in southern Africa. They opposed anti-apartheid politics in South Africa and the civil rights movement in the United States, and expressed hostility towards the Communist threat in the era of the Cold War.

It was the racist ideology of the likes of Hofmeyr that drove a Natal-born African painter and art teacher, the 29-year-old Selby Mvusi, into what turned out to be a decade-long exile from South Africa in 1958. Trained at Indaleni African Art School in his teens, Mvusi had been an African National Congress Youth League activist at Fort Hare in the early years of apartheid before he chose to apply his politics to the teaching and theory of teaching of art. A precocious painter who experimented with abstraction, he gained a fellowship that took him to a graduate programme at Pennsylvania State University, where the internationally recognised art educationalist Viktor Lowenfeld nurtured his talent. It was the beginning of a richly productive decade for Mvusi, who produced 16 new paintings within a year, all of which were exhibited at the second African Studies Association meeting in Boston the following year, an event which effectively established his reputation as an African artist. Mvusi had by then moved to further his studies at Boston University and was increasingly active in the interlinked worlds of African art and African studies.

The Sharpeville uprising of 1960 was another decisive turning point in his career. Mvusi now realised that it was impossible for a politically engaged artist like himself to return to South Africa. He moved his family to newly independent Ghana and then to Kenya, where he reinvented himself as a pan-Africanist theorist of modern African art and design. Magaziner provides a sophisticated and empathetic reading of what was a truly visionary theory of African design, beginning with Mvusi's bravely polemical interventions at an African art and African studies conference in Salisbury in 1962. In outspoken contrast to the vast majority of American and white expatriate African art experts, Mvusi called for African artists and designers to look

40 Ibid, 246–83.

to the present rather than the past as their source of inspiration. What developed was a pan-Africanist theory of socially committed art rather than romanticised, backward-looking visions of the glories of earlier creations, whether through the lens of Eurocentric art theory or an emerging Africa-centric politics of negritude. Equally unorthodox was his insistence on the need for Africa to embrace rather than reject the revolutionary potential of modern technology. In 1965 he moved from his position as the first African art lecturer in Kumasi, Ghana to found a school of African art and design at the University of Nairobi. Here Mvusi encouraged a new generation of young artists and designers to look towards the African present and future rather than remaining mired in the lost glories of the continent's history. Selby Mvusi's contribution to rethinking the place and practice of African art and design was cut short by his untimely death in 1967.

The politics of race and identity is more implicit and that of narrative possibility more explicit in the discussion of different plausible readings of the micro- and the macro-politics of a relatively unknown American ornithologist who retired from the United States government in 1958 and immigrated to Southern Rhodesia in 1959. Did Rudyerd Boulton use African ornithology and the Atlantica Foundation Research Institute as a cover for the United States Central Intelligence Agency (CIA) espionage in southern Africa during the 1960s? There is certainly circumstantial evidence to suggest it. He had worked for a decade in the field of American intelligence, including for the CIA, whose letterhead of the 1950s is to be found among his private papers, before his move to Africa. The technology associated with his so-called birding research also seems suspiciously out of scale, with elaborate listening and recording equipment that sits oddly alongside his modest skills and reputation as a birder in Africa. There is also no shortage of evidence regarding the interests of his former (and possibly continued) employers in using science as a cover for espionage in Africa and other colonial contexts during the height of the Cold War. His contemporaries were mildly suspicious of him, yet they tend to portray him as genial and bumbling. He does not seem to have enjoyed the kind of financial security that CIA employment is likely to have offered. In addition, known intelligence agents in Africa were unaware of his presence.

So, while the evidence of 'ornithological espionage' remains elusive and the case speculative, there are other ways of thinking about his relatively mundane scientific career. Here Jacobs develops the theme of her earlier writings on'the intimate politics' of knowledge production, of the centrality of affective relations to the ostensibly neutral work of scientific classification and description. Where she had earlier explored the possibility of intimacy between an African ornithologist George Latimer Bates and his African research assistants,[41] here she uncovers the significance of Boulton's three wives who served as field collaborators or patrons, making his ornithological and wider scientific work possible.

41 Jacobs, 'Intimate Politics of Ornithology'.

The relationship between field scientists and their spouses, some of whom became well-regarded scholars in their own right, has been richly explored in relation to social anthropological knowledge production.[42] In this regard Boulton's first wife, Laura Craytor, used their joint African field expeditions as a way of establishing her credentials as an ethno-musicologist but, in a reversal of the usual politics of inadequate acknowledgement by male scientists of their wives in the field, failed to so much as mention her marriage to Rudyerd in the late-life memoir that tracks her scholarly career. In the end it was Boulton's second and third wives, both older than he, who effectively served as his patrons, offering the kind of financial security that allowed him to live the life of the amateur scientist in Southern Rhodesia. Jacobs suggests that spousal influence went beyond financial security: the interests in African art and racial equality of his flamboyant second wife, Inez Cunningham Stark, were crucial in setting him on the path that led to the establishment in the year after her death (and that of his remarriage) of the Atlantica Foundation in Southern Rhodesia. Boulton's foundation did serve for a time as a patron of scientific research for visiting American scientists, regardless of whether we read his life as that of CIA spy or of a race- and class-privileged settler scientist, or both.

The Micro-Politics of Science: The Restoration of Quaggas, 1975–2015

This issue concludes with Peter Heywood's remarkable case study in the micro-politics of 'hard' science: the role of molecular biology in the resurrection of the quagga in South Africa. The tragic history of the hunting out of the quagga may be relatively well known: the last wild animals were shot out in the Cape Colony in the 1870s and the death of the last captured quagga, in the Amsterdam Zoo in 1883, marked its extinction. The record of its past now lay in paintings, photographs and the descriptions of scientists, and, most significantly for this narrative, the physical remnants in the form of some 23 mounted museum specimens, only one of which remained in South Africa, and sundry skeletons and skulls. The notion of possible restoration is surprisingly old, having been mooted as early as 1900, but only effectively took hold when a German-born taxidermist at the South African Museum in Cape Town, one Reinhold Rau (1932–2006), embarked on a quest to restore the quagga. With hands-on experience of museum specimens in Germany and the South African Museum, Rau campaigned for the resurrection of the quagga from 1975. His proposal was met with scepticism: the project was too costly, or too academic.

The definitive turning point came in the form of molecular biology in the early 1980s. When the San Diego Zoo approached Rau to provide tissue of zebras, he sent samples from museum specimen collections in Germany so that they could test the DNA and protein of the extinct quagga in order to determine whether it was, as Rau (and Frederick Selous) and had long suspected, a subspecies of the plains zebra rather

42 For a particularly brilliant case study, see M. Engelke, '"The Endless Conversation": Fieldwork, Writing and the Marriage of Victor and Edith Turner' in R. Handler (ed), *Significant Others: Interpersonal Relationships and Professional Commitments in Anthropology* (Madison: University of Wisconsin Press, 2004), 6–49. Others have explored the field and collaborative relationships between Raymond and Rosemary Firth, and Philip and Iona Mayer.

than a separate species. The DNA finding of Higuchi and his laboratory researchers based on this small sample was the first concrete evidence that the plains zebra and the quagga were 'conspecific', to use the scientific term.. Rau now had more success in rallying a wide range of role players, each with somewhat differing motivations, to the cause, including, rather ironically, hunters along with the more obvious candidates, nature conservationists and university-based scientists. So it was that the Quagga Project was born in 1985 with institutional support from the South African Museum and the Cape Department of Nature and Environmental Conservation. A founder population of 'quaggas', consisting of nine carefully selected plains zebras from the Etosha National Park and a further nine from the Umfolozi Game Reserve in Kwazulu-Nata,l was constituted in the Vrolijkheid Nature Reserve near Robertson in 1986. The founders were chosen on the basis of their closer-than-usual physical approximation to the skin pattern of the quagga, which photographs, illustrations and faded museum specimens show to have had fewer stripes and a darker colouring than the plains zebra. In subsequent generation those offspring with the closest resemblance to the extinct quagga were selected for breeding and this experiment in selective breeding, a practice described in detail by Darwin, has produced some 119 'Rau quaggas', now distributed across game parks and reserves throughout the country.

Heywood concludes by recommending that we think of the quagga as a 'boundary object', the concept coined by Star and Griesemer,[43] to reflect on the ways in which role players with differing motivations share a common goal in relation to projects of preservation and restoration. In this sense the micro-politics of quagga restoration has been a coming together of scientists with expertise in molecular biology and taxonomy, hunters who professed a desire to atone for destructions by their distant ancestors, and conservationists who wished to stock their reserves and game parks with a new attraction, while imbuing a post-apartheid South African symbol with a history of victimisation that echoed the national narrative of reconciliation or resurrection.

Changing Resolutions

By no means does the micro-political approach suggest harmonious relations. Power accruing from global processes certainly matters. Race, wealth and the scientific arrogation of authority permeate face-to-face collaborations. Intimate and professional knowledge can have colonial implications and imperial culture colours individual understandings. Because power operates reciprocally between levels, historical understanding requires investigation on all scales and on movements between them. How can we understand the relationships between the micro and macro? Rather than a metaphor of fractals, of replication of those patterns visible from a distance as the viewer moves to smaller and smaller scales, we propose one of a zoomed photo that

43 Star and Griesemer, 'Institutional Ecology, "Translations" and Boundary Objects'.

shows detail emerging and receding with movement between resolutions. Sliding between scales demonstrates that the essential may sometimes become invisible. Yet a viewer can retain an understanding of what is too small to be seen.

Scaling down to the micro-level and to production will reveal otherwise unrecognised political characteristics. In addition to privilege, individual confidence and curiosity come into play; as socially produced traits, these are historical subjects worthy of investigation in their own right. Love and laughter are as real as power and scorn. All these emotions infuse the production of what is held as rational and scientific. The blurriness of boundaries between knowledge communities can be difficult to see once authority is consolidated or after it is challenged. On the edges of imperial and racial networks, contradictions become active agents, and negotiations can take unexpected turns.

The articles in this issue of *Kronos* establish that micro-political analysis is essential to any comprehensive understanding of the politics of knowledge. Yet, by definition, comprehensive understandings require scaling back up, to a macro view. The return to the big politics of knowledge may be jarring. The prevailing understanding in this postcolonial world, including southern Africa, is of knowledge riven by faults created by empire, with monuments of bronze and granite staking the territories, and so it can be difficult to see that interactions occurred across those chasms and around those sentinels. Forensic work establishes that the stuff of monoliths, granite and bronze, are actually composites and alloys. Likewise, the seemingly impenetrable and uniform global phenomenon of 'science', with all its workings, was produced through heterogeneous dynamics, even if it has been made to appear otherwise.