



FORSCHUNGFRANKFURT

Goethe University Science Magazine



Perspectives on AFRICA

1. 2022

AMBIVALENT PARTNERSHIP

The complex relations between Africa and Asia

PLAYING WITH FIRE

Climate change threatens fires in the savannah

QUICK LEARNERS

Language acquisition by migrants in the Rhine-Main region

INTERVIEW WITH SIMON WENDT

African Americans' special relationship to the African continent

PROBLEM SOLVER OR PAPER TIGER?

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MESSAGE FROM THE EDITORS

The title picture shows part of a graffiti in Soweto, South Africa.

Dear reader,

Is an issue of *Forschung Frankfurt* on the topic of Africa allowed? We were confronted with this question several times during its production. Isn't a magazine that focuses on the continent in the Global South neocolonialist per se and thus problematic? We thought about this a lot and discussed it with others.

So why Africa? The relationship between Europe and Africa is ambivalent: the colonial heritage weighs heavily on it, but on the other hand it is characterised by the awakening of the young continent and a growing self-confidence of the African countries. There is great interest in Africa, but the knowledge and images conveyed in the media are often rather simplistic – hardship, war and poverty dominate on the one hand, the fascinating flora, fauna and cultural traditions on the other.

Goethe University Frankfurt and the Rhine-Main Universities (RMU) have extensive expertise in research and teaching related to Africa. Scientists have joined forces at the Centre for Interdisciplinary African Studies, where subjects such as linguistics, geophysics, biology and archaeology come together – something unique to Frankfurt. The research conducted here presents a nuanced picture.

There is a lot to report, and you can find a small part of it in this issue. Africa is a vast continent with 55 countries, some of which are at least as different from each other as the countries of Europe. Our magazine can only convey this diversity and size by way of example. In selecting the topics, the research perspectives and activities of Goethe University Frankfurt were the deciding factor.

One topic, for example, is the Nigerian film industry, which has long left the Hollywood "dream factory" behind as far as productivity and acclaim are concerned. In collaboration with Film Studies in Frankfurt, Nigerian film heritage is being collected

and documented worldwide and made available for research. We look at Tunisia, where democratisation efforts are comparatively advanced and a flourishing medical sector has developed. Other articles deal, for example, with language learning strategies among Africans in the Rhine-Main region, archaeological research on newly discovered rock art in Namibia, the population's acceptance of intra-African peace organisations, mushrooms as a food resource and strategies against the climate crisis. Many articles were compiled together with researchers from Africa, and projects are collaborative by design.

And naturally we also look at the discussion within Africa-related research about its own future: How can we gain knowledge from many different perspectives together with African researchers? How must research be designed so that it also benefits the people in Africa? Perhaps "Perspectives on Africa" is an example of how research can be conducted jointly or from individual perspectives so that knowledge about society, culture and nature can be enhanced in a meaningful way.

We wish you interesting insights and enjoyable reading.

Anke Sauter and Markus Bernards
Forschung Frankfurt Editorial Team

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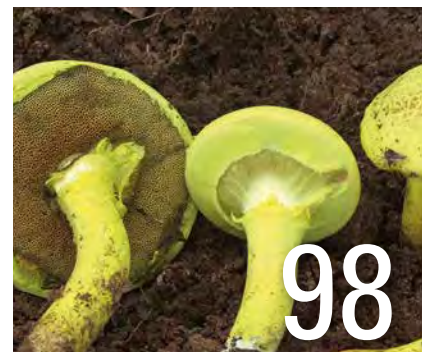
“NEW” ROCK ART IN NAMIBIA

Stone Age artists left behind thousands of rock pictures in the Namib Desert. A team from Goethe University Frankfurt has devoted itself to conducting research in inhospitable environments.



WHERE WE EVOLVED

Rare fossils, discovered and studied by palaeontologists such as Friedemann Schrenk and Ottmar Kullmer, reveal the story of how humans evolved. Today, this continuing evolution is a cultural one.



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SPEAKING,
NARRATING,
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Striking continuity

What makes the Nigerian film so successful

By Pia Barth

Film scholars at Goethe University Frankfurt are convinced: Africa is where the future of cinema lies. Why? Because the film industries that have spontaneously sprung up there are making creative use of digital technologies and distribution channels. And they narrate stories that interest a growing audience around the world.

There are good reasons for telling again here the often-told success story of the Nigerian film industry known as Nollywood: it is a good story, it sheds light on a special feature of Nigerian cinema – and it shows what it is about Nigerian film culture that fascinates film scholars at Goethe University Frankfurt and why the current research projects on Nigerian film will be just the start of further international collaborations. The story begins with a clever sales idea: in 1992, Kenneth Nnebue, an importer of Taiwanese video cassette recorders, started to distribute films he has made himself on a delivery of empty VHS tapes in order to drive VCR sales. In a few days, the thriller *Living in Bondage* was made, produced by Nnebue and shot by Chris Obu Rapi with an amateur camera. The film is about a young man, embittered by poverty, who kills his wife in a ritual sacrificial ceremony to become rich and influential; in the end, he is haunted by his wife's ghost and loses everything. Surprisingly, 750,000 copies were sold and spawned numerous imitations. In the following years, home videos in the style of *Living in Bondage* became a successful model. Made in a few days, they often told stories of the travelling theatre and the African narrative tradition with popular actors known from television. The distribution channels of Hollywood and Bollywood cinema, which were already popular, were used,

and the popularity of home videos was additionally fuelled by the flourishing business with pirate copies. The films, in English and the three main languages, Igbo, Hausa and Yoruba, spread across the whole continent and throughout the African diaspora worldwide. Without the Western public even noticing, the Nigerian film market became one of the largest in the world. With around 1,000 feature films each year, it soon ranked second behind Bollywood.

Taking possession of the country's own film heritage

The unprecedented success of the Nigerian video film was preceded by the collapse of the Nigerian celluloid film culture and the death of domestic cinemas. Film culture in Nigeria at the time was dominated by professional filmmakers often trained in the UK, whose works also attracted the attention of European film culture because they met the selection criteria for European festivals. However, after the naira, Nigeria's currency, dropped in value in the middle of the 1980s as a result of the structural adjustment programme triggered by the IMF, celluloid became prohibitively expensive. And in the politically turbulent 1990s, the journey to the cinema and the darkness of the cinema so magical for cineastes could become life-threatening in crime-ridden big cities.

1 The discovery of old reels of the film classic *Shaihu Umar* by Adamu Halilu in 2016 were the motivation for wanting to document their own, Nigerian film history.

Nigerian film can survive in home videos because entrepreneurial filmmakers stick – with tremendous vigour – to what’s already to hand: the technology and distribution channels they have at their disposal. This cinema in VHS format, soon to be known as Old Nollywood, bridged the gap to what is referred to as New Nollywood, which established itself in the middle to the end of the noughties and, like its predecessors, has long turned away from Hollywood. New Nollywood is digital, focuses on distribution via the internet and has developed new sources of income in the shape of online licenses as well as video, CD and TV rights; it makes use of well-known distribution channels such as Netflix, but also domestic, less expensive networks such as irokoty; with increasing budgets, it strives for higher quality in terms of plot (and at the same time draws inspiration from Old Nollywood films); and it gives female producers, actors and directors a playing field as well. Capturing in a nutshell the market power

2 After a break due to the pandemic, the first students from Jos arrived in the autumn of 2021 for an exchange semester at Goethe University Frankfurt.
3 How videos are digitised: the practice-oriented film culture degree programme in Jos also offers students technical seminars.

of his country’s film industry, Victor Okhai, the veteran among Nigerian filmmakers, said laconically in an interview: “We’re now doing with the rest of Africa what the Americans did with us in the 1970s.”

Creative, digital New Nollywood sparked new impetus: to document and archive the country’s own film history – and thus also gain access to colonial and postcolonial history. A key work in Nigerian film from 1976, so before the video boom, provided the initial spark: Adamu Halilu’s *Shaihu Umar*. By chance, curator, critic and filmmaker Didi Cheeka discovered old film reels in Lagos. In 2017, they were digitised and restored by Arsenal – Institute for Film and Video Art in Berlin. At that point in time, the Nigerian National Archive had neither digitisation facilities nor trained staff. This was about to change when, through cooperation with Arsenal, the film scholars at Goethe University Frankfurt also came into play.



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Making a lot out of very little

“It’s the incredible energy, the inventiveness of small entrepreneurs and the creative capacity to make a lot out of very little,” that film scholar Vinzenz Hediger says he finds fascinating about African and especially Nigerian cinema. And which have encouraged him and his colleague Sonia Campanini to develop research projects on African film at the Department of Theatre, Film and Media Studies of Goethe University Frankfurt. Many years of academic collaboration with Arsenal – Institute for Film and Video Art and the expertise generated by the master’s degree programme launched at Goethe University Frankfurt in 2013 entitled Film Culture: Archiving, Programming, Presentation are the reason why in 2017 Hediger was invited by Nigerian filmmakers to a workshop devoted to questions of national film heritage. Thanks to a funding programme of the German Academic Exchange Service, a partnership unique for both sides has developed out of this initial encounter: the practice-oriented master’s degree programme in film culture offered by Goethe University Frankfurt together with the DFF – Deutsches Filminstitut & Filmmuseum e.V. (German Film Institute & Film Museum), which has now also been running in Nigeria since 2019. Project partners are the Nigerian Film Corporation (NFC), the National Film Institute of Nigeria and the National Film, Video and Sound Archive in Jos, as well as the DFF – Deutsches Filminstitut & Filmmuseum e.V. (German Film Institute & Film Museum) and Arsenal – Institute for Film and Video Art. The degree programme is the first and only humanities collaboration in the Transnational Education Programme of the German Academic Exchange Service and the first

master's programme in film archiving in the whole of Africa. The four-year programme is designed to prepare young academics for tasks in the newly established National Archive of Film, Video and Sound in Jos – and, of course, for research and teaching in the new master's programme.

Before the pandemic, four scientists from the Nigerian institutions mentioned above completed initial two-month training at the DFF in Frankfurt, Goethe University and Arsenal in Berlin. In the autumn of 2021, three students from Jos arrived at the university for an exchange semester. During their subsequent internship at Omnimago, a service provider for the film industry, they learnt how to digitise video films. Without this technology, it is impossible to fill the gaps in the Nigerian film archive.

“Training aims to enable students to discover film heritage in general, then to digitise it and make it available in and outside Nigeria,” explains film scholar Sonia Campanini. After all, documenting and archiving Nigerian film history means first of all taking possession of the country's own film heritage in the first place. Nigerian filmmakers rarely own the rights to films from the colonial era, most of which have been collected by the British Film Institute and digitised there; copies of cinema films from the period of independence are mainly deposited in Europe, where they were produced back then; and the ravages of time have long taken their toll on the video films of yesteryear. When the annual conference of Eye, the Dutch national film museum, adopted precisely this as its theme in May 2022, that showed just how urgent the problem is: the varying digital availability of film heritage in the world's regions and how this alarming disparity can be balanced out through international cooperation. Among the film experts from all over the world who participated were also, of course, the film scholars from Frankfurt.



The Nigerian partners set the topics

Exploring Nigerian film heritage and above all tracing the consequences of digitisation for cultural production – this is also the objective of the research project “Cultural Entrepreneurship and Digital Transformation in Africa and Asia (CEDIT-RAA)” launched in Frankfurt in 2021 together with Johannes Gutenberg University Mainz, in which Nigerian film scholars are also involved. “As far as Nigeria is concerned,” says Hediger, “our Nigerian partners set the topics.” These have included questions such as: What influence do digital distribution channels have on local producers of cultural products and on the copyrights that they negotiate for Old Nollywood remakes? How are digital processes used in documentaries on African history for a young audience? How do local producers use digital technologies and media for new formats, and how is this reflected in their content?

4 The New Nollywood movement draws inspiration from Old Nollywood films: for example, the 1992 video classic *Living in Bondage* underwent a remake in 2019.

In her doctoral thesis on the semiotics of costume and make-up in Nigerian historical films, which is also part of the Research Training Group “Configurations of Film” in Frankfurt, researcher Fadekemi Olawoye, who was educated in Nigeria, looks at the influence of traditional narrative cultures, the popular tradition of travelling theatre and Ibo culture. French film scholar Benoît Turquety, who is now teaching in Lausanne, studied the history of Nigerian film during his stay as a Mercator Fellow in Frankfurt. His common theme: the format of the film material used in each case. Between television, travelling theatre in the Yoruba tradition, filmed theatre, low-quality analogue video and various digital forms, Turquety attests to a striking continuity in African cinema. In the framework of a Mercator Fellowship, Nigerian film scholar Añulika Agina will visit Goethe University Frankfurt in the autumn of 2022 to teach and conduct research.

ABOUT VINZENZ HEDIGER



Professor Vinzenz Hediger, born in 1969, has been a professor of film studies at Goethe University Frankfurt since 2011. He studied philosophy, film studies and American studies at the University of Zurich, where he earned his doctoral degree with a thesis on the significance of the film trailer. From 2004 to 2011, he held the Alfried Krupp Endowed Chair

in the History and Theory of Documentary Forms at RUB (Ruhr-Universität Bochum). Hediger's research interests lie in the history and theory of film. He explores not only Hollywood cinema but also industrial film and scientific film. He is principal investigator of the "ConTrust" cluster project and spokesperson for the Research Training Group "Configurations of Film". Hediger helped to set up the master's programme in film archiving together with the University of Jos (Nigeria) and the Nigerian Film Corporation. He is co-founder of NECS – European Network for Cinema and Media Studies and founding editor of the *Zeitschrift für Medienwissenschaft*, as well as a member of the Academy of Sciences and Literature in Mainz.

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ABOUT SONIA CAMPANINI



Assistant Professor Sonia Campanini, born in 1982, is principal investigator and postdoctoral researcher in the interdisciplinary project "Cultural Entrepreneurship and Digital Transformation in Africa and Asia (CEDITRAA)". From 2015 to 2022, she was assistant professor for film culture at the Department of Theatre, Film and Media Studies

at Goethe University Frankfurt, headed the master's degree programme "Film Culture: Archiving, Programming and Presentation" and contributed to the corresponding programme at the University of Jos (Nigeria). She studied at the Università Cattolica del Sacro Cuore and the Università di Bologna as well as the University of California (Los Angeles) and earned her doctoral degree at the universities of Udine and Amsterdam. She has been working at Goethe University Frankfurt since 2015, conducting research into film archiving and curating with a focus on the material, technological, aesthetic and memory levels of audiovisual heritage from a transnational perspective.

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"It's the incredible energy, the inventiveness of small entrepreneurs and the creative capacity to make a lot out of very little."

Vinzenz Hediger

What is global film culture anyway?

The interdisciplinary research project CEDITRAA combines film studies with economics, cultural anthropology, linguistics as well as African and Asian studies. As numerous as the research disciplines are, as broad too is the variety of methods practised: they range from field research and participant observation to business studies and digital research. Overall, the research project thrives on such a lively and inquisitive view of the bigger picture: within the Rhine-Main Alliance, Matthias Krings, ethnologist in Mainz and an expert in northern Nigerian video films, is working together with other specialists. A team from the University of Udine in Italy is contributing its expertise in the digitisation of videos. And through collaboration with the University of St Andrews in Scotland, the Frankfurt team has recruited a proven expert on Nigeria's colonial film history: Tom Rice.

What unites them all is their interest in broadening the perspective of the European media and cultural industries. What lessons do the African film industries hold in store, which are spontaneously emerging and not waiting for investors or funders? What is global film culture anyway?

"We're endeavouring to answer these questions together in a dialogue with Nigerian colleagues and the master's students," says Sonia



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Campanini about the collaboration so far in the joint master's degree programme and research project. And anyone taking a look at Fadakemi Olawoye's doctoral project will learn that the history of Nigerian video film is the subject of lively discussion in Nigeria itself too. This has not only but also to do with the fact that there are still considerable gaps in the Nigerian film archives. Each new discovery could introduce new aspects or question previous narratives of film history.

The well-known success story of the Nigerian film industry will therefore be told many more times in future – always in a new and different way. ●

IN A NUTSHELL

- In the mid-1980s, Nigerian celluloid film culture and domestic cinema collapsed. Cinema in VHS format emerges, which makes use of existing technology and distribution channels. Out of this develops one of the largest film markets in the world.
- From the mid-noughties onwards, New Nollywood replaced the Nigerian home video known as Old Nollywood. The new cinema is digital, focused on distribution via the internet, opens up new sources of income – and sparks new impetus: to document and archive the country's own film history.
- Together with the Department of Theatre, Film and Media Studies at Goethe University Frankfurt, the first master's degree programme in film archiving in Africa was set up in Nigeria in 2019.
- The film scholars in Frankfurt are meanwhile collaborating with their Nigerian partners in further international and interdisciplinary research projects. What unites them all is their interest in broadening the perspective of the European media and cultural industries.

5 Some stories told by African cinema are influenced by the travelling theatre of the African Yoruban people's narrative tradition.



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Searching for the silenced memory

Literary studies in Zimbabwe embark
on the search for alternative narratives

By Tanaka Chidora

The history of a country has many narratives. In Zimbabwe, officialdom propagates a certain direction, while other directions are silenced. But it is not least literary studies that are embarking on the search for a more holistic memory for this nation.

In 1980, the international community recognised Zimbabwe as an independent state. The period that followed was marked by a fight about its history. In the debate about who did what and when, power, affiliation and ownership, such as land possession, played a key role. The historical narratives that arose from this and recur in society's memory again and again allow the ruling political caste in Zimbabwe and its elites to appear the winners. A very specific narrative about the beginnings and present of the Zimbabwean nation and how the efforts of those in power helped lead the country out of colonial rule and into independence thus dominate history curricula in schools. The idea of nationhood is closely linked to the endeavours of certain great men and women, who are commemorated by a monument called Heroes' Acre in Harare. This idea is exclusionary because it allows only a few individuals to be remembered as agents of freedom; all others are to be eternally grateful and permit those who fought for the country to govern and to enjoy the fruits of independence. Only at the university are such narratives subjected to scrutiny. There, historians are exploring how these narratives came about – and what the endgame is.

National consciousness has its pitfalls

After 1980, literary studies departments were established at universities, beginning with the University of Zimbabwe, where the respective modules and texts also adhered to the described narrative of the nation. The nationalism of Zimbabwe's ruling party was often depicted in them as part of the anti-imperialist struggle. Most texts were read from an Afrocentric perspective; anyone choosing a different approach was attacked, whereas those who supported this singular narrative were showered with praise.

However, national consciousness by all means has its pitfalls, and the failure of the ruling party's nationalism, for example, triggered a debate on the national question; historians saw themselves compelled to rethink the common narratives and concentrate on the silence they created. Historians such as the late Terrence Ranger have initiated debates about what he calls "patriotic history", a particular version of history that is supposed to support the ruling party despite its failures, misrule, corruption, violence and dictatorship. Today, many Zimbabwean historians are no longer dealing only with *what* happened but also with *why* there

Police operation against its own people: on 20 November 2019, a crowd had gathered in Harare to listen to a speech by Nelson Chamisa, leader of the MDC Alliance (Movement for Democratic Change). But police use force to break up the gathering – shown here is a policeman kicking a woman with his boots.



Photo: Jekesai Njikizana/AFP

are certain versions of history and what their objective is.

In literary studies, the re-reading of dominant literary texts in Zimbabwe has opened up the possibility of questioning the idea of nationhood and the memory that shapes this idea. With the publication of *Versions of Zimbabwe* (2005), scholars such as Robert Muponde and Ranka Primorac have triggered discussions that allow a re-reading of Zimbabwean literary texts in a way that deconstructs the prevailing patriotic discourse that thrives on silence about the violence inflicted not only on people but also on narratives. But it is not only literary critics who are contributing to this reassessment of the nation and its past but also creative writers whose narratives keep alive the memory of a silenced past.

Government violence is still a taboo subject

Novuyo Rosa Tshuma's *House of Stone* (2018) recalls the ruling regime's violence against the civilian population between 1982 and 1987, violence that is estimated to have cost the lives of 20,000 people. This is a part of Zimbabwe's past which is silenced in public discourse. Novels such as *We Need New Names* (NoViolet Bulawayo, 2013) and *Harare North* (Brian Chikwava, 2009) focus on recent manifestations of



The author

Tanaka Chidora is a literary studies scholar. He completed his doctoral degree in literary studies in 2018 at the University of the Free State in South Africa. He had already been teaching at the University of Zimbabwe in the Department of English Language and Literature since 2014. In 2021, he joined Goethe University Frankfurt as a postdoctoral fellow of the Alexander von Humboldt Foundation, where he is conducting research on violence, memory and literature in Zimbabwe. Chidora is also a poet. In 2019, his poetry anthology "Because Sadness is Beautiful?" was published in Zimbabwe by Mwanaka Media and Publishing.

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IN A NUTSHELL

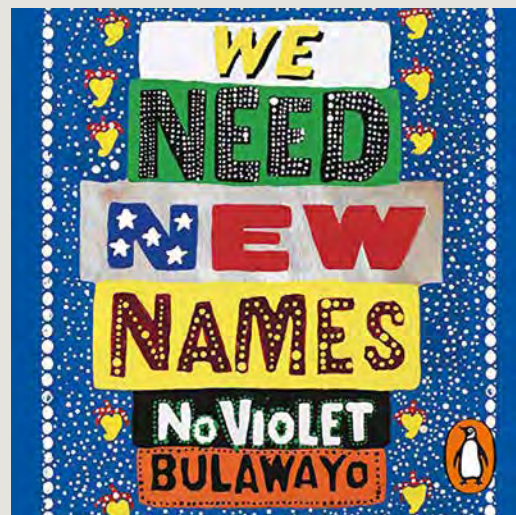
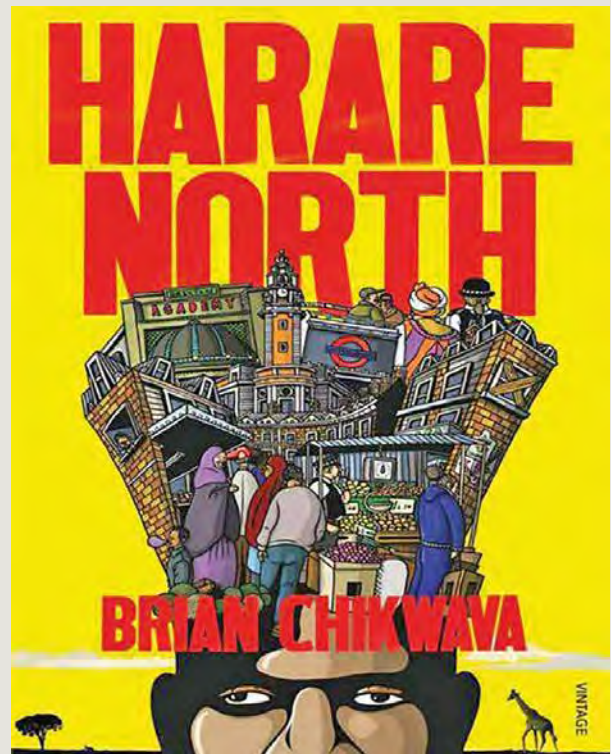
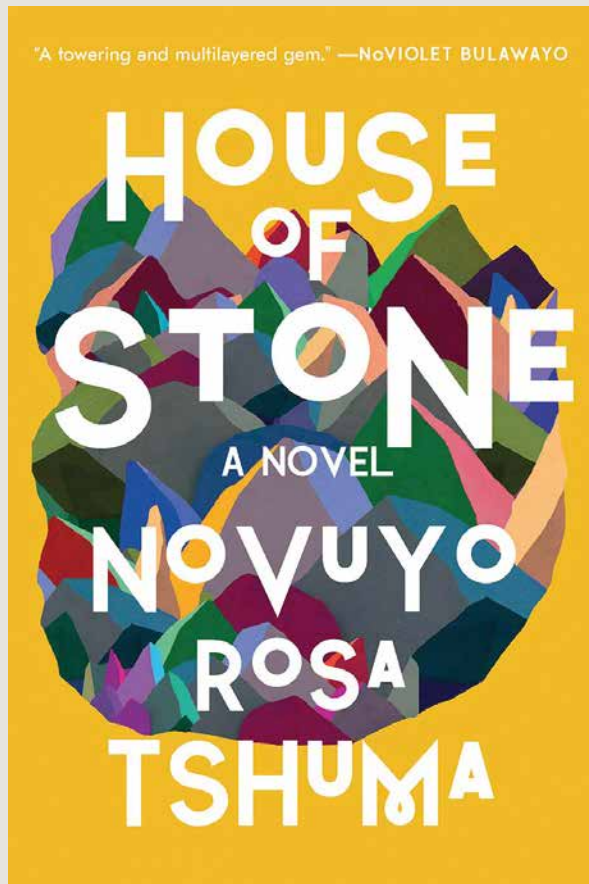
- Since Zimbabwe became independent, an official image of history has asserted itself: the ruling class and elites are worshipped as freedom fighters.
- Universities also initially dealt exclusively with texts that adhered to this narrative.
- Meanwhile, however, historians have triggered debates about what is known as "patriotic history" and are revealing what happened and for what reasons.
- Even today, literary figures who broach the topic of governmental acts of violence can still only do so with the help of certain narrative styles.
- But history and literary studies are working hard to question the official historiography – out of which a new field of research is gradually developing.

violence by the ruling regime, events of the more recent past (the violence that marked the decade after 2000) which have been suppressed to such an extent that some people, when they hear from others about the atrocities that occurred, cannot believe that such a thing could happen in Zimbabwe.

Recent manifestations of violence – the most atrocious of which claimed the lives of 23 people in 2018/2019 when state apparatus opened fire on protesting civilians – still remain a taboo subject in public discourse. Anyone openly recollecting such acts of violence invites the wrath of the regime. By using various narrative styles, including "unreliable narration" or humorous or child narrators, the novels listed above, and many more, steer attention to aspects of Zimbabwe's past and present that have been forgotten – not least through the state's active intervention. This intervention took the shape of censorship and violence against those wanting to speak out or by focusing on narratives that glorify the state at the expense of those who expose its iniquities.

The place for memory studies in Zimbabwe

Even if memory studies is not yet a coherent field in Zimbabwe, the current focus of history and literary studies scholars and creative writers on questioning the state's narratives shows that memory studies could become an important field in Zimbabwe. My own current project looks at violence, memory and literature in Zimbabwe. The literary texts that I have selected



Zimbabwean literature
as a place for alternative
historiography.

for this project are part of an emerging canon that seeks to provoke alternative remembrances of Zimbabwe's past. In my research, I have seen how emerging writers as well as historical and literary scholars in Zimbabwe have already paved the way for these alternative remembrances: they bring to the fore narratives that have so far been silenced, thereby reactivating discussions on the kind of nation we have and the foundation on which it is built. These scholars are already performing some kind of memory studies, even if they themselves are not calling it that. Perhaps these energies ought to be bundled together into something that can be referred to as Zimbabwean memory studies and

in this way create a more powerful focus. My own project is a step in this direction and itself embedded in existing debates on memory and violence in Zimbabwe and the role of literature in remembering a silenced past. Perhaps specific steps should be taken to cement the place of memory studies in Zimbabwe. Conceivable are, among others, interdisciplinary academic seminars, conferences, research projects and the establishment of an association for memory studies in Zimbabwe that networks with international associations for memory studies. ●



*“At home,
we didn’t even have a book
about Africa.”*

Now and then: an intergenerational dialogue on African Studies
at Goethe University Frankfurt

Founded as the “Institute for African Linguistics”, African Studies is meanwhile firmly established in the linguistics portfolio at Goethe University Frankfurt. A discussion between Antonia Fendt and Mary Ann McLaughlin, two African Studies students, and Professor Herrmann Jungraihtmayr, the doyen of the subject. Dr Anke Sauter chaired the round.

Sauter: Professor Jungraihtmayr, you are regarded as the founder of the Institute for African Studies. How did this come about?

Jungraihtmayr: I had accepted the professorship at Goethe University Frankfurt in 1985 on the condition that I could set up an independent institute here that had not previously existed. But then it indeed took quite some time. At first, I was responsible for African languages within what is now the Department of Social and Cultural Anthropology. Then, in 1994, the Institute for African Linguistics, was founded, which was the original name.

Sauter: You didn’t come here with empty hands.

Jungraihtmayr: Without the premise of almost thirty years of African Studies in Marburg it would not have been possible. I took all my staff with me at that time, most of the library moved from Marburg to Frankfurt and is still part of the Institute of African Studies today.

Fendt: What were your motives for occupying yourself with African languages?

Jungraihtmayr: That’s a sixty-four-thousand-dollar question, the simple answer is: I don’t know exactly. I come from the small town of Eferding (Austria). At home, we didn’t even have a book about Africa. After completing my A-levels at grammar school in Linz, I met up with my school friend Otto Maschke. We both wanted to do something for Africa. He had read a lot about the former German colonies and got me involved. But then, when we met in Vienna, he said that unfortunately he couldn’t do it after all. His parents wanted him to study something useful.

Fendt: How did your own family react to you wanting to study a subject that wasn’t mainstream?

Jungraihtmayr: When I was already in the sixth or seventh semester, a friend asked my father: Max, how can you let your son study such nonsense? To which my father replied – and that still gives me a boost even today – “If you say anything like that again, it will be the end of our friendship.” So I had my parents’ support, but naturally it was quite naïve support. They were simple farmers and innkeepers.

McLaughlin: What made you decide to take in a linguistic perspective next to the ethnological one?

Jungraihtmayr: I asked myself: Why is ethnology only about culture and not about language as well? The secretary at the Institute for Ethnology in Vienna, Countess Hohenwart-Gerlachstein, drew my attention to the lecture by Professor Czermak at the Institute for Egyptology and African Studies. That’s when the penny dropped. Czermak was tremendous. He held a lecture once a week about Ancient Egypt, and that’s how I became an Africanist. But what about you?

Fendt: In our bachelor’s programme in Mainz, we both studied linguistics as a

Off to a successful start

THE NEW BACHELOR’S PROGRAMME IN AFRICAN STUDIES

Since the 2021/22 winter semester, there is a new bachelor’s degree programme in African Studies, offered jointly by Goethe University Frankfurt and Johannes Gutenberg University Mainz. Its title: “African Languages, Media and Communication.” It was prompted by Africanists working outside academia, says Professor Axel Fanego Palat, Africanist at the university. He says that there was a lack of knowledge about contemporary Africa. How do Africans, who are inherently multilingual, communicate in the European diaspora? What role do social media play on a continent with an oral tradition? And how formative are postcolonialism and migration? Knowledge about modern Africa opens up new career prospects for young people. But the new demand was definitely a challenge for the “small discipline” of African Linguistics. An “approach based purely on language description is no longer sufficient,” says Fanego Palat. In Professor Nico Nassenstein, an Africa researcher from Mainz, he found a partner who was also looking for a new way forward. Together, they have developed a degree programme which is

unique in Germany. This fits nicely into the strategic alliance of the Rhine-Main Universities (RMU), to which, of course, TU Darmstadt also belongs. Grants from the Initiative Funding for Research and Teaching were therefore made available. The new degree programme is also docked onto a new research project jointly carried out by the universities of Frankfurt and Mainz: the interdisciplinary international project “Cultural Entrepreneurship and Digital Transformation in Africa and Asia” (CEDITRAA), which is looking at the consequences of digitisation for cultural production in Africa and Asia (see article on page 5). The new bachelor’s programme also gives students room to spend time abroad and is interdisciplinary. Students study two African languages as well as Africanist linguistic practice with content from sociolinguistics as well as digital and intercultural communication. Thanks to digital teaching formats, commuting is kept within limits and makes it possible to include teaching staff from Africa. Demand seems to endorse the concept: almost 40 young people started the programme in the autumn. **pb**



During a stay in Tangale Land, north-eastern Nigeria: Professor Jungrathmayr together with his language assistant Stephen Njengo (left) and master narrator Gabdo Bapi Gauti (centre).

core subject and ethnology as a minor and had to take two languages within the core subject. I've always been interested in history, geography, but also the flora and fauna of Africa, and thought it would be exciting to learn an African language because languages are known to open doors. I then first signed up for the West African language Bambara and later for the East African language Swahili. During my master's degree I then learnt Kinyarwanda.

Sauter: What fascinates you about African languages?

Fendt: What fascinated me was the diversity of the language and the language structure. For example, expressing *have* or *be*, which for us are common verbs, can be expressed quite differently in other languages.

Sauter: Can you explain that further?

Fendt: In Bambara, possession is expressed by means of various concepts, depending on what you own. This means that there is no direct translation

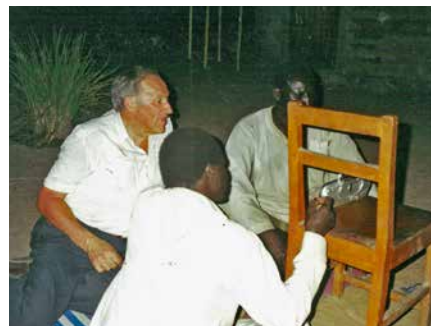
for *have*. Instead, *have* is formed syntactically via local postpositions, whereby a distinction is made between whether the possessions are concrete or abstract.

McLaughlin: It's more a description of how close something is to the respective person. If I own something, I say it's with me.

Jungrathmayr: That reminds me of my early studies of Ewe, a language of Ghana and Togo. In Ewe, there is no word for *bring*. *Bring* is an abstraction, it is made up of *go*, *come* and *give*. We can speak here of serial verbs, similar to the *verba coniuncta* in Nubian.

McLaughlin: How did you arrive at your later research focus, the Chadic languages?

Jungrathmayr: After Professor Czermak had died in Vienna in 1953, I continued my studies in Hamburg. When I suggested to my professor there that I could write a paper on the *verba coniuncta*, he said: There's no need to do that. Instead,



Herrmann Jungrathmayr with African staff during a nighttime recording of the Sumray language in Central Chad in 2001.

I should work on a manuscript written by a missionary. It was a dictionary with the grammar of Tangale, a Nigerian-Chadic language. That was how I started with Chadic.

Fendt: What fascinated you about it?

Jungrathmayr: The relationship between the languages of northern Africa and those of sub-Saharan Africa, then called White Africa and Black Africa, had interested me from early on. I wanted to know: This millennia-long encounter between the peoples, the languages, the cultures – how have these encounters possibly changed the languages?

Sauter: Could you please tell us briefly what exactly you discovered about Chadic?

Jungrathmayr: Chadic as a language world can only be explained by the immigration of people who originally lived in the green Sahara. About 5,000 years ago, they were obliged to look for a new home because of climate change. And they found it on the one hand in the Nile Valley in Egypt and on the other hand in the Lake Chad region in Central Sudan. I have dedicated my life to investigating what became of the originally North African language cultures when they came together in Central Sudan with Nigritic-African peoples and languages and developed together with them.

Sauter: And what happened?

Jungrathmayr: The essence was that the so-called Hamito-Semitic, Afro-Asiatic languages – Akkadian, Hebrew, Arabic,

ABOUT HERRMANN JUNGRAITHMAYR

Herrmann Jungrathmayr, born in 1931, studied African studies, Egyptology and ethnology in Vienna and Hamburg. From 1956 to 1959, he was a lecturer at the Goethe Institute in Cairo and taught at Orman and Ibrahimiyya grammar schools. In 1957, he introduced the German language at Al-Azhar University. In 1967, he earned his postdoctoral degree (habilitation) at the University of Marburg and then worked as a lecturer there. After working as an assistant professor at Howard University in Washington, DC, he was a professor of African Studies at the University of Marburg from 1972 to 1985. From 1985 to 1996, he was chair of African Linguistics at Goethe University Frankfurt, where he founded the Institute for African Linguistics, now known as the Institute for African Studies.

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Berber, etc. – are indeed apophonic languages, that is, like in English with verbs like *sing, sang, sung*, the vowel changes. They were influenced by contact with original (autochthonous) African languages, in which the pitch usually changes. In Mubi, an ablaut language, you have *ewit* (he bit) and *uwaat* (he is biting) – perfective and imperfective are marked here by a strong vowel contrast. As little as 300 kilometres further west, the beautiful vowels disappear. In Masa, the perfective is *ât*, the imperfective *ât* (pronounced with different pitch).

McLaughlin: Did you conduct any direct field research?

Jungrathmayr: Yes, of course, many times over 50 years. From 1956 onwards, I lived for three years in Egypt and taught German at grammar schools and at Al-Azhar University for the Goethe Institute. I wanted above all to learn to speak Arabic. Through students from Central Sudan, I gained access to their home villages. With my brother Alfred, I then undertook a first journey in 1958/59 to pick up the traces of the Daju language, which particularly interested me at the time.

Fendt: There are 150 Chadic languages. What drove you to explore more and more languages?

Jungrathmayr: Curiosity and enthusiasm for research. Many of these languages we didn't even know yet. Science is the art that creates knowledge. Each language preserves the Afro-Asian heritage in its own way.

Sauter: And what do the languages have in common?

Jungrathmayr: There is a core vocabulary that links them to the classical written languages of the Ancient Orient. For example, individual words such as the verb *paras* (to split) are found on Akkadian cuneiform tablets as well as in some eastern Chad languages. Moreover, these languages function in the verbal domain according to the basic principles of perfective and imperfective. Everything can be traced back to this basic binarity. This fascinated me, and over the years I proceeded from language to language and examined it.

McLaughlin: You have an overview of several decades of African Studies. What has changed during this time in your opinion?

Jungrathmayr: Today, the synchronic aspect of language studies is much stronger than the diachronic [*comparing*



The Africanist with his daughter Therese and the Emir of Kaltungo. The two were in the Nigerian town in 2009 for a book presentation.

over time]. We have learnt the historical view even more: How did a language become the way it is? Are there neighbouring languages which represent a more ancient type? To be able to examine this, of course, requires a lot of data. That is how the Chadic word catalogue came about, which was started in Marburg and continued in Frankfurt.

Sauter: You went to Africa as a European with this academic interest in languages. Was there such an interest in African countries as well?

Jungrathmayr: Difficult question. The interest in language at the universities at that time was still going in a different direction. First of all, materials were needed for teaching at elementary school. However, I was acknowledged several times for my work, perhaps without my research being received in detail.

Sauter: Are there linguists in Africa who work in a similar way to you?

Jungrathmayr: Yes, for sure. There are many colleagues who teach at African universities and meet us at international congresses, and who do it at least as well as we do. As native speakers and trained linguists, they naturally have great advantages. What is still largely missing is historical comparative language research.

Fendt: Are you still actively conducting research?

Jungrathmayr: And how! I'm working together with an Egyptologist in Constance. At present, we're describing a language together in Chadic, it's called Kwang. Yes, I'm still *in media res*, although sometimes I don't feel so fit anymore. But when I have support like this, it's fine. I still have such an infinite amount of material! (To Fendt and McLaughlin:) But can I ask you whether you would also be enthusiastic about research? Would you like to describe a language which hasn't been explored yet? Or would you rather undertake communication research with the help of the language you've learnt?

McLaughlin: I would certainly enjoy researching a language that has not yet been described. But I also found it exciting to work with the materials which can be found in the Africa Museum in Tervuren (Belgium), for example, where I was an intern. It houses many language policy records from the time during and shortly after colonial rule in the Congo which have not yet been made available to the world.

Jungrathmayr: What is it about, exactly?

McLaughlin: It was like this: missionaries landed in the Congo, learnt there the first local language, which they perhaps mastered quite well. Then they moved on to do their missionary work. In the process, they used this language as the standard language in other places, even though the local conditions were different. This led to language changes because completely different links and combinations resulted.

Jungrathmayr: So by using the idiom they learnt first as a language of communication, they carried elements further which then changed the other languages?

McLaughlin: Exactly. As a result, artificial languages were created. These languages still exist today if you look, for example, at the language Lingala. These mental assets are often kept in museums and could be made available to the public so that people can understand themselves why their language is spoken

today in the way it is. But many of these documents are in museums in Belgium, so the people in the Congo don't have access to them.

Jungraithmayr: Are there attempts to digitise them so that people in the Congo can also see them?

McLaughlin: Yes, this is now slowly starting to happen in the course of the debate about looted art. But it's not only about objects but also about many language documents because a large number of linguists also worked for the museums at that time.

Jungraithmayr: Digitising language material which exists in writing in Europe so that African communities can take note of it and possibly work on it on their own: that's an extremely important task. Practically all our publications would have to be included. Each of my books costs €70 or more. It's indeed paradoxical: when our institute moves to West-end Campus, many of our books won't be able to go with us because of lack of space, while there they are desperately needed.

Sauter: They would be put to good use in Africa.

Jungraithmayr: Yes, of course, but who is going to finance it? Just sending a little book costs €30.


McLaughlin: "Engagement Global". It's a service for initiatives that promote development projects. For example, you can use the transport cost subsidy to raise in-kind donations. One condition is that these donations are aimed at improving the living conditions of a disadvantaged population group, which is what books always do. We could submit an application to them, pack up all the duplicates and send them there.

Jungraithmayr: That would be great!

Sauter: Then our little discussion group has produced a really practical outcome!

The discussion was chaired
by Dr Anke Sauter, science editor
at Goethe University Frankfurt.


ABOUT ANTONIA FENDT



Antonia Fendt, 24, originates from Idstein/Taunus. She completed her bachelor's degree in linguistics and ethnology and during this period learnt the West African language Bambara and the East African language Swahili. In addition, in the master's degree programme "Language and Society in Africa", with a focus on "African Studies – Social and Historical Contexts", she completed courses in Kinyarwanda. During her studies, her interest and enthusiasm for African cultures, music and literature have grown even further. She is a student assistant at the Institute for African Studies. In the future, she could imagine working in research and teaching.

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ABOUT MARY ANN MCLAUGHLIN



Mary Ann McLaughlin, 27, grew up in the US and in the little village of Langweiler in the administrative district of Kusel. She studied linguistics in Mainz, specialising in African studies and ethnology and learning the Bambara und Swahili languages. She is now enrolled in Frankfurt on the master's degree programme "Language and Society in Africa", with a focus on "African Studies – Social and Historical Contexts" and has completed a language course on Kinyarwanda as well as a structure class on Lingala/Bangala. In terms of career, she could imagine working in development cooperation, but also in research and teaching. During an internship at the Africa Museum in Tervuren, Belgium, she found the topic for her master's dissertation, which will critically examine colonial linguistics and language policy in the Congo.

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Immersion in a new language

How Africans in the Rhine-Main region
learn German

By Axel Fanego Palat

Living in Africa means being multilingual. People who immigrate to Europe thus have a clear advantage when it comes to learning German. This is shown by a linguistic study in the Rhine-Main region.

In a school context, we are accustomed to learning languages systematically. It is a matter of understanding and being able to apply grammar rules, practising vocabulary in the foreign language. Students in school have a teacher at their side with appropriate training and the necessary teaching materials. Without this support, children and young people feel abandoned; the prospect of learning a language just like that – virtually autodidactically – is alien to us. But that is precisely what many people from Africa and living in Germany today are doing.

People who immigrate to Germany find themselves at a similar starting point as school students: they too want or are obliged to learn new languages (cf. Esser, 2006) – and yet lots of things are different. And although they have not spent years cramming vocabulary and learning grammatical rules off by heart, they are quick to communicate, as we have observed in the Rhine-Main region. In most cases, communication works faster than in foreign language classes at school. But how can the success of non-guided language learning be explained? To find out, we are observing the strategies of people coming to us from Africa. We want to familiarise ourselves with their previous language experiences and hear their attitudes towards and notions about language. And looking at Africa is also worthwhile here because linguistic everyday life in Africa is mostly complex.

The project

The RMU Initiative Funding for Research financed a two-year project (2019-2020), within which Fanego Palat explored the linguistic integration of African migrants in the Rhine-Main region. The research work was conducted in close collaboration with the Department of Anthropology and African Studies at Johannes Gutenberg University Mainz. Apart from Fanego Palat, Assistant Professor Nico Nassenstein, Dr Sabine Littig and private lecturer Dr Klaudia Dombrowsky-Hahn also worked on this project.

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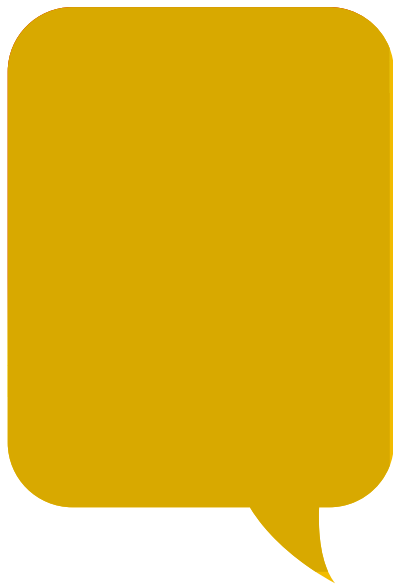
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Sporadic visits to language classes

Kajatu, for example, originates from Guinea in West Afrika. As a young woman, she met her German husband and moved with him a good twenty years ago to the Rhine-Main region. Up to that point, she had lived in various countries in West Africa, all of which feature great linguistic diversity. She has learnt new languages again and again: Pular, Bambara, Maninka, French, Fulfulde – and finally German. We made her acquaintance within a project aimed at shedding light on how people from Africa find their bearings in Frankfurt as far as language is concerned.

In Kajatu's case it is clear: in terms of language, she finds her way around very well – even if she herself is not entirely satisfied. She did not find the language classes she attended in her early days in Germany very helpful. She tended to follow them rather sporadically. Philipp from Ghana, who has lived in Germany since the 1980s, feels more or less the same. He emphasises that being open and plucking up a little courage were enough to learn the German necessary to hold a conversation. How did they both learn German so well? The answer to this question appears to lie in their attitude, in their experiences with languages and in a specific cultural ability geared to linguistic navigation.

To preempt the answer: Africans like Kajatu and Philipp are not inherently better at languages than people from other parts of the world. Other things come into play. In large parts of Africa, people use several languages in their daily lives. Depending on the region, these are not necessarily related and scarcely resemble each other. Notwithstanding, being multilingual is the norm, not the exception. People are also very mobile within Africa. They often move elsewhere to study, find work or for family rea-



sons. In the process, they also find themselves again and again in unfamiliar linguistic environments where they have to learn new languages. They do not attend evening classes – which are rarely available – to do this. Instead, they “immerse themselves” in the new language.

Language learning as a cultural skill

That this is successful is thanks to a number of contributing factors. In view of the everyday multilingualism in their various home regions in Africa, people have more experience with language learning. They master it as a cultural skill, as it were. As such, they in principle do it unconsciously. Kajatu told us that she picks up German like this, a little bit here and a little bit there. Such descriptions are characteristic of the attempt to describe non-guided language acquisition to us.

This does not, however, mean that the topic of language remains undiscussed. Quite the contrary. Littig (2021) highlights that families with an African migration background consciously make language policy decisions at the micro level. Individuals who come to the Rhine-Main region from Africa as young adults actively endeavour to learn German. As well as they can, they pursue the communicative strategies familiar to them. However, they also stress the importance of formal language courses where they learn under guidance.

After all, it is hardly possible here in Germany to dispense with guided language courses altogether. Education and work demand German language skills that are based on normative standards and writing abilities. Here, too, experience with language reality in Africa can have a favourable effect. One's own multilingualism makes it easier to learn another language. Particularly with regard to controlled language acquisition, factors such as age, gender, level of education or social environment additionally play a role – and not least personal talent.

Language as stigma

The Africans we talk to report about limitations they repeatedly come up against. Often, they are themselves dissatisfied with their German skills – even when these, seen objectively, are very good. Thus, in their everyday professional life, on the street, but also in their personal environment, they experience that their German stigmatises them. Bea was once a teacher in Burkina Faso, Bintu previously a lawyer at the public prosecutor's office in the Congo. In

Germany, both are now working – despite their professional qualifications – in geriatric care.

Such experiences go against the promise that a good command of German smoothens the way to successful integration in all areas (Dombrowsky-Hahn et al., 2021). This promise gives rise to high expectations both among migrants themselves as well as in society. However, this also entails the risk of becoming frustrated. Frustration undermines motivation. Yet good and lasting motivation is regarded as a prerequisite for successful learning.

Misconception of language skills and motivation

We have to distinguish here between the *need* to learn a foreign language and *motivation*. We know this ourselves from language lessons at school. The German Abitur (A-levels) requires two foreign languages. This alone, however, does not necessarily boost motivation among school students. But what exactly do we mean by motivation? When learning languages, various things can motivate us: career prospects, personal ties to people who speak a different language, or intellectual curiosity. Unfortunately, measuring the degree of motivation is not possible, which is why it is only suitable to a limited extent as an explanatory variable for successful language acquisition. Only in retrospect can we

2018). This scientific term was originally coined in conjunction with bilingual education. It challenges a widespread assumption that children only learn languages well if they keep them strictly separate. African experience underscores that this is incorrect. African migrants, who are always multilingual, draw on all their linguistic knowledge in parallel, regardless of the language from which it originates.

They creatively piece together vocabulary and grammatical structures from the different languages they have learnt. In so doing, they do not mix them arbitrarily without knowing what they are doing. Quite the contrary: they are continually adapting to changing situations.

IN A NUTSHELL

- Migrants from Africa face a motivational dilemma in Germany: they have a great desire to learn German well and also regard this as necessary. In everyday language situations, however, they often notice that their skills are inadequate.
- Africans in the Rhine-Main region learn German remarkably quickly. This is to be seen in the context of the linguistic situation in their home country: mobility in Africa is high, and the population is dependent on constantly learning other languages.
- Translanguaging plays a major role in Africa (in particular): this theory assumes that we do not “manage” several languages separately in our heads but instead our entire linguistic knowledge at the same time. The “mixing” of languages does not hinder language acquisition; it fosters it.
- Unguided language acquisition, that is, in many cases learning German in a migration context, is not unreflected language learning. It is a cultural ability that people by all means discuss consciously in the process.



say that motivation was evidently sufficient if someone had a good command of German as a foreign language.

Where that is not the case, we suspect a lack of motivation. Unfortunately, the blame for lack of motivation is often apportioned solely to the learners (“Pull yourself together...!”). This completely blanks out the fact that the people in the learner’s environment are of fundamental importance if communication and language learning are to function. This is an essential part of the concept of language acquisition as a sociocultural practice.

Multilingualism raises language consciousness

In Africa, what is known as *translanguaging* is an everyday occurrence (García, 2017; Wolff,

there was no equivalent translation in German. Suddenly, her sentence structure in German took on forms that stem from Maninka: the language of her grandmother who she was telling us about. Even details of her pronunciation changed depending on the topic, who is listening and their attention. Often, however, the interviewer was also consciously asked to say something herself in a language other than German. The interviewee and the listener swapped roles during the conversation, at least for a short time. Jokes and word games, which often involve switching between languages, were woven into the conversation.

The often creative handling of language in Africa can help an individual to expand their linguistic repertoire. For example, by talking about language. Meta-linguistic discussions are

Sometimes this happens almost imperceptibly. We conducted our interview in German. But Kajatu used terms from Bambara when

common. They contain explanations and provide – perhaps this is more important – many opportunities for linguistic experimentation. Another strategy is to adjust the “amounts” of different languages in your own discourse to your counterpart, but not simply to adopt their language completely in the process. Instead, there is by all means a “challenge” as well (Nassenstein, 2017). And there are also local language teaching experts whose advice can be sought. Such “fluid” and diverse practices are hardly appreciated in Germany. Mastering a language well means coming as close as possible to a standardised High German.

This explains the discrepancy between the very good communicative skills we see in Kajatu, Bea, Philipp and Bintu and their own self-assessment, which

turns out less positive. The Africans we spoke with repeatedly expressed the feeling of reaching their limit, of not progressing in terms of language and of not satisfying requirements. At the same time, they communicate a lot in German every day.

A task for society as a whole

It is the everyday experience of these people, who speak with an accent or deviate from grammatical norms when speaking, that puts them in this seemingly paradoxical situation. They encounter people whose German conforms to the standard. Their reaction to what they perceive as the migrants’ inadequate German can vary. Disdainful, paternalistic, unsure. Quite a few also pay tribute and offer well-meaning encouragement. But even this implies in an undertone that it is not quite enough (yet). The signal the migrants receive is: “Rectify your inadequate German!”

Where multilingual practices such as translanguaging are successful – for instance in Africa – language learning is not reduced to the cognitive task of the individual. It is a cultural practice of social communities. This is juxtaposed with a normative understanding of language that characterises the appraisal of linguistic skills in Germany. However, African immigrants have no influence on this deeply rooted cultural difference. At this point, migrant language acquisition is also a task for society as a whole in Germany, in which we should all play a part. ●



The author

Axel Fanego Palat (né Fleisch), born in 1968, has been Professor of African Studies at Goethe University Frankfurt since 2018. He studied African studies, geography, general linguistics and ethnology in Cologne, where he also earned his doctoral degree. He was then a postdoctoral researcher in Berkeley (California), after which he taught for ten years as a professor for African studies in Helsinki (Finland). Fanego Palat’s research interests lie in the relationship between language and identity, migration linguistics and the perception of Africa in academic and public discourses. He has initiated a school project on Africa. Axel Fanego Palat is involved in the LOEWE Research Cluster “Minority Studies – Language and Identity”, which is running from 2020 to 2023.

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My first stay at Goethe University Frankfurt was in 2015: I took part back then in a round table of development experts, the topic was NGOs in Burkina Faso in the face of economic constraints. I came to Frankfurt again in the autumn of 2017 with a scholarship from the German Academic Exchange Service to compile a study on the contribution by NGOs to the development of Burkina Faso.

Despite the presence of many NGOs in Burkina Faso and despite the government's efforts to support vulnerable populations, major challenges persist. The motives for setting up NGOs are highly diverse: eliminating poverty, combating illiteracy and providing advice for women and young people, in particular with regard to better education. Some organisations also offer technical, civic and practical training for villagers as well as financial and technical support for implementing projects by farmers, as well as fostering economic activities.

During my stay, I was able to attend scientific lectures by colleagues in the department as well as the NGO colloquium entitled "Histories in Oblivion and Overlooked Lifeworlds".

"A good place for African researchers"



Professor Alain Joseph Sissao, 59, is conducting research at the Institute of Sciences of Societies (INSS) at the National Centre for Scientific and Technological Research (CNRST) and is Research Director at Norbert Zongo University in Koudougou/ Burkina Faso.

The second phase of my stay consisted of visits and work sessions, for example with Professor Roland Hardenberg, Director of the Frobenius Institute. We talked about research

collaboration with Burkina Faso as well as a translation of an anthology of tales. I talked with Professor Mamadou Diawara, Deputy Director of the Frobenius Institute, about collaboration between Point Sud and the Institute of Sciences of Societies in Ouagadougou as well as the prospects for future collaboration with researchers in Burkina Faso.

It goes without saying that this community brought me a lot. I had perfect working conditions: an office with an internet connection, a library highly specialised in my field of work, fruitful contacts with competent and approachable colleagues. I also learnt a lot about how German research and science institutions work.

Goethe University Frankfurt is a good place for African researchers to work on promising research questions. The hospitality of university administration and my colleagues made my stay fruitful and pleasant. Exchange with European academics is important. Together we should find solutions for development issues. In particular, I'm planning joint publications with my colleague Professor Hans Peter Hahn, with whom I've been working on the research topic of NGOs in Burkina Faso since 2015.

African Scholars at Goethe University Frankfurt

I arrived in Frankfurt on 21 October 2018, and the adventure of my research stay at Goethe University could begin. In my doctoral degree, I wanted to gain a detailed understanding of the role played by traditional female leaders in the United Nations Development Programme (UNDP) in Ghana. At the beginning of my project, I financed myself, later I received a scholarship from the Andrea von Braun Foundation as well as funds from Goethe University Frankfurt for field research. To preempt the outcome of my work: I found that female leaders, such as queen mothers, priestesses and female heads of families, although they are confronted with greater difficulties in local political affairs in Northern Ghana, have become important stakeholders in the fight against hunger, poverty, disease and environmental pollution.

Before coming to Frankfurt, I had completed my bachelor's degree in political science at the University of Ghana, then a master's degree in human security, a sub-domain of anthropology, at the University of Aarhus (Denmark). Frankfurt am Main, with its incredible skyline, bustling nightlife and multicultural diversity, was to become my

"I can call myself a Frankfurter"



Thompson Gyedu Kwarkye, 31, completed his doctoral degree in June 2022 at the Department of Social and Cultural Anthropology of Goethe University Frankfurt. The title of his thesis: Women in Local Governance; Exploring Nawuri Women Leaders in Human Security in Kpandai District, Ghana.

home for the next three and a half years. At the Department of Social and Cultural Anthropology of Goethe University Frankfurt, my interest in ethnological research grew more

and more. The outstanding professors here, the well-stocked library at the Frobenius Institute, access to a workplace, but above all the numerous colloquia, workshops and seminars have helped me to progress a lot.

As an African conducting research on Africa in Europe, collaboration, networking, participation in conferences and working groups were essential for my survival. I've gained important experience and acquired competencies such as project management, analytical, communication and presentation skills as well as proficiency in the German language. Exchanging with European academics has enabled me to learn how alternative approaches could lead to innovative solutions.

The biggest surprise for me was the persistent bureaucracy and paperwork not only at the university but also in the City of Frankfurt. Nevertheless, I'm very grateful to have been able to come to Frankfurt; the different people I met at the university (some of whom I'm proud to call my friends), the amazing food and drinks, and the modern aesthetics of the city delighted me again and again: I can call myself a Frankfurter.



من أجل 6 فيفري يومًا وطنيًا
لمناهضة الإرهاب
والاعتقال السياسي

ف الحقيقة
حاكمة القتلة
المحاسبة

PEACE, DEMOCRACY,
FUTURE

A country between hope and uncertainty

Democracy, mobility and biotechnology in Tunisia after 2011

By Veit Bachmann, Kmar Bendana, Betty Rouland

How has Tunisian society developed after the revolution in 2011?
Is the North African country really on the way to democracy?
Viewed from the perspective of human geography, Tunisia presents a contradictory picture.

The Arab revolutions of 2010/2011 began in Tunisia. We have made a conscious choice to avoid the terms “Jasmine Revolution” or “Arab Spring”, since they imply a romanticised Eurocentric view of these revolutions. In the case of Tunisia, the term “Revolution of Dignity” has come to express that the demand for dignity was at the heart of the uprisings. Human dignity, dignity in the face of arbitrary use of power by the police, the dignity of being able to earn a living, the dignity of freedom and the dignity of having control over one’s own body – and the dignity of being able to move freely across national borders.

Neither in Tunisia nor in any other Arab state were all the hopes fulfilled that had been placed in the popular uprisings. However, it is undisputed that the protests triggered by the self-immolation of street vendor Mohamed Bouazizi on 17 December 2010 in the small town of Sidi Bouzid in central Tunisia have massively changed many countries in North Africa and the Middle East.

Political hope, frustration and uncertainty

While the tragic situation in Syria attracted and continues to attract attention in European media alongside occasional reports on the situation in Egypt and Libya, developments in Tunisia feature far less often in newspapers and news

programmes. This can partially be seen as a positive signal, insofar as it is likely related, among others, to the general absence of violent clashes in Tunisia. But another reason for this media abstinence might also be the complexity of developments in Tunisia, which are extremely difficult to decipher.

Despite all the problems in the country, Tunisians are proud of their revolution. Tunisia is the only Arab country where a revolution has developed in a democratic direction. Over the past decade, a relatively free press, an active civil

Left: In February 2022, Tunisian men and women demonstrated in memory of the assassination of the left-wing opposition leader Chokri Belaid.

Below: “From Tunisia to the Arab World” – Graffiti in the Medina of Tunis, the historical centre of the Tunisian capital.





Private clinics in Tunisia, such as this hospital with an emergency room in Djerba (left) or the fertility centre in Tunis (right), are popular among foreign patients.

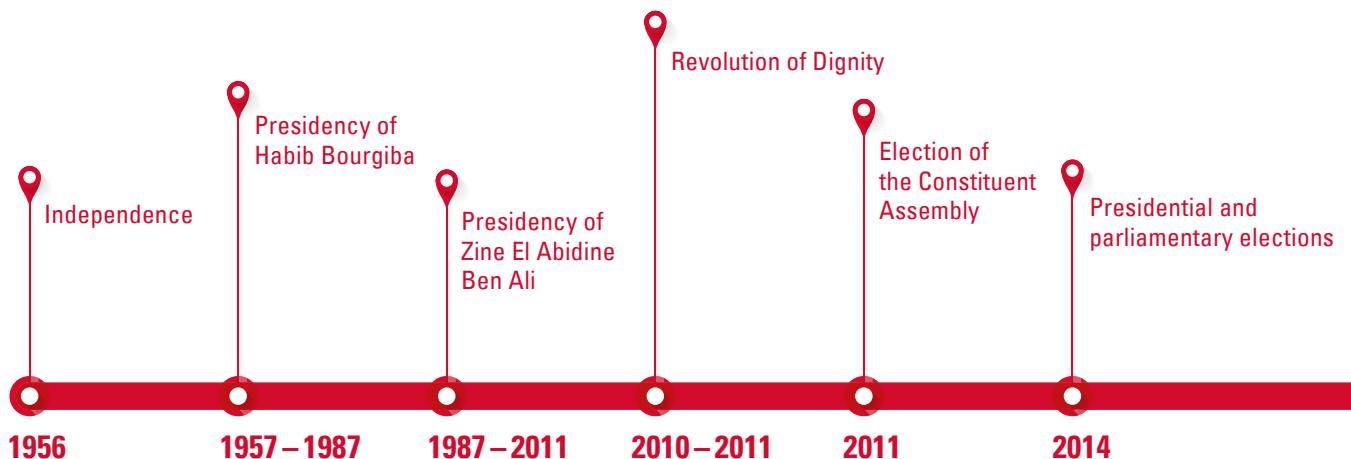
society and an extremely lively and critical art and cultural scene have developed in Tunisia. The economic situation, however, remains tense. The lack of economic prospects, especially for young people, and persistent corruption are once again bringing the question of dignity to the fore.

In addition, current political developments (see timeline below) raise doubts about the sustainability and stability of democratic structures: on 30 March 2022, the fourth President of the Republic of Tunisia, Kaïs Saïed, dissolved parliament. This decision opened another chapter in the complex political crisis that has been ongoing since the summer of 2019. The death of former President Béji Caïed Essebsi in July 2019 led to early elections in the autumn of the same year, in which “outsider” Kaïs Saïed was surprisingly elected as president. In July 2021, Kaïs Saïed suspended parliament, dismissed Prime Minister Hichem Mechichi and declared a state of emergency. This decision can also be interpreted as a reaction to ongoing political conflicts and repeated stand-offs

within parliament. Tunisia has been ruled by decree since 22 September 2021, and the new cabinet, led by Najla Bouden, was formed on 11 October 2021.

Following a period in which all Tunisian citizens were able to submit proposals for the revision of the constitution, a referendum was held on 25 July 2022 to vote on a subsequent draft constitution. Constitutional parliamentary elections are due to be held on 17 December 2022, the twelfth anniversary of the self-immolation of Mohamed Bouazizi. The symbolic date of this election is evidently intended to suggest that President Saïed is the legitimate “consumer” of the revolution.

In this respect, the democratic development in Tunisia since 2011 can be regarded as slightly more positive than in other Arab countries where there was also a revolution. Nevertheless, the current developments under Saïed’s presidency highlight the enormous challenges of any democratisation process and the need for civil society to remain vigilant. Tunisia’s political future remains tense and uncertain.





Courtyard of a nursing home and rehabilitation centre for an international clientèle in Tunis.

Economic adaptability?

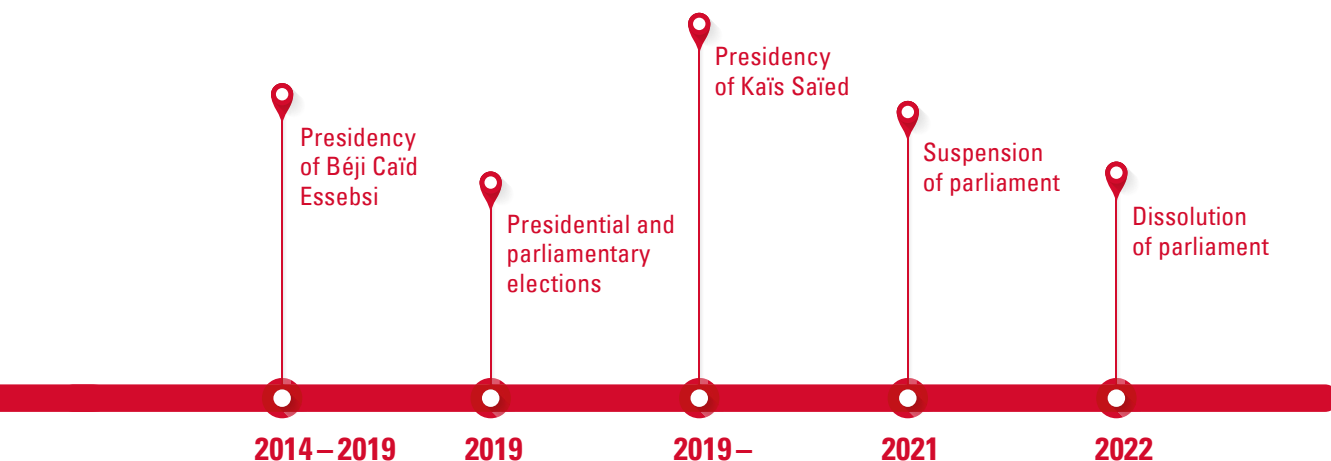
The economic situation in Tunisia is also rather complicated. The devaluation of the national currency (Tunisian dinar), the unstable geopolitical situation in the region and enormous fluctuations in the tourism sector – not least as a result of the terrorist attacks in Tunis and Sousse in 2015 and the coronavirus pandemic – pose great challenges for the economy. However, there are also some success stories, which are often not particularly visible. In any case, and particularly since the autocratic Ben Ali regime was overthrown in 2011, it seems prudent to take a differentiated view of Tunisia’s balance sheet. Many economic dynamics can develop or intensify in the course of newly gained freedoms. However, these dynamics are often difficult to grasp, as macroeconomic indicators (such as official figures on gross domestic product or economic growth) do not reflect certain realities, rendering dynamics invisible.

Tunisia is known as a country of “débrouillardise” (resourcefulness/geniality) with an enormous ability to adapt. The informal econ-

omy, that is, activities that are not registered or controlled by the state, is estimated at more than 50 percent of economic output. The economic and social dynamics are thus far more complex than the official statistics suggest. They are based on a colourful mix of local actors who are characteristic of large parts of the private sector and the informal economy of Tunisian “débrouillardise”. Only a qualitative analysis from the bottom up and across the breadth of society could give a realistic picture.

Health service exports are booming

An example of Tunisia’s innovative strength and the interaction of formal and informal economic structures is the development of its private health sector. Thanks to growing mobility in the region, existing expertise in the field of biotechnology and new digital information and communication opportunities, highly specialised health services have become a top Tunisian export. Private clinics offer a foreign clientèle various medical treatments of a particularly high standard and at very attractive prices. One



advantage is that patients can easily enter the country, and those wishing to be treated there are not subjected to restrictive and potentially degrading visa policies like in EU countries.

Against this background, Tunisia has become a centre for global therapeutic mobility, primarily for regular customers from the neighbouring Maghreb countries of Libya, Algeria and Mauritania as well as from Francophone Africa. The range of diagnoses and therapies sought by patients travelling to Tunisia is notably diverse. Cosmetic surgery, a typical reason for therapeutic mobility, is just one of many medical fields. Often, complex and special lifesaving treatments are carried out in the field of oncology or orthopaedic surgery, which are not possible in the patient's country of origin. Many couples also travel to Tunisia for fertility treatment. Tunisian clinics have specialised in this socially highly sensitive field, and this niche generates a lot of

IN A NUTSHELL

- Tunisia is the only Arab country that has developed in a democratic direction after the revolution. But the country faces great challenges.
- The economic situation is complex. More than 50 percent of economic output is generated by the informal sector. Tunisia is regarded as a particularly resourceful country.
- Its health sector is highly dynamic. High-quality healthcare services at competitive prices attract patients from neighbouring countries.
- The downside to this success story is a weakening of the public health system to the detriment of local patients.



The authors

Veit Bachmann, Kmar Bendana, and Betty Rouland are conducting joint research within the Franco-German project IMAGEUN ("In the Mirror of the European Neighbourhood (Policy): Mapping Macro-Regional Imaginations") at Goethe University Frankfurt. **Veit Bachmann** is a geographer at the Department of Human Geography of Goethe University Frankfurt and working on questions of European integration, foreign relations and development cooperation. **Kmar Bendana** is a historian at the Université de Manouba and the Institut de Recherche sur le Maghreb Contemporain in Tunis and conducting research on Tunisia's modern history and external relations. **Betty Rouland** is a geographer and scientific coordinator in the "Health/Santé" department at the Institut Convergences Migrations in Paris and conducting research at the interface of health and human mobility. Previously, she was based at the Institut de Recherche sur le Maghreb Contemporain in Tunis.

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income. In this part of the world, impaired fertility is more socially stigmatised than other health problems. Corresponding treatment, and even the patient's arrival, are handled with the utmost discretion. In addition to the actual treatment in a Tunisian clinic, a complex network of intermediaries, online services (such as consultations, exchange of information, blogs and forums, the planning of entire visits, etc.), travel companies, nursing homes, hotels and other accommodation has developed, which operates through a complex nebula of formal and informal activities.

"Medical tourism", the term much better known, is hardly appropriate here, as patients travel to Tunisia due to medical necessity, rather than for relaxation or recuperation. Tourism plays virtually no role, for example, in the treatment of war injuries from neighbouring Libya. Moreover, not least due to the length of the stay, the per capita contribution to the Tunisian economy by foreign patients is far more diverse and extensive than beach tourism in hotel chains often owned by foreign companies.

Unfortunately, however, the international and economic success of the private health sector in Tunisia also has a downside. Like many private globalisation processes, developments in the Tunisian healthcare sector are also made at the expense of public services. Sought-after health workers are actively recruited away from the public sector and into the private sector not just within the country but by other European countries (particularly Germany and France). The impact this has on public health in Tunisia became particularly apparent during the coronavirus pandemic in 2020/2021. The

high-quality services provided by the private sector remain unaffordable for a large part of the Tunisian population.

“Development” and globalisation made in Africa

From a human geography perspective, the transnational business with health services has a number of aspects that need further consideration. These include growing inequality, macro-economic development, the role of the formal and informal economy, as well as cutting-edge biotechnology, but also questions about restrictive European border policy, international mobility and new opportunities for digitalisation. In any case, this phenomenon of globalisation, which is barely visible from a Eurocentric point of view, deserves more attention from policy and research. There are no quick and simple answers because booming private healthcare contributes, on the one hand, to increasing unequal treatment in the Tunisian healthcare system, but is vital, on the other hand, for patients – and of increasing importance for the Tunisian economy. At least the development processes set in motion are entirely African rather than the result of paternalistic European development cooperation. ●

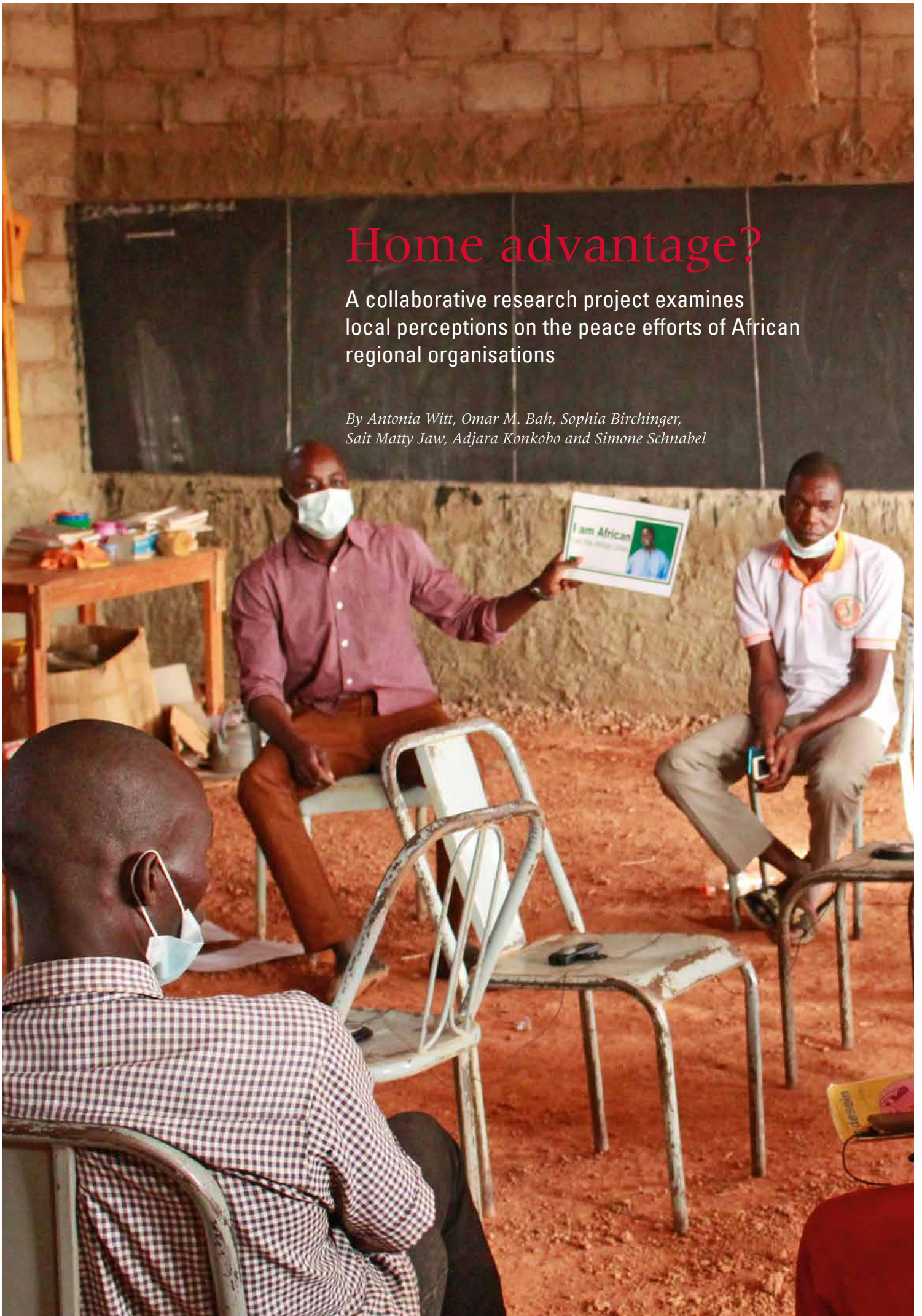


Tunis city centre on 14 January 2016: the fifth anniversary of the flight of Ben Ali, the autocrat banished to Saudi Arabia during the revolution, brought many people to the streets.

Home advantage?

A collaborative research project examines local perceptions on the peace efforts of African regional organisations

By Antonia Witt, Omar M. Bah, Sophia Birchinger, Sait Matty Jaw, Adjara Konkobo and Simone Schnabel



Whenever there is a coup d'état in African countries, regional organisations are called upon to restore democracy – and they often succeed. But what do local people think about their interventions? A transnational team of peace and conflict researchers are exploring this topic.

In 2021, there were five successful coups in Africa, more than at any time since the late 1990s: in Mali, Guinea, Sudan and Burkina Faso, the governments were overthrown by the military. In Chad, after the death of the president, power simply passed to his son, which as a “non-democratic change of government” also counts as a coup. Prior to that, the decline in coups since the early 1990s was partially thanks to the efforts of African regional organisations such as the African Union (AU) and the Economic Community of West African States (ECOWAS). Both organisations have adopted regulations condemning coups and excluding governments that come to power by non-constitutional means from their organisations. Such governments lose their voting rights and are isolated internationally. What’s more: anti-coup norms give both organisations a mandate to ensure the “restoration of constitutional order” in the event of a coup, through mediation and negotiations, sanctions or – if necessary – through the threat or use of force. This is because coups not only have an impact on the political and social order in the affected countries, they are also a threat to peace and security in the entire region.

Since the establishment of the African Union in 2001, such regional efforts to restore constitutional order have been undertaken in 15 African countries. They reflect the growing responsibility assumed by African actors for peace and security on the continent. But how do citizens in the affected countries perceive these interventions? How do they evaluate them? And what expectations do they have of African regional organisations and their role in peaceful conflict resolution? We are investigating these questions using collaborative research methods

in a project funded by the German Research Foundation (see p. 33). We are looking at how interventions by AU and ECOWAS are perceived locally in Burkina Faso (2014/15) and The Gambia (2016/17). In both countries, AU and ECOWAS intervened as a result of political crises: in Burkina Faso, President Blaise Compaoré, who had ruled the country for 27 years, was overthrown by a broad social movement in 2014. In The Gambia, Yahya Jammeh, the then president, refused to acknowledge his defeat in the 2016 presidential election. While AU and ECOWAS tried to restore constitutional order in Burkina Faso above all through mediation, negotiations and sanctions, the regional intervention in The Gambia was also supported by a military presence that eventually forced Jammeh to relent.

Why local perceptions are important

“Perceptions”, that means interpreted experiences. Essentially, perceptions are subjective, but they have a social effect at the same time as they shape the behaviour of individuals and collectives. The term is deliberately used in its plural form to stress the diversity and complexity of local perceptions.

Although there is an increased scientific interest in African regional organisations and their activities for peace and security, the question of how these are perceived locally has not

Left: Moderator Dr Amado Kaboré from the Institut des Sciences des Sociétés with participants of a focus group in Djikôfê, Ouagadougou, Burkina Faso.

Below: Meeting of a focus group in Kanifing in the metropolitan region Greater Banjul Area, The Gambia.





picture alliance/Reuters, Vincent Bado

On 24 January 2022, the President of Burkina Faso, Roch Marc Kaboré, was arrested. In front of the Guillaume Ouédraogo military camp, people gather to show their support for the army and are sent away by soldiers.

More information about the project

<https://www.hsfk.de/forschung/projekte/projekt/lokale-wahrnehmungen-regionaler-interventionen-au-und-ecowas-in-burkina-faso-und-gambia>

yet been systematically explored. This blind spot is hardly comprehensible, since it has been sufficiently demonstrated in interventions by other actors, such as those of the United Nations or individual states, that there are considerable differences between the goals of international intervention efforts and those of the local population. Local perceptions are therefore key to understanding divergent notions of peace, security and order, as well as the conflicting nature of interventions. They also indicate how sustainable international peace efforts are, since without the approval and support of the local population such efforts are unlikely to be successful.

This blind spot in research to date reflects the colonial view of African institutions and actors that still prevails today. African regional organisations are often dismissed as ineffective by external actors. They are regarded as “paper tigers” whose policies have little effect on the lives of African citizens – which also makes it unnecessary to investigate how their interventions are perceived locally. At the other extreme, overly optimistic views of African regional organisations assume that they have a kind of “home advantage”, enjoy greater local acceptance and promote locally adapted solutions, particularly in the context of peace efforts – unlike global actors such as the United Nations.

IN A NUTSHELL

- African regional organisations such as the African Union (AU) or the Economic Community of West African States (ECOWAS) have been working since 2001 to restore constitutional order following political or constitutional crises in their member states.
- A collaborative research project has looked at the perceptions and acceptance of these efforts among the population in Burkina Faso and The Gambia. This area was previously a blind spot in research.
- The findings are complex, but they show that there are high expectations of the actions undertaken by intra-African organisations – although the experiences of these actions are not entirely positive.
- Interestingly, different population groups report different perceptions: in Burkina Faso, it is the elites who are particularly critical of the regional organisations; in The Gambia, by contrast, the general population is dissatisfied, while the political elites perceive the interventions as successful.



Left: Research assistant Baboucarr Fatty and Sait Matty Jaw during field research in Banjul, The Gambia.

Below: Simone Schnabel, moderator Dr Amado Kaboré, Adjara Konkobo and research assistant Abdoul Wahab Semde discuss their field research in Ouagadougou, Burkina Faso.



Developments in Mali, Burkina Faso and Guinea, where there have recently been repeated public protests against the ongoing efforts of AU and ECOWAS to restore constitutional order, show that this is not always the case. Are African regional organisations then seen much more critically at local level than is generally assumed by research?

Controversial and acknowledged at the same time

On the basis of more than 20 focus groups and over 150 interviews that we conducted between January 2020 and April 2022 in various cities and rural areas in Burkina Faso and The Gambia, we can provide an empirically substantiated, more nuanced answer to this question.

Firstly, our research shows that local perceptions differ greatly from one another. The same interventions are experienced and interpreted very differently by various social groups and individuals. In both countries, AU and ECOWAS are perceived as biased, arrogant and dominated by heads of state and their interests. By contrast, others show considerable appreciation for the successful resolution of the political crises and the restoration of “normal life”. From these local perceptions, it is clear that both organisations are at the same time more controversial and more acknowledged in local perceptions than often assumed.

Collaborative research

The research project “Local perceptions of regional interventions: AU and ECOWAS in Burkina Faso and The Gambia” is being carried out by an interdisciplinary team of researchers from Germany, Burkina Faso and The Gambia. Both case studies are being conducted by a research tandem in which Burkinabè, Gambian and German scientists are jointly shaping the entire process from data collection to publication of the results. In this way, the project tests new forms of collaborative knowledge production with the aim of dismantling global hierarchies in knowledge production in and about Africa. The empirical core of the project is several months of joint field research, in which the research tandems are together conducting focus group discussions and interviews. Research tandems make the positions of individual researchers visible, allow a mutual reflection of interpretations and assumptions, and promote a deeper understanding of the conditions for scientific work in different contexts.

Literature

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Witt, Antonia: Understanding Societal Perspectives on African Interventions. A Methodological Agenda, PRIF Working Papers No. 50, Frankfurt/M. 2020.

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Secondly, it turns out that many people, despite clearly expressed criticism, have very high and often clearly formulated expectations of both organisations and want a stronger and more consistent commitment to peace, democracy and development in their member states. Paradoxically, these expectations are often at odds with the way people experience the two organisations in practice. Ultimately, the hope of better regional organisations that could help to compensate for the deficiencies of state order remains uncontested.

Thirdly, our research shows that the significant differences in *how* regional interventions are perceived and evaluated are closely linked to a person's individual position in local political and social power structures. In both countries, there is a clear difference in how elites perceive the interventions and, by contrast, perceptions of the broad population, which is largely excluded from political and economic power. Depending on the group, people have very different experiences with regional interventions as well as very different ideas of what would resolve conflicts effectively in their country. The difference between the two countries is surprising: in Burkina Faso, it is above all the elites who express strong criticism of the peace efforts of AU and ECOWAS and regard both organisations primarily as clubs of heads of state. In The Gambia, on the other hand, it is primarily the population living in areas with ECOWAS military presence that is most critical of regional peace efforts, while the political elites – in these areas too – see the Gambian experience primarily as a sign of successful regional conflict management.

Practical relevance

Our findings show that African regional organisations are by no means mere "paper tigers", as it is often claimed. Rather, due to their interventions these organisations have a local presence and are locally effective, that is, having a political effect. If they were not effective, there would be neither different experiences with regional peace efforts nor different perceptions of these efforts. In view of the wave of resistance that AU and ECOWAS are currently experiencing in Mali, Burkina Faso and Guinea, the results of our research provide relevant insights for both organisations: only if they take the manifold perceptions and experiences of local people seriously will they be able to develop sustainable solutions in the long term. Our findings also once again underline how important it is not only to listen to those who shout the loudest but also, and above all, to give a voice to those often regarded as insignificant for international and regional politics. ●



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Paradoxical successes, expected failures

Development projects in Africa

By Helmut Asche

aid

Extensive research has been conducted into economic development and the international aid that is meant to ensure its progress. Although development aid is not a bona fide Africa topic in research, it is an important part of socioeconomic life in almost all the 55 African states. Libraries are filled with studies on development, emergency or humanitarian aid and their transitional forms. They have still not convincingly shown why development policy has become a permanent feature of modern societies since the 1950s and an established field of governmental policy alongside, say, trade or defence. However, it is clear that despite fundamental criticism from many sides, development aid has generated an entire institutional landscape which extends deep into the civil societies of the Global North and the Global South.

Even if the mandated term for what the rest of the world knows simply as “aid” is “Entwicklungszusammenarbeit” (development cooperation) in the German-speaking world, suggesting an equal footing, the fundamental imbalance between donors and recipients is still inherent. That doesn’t mean that individual development projects cannot be successful. If a country uses development aid to drill a well, it might work out, provided that maintenance is in place and unintended side effects do not counter the impact. Accordingly, reports from practically all donor organisations across all sectors worldwide show a success rate for aid projects of 66–75% – a phenomenon which I coined some time ago as “the iron law of development success”. Frustratingly, it is very rare that this leads to corresponding macroeconomic development which lifts the recipient countries to a new level of self-sustained growth. The result is

what Mosley back in 1987 called the micro-macro paradox: successes at the technical micro level, but no significant progress at the macro level, despite some measurable effects on growth. As this finding cannot be easily ignored, reform efforts in the past decades have taken at least three directions.

Small-scale and competitive

The typical microeconomic form of international aid is still the individual “project”, which describes an external intervention limited in terms of time, space, goals and resources. During the early stages of reform efforts, the first direction taken by aid organisations was to bundle projects either as sectoral or intersectoral programmes in order to increase impact, for example in integrated rural development. When numerous developing countries went bankrupt at the end of the 1980s and the beginning of the 1990s, entire reform programmes were imposed on them as a condition for continued aid. The most important were the structural adjustment programmes of the World Bank and the International Monetary Fund, whose partly indispensable, partly radically market-biased packages of measures still exist today under different names, often as poverty alleviation programmes. Despite all reform efforts in the direction of programme, sector or budget aid, the “project” has remained the archetype of international aid. Successes have remained mixed, partly because donor coordination in such programmes has made only modest progress. Although most development agencies are not market actors but government agencies, competition between the donors themselves remains a key feature of development aid.

Participation and ownership

Secondly, an entire series of international summits, from Paris in 2005 and Accra in 2008 to Busan in 2011, has attempted to change the ownership structure of development aid projects and programmes. In theory, the principles of *ownership* and *partnership* should ensure that national stakeholders are involved on an equal footing. Donor coordination should also ideally be carried out by local partners. With the exception of a few, very self-confident *developmental states* such as Rwanda or, until recently, Ethiopia, this has only been moderately successful on an international scale, as donors are reluctant to relinquish their authority and prefer to pursue their domestic political agenda.

Ownership & Partnership

The outdated *logical framework approach* formerly adopted by the military as a planning instrument was the typical methodology of external project planning from the top down, in which partner institutions and recipients had an associated role at best. In the course of development reforms, the *logical framework approach* has long since been replaced by “participation” in planning and implementation. However, the fundamental imbalance has remained. It is not the donors who participate in projects developed locally but vice versa: in practice, participation means that of local stakeholders in third-party projects. In this issue (page 42), Melina Kalfelis analyses the neo-colonial working conditions that result from this and reveals how much the perception of temporal and procedural processes differ on both sides of NGO partnerships. Social anthropologists such as Behrends, Bierschenk, Rottenburg and others have described the continuing tradition of foreign narratives being imposed on local development realities – originally in relation to conflict management projects in Africa – as *travelling models*. In almost all cases, the journey only goes from north to south.

Developmental States

Logical Framework

Improvements in evaluation but no ideal solution

Thirdly, development aid in the last decades has attempted to make fewer mistakes in the socio-technical design of projects through more methodologically elaborate evaluation. Systematic comparison with situations that are as similar as possible but without project intervention makes it possible to identify attributable effects more precisely and ascertain which approach is the most effective. Such *randomised controlled trials* have also made their way into development aid in the last decades, although German development aid has lagged behind in this regard. The study on *community-driven development* in The Gambia by Matthias Schündeln and co-authors (page 38) and funded by the World Bank is very enlightening here, as it describes a key element of the “resource curse” that massive subsidies from outside can bring with them: growing social inequality.

Travelling Models

Nevertheless, few would regard *randomised controlled trials* as the only true standard of evaluation, as they are hardly applicable to nationwide programmes or to national policy advice. Today, a comprehensive *theory of change* is required to better describe intended and unin-

Theory of Change

tended effects, among others. Something else is more important: Olivier de Sardan has astutely analysed that typical projects and especially projects steered by *randomised controlled trials* try to conceal different contexts as far as possible in favour of uniform measures – until what he called *La revanche des contextes*, which is also the title of his seminal work from 2021, catches up with them. There is apparently no ideal solution in conventional development aid.

La revanche des contextes

Is it time for a radical rethink?

What are the radical alternatives? Turning *community-driven development* upside down and rethinking it properly could be a solution. Take a recent, strategically important example: the countries of the Central Sahel – Mali, Burkina Faso, Niger, Chad – are facing an existential crisis triggered by the interaction of external and internal threats. The military strategy of combating terrorism dominated here by France has been just as unsuccessful as in Afghanistan, and its interconnectedness with conventional civil aid, as described above, has also failed to restore peace in society.

Randomised Controlled Trials

A group from the Association for African Studies in Germany, with the significant participation of researchers from Goethe University Frankfurt, including the anthropologist Hans Peter Hahn, has summarised their diverse research results and experience in the proposition for a necessary “reversal of the stakeholder’s perspective”: since the central state and the established political classes in the Sahel have

Community-Driven Development

largely failed, it is primarily solutions on the ground, resulting from negotiations between local stakeholders and including armed groups, which promise a break-through in this desperate situation. They can and must be supported – but not managed – by international cooperation. Of course, this too does not offer a panacea. ●



The author

Professor Helmut Asche, born in 1951, is an economist and sociologist. From 1986 to 1998, he was government advisor in Burkina Faso, Rwanda and Kenya. Since 2000, he has worked at the GTZ headquarters (now GIZ) in Eschborn, most recently as regional chief economist for Africa. From 2006 to 2011, he was professor at the Institute of African Studies at the University of Leipzig. From 2004 to 2008, he was a member of the Advisory Board of the Centre for Interdisciplinary African Studies at Goethe University Frankfurt. In 2012, Asche was appointed by the Federal Government as director of the newly founded German Institute for Development Evaluation (DEval) in Bonn. Since 2011, Asche has also taught as an honorary professor at the Department of Anthropology and African Studies at the University of Mainz. He recently published “Regional Integration, Trade and Industry in Africa” (Heidelberg 2021) in the book series “Advances in African Economic, Social and Political Development”.

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Money can't always build a better community

Matthias Schündeln and his team have studied the impact of World Bank participatory development projects in The Gambia

By Anke Sauter





Providing financial support directly where it is needed and letting the people there decide themselves how to use it seems like a good idea. However, a study by development economists in Frankfurt shows that aid from the West can lead to unintended risks and knock-on effects in Gambian villages.

The fact that development aid often fails to deliver the desired results might have to do with decisions being made without understanding what is actually needed on the ground. “If people in Washington or Eschborn [where GIZ is based] come up with an idea, they may be acting with the best of intentions. But this might fail to answer people’s actual needs,” says Matthias Schündeln, Professor of Development Economics at Goethe University Frankfurt. Since the 1990s, there has been a shift towards supporting participatory projects: here, under certain conditions, funds are transferred directly to the villages and regions, where the local people can decide what best to do with the money. This approach is also referred to as community-driven development, or CDD for short.

The World Bank also follows this principle. “It is currently active in 90 countries with 327 CDD projects worth 33 billion US dollars,” says Matthias Schündeln. But how successful are these projects? How sustainable are they? And how do they affect existing social and economic structures? In a study funded by the German Research Foundation, Schündeln, together with Simon Heß and Dany Jaimovich, have taken a closer look at such a World Bank project, which was carried out in The Gambia between 2008 and 2010 and included around 500 villages in the first phase.

The selected villages received an average of around 10,000 US dollars – a considerable sum of money in view of 30 to 40 households per village and an annual per capita income of 700 dollars. The overall purpose of the funding was to improve the village’s prosperity in a sustainable way. It was left to the community to decide whether to invest in education, health or infrastructure. The decision-making process was complex, with a specially formed committee

playing an important role. The village head or Alkalo, often a descendant of the founding family, was supposed to have only an advisory role.

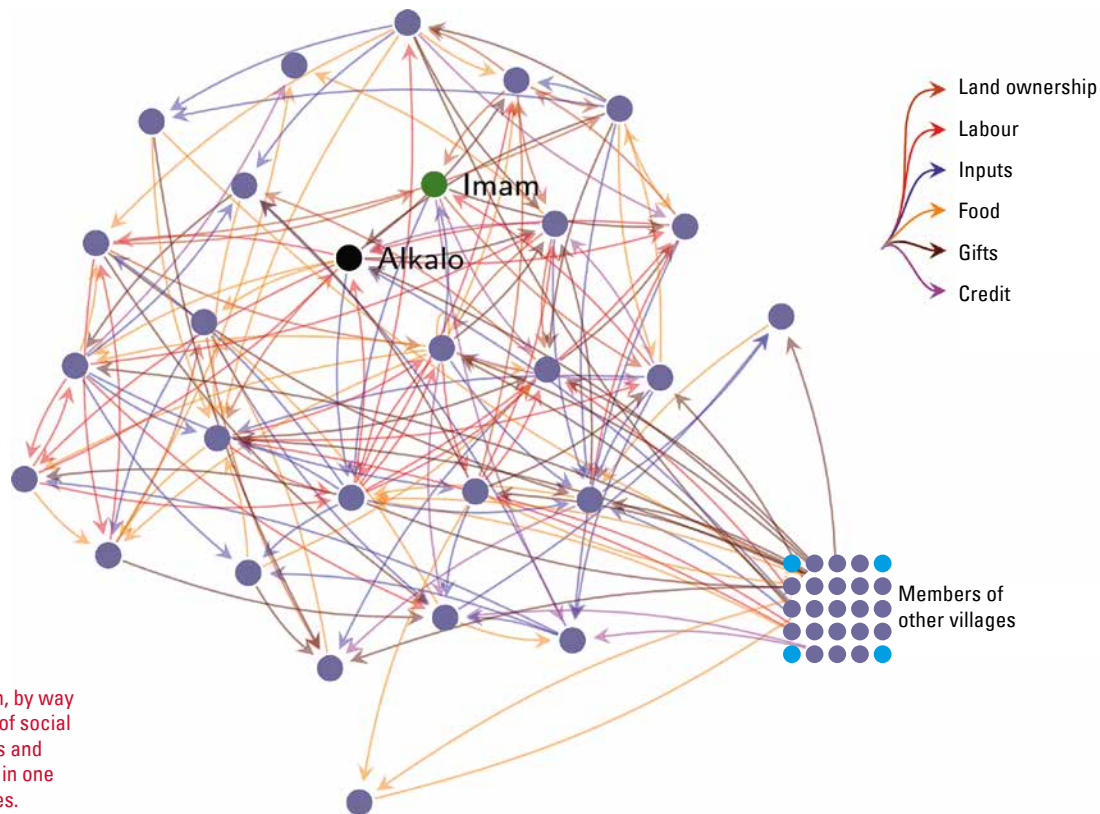
500 villages received aid, 500 villages did not

In theory, this all sounds wise. But how has international aid actually affected the prosperity and social structures in the villages? The research team travelled to The Gambia on a number of occasions to conduct several months of field research. The World Bank project was particularly suitable for this purpose: the 500 villages which had received funding were compared with the 500 that had not, which had all

The villagers decided together what to do with the World Bank’s money. In one village they purchased a mill, in another they bought a tractor (top).

IN A NUTSHELL

- Development economists at Goethe University Frankfurt have studied the medium-term impact of a World Bank participatory project in The Gambia.
- The subsidised village communities received money to boost the village’s prosperity through jointly implemented projects.
- A comparison of villages that received money and those which did not showed that wealth effects as a result of the funding were small and tended to be unevenly distributed.
- The main focus of the study was on social cohesion. In the villages that received aid, there was less interaction between members of the community, but they continued to support each other in an emergency.



Visualisation, by way of example, of social relationships and interactions in one of the villages.

ABOUT MATTHIAS SCHÜNDELN



Matthias Schündeln is Professor of Development Economics at Goethe University Frankfurt and was a visiting professor at Stanford University, the University of New South Wales (Australia) and Columbia University. He earned his doctoral degree from Yale University and worked as an assistant professor at Harvard University for five years. In 2009, he was appointed as a professor at Goethe University Frankfurt. In his research, Matthias Schündeln deals, among others, with the social effects and environmental impacts of development activities, in particular with projects that integrate local community groups in their implementation. In a project funded by the German Research Foundation, he is currently studying the effects of climate change on economic and political development in poorer countries.

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Simon Heß is a postdoctoral researcher at Goethe University Frankfurt, where he completed his doctoral degree in development economics in 2020. For his thesis, Simon Heß travelled several times to The Gambia to collect data. His research deals with the analysis of the formation and function of social and economic networks. In September 2022, he will take up a position at the University of Vienna.

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been chosen at random. The random selection of the villages that had received funding allowed the researchers to investigate causal relationships with methods such as those used in randomised controlled trials in medicine, for example to investigate the effects of drugs or vaccinations. Following predefined criteria, the researchers from Goethe University Frankfurt selected 28 villages from each of the two groups in the project, a total of 56 villages, where they interviewed 2,700 people. Secondary data sources, such as the 2013 census, were also analysed. Their research revealed that the project had certain effects on the economic situation of the village and its inhabitants; the supply of consumer goods, food and livestock improved. However, the investments made were very different and therefore not easily comparable. Generally, the researchers also identified a clear trend that funding had increased inequality between the villagers.

Aid has reinforced existing elites

“If, for example, a tractor or other agricultural equipment was purchased for the village, you can expect that especially the landowners will benefit,” explains Heß. Aid thus tended to boost the position of the existing elite in the village, an effect that is described by development economists as “elite capture”. The Frankfurt team also looked at the relationships between the villag-



ers, frequency of communication and economic transactions. They discovered that interactions decreased overall within the community, while the elite were able to intensify contact among themselves and with other villagers. Does this mean that development projects upset the social structures in the village? And is the ineffectiveness at the economic level over the longer term, which other studies have identified, due to disharmonious relationships in the village? Simon Heß would not go so far in his interpretation and points out a positive finding: “We asked the villagers if they had experienced any major suffering such as illness, death of a family member, or a poor harvest. And independently of that, we also asked them how they exchanged things with others in the village. It turned out that those who had suffered more had also received more support, and this situation remained unchanged.”

Mutual help is essential

It is important to know that – unlike in wealthy Europe – there is hardly any formal cushioning of existential risks such as illness or unemployment in The Gambia. And those with fewer economic means have little chance of obtaining a bank loan. In an emergency, people rely on their personal and family networks: people help each other – not least because you can then expect help yourself when you need it. And this

emergency mechanism continued to function despite changes to interactions within the village community.

If you weigh up the costs and benefits of such projects, are they really worthwhile? Professor Schündeln believes that the answer is far from simple. Moreover, it is important to take into account the findings of these and other studies and, in particular, to keep an eye on elite capture. After all, it is certainly not in the interests of the donors to promote social discord in the villages. ●

Gathering in the shade of a large mango tree. This photograph is from one of the villages funded in the World Bank project.



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The myth of development cooperation

Increasing demands from donor organisations make regional actors' work more difficult.

By Jonas Krumbein

When non-governmental organisations from the Global North cooperate with organisations in the Global South, they impose increasingly stricter demands on what has to be done. Social anthropologist Melina Kalfelis has investigated how local partner organisations deal with these demands.



Bureaucracy at BBN.

Melina Kalfelis, a social anthropologist from Goethe University Frankfurt, travelled with staff from a local NGO along many kilometres of potholed tracks through the province of Ganzourgou in Burkina Faso. She was accompanying them to a child they were looking after as part of the sponsorship programme of a North American NGO. The goal was to take ‘Thank You’ photos and videos for the child’s sponsoring parents as well as for donors in Europe. The North American organisation regularly demands videos, photos and thank-you letters from the children. After all, sponsoring parents should see that their money is improving the daily life of children in countries of the Global South. A good conscience helps to maintain their willingness to donate. What the sponsoring parents don’t know: the NGO staff in Burkina Faso were obliged to pay for the fuel for the business trip themselves and to work unpaid overtime.

A show for Europe

Almost immediately after their arrival at the child’s home, the camera began to roll. The nine-year-old didn’t give the impression that she was making a thank-you video for donors in Europe of her own free will, as Melina Kalfelis

observed: the girl looked down at the floor, didn’t say a word. Finally, she mumbled a few sentences in French, repeating the words dictated to her by the NGO employee. He suspected that the child didn’t dare to speak French. This could cause problems: for him, a negative appraisal of his performance and, for his organisation, the loss of the partnership with the donor because international NGOs and their financial partners expect children of the girl’s age to be able to speak the official language in Burkina Faso – a legacy of the colonial era. After some effort, the nine-year-old uttered the required words of thanks. But too quietly. When she finally managed to recite the sentences in a flawless and audible manner, her expression was not cheerful enough for the camera. “This day,” Melina Kalfelis noted later, “was one of the most uncomfortable during my field research.” Experiences like this have motivated Kalfelis to become involved in advising NGOs in the Global North beyond her scientific work in order to raise their awareness of the working conditions in NGOs in countries in the Global South.

Repressive influence of partner organisations

For a total of nine months, Kalfelis observed employees and members of civil society organisations in Burkina Faso, West Africa, as well as in Switzerland and Sweden, and also participated in day-to-day activities such as meetings or trips to visit sponsored children and film videos for donors. The idea behind this method, which is self-evident for social anthropologists, is that only through participatory observation is it possible to gain an in-depth understanding of social life. The insights that Kalfelis gained and presented in her recommendable book “NGOs

IN A NUTSHELL

- Not only repressive governments worldwide but also democratic governments and foundations restrict NGOs in development cooperation – by imposing more and more bureaucracy on them.
- States and foundations should allocate more money again to non-governmental aid without restricting duration or purpose.
- NGOs in the Global North could then promote more projects by civil society organisations in the Global South and sustainably strengthen the institutional base of the local civil society.

as Lifeworlds. Transnational Entanglements of Civil Society Actors" [NGO als Lebenswelt. Transnationale Verflechtungen im Arbeitsalltag von Entwicklungsakteuren] point far beyond Burkina Faso.

Worldwide, Kalfelis argues, the freedom of non-profit organisations working in development cooperation is diminishing – not only due to repressive governments but also to democratic governments and private foundations in Europe and North America. With this insight, Kalfelis extends the debate on the "shrinking spaces of civil society", which has long been discussed in expert circles, for example in political science, to actors such as private organisations who have contributed to the problem. After all, many are increasingly earmarking their funds for current global policy issues, such as the fight against certain diseases or climate change. NGO projects are strictly limited, particularly as a result of the Paris Declaration on Aid Effectiveness adopted in 2005. Success must be increasingly measurable, and as much as possible of the money used must reach the target groups.

Under pressure to justify their activities

This sounds good at first, but it forces non-governmental organisations to "adopt bureaucratic structures and project-based rationale in order to participate in the global competition for development resources," criticises Kalfelis. Documentation obligations regarding use of funds, increasingly constrictive deadlines and programme requirements are becoming more and more time-consuming, she says. Under pressure from foundations and public financial institutions to justify their activities, NGOs pass these demands directly to their partners in the Global South – with devastating consequences, as Kalfelis experienced in Burkina Faso.

Lunch break on the balcony of a donor organisation's office in the capital Ouagadougou (2017).

A new school building is in the planning: a ceremony in 2015 to celebrate.



Protected by anonymity

Like many organisations in Burkina Faso's vibrant civil society, the NGO with the sponsorship programme did not start out as a service provider to international donors. Instead, the organisation Kalfelis called Biiga Biiga Neere (BBN) in her thesis was founded by a man named Michel, which is also a pseudonym. All names of contacts and organisations in Kalfelis' work are anonymised because they criticise donors' demands or talk about rule breaking, which could jeopardise their professional future in development cooperation or exclude their organisations from the global competition for development resources.

Like all members of civil society organisations in Zorgho, Burkina Faso's provincial capital, Michel and the BBN staff had a story to tell. A story about cooperation with foreign development organisations, about hopeful beginnings and the termination of project-linked jobs, about social advancement and a relapse into precarious living conditions. Kalfelis also learnt about their strategies for coping with challenges in the NGO sector.

A school for orphans with an uncertain future

As a civil servant in Burkina Faso's Ministry of Education, BBN founder Michel was familiar with illiteracy in the country. He used his expertise and contacts in the capital and in his home region around Zorgho to help orphans who had slipped through the school system. BBN built a school for them. When Kalfelis worked at the school in 2009, she experienced a place that was an important point of contact for many children: "When the children had a problem, they would ask their teachers for help, and I also saw how teachers gave them medicine when they were ill." Three years later, the school's future was uncertain.

What was behind this sudden change? BBN had a new partner, a development organisation from North America. The organisation had been looking for financial support for the school, but the North American NGO only needed a service provider for their children's sponsorship programme. It did not want to support BBN's school, which was subsequently forced to close. The teachers left. BBN founder Michel hired new employees for the sponsorship programme: young university graduates from Burkina Faso's capital Ouagadougou, who met the donor's project management requirements. When accusations of alleged embezzlement within the North American NGO and against Michel himself were raised, the young experts moved on to their next employer. BBN was disbanded.

€1,000 for a sun canopy

It is such experiences with donors from the Global North that make organisations in Burkina Faso rely increasingly on their own revenues and resources. A community of women in Zorgho sells fabrics. They invest part of the profits in a solidarity fund for members of their community who are in need. But raising capital by themselves is difficult in a country like Burkina Faso. As Melina Kalfelis observed, capital even for smaller investments is often lacking, for the women in Zorgho too: "The organisation has wanted for a long time to start building a sun canopy under which the women can do their work, which would cost around €1,000."

Kalfelis believes it is essential for foundations and states to give more money to non-governmental development organisations without restricting duration or purpose. NGOs from



Europe and the USA would then have more freedom to support civil society projects in Burkina Faso. Further, it is often local projects and initiatives that improve the living conditions of people in countries of the Global South most sustainably. Researchers like Melina Kalfelis have long provided proof of this. In Zorgho, the site of Kalfelis' field research, most NGOs had a lifespan of three to nine years from 2000 to 2014. "It is striking," notes Kalfelis in her thesis, "that the survival period of NGOs is congruent with the typical development project cycle of three, six or nine years." ●

A parade of women's organisations and NGOs on Women's Day, 8 March 2016.



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ABOUT MELINA KALFELIS



Dr Melina C. Kalfelis, born in 1987, studied historical anthropology, political science and psychoanalysis at Goethe University Frankfurt and earned her doctoral degree in political and audiovisual anthropology. For her doctoral thesis "NGOs as Lifeworlds. Transnational Entanglements of Civil Society Actors" [NGO als Lebenswelt. Transnationale Verflechtungen im Arbeitsalltag von Entwicklungsakteuren], she spent nine months conducting research in Burkina Faso, Sweden and Switzerland. Kalfelis is currently working as a research associate in the research initiative "ConTrust: Trust in Conflict – Political Life under Conditions of Uncertainty". Her current research project is "Trust and Violence in Times of Political Transformation".

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An ambivalent partnership

The AFRASO programme shed light on the complex relations between Africa and Asia – with a focus on China

By Uta Ruppert and Stefan Schmid

China as a neocolonial power that is exploiting Africa and expanding its sphere of influence – this cliché in Western perception does not stand up to closer scrutiny. The AFRASO programme at Goethe University Frankfurt explored the broad range of interactions between Asia and Africa.

China in Africa: hardly any other topic has triggered such heated debate in African studies in recent years. Mainstream Western media portray a familiar picture of China in Africa: China's efforts are merely cleverly packaged strategies to secure for itself the African continent's immense wealth of natural resources and expand Beijing's power. In sharp contrast, China's narrative claims that its relations are the product of a "historical alliance of countries and nations formerly oppressed by the West". African voices are meanwhile particularly critical of the West's insincerity, which is undoubtedly pursuing its own interests in Africa. In contrast to the West, China is valued for not interfering in Africa's internal affairs and for treating the African states as equal trading partners rather than a problem child.

Emerging research

Rather than accepting these overly simplistic standpoints, a research programme at Goethe University Frankfurt aimed to understand the complexity of African-Asian relations and realities, to explain contradictory developments and to position their potential and challenges within the constitutive patterns of international policy and the global cultural developments of the 21st century. "Africa's Asian Options (AFRASO)" (2013–2019) was conceived as an inter-centre programme of the two interdisciplinary centres for East Asian Studies and for African Studies and funded by the Federal Ministry of Education and Research. AFRASO's research focused on the following questions: What new opportu-

nities and options are emerging for Africa in cooperation with Asian countries? Which features can be identified in the various facets of this South-South cooperation? Which new forms, perspectives and transregional ideas – realities that span continents – are emerging and how are they influencing the multipolarity of the world order?

Before AFRASO was launched, such questions had hardly been asked in German-speaking African studies – and certainly not from an interdisciplinary perspective ranging from economics, political science and anthropology to cultural, literary and linguistic studies. AFRASO also covered new ground by looking at Asian countries beyond China such as Malaysia, South Korea, Japan and India, countries which have often been overlooked in international research. Malaysia was important to AFRASO's research due to its pivotal role in training African students, and South Korea was selected as a role model in development policy. As one of the Four Asian Tigers, South Korea has succeeded since the 1980s in achieving rapid industrialisation and established an export-led economy. With regard to Japanese-African cooperation, AFRASO was particularly interested in the approaches of Kaizen institutes in training African entrepreneurs and small businesses in line with Japanese operational and staff management practices. India was of great importance in its leadership role in the Non-Aligned Movement and as a source of ideas for social developments. As one of the oldest regions of commercial trade between Asia and Africa, but also of

1 Chinese shop in Cape Town/
South Africa

transnational thinking and remembrance, the Indian Ocean was also of central interest in the AFRASO programme. Indonesia, Thailand, the Philippines and Vietnam were considered as countries with a wide range of interpersonal relations, for example in relation to commercial travel or labour migration. In this context, AFRASO examined the role and experience of Vietnamese workers in Angola and the networks of female West African traders in Bangkok and Jakarta.

China repeatedly at the centre of debate

Nevertheless, AFRASO's research often focused on Chinese-African relations. Due to its size, diversity and long history – trade relations, for example, date back to before colonialism – China plays a special role.

In post-war history, the Bandung Conference in 1955, which was attended by many African and Asian countries, marked a crucial starting point for the Non-Aligned Movement, which united most of the countries of the Global South and was highly significant during the Cold War, especially in the 1970s within the framework of the United Nations, as the “third force”. Since the member states often acted in a coordinated manner, the non-aligned countries became influential in the international system – even if they were ultimately unable to achieve major goals such as that of a new world economic order. Following Bandung, China's aid for Africa took on more assertive forms, including logistical, material and financial support for African national liberation movements. The construction of the Tanzania-Zambia Railway (TAZARA), which was financed by China in the early 1970s and enabled the two African countries to bypass the apartheid states and export raw materials, is still regarded as a

symbol of Chinese-African friendship in the spirit of anti-imperialism. At the same time, however, the TAZARA project also gave the Chinese access to Zambia's copper reserves.

The myth of supremacy?

Perceiving China's relations with the African countries as purely friendly in the 20th century holds as little weight as the notion of China in the 21st century as the dominating neocolonialist power with the sole ambition of pilfering raw materials. There is no doubt that access to raw materials is China's main concern in Africa. In reality, however, the processes involved are much less guided by a unified Chinese state than is often assumed. Indeed, Chinese-African economic relations are largely driven by a mixture of individuals, family businesses and companies, which are in general not controlled by the Chinese government. This is particularly true of the many Chinese traders striving to make a living on an individual basis in almost all countries on the African continent.

The same applies for Chinese “land grabbing” in African countries. Using Benin as an example, AFRASO was able to show that the extensively discussed ruthless Chinese land grabbing is by no means the dominant form of land investment in Africa, where China lags far behind domestic and major Western investors. The picture is similar in the raw materials and mining sector, which the media like to portray as the main area of Chinese hegemony.

Chinese investors are primarily active where Western companies have already prepared the ground with their investments and now want to offload them due to security concerns. In contrast, Chinese companies – for example in the Central African Republic – are prepared to make both risky and long-term investments that are not particularly attractive for Western companies, especially if they are listed on important stock exchanges with corresponding legal and reporting obligations. In these cases, neither “neocolonial exploitation” nor “economic relations based on solidarity” serve as suitable explanations.



2 Chinese clothes shop in a shopping centre in Johannesburg/South Africa.





IN A NUTSHELL

- China as a neocolonial power in Africa: this is how Western media like to portray China's role in Africa. The reality, however, is much more complex. This was one of topics of the AFRASO research programme.
- Asian-African relations have a long history. The conference of the Non-Aligned Movement in Bandung in 1955 marked the starting point of collaboration as partners and in solidarity against the West.
- Contrary to popular assumptions, China does not act in the first instance as a central neocolonial power, but exerts its influence in Africa through individuals, companies and family businesses. These relations are not unilateral: African stakeholders have also discovered China and other Asian nations as partners for politics and trade or as a study destination for themselves.
- Nevertheless, Chinese-African relations are not always harmonious and free of mutual prejudices.

Different and disparate patterns of cooperation can also be found in cultural and political cooperation between China and Africa. AFRASO's study of Confucius Institutes in Africa showed that China is much less political and orchestrating in African policy than assumed. Rather, Confucius Institutes try to adapt to local conditions and usually emphasise certain aspects of traditional Chinese culture such as calligraphy or tea ceremonies. For Africans, Confucius Institutes represent an interesting educational option, for example for upgrading their academic degrees and thus increasing their chances on the labour market, not least in China.

AFRASO also found that the rhetoric of friendship and partnership on an equal footing is just as beneficial for the African side as it is for the Chinese in political relations. While China emphasises above all its position in world politics through these networks of friendship, the Chinese model of the controlled developing state also serves as an internal role model for political elites in various African countries. For civil society stakeholders on the African continent, however, these South-South political alliances are less interesting, as AFRASO's study of Chinese-South African cooperation in the field

3 Street scene during the evening in Guangzhou, the city in China with the largest African community. In 2020, more than 13,000 people of African origin lived here, most of them students or traders.



4 A delegate registering for the first AFRASO conference in Kuala Lumpur, 2014.

5 Confucius Institutes are widespread and popular in many countries in Africa – shown here is the sign of the institute at the University of Dakar, Senegal.

6 Chinese-Senegalese rice project: to increase production, new methods and rice varieties are being tested.

of gender policy showed. It is true that some South African stakeholders in institutional gender policy, for example from ministries and other state institutions or even groups of female entrepreneurs, are working to establish more intensive relationships with their Chinese counterparts. However, stakeholders from autonomous women’s movements pursuing concerns such as combating violence against women distance themselves from the various forms of state-led cooperation and instead seek partnerships in the diverse networks of transnational social movements that encompass South-South as well as South-North relations.

Transregionalism is not a one-way street

AFRASO thus contributed in several ways to a scientific nuancing of the popular image of China in Africa. China is neither omnipresent nor unassailable: China’s relations with Africa usually serve its own political and economic



interests, but are not fundamentally more neocolonial than Western relations with African countries.

The newly emerging forms of African-Asian transregionalism, which became increasingly central to AFRASO’s analyses over the course of the research programme, are certainly not symmetrical in nature, but instead shaped by all participants and generate benefits on all sides. Africa is also in the process of discovering Asia for itself and taking advantage of new opportunities. For example, AFRASO showed that China is an important destination for African traders, who have settled in large numbers and are beginning to invest in a future there. Although this influx is increasingly met with resistance from the population, cities, especially in the south of China, are still among Asia’s most attractive options for students and traders from all over Africa, who are forming the nuclei of a new African diaspora in China.

Thanks to the presence of traditional Chinese medicine in Africa, another important African-Asian connection has emerged: Chinese doctors in Mali have become an integral part of society, while traditional Chinese remedies have become established in South Africa in competition with traditional African medicine.

An end to harmonious relations?

Since 2019, however, the image of the new South-South Alliance and the new brotherhood



between the nations has become increasingly tarnished. On the one hand, there have been repeated and clearly racist incidents against African students in China, which have greatly damaged China’s image in Africa. There are also increasing reports in Africa itself that Chinese companies are not complying with applicable labour or environmental laws, for example in Zambia’s mining sector. In other African countries, Chinese family businesses are pulling out of retail because of their poor economic performance or because governments, such as in Senegal, have introduced legislation to regulate

trade. In many places, for example, Chinese traders are only allowed to sell goods that are not offered by local shops.

And in Africa, too, there is racist resentment against companies and immigrants from China, triggered by the displacement of local companies, disregard of occupational health and safety and environmental laws or the way Chinese business owners treat their staff on a day-to-day basis. The coronavirus pandemic has put a sudden and so far permanent end to people's mobility and the award of scholarships, and what happens next remains unclear. Finally, the enormous debt of African countries, which has accumulated in the course of often gigantic Chinese infrastructure projects, is currently also a pressing issue. For example, Uganda has already had to hand over its only international airport in Entebbe to China, which is hardly a sign of unswerving South-South solidarity.

At Goethe University Frankfurt, research on African-Asian relations continues. For example, researchers in the project "Cultural Entrepreneurship and Digital Transformation in Africa and Asia (CEDITRAA)" are studying the cultural industries of selected African and Asian countries, together with colleagues from the University of Mainz. ●



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(Selected publications by AFRASO staff)



SPOTLIGHT
ON
AFRICA

From Africa research to Africa-related research

A change in perspective can be observed in all disciplines.

By Kokou Azamede and Hans Peter Hahn

Over the past 20 years, the Centre for Interdisciplinary African Studies at Goethe University Frankfurt has systematically developed new perspectives in Africa-related research, among others, for example through interdisciplinary and transcontinental concepts. Even today, however, inequalities that have grown throughout history make it difficult to understand the continent properly, which has been and is still too often regarded as a research object.

The Centre for Interdisciplinary African Studies was established at Goethe University Frankfurt in 2003 as the result of an extraordinarily successful Collaborative Research Centre with a regional focus on West Africa. Since then, the centre has bundled a broad spectrum of research activities related to Africa in the humanities and natural sciences. It initiates interdisciplinary research projects, promotes cooperation with African partners, supports young interdisciplinary researchers with a focus on Africa-related topics and engages in public relations to show a nuanced picture of Africa. In comparison with other important centres of Africa-related research in Germany (Bayreuth, Cologne, Hamburg, Leipzig, Berlin), the Centre for Interdisciplinary African Studies is distinguished by its wide variety of subjects and participating disciplines. More so than the researchers in the other places, those in Frankfurt have very different disciplinary backgrounds that are each connected to thematic areas related to Africa and beyond.

Interdisciplinarity was already an important feature of Collaborative Research Centre 268

that preceded the centre and was funded by the German Research Foundation from 1988 to 2003. Researchers in CRC 268 worked together on clearly defined regional case studies with colleagues from archaeology, anthropology, geography and linguistics to learn more about the natural conditions and cultural history of West Africa. The research programme “Africa’s Asian Options” (AFRASO; see article on page 46), implemented from 2013 to 2019 and funded by Germany’s Federal Ministry of Education and Research, marked a further development in the centre’s activities, as the focus here was no longer on Africa as a continent, but on the transcontinental interdependencies between Africa and Asia.

Interdisciplinarity beyond the boundaries of classical “Africa research” was therefore the centre’s founding principle, and AFRASO expanded this perspective in its later work. Research in the AFRASO programme made the importance of looking at Africa as a globally connected continent even clearer. AFRASO’s research findings show that it would be shortsighted to limit research to the continent as a

Graffiti art in Soweto near Johannesburg, South Africa.



The “Pilot African Postgraduate Academy (PAPA)”, which was developed by Goethe University Frankfurt, the University of Basel and the Point Sud Research Centre in Bamako, began work in 2020. The photograph shows the first fellows and mentors.

geographical entity. To produce a balanced picture of Africa, it is necessary to examine trans-continental contexts.

Innovative research concepts and findings can thus change the image of Africa as a whole. Numerous other projects initiated and implemented by the centre’s members over the past 20 years share this insight: dealing with Africa always opens up new perspectives. Africa is not something that can be separated from Europe. Recent research has instead repeatedly asked the following question: How can Africa-related research bring us closer to an adequate understanding of the continent?

The centre’s members address this key issue by critically questioning their research as well as constantly seeking new approaches and examining their added value. Increased sensitivity to colonial interdependencies in public debate is currently of particular importance. In the context of colonial history, it is becoming increasingly clear how close the historical ties between Europe and Africa were and are. To date, research has ignored power asymmetries far too often. Europe’s implication in Africa’s fate was wrongly considered to be a phenomenon of the past. Uncovering such inequalities in the past as well as in the present is one of the new priorities that the centre intends to address by questioning its self-image and realigning its direction.

On the one hand, this concerns research topics and methods. It is not only a question for the humanities or historical sciences of how power asymmetries could be described and overcome but also a challenge for the scientific disciplines engaged in Africa-related research. Today, the persistence of this imbalance calls into question the overall cogency of research on Africa, as research conducted from Europe has been shown to produce biased results.

Shortcomings in this research include the neglect of certain fields, such as local politics in colonial contexts or the use of databases in Africa. Some of the approaches that the centre will in future adopt in order to overcome this imbalance are:

1. Research into colonial heritage in all areas (culture, politics, economy, health/medicine, science and religion)
2. Studying different cultural/geographical and social interactions; understanding colonial involvement as a transcultural field of experimentation
3. Developing methods of analysing and overcoming inequality in all areas: research infrastructure, access to knowledge resources, obtaining academic degrees, etc.

On the other hand, it is also about questioning forms of research. While collaborative research has become a widely accepted standard in recent years and there are currently hardly any projects without the participation of scientists from both continents, much remains to be done with regard to a common, European-African definition of research questions on an equal footing, which is fundamental for promoting “true” collaboration. Only such collaboration produces sustainable results, which need to be verified by experts from different cultural backgrounds.

At present, the possibilities for joint project development are still far too limited. Support for collaboratively developed projects is only available in a few cases. The guidelines laid down by funding organisations do not allow projects to be managed independently by the partners in the African countries.

In particular, the funding of young researchers from these countries is proving very difficult –



The board of directors of the Centre for Interdisciplinary African Studies:

Dr Nikolas Gestrich, Dr Aisha Othman, Prof. Mamadou Diawara, Dr Alexa Höhn, Prof. Axel Fanego Palat, Dr Karen Hahn, Prof. Frank Schulze-Engler, Prof. Hans Peter Hahn, Dr Stefan Schmid, Prof. Jürgen Runge (from left)

despite some lighthouse projects at the centre such as the Point Sud programme funded by the German Research Foundation, the Volkswagen Foundation's fellowship programme "Knowledge for Tomorrow" or the "Pilot African Postgraduate Academy (PAPA)" led by Professor Mamadou Diawara of the Gerda Henkel Foundation. Overall, there is neither a sufficient number of scholarships for doctoral candidates and postdoctoral researchers in Germany nor are there any suitable exchange programmes or international study programmes in which universities in African countries are involved. Much remains to be done in this regard. One of the major challenges for future Africa-related research lies in improving collaborative structures, which would make exchange on an equal footing possible in the first place. ●

The authors



Professor Hans Peter Hahn, 58, is Professor of Anthropology and spokesperson for a Franco-German doctoral programme entitled "Representing the 'Other': Museums, Universities, Anthropology". His research interests are material culture, technology, migration and museums with ethnographic collections. For example, he has worked intensively on the diffusion of mobile phones and bicycles in Africa, but also on property ownership in rural areas of West Africa. Most recently, Hans Peter Hahn published an anthology on the lives of migrants after their arrival in Germany. In doing so, he shows how consumption patterns are signs of integration as well as the expression of an individual's own cultural identity.

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Dr Kokou Azamede is a lecturer at the University of Lomé (Togo) in the Department of German Studies/ Cultural Studies. He earned his doctoral degree in 2008 at the University of Bremen with his thesis: "Transculturations? Ewe Christians between Germany and West Africa 1884–1939 [Transkulturationen? Ewe-Christen zwischen Deutschland und West-Afrika, 1884–1939]. His research focuses on transcultural studies, German missions and German colonialism as well as German colonial photography in West Africa. He received a scholarship from the Hanns Seidel Foundation from 2001 to 2002 in Bayreuth and from the Volkswagen Foundation from 2004 to 2005 in Bremen. He was a postdoctoral fellow of the German Academic Exchange Service in Bremen in 2010 and 2014, the Fritz Thyssen Foundation in Frankfurt from 2012 to 2013 and the Merian Institute of Advanced Studies in Africa – MIASA in Accra (Ghana) in 2021. He is currently a guest lecturer at the University of Tübingen. His current research projects explore the recontextualisation of human remains and colonial objects from German Togoland in German museums and colonial heritage.

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Research in Africa – who is talking about whom?

Insights into the debate on representation, decolonisation
and the future of African Studies

By Melanie Gärtner

Debates about who is represented and how they are represented are held in many parts of society. Who is telling whose story and how? Who is talking about whom and how? In research, the question should be: Who is studying whom and how? African Studies is an area of research kept particularly busy by these issues.

Debates about who is represented and how they are represented are held in many parts of society. Who is telling whose story and how? Who is talking about whom and how? In research, the question should be: Who is studying whom and how? African Studies is an area of research kept particularly busy by these issues.

At the beginning of June, the Association for African Studies in Germany held a conference in Freiburg on the topic of *“Africa – Europe: Reciprocal Perspectives”*, exploring how processes in the scientific co-production of knowledge between European and African researchers take place and how research can be decolonised. The conference was preceded by a far-reaching debate. To what extent is it appropriate today

that an association that understands its task as bringing topics relating to Africa to a wider society largely consists of white German scientists? Do they not have a very one-sided view of Africa, unavoidably shaped by colonial history? Why is the African diaspora – that is, the communities of people from Africa scattered around the world – not one of the association’s priorities, even though it plays a growing role worldwide? And what impact do these overall conditions have on the production of knowledge about Africa?

Questions of this kind are being asked today in many disciplines in the humanities. However, they are discussed particularly extensively in anthropology. The reasons lie in the subject’s colonial heritage; after all, ethnologists were repeatedly at the service of the colonial powers and during this time created the Colonial Library, the fundamentals of a research canon that has had an impact on the image of Africa and African Studies to this day.

Cultural anthropology: Struggling to establish a new position

Although many disciplines call for a decolonising of the sciences, that is, a detachment of the sciences from the perspective of the former colonial powers from the Global North, this particularly irritates anthropology's self-understanding, which is struggling to position itself anew. In 2008, the renaming of the scientific association from the German Society for Ethnology to the German Society for Social and Cultural Anthropology showed how self-critical the discussion is. The fact that the term ethnology was avoided following the long overdue abandonment of *Völkerkunde* is due, on the one hand, to the better alignment with Anglophone concepts, but on the other hand perhaps also to the sensitive perception of *othering* or exoticisation, which the Greek term *ethnos* implies.

Not all institutes have followed the professional association's thinking. It remains quite controversial whether the *other view* that ethnology represents is – scientifically speaking – a weakness or a strength. When it comes to decolonisation, it is about more than just a reflective use of language.

Hans Peter Hahn, Professor of Anthropology at Goethe University Frankfurt and Chairman of the Association for African Studies in Germany from 2018 to 2021, remembers his own time as a student and the debate on representation triggered by the publication *Writing Culture: The Poetics and Politics of Ethnography* (1986) by James Clifford and George Marcus. The texts in the anthology dealt with how ethnography describes culture, and with the culture of writing and the associated construction of culture. This point in particular leads to intensive discussions: "The book has shaken up the concept of descriptive ethnography and thus the basis of our discipline." The consequences were far-reaching: "The humanities project of being able to comprehensively describe the world through observation has failed. Today we know: a complex phenomenon such as a society or a culture cannot be captured from a single perspective," says Hahn. Even back then, criticism was accompanied by demands to rethink scientific practice. Some ideas from that time have prevailed – be it in the form of linguistic sensitivity or in the demand for a polyphonic anthropology, often the aim of collaboratively designed research projects.

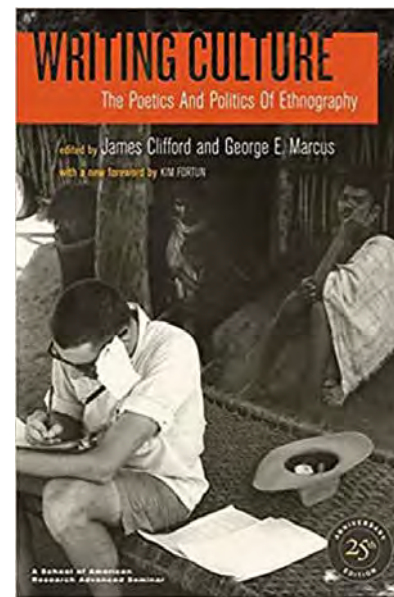
Co-authorship as a basic principle

For Professor Hahn, however, this does not go far enough. For him, the subject would have to deal significantly more progressively with topics of representation and diversity. He still remembers with astonishment his own student days in

Frankfurt, when his lecturers did not proactively transport the 'writing culture' debate into their seminars. "I came across the publication by chance at the time, but it was not a topic in the seminars," he recalls. "This shows an inertia that is still inherent in anthropology today," says Hahn. He himself has adapted his research practice. Hahn prefers to publish with African colleagues in co-authorship and takes a critical view of seminars on regional areas. It is more important for him to train his students to adopt a reflective approach towards identity, racism and postcolonial concepts. In his role as chairman of the Association for African Studies in Germany at the time, he initiated a debate on the self-critical reflection of African Studies on the association's 50th anniversary (2019). The theme of the Freiburg conference developed out of this reflection.

The questions of who talks about whom, who is studying whom, who produces the knowledge on the basis of which decisions are made fall on fertile ground in an organisation like the Association for African Studies in Germany. No wonder. After all, there is increasing criticism that *whites* conduct research in *black* communities.

Dr Hauke Dorsch, lecturer at the Department of Anthropology and African Studies at Johannes Gutenberg University Mainz and scientific director of the African Music Archives (AMA), has his own tale to tell here. In the context of one of his publications, Dorsch was exposed to the vehement criticism that he had not occupied himself sufficiently in a scientific paper with his role as a *white man*. "The article went through several reviews, in which I reflected on this and explained it increasingly explicitly," says Dorsch. In another case, an invitation to a music event was withdrawn after it became clear that he would be introducing African music as a *white man*. "As someone who has been organising concerts for decades, the idea of working with African colleagues on an equal footing is anything but new to me," says Dorsch. "That I also have to represent the music I play is a bizarre idea. When I started getting enthusiastic about the music of Africa, this interest still stood for respect, recognition of cultural achievements and a view beyond individual horizons." Of course, he understood the debates surrounding decolonisation and appropriation and welcomed the sensitive handling of diversified representation. For years, students too have demanded these debates, especially those who identify as people of colour. "But the fact that skin colour is so significant and thus genetics are the deciding factor in what a person should or should not do is a direction that I do not want to follow."



The book "Writing Culture: The Poetics and Politics of Ethnography", published by James Clifford and George Marcus, triggered a hefty debate in the 1980s about how ethnography describes culture.

Left: An interview with anthropologists at Goethe University Frankfurt: Professor Mamadou Diawara (right) and Professor Hans Peter Hahn on Riedberg Campus, where they participated in a board meeting of the Centre for Interdisciplinary African Studies.

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“Some regions of the world seem to be under a blanket. It’s as if nobody expects any scientific findings from these parts of the world,” says Professor Abimbola Adesoji, historian at Obafemi Awolowo University in Ife-Ife, Nigeria.



“But the fact that skin colour is so significant and thus genetics are the deciding factor in what a person should or should not do is a direction that I do not want to follow,” says Dr Hauke Dorsch, lecturer at Johannes Gutenberg University Mainz and scientific director of the African Music Archives (AMA).

The right research questions are important

For Mamadou Diawara, professor at the Department of Social and Cultural Anthropology of Goethe University Frankfurt and founding director of Point Sud, the centre for research on local knowledge in Bamako (Mali), this trend also stands in the way of the original call for polyphony in the debate on representation. “The demand for decolonisation is an appeal to make different voices and thus different modes of knowledge heard,” he says. “We must take this appeal very seriously.” The reasons for injustice are deep, and the decolonisation process much more complex; it is not enough to question only European supremacy. “The patterns reproduce themselves. If we don’t want to create many small bubbles in which monologues are conducted in closed circles, we shouldn’t ask the question of who is studying something, but what we’re studying and how,” Diawara demands.

Diawara himself sees above all problems in the structure of the research landscape. Researchers in the Global South are not on an equal footing, even in collaborative research projects – neither in terms of remuneration nor in their scientific role, in which they function as assistants and suppliers of knowledge, he says, while colleagues in the Global North assume the role of experts and thus have the prerogative of interpreting the results. The dependence of African research facilities on funds from the North becomes particularly problematic if topics are dictated. When research content is dictated, approaches have often dominated that would like to monetise the knowledge gathered as applied research, such as delivering solutions for development-specific questions. “The problem here is that these questions are imported from outside and thus produce solutions that have little to do with local realities,” says Diawara. “We need more space to ask those questions within the framework of basic research that shed light on specific problems on the ground. To do this, we need people who perform excellent scientific work and are familiar with local realities. They don’t necessarily have to be African people.”

If we take research performance as a benchmark, we need to ask about the structural starting point: researchers from the Global South often have insufficiently developed research facilities at their disposal to be able to mature into outstanding scientists, and this amounts to unequal conditions. Some programmes are committed to counteracting this gap, building up local scientific expertise and supporting African institutions. Examples are the clusters of excellence *Normative Orders* of Goethe University Frankfurt or *Africa Multiple* of the Uni-

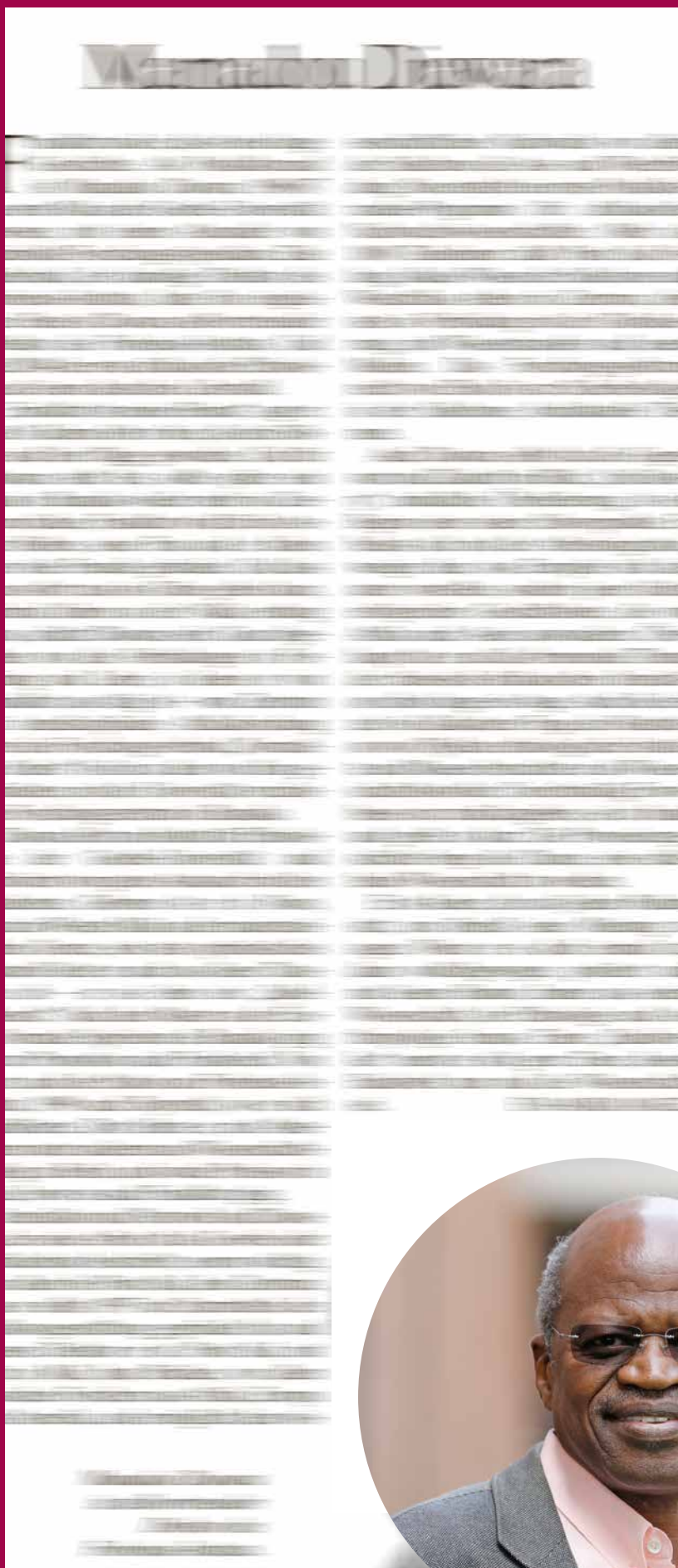
versity of Bayreuth, the *Knowledge for Tomorrow* initiative of the Volkswagen Foundation, the *Point Sud* programme of the German Research Foundation or the *Pilot African Postgraduate Academy* of the Gerda Henkel Foundation.

Knowledge production as a monopoly?

One of the scientists who has been able to expand their scientific network in this way is Professor Abimbola Adesoji, historian at Obafemi Awolowo University in Ife-Ife, Nigeria. With a Georg Forster Fellowship of the Alexander von Humboldt Foundation, he conducted research at Goethe University Frankfurt from 2009 to 2010. He has observed that whether content is valued to a greater or lesser degree in the global knowledge market depends on where it is produced. “Some regions of the world seem to be under a blanket. It’s as if nobody expects any scientific findings from these parts of the world,” says Adesoji. “This means that knowledge is hierarchised and knowledge production is monopolised.”

That the structurally unequal treatment of scientists from the Global South in collaborative research projects is difficult to overcome is due to systemic reasons. One of them lies in the German research funding system. The demand that equivalent research funding should be made available to colleagues from Africa within the framework of a project so that they can define their content under their own responsibility is currently incompatible with the requirements of the Federal Court of Auditors when using taxpayers’ money.

In an open letter to the Federal Ministry of Education and Research, the German Research Foundation and the German Academic Exchange Service in April of this year, a group of German scientists, including those from the Association for African Studies in Germany, drew attention to the shortcomings in German scientific cooperation with the Global South. Among others, they called for more flexible research formats, less overregulation and inexpedient bureaucratic constraints as well as more respect when dealing with partners in the Global South. ●



For legal reasons, the article “Faces of Frankfurt” from the FAZ newspaper of 11 July 2020 about Professor Mamadou Diawara, which is included in the print edition of Forschung Frankfurt, cannot be published online. If you are interested in the print edition, please contact the Forschung Frankfurt editorial team.

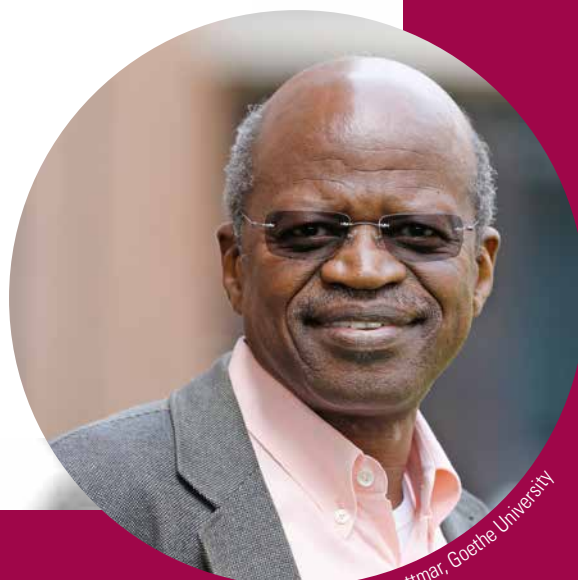


Photo: Uwe Dettmar, Goethe University

Learning from each other

The Frobenius Institute and the Oswin Köhler Archive have been cooperating closely with African partners for years

By Jonas Krumbein

From the collection of the Africanist Oswin Köhler: a powder box made from a turtle shell.





Goethe University Frankfurt's collections with reference to Africa are of great interest to the communities of origin as they contain important information about their history. In addition, scholars at Goethe University Frankfurt receive new input for their research from collaboration with community members.

Bows and arrows, animal skins and musical bows, woven or carved vessels: Frankfurt ethnologist Gertrud Boden has spread out hundreds of objects in front of her two visitors. Thaddeus Chedau and Sonner Ciayi Geria are delegates of the Khwe people in Namibia, who are one of the San – or Bushmen – groups in southern Africa. In October 2019, the two representatives came to Frankfurt to look at objects that are part of their cultural heritage. The Africanist Oswin Köhler had collected them on numerous research trips between 1959 and 1992. After Köhler's death in 1996, his wife donated the objects to Goethe University Frankfurt, together with dried plant samples, photographs, films, audio files, vernacular texts and dossiers such as research reports or letters. The collection has since formed the core part of the Oswin Köhler Archive at the Institute of African Studies. Since 2015, Gertrud Boden has been busy rendering the collection accessible to researchers as well as to the Khwe themselves, whose culture is under threat and whose traditions are largely forgotten among young Khwe. The German Research Foundation is funding the work.

Marginalisation of the Khwe

The settlement area of the Khwe in what is known as the Caprivi Strip, a narrow stretch of land in the far northeast of Namibia, was proclaimed a national park in 2007. In order to protect elephants from poachers, strict legislation has been introduced, which also restricts the Khwe and allows them to stay in the bush only within a five-kilometre radius of their settlement. As a result, cultural practices such as hunting or gathering medicinal herbs, as documented by Oswin Köhler in his films, photographs and other materials, can no longer be

carried out. As Gertrud Boden recalls, the two Khwe delegates, Chedau and Geria, were deeply moved to see the – to her rather inconspicuous – samples of dried plants, which they had not seen for years.

It's up to the Khwe people to decide

The ethnologist also wanted to make the collection accessible to the public in the form of an exhibition after years of being stored in boxes. Decisions about what to exhibit were made by the Khwe. And they had very clear ideas: in the exhibition at the Institute of African Studies in the *Neue Mensa*, a cafeteria and institute building on Bockenheimer Campus, only plant specimens whose benefits are already generally known were to be displayed. The Khwe were worried that the knowledge about medicinal herbs which they had passed on for generations might be stolen and patented by pharmaceutical companies. For similar reasons, recordings of traditional Khwe music from the Oswin Köhler Archive are only accessible after approval by representatives of the Khwe community. Under no circumstances should they be copied or used without paying a royalty, for example to produce pop songs or films. Anyone wishing to use the recordings digitised with funding from the Endangered Languages Documentation Programme at the renowned SOAS University of London must first apply by mail to Namibia for approval.

Even though the objects in the Oswin Köhler Archive are not looted artefacts from the colonial era in the classical sense, the Khwe should have the right to decide on the conditions of use and on where the documents of their cultural heritage are kept. Goethe University Frankfurt has committed itself to this approach for all its collections from Africa.

This elephant sculpture is made of beeswax.



This drinking vessel, known as a calabash, was used by hunters to quench their thirst during hunting.



From left: Sonner Geria, Thaddeus Chedau, Judith Blume (collection coordinator at Goethe University Frankfurt) and Gertrud Boden look at Khwe objects in the Oswin Köhler Archive in September 2019.

Rock Art Archive nominated in UNESCO Memory of the World Programme

The Frobenius Institute, named after its founder Leo Frobenius and affiliated to Goethe University Frankfurt, is also following this approach. Born in 1873, Frobenius, an ethnologist, had initially financed his expeditions by collecting objects in Africa and selling them to museums. After receiving financial support from William II, the German Emperor, Frobenius was no longer dependent on collecting – and was able to devote himself to his main interest: the study of prehistoric rock art of past cultures in Europe and on the continents of the southern hemisphere, especially in Africa.

Leo Frobenius had recognised the cultural and historical value of rock art in the Sahara and southern Africa early on. But at the beginning of the 20th century, it was not yet possible to use cameras to document them for scientific records. These could only take black-and-white pictures – the rock art, however, was generally coloured – and the darkness in the caves led to poorly exposed photographs lacking in detail. Instead, Frobenius took visual artists with him on his expeditions, who produced drawings, watercolours and oil paintings of rock art. These copies are now stored in the Rock Art Archive in the basement of the Frobenius Institute in the Poelzig Building on Westend Campus. “What the artists commissioned by Frobenius depicted at the time is now an indispensable cultural memory that is used, for example, to reconstruct destroyed or damaged original rock art in South Africa,” explains Dr Richard Kuba, who is responsible for the Frobenius Institute’s archives. It is clear why the rock art collection was nominated by the German UNESCO Committee for inclusion in the Memory of the World Programme in November 2021. A decision on this recognition is expected to be taken in 2026.

The author

Jonas Krumbein, 37, studied history and political science at the universities of Freiburg and Durham (England) and works as a freelance journalist in Frankfurt.

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Digitally accessible to all

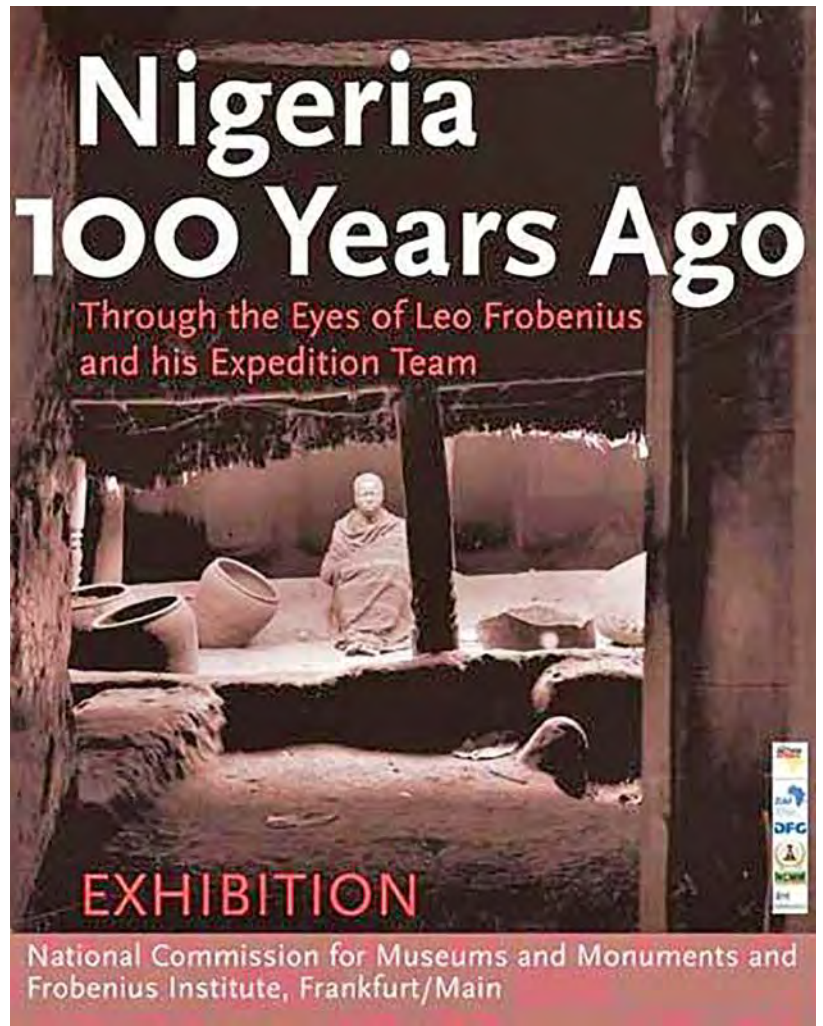
To make it easier for today’s custodians of rock art sites in Africa to access information on world heritage sites in the making, Kuba and his team – first and foremost Peter Steigerwald, head of the Frobenius photo archive – have digitised the painted copies in an elaborate process and made them available worldwide via the internet. There is currently no transfer of the rights of use to the artwork to their community of origin in Africa. “In Africa, which is now predominantly Christian and Islamic, there are hardly any local communities that associate themselves with the tradition of prehistoric artists and who ritually take care of such sites or claim rights to the images,” explains Kuba, who is also conducting research on rock art by indigenous people in Australia. “In northwest Australia, rock art is still a central element of culture and tradition, and we hand over images and rights of use,” he reports. However, in Africa, just as in Europe, the stories and myths surrounding the images, some of which are up to 12,000 years old, have long been buried. Wherever possible, the Frobenius Institute nevertheless strives to cooperate with African partners and in 2017 organised an exhibition with copies of African rock art in Dakar, together with Senegalese artists.

IN A NUTSHELL

- Artefacts from the colonial era looted in the classical sense are rare in Goethe University Frankfurt’s collections related to Africa.
- The Oswin Köhler Archive or the collections of the Frobenius Institute consist mainly of texts, photographs, drawings and paintings showing the cultural life of African societies, which researchers produced or commissioned while on ethnological expeditions.
- They are images from a time when images were sparse because classical colonial photography barely focused on African societies.
- For communities in Africa, the visual and audio documents are testimonies to a past that is partly buried by colonialism and world market integration and are now arousing new interest. The collaboration also enriches research at Goethe University Frankfurt.

Left: "Nigeria 100 Years Ago": the cooperative exhibition was shown in 2010 at the Cyprian Ekwensi Centre for Arts and Culture in Nigeria's capital Abuja.

Right: The front page of the exhibition catalogue.



There was great interest in the rock art and photo exhibition "Art rupestre africain. De la contribution africaine à la découverte d'un patrimoine universe", here a picture from the opening in March 2017 at the Musée Théodore Monod d'Art africain de l'IFAN Cheikh Anta Diop in Dakar, Senegal.



Opening by the Governor of Niger State of the regional exhibition “Nigeria 100 Years Ago – Nupeland” at the UK Bello Arts Theatre in Minna, Nigeria, November 2010.

Images from a time when images were sparse

The rest of the Frobenius Institute’s visual archives are of particular interest to partners in Nigeria or Burkina Faso. In addition to tens of thousands of early photographs, these include numerous drawings of traditional architecture, material culture and everyday scenes as watercolours or oil paintings, as well as portraits of special personalities, who were rarely the focus of colonial photography geared towards Europeans. Seen from the perspective of the communities of origin, they are “images from a time when images were sparse,” as Kuba puts it. “The interest in the communities of origin stems not least from the fact that after the upheavals of the colonial and postcolonial eras, the precolonial past is becoming more interesting again,” he explains. Kuba has therefore been involved in handing over images from the Ethnographic Pictorial Archive to the communities of origin. “As an institute, however, we are not interested in transferring these objects in order to cleanse



colonial guilt,” he emphasises. “Rather, as an ethnological institute, we want to build and maintain relationships with the countries of origin. Their perspectives on the visual collections also enrich our research.”

An example of this is the visiting scholar programme for researchers from Africa. This programme has resulted in successful exhibitions by the Frobenius Institute, such as “Nigeria 100 Years Ago”, which was shown in several regional museums there. “Because of the great interest, Nigeria’s National Commission for Museums and

Monuments even covered half the exhibition costs,” says Kuba, delighted at this recognition.

It is the same delight that Gertrud Boden of the Oswin Köhler Archive radiates when she talks about her planned research trip to Namibia to finally implement plans for deeper cooperation with the Khwe. So far, the coronavirus pandemic has thwarted the project. Both Boden and Kuba experience the partnership with communities of origin, as promoted by the Frobenius Institute and the Oswin Köhler Archive for years, above all as enriching. ●

ABOUT GERTRUD BODEN



Dr Gertrud Boden, born in 1959, studied cultural anthropology at the University of Cologne. In 2003, she completed her doctoral thesis on “Prozesse sozialen Wandels vor dem Hintergrund staatlicher Eingriffe. Eine Fallstudie zu den Khwe in West Caprivi/Namibia” [“Processes of social change against the background of state intervention. A case study on the Khwe in West Caprivi/Namibia”]. Since 2015, she has been a research fellow at the Institute of African Studies at Goethe University Frankfurt within various projects funded by the German Research Foundation. With her colleague Anne-Maria Fehn and native speaker Thaddeus Chedau, she has edited the missing volumes of Oswin Köhler’s vernacular encyclopaedia “Die Welt der Kxoé-Buschleute/The World of the Khwe Bushmen”. Her current project, “Potentials of a Collection”, focuses on intensifying joint research on Khwe material in collaboration with members of the Khwe community.

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ABOUT RICHARD KUBA



Dr Richard Kuba, born in 1963, studied ethnology and African history in Munich and Paris and earned his doctoral degree in Bayreuth on the precolonial history of West Africa. Since 2005, Kuba has been responsible for the Ethnographic Pictorial Archive, the Rock Art Archive and the Legacies Archive at the Frobenius Institute and has set up the institute’s online pictorial archive. Kuba has curated numerous exhibitions, including ones at the Gropius Bau in Berlin (2016) and the Museum Rietberg in Zurich (2021).

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AFRICA ALIVE



In 2022, the Africa Alive Festival screened, among others, the Angolan film “Air Conditioner” (2020), shot by the film collective “Geração 80”.

Africa Alive

Frankfurt has hosted the annual film festival since 1994

Fostering a lively dialogue between cultures, helping to dismantle prejudices and enriching multicultural Frankfurt are the objectives of the Africa Alive Festival, which has been firmly anchored in the cultural programme of the City of Frankfurt since 1994. Each February, the DFF – Deutsches Filminstitut & Filmmuseum, Filmforum Höchst and further cooperation partners cast the spotlight on African productions and debates. Mostly films are shown, but there are also concerts, readings, a children’s programme and a panel discussion on each of the focus topics. This year, the festival had to be postponed due to the pandemic. It was finally held for the 28th time on 22 – 29 September 2022.

This year’s thematic focus was Algeria’s independence, which celebrated its 60th anniversary on 5 July 2022. Screenings included the restored classic “Chronique des années de brasse” (1975) by Mohammed Lakhdar-Hamina, winner of the Golden Palm

in Cannes in 1975. The film made it clear that the resistance had already begun long before 1 November 1954, the official beginning of the Algerian War. Lina Soualem’s documentary “Leur Algerie” (2020) is dedicated to her grandparents, who emigrated from Algeria to France as a young couple, but never talked about their past and the painful memories.

The festival is organised by the DFF – Deutsches Filminstitut & Filmmuseum, the Filmforum Höchst of the Volkshochschule Frankfurt, Africa Foundation e.V., Afroton Kulturprojekte, and Dialog International. But other cultural institutions, initiatives and associations in Frankfurt as well as private individuals also contribute to the festival’s success. Countries and topics in recent years have included the Arab Spring (2012), Generation Change (2016), African Utopias (2018) or Sudan (2020). In 2019, the festival was awarded the Integration Prize of the City of Frankfurt.

In 2022, the Africa Alive Festival also focused on the work of film collectives: presented were “Geração 80”, a collective of creative individuals from Angola who stand for a new, innovative generation, the directors’ collective “Yes! That’s Us” from Uganda, the ensemble “The Living and the Dead” from Haiti and “The Nest Collective” from Kenya, a multidisciplinary group that came together in Nairobi in 2012 and has since produced works in the fields of film, music, fashion, visual arts and literature. The group came to fame through its queer film anthology “Stories of Our Lives” (2014), which won multiple awards.

www.africa-alive-festival.de



*From slavery
to Barack Obama*

Simon Wendt, Professor of American Studies,
on the multifaceted significance of Africa for Black America

Forschung Frankfurt: Professor Wendt, a large percentage of the 40 million African American citizens of the United States today can trace their origins back to people who were trafficked from Africa as slaves.

Simon Wendt: These people were brought not only to the territory that later became the United States but also to the Caribbean and Brazil. In fact, “only” about 600,000 were brought to the USA. While in countries such as Brazil several hundred slaves often worked on very labour-intensive sugar plantations and did not have a high life expectancy due to the extreme conditions, it was rare that more than 50 enslaved people lived on American cotton plantations. The better living conditions and the fact that American slaveholders regarded these people as valuable property contributed to the life expectancy and birth rate of the African American population being significantly higher than in South America or the Caribbean.

What perspective did these people have on the origin of their ancestors?

At the time when slavery was drawing to an end, there were some (mostly men) who were saying: “We must return to Africa.” They were also encouraged to leave before the Civil War by white citizens who had founded the American Colonization Society (ACS) with racist intent. Liberated slaves or free African Americans should be sent back to Africa, as many white people feared the growth of the free Black population. As a result of these efforts, a colony was founded on the west coast, which later became the African nation Liberia. This initiative was led by white slaveholders, who were strongly criticised by anti-slavery activists before the Civil War because of their racist motivation for supporting African American emigration.

And how did the free African Americans themselves see this in the further course of events?

Since the 19th century, even Black nationalists have repeatedly called for going “back”, although this was by all means also a topic of controversial discussion. In the early 20th century, a Black Jamaican nationalist named

Marcus Garvey founded an organisation, the *Universal Negro Improvement Association*, in the United States, which grew rapidly to several million members. He said: We African Americans have our roots in Africa, so we also want to establish a state there, similar to Liberia. Garvey said that with the help of African Americans, Africa could once again become a great and strong continent. But it is important to bear in mind here that some of the white majority society’s myths about Africa, for example the continent’s alleged backwardness, were certainly believed by African Americans.

“Back to Africa always was and still is a response to white racism in the United States.”

In addition to those who called for a return to Africa, were there any other voices among the African Americans?

Ultimately, the slogan “Back to Africa” was mostly symbolic because most African Americans could not have afforded to return. Back to Africa always was and still is a response to white racism in the United States. Living in the racist South of the United States before 1910 meant, above all, surviving. Black people were subjected to racial segregation, were not allowed to vote and had little chance of advancement. In addition, numerous southern African Americans were lynched in the South (but also in the North). They were only second-class citizens, but for many of them Africa

A slave ship with steerage that was installed to transport as many people as possible. Between the 17th and 19th centuries, ten to twelve million African people were trafficked to the Caribbean as well as to North and South America on such ships.
Photograph: picture alliance/akg-images

nevertheless played no role as a point of reference.

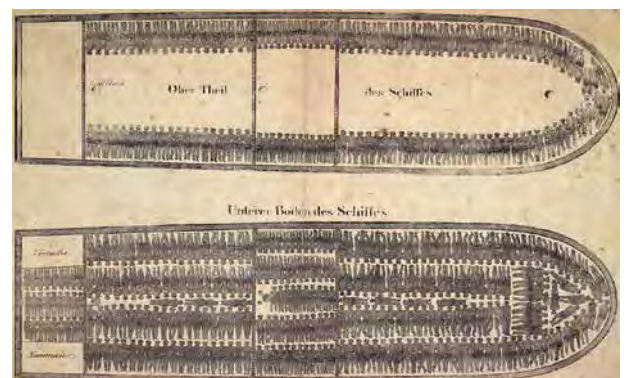
In the 1960s, Malcolm X shaped the discourse of Black thinkers and Black nationalists.

Malcolm X is one of the most important figures not only for the African American freedom struggle but also for Black America’s relationship with Africa. He was interested not only in founding a nation in Africa but also in the cultural struggle for a Black nation in the USA. A Black Power organisation, the Republic of New Africa, referred explicitly to Malcolm X and called for five Black states in the South as the territorial base of an African American state within the United States. For Malcolm X, Black nationalism also meant focusing exclusively on the African American population. For example, he proposed the founding of Black companies that stood for economic nationalism. The famous slogan “Black is beautiful” is mainly attributed to Malcolm X. During his lifetime, Malcolm X also tried to forge ties with African leaders, whom he regarded as important allies in the fight against racist oppression.

“Without Africa, the history of the USA would be unthinkable.”

How has this view evolved to this day?

In the 1980s and 1990s, an African American holiday was even established: this holiday, called “Kwanzaa”, is also about the Black population returning to





The African American activist Malcolm X was one of the most influential Black nationalists in the 1960s. He tried to forge closer ties between Black America and Africa.

its African roots. Many Black Power activists believed that Swahili was the *lingua franca* of Africa and that people must learn it. Some people started to wear traditional African apparel. This devotion to Africa can also be found today among Black celebrities from pop and film culture. For example, they visit former slave stations on the west coast of Africa, where African men, women and children were forced onto ships that would bring them to North and South America and the Caribbean. Such a visit is experienced as a very emotional moment. These people realise that their roots are in Africa and that their connec-

tion to this continent is based on a history of trafficking, violence and dehumanisation. Africa is today seen as a very important continent, without which the history of the USA would be unthinkable.

Many Black people pinned great hopes on Barack Obama – not only in the USA but worldwide.

In the discussion about ties between Africa and Black America, Barack Obama is a fascinating case because many threads pull together here. At that time, the election campaign was also concerned with the question of how African American he really is. He is from the Black community of Chicago and married an African American woman whose ancestors were slaves. But is that enough? “Is he Black enough?” was a question asked in both Black and white media. Ultimately, he was recognised by the majority of the African American population as one of their own because he was born and partly raised in the USA. That is why he received great support from this side during the election campaign. This was a real turning point not only for the African American population but also for people in Africa, especially in Kenya, where Obama’s father came from: the fact that a Black man can actually become president of the United States. During a visit to the United States in 2009, I experienced for myself what effect this had in the Black community. Young Black men wore T-shirts with portraits of Martin Luther King, Malcolm X and Obama. He was seen as a symbol of the victories of the civil rights movement in the history of

the Black liberation struggle and became an important model for young Black people.

“Being politically represented is simply not enough.”

“Afropessimism” is the title of the latest book by American writer and philosopher Frank B. Wilderson III, who also recently gave a reading at Goethe University.



Huey P. Newton was one of the two founders of the Black Panther Party (BPP). In the eyes of many Black Power organisations, Africa played a central role in the African American freedom struggle.

Frankfurt. In the post-Obama era, are rather negative expectations dominating the Black community again?

One could say that the Black Lives Matter movement is also a reaction to Obama’s presidency. It is not enough, according to many activists, to have a Black president in the White House. Being politically represented is simply not enough. In other words: systemic racism cannot be suppressed (solely) by individual action. Instead, it is necessary to fight for structural change at all levels. Obama could not have achieved this because he

ABOUT SIMON WENDT



Professor Simon Wendt, born in 1975, is Professor of American Studies at Goethe University Frankfurt. Among others, he heads a research group on “The Black Power Movement and the Contested Nature of American Democracy” (2022–2025) funded by the Gerda Henkel Foundation. Another research project, which is funded by the German Research Foundation, focuses on “Armed Self-Defense in Recent America: Intersectional Perspectives (2018–2023)”.

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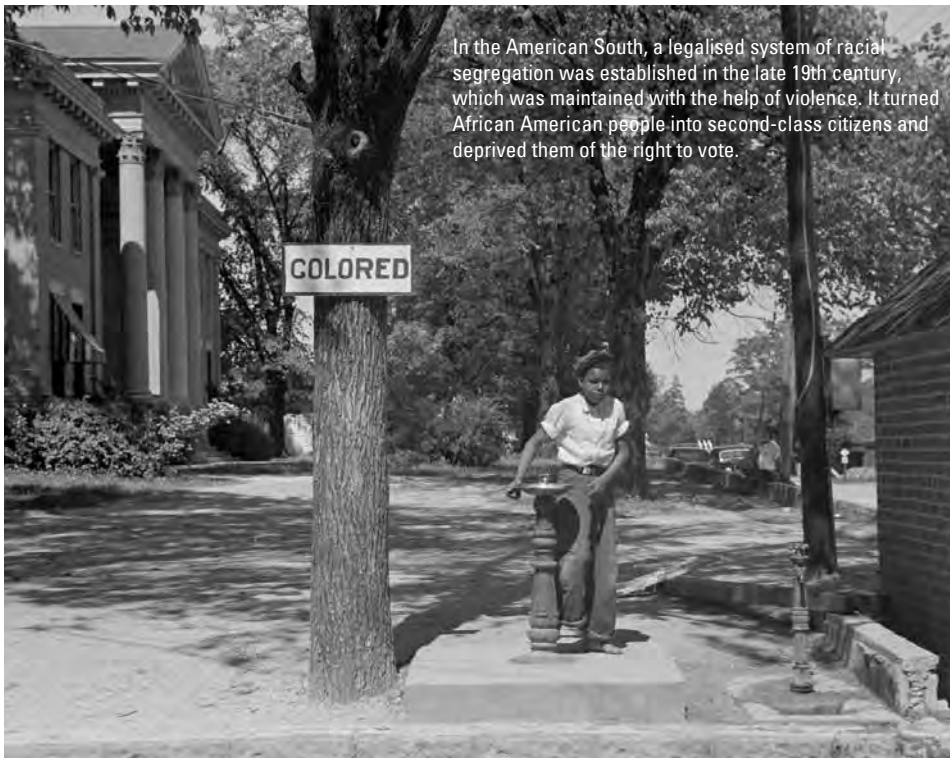
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In the American South, a legalised system of racial segregation was established in the late 19th century, which was maintained with the help of violence. It turned African American people into second-class citizens and deprived them of the right to vote.

tried to position himself as a “post-racial president”. He also needed the votes of white Americans. Saying “I’m particularly interested in the African American population” would have been of little help. The existence of the Black Lives Matter movement shows that the legacy of slavery and the problem of racism have still not been solved.

Today in the USA there are not only descendants of slaves but also migrants from Africa. How do these people experience systemic racism?



The death of an African American citizen named George Floyd, who was murdered by a white policeman during his arrest in May 2020, sparked worldwide protests against racist police violence. Many of these protests were coordinated by the Black Lives Matter movement, which was founded in 2014.

African immigration began with new immigration legislation in 1965 and has been increasing ever since. Certainly, these people are also experiencing new things – even just being treated as “Blacks”, which is hardly an issue in their country of origin – while on the other hand migrants also carry the experience of colonialism with them. Of course, immigrants from Africa had to and must ask themselves: Am I part of African American America? Like many other immigrant groups – Germans, Irish, Italians, Chinese – they have established their own communities, for example Nigerian and Kenyan. Within these groups, they try to preserve their culture. This brings to light differences to the older African American culture. However, it can be assumed that the second and third generation of African immigrants will see themselves both as part of the American nation and as a member of the Black community in the USA. Unfortunately, American racism will continue to play a major role in this identity-building process.



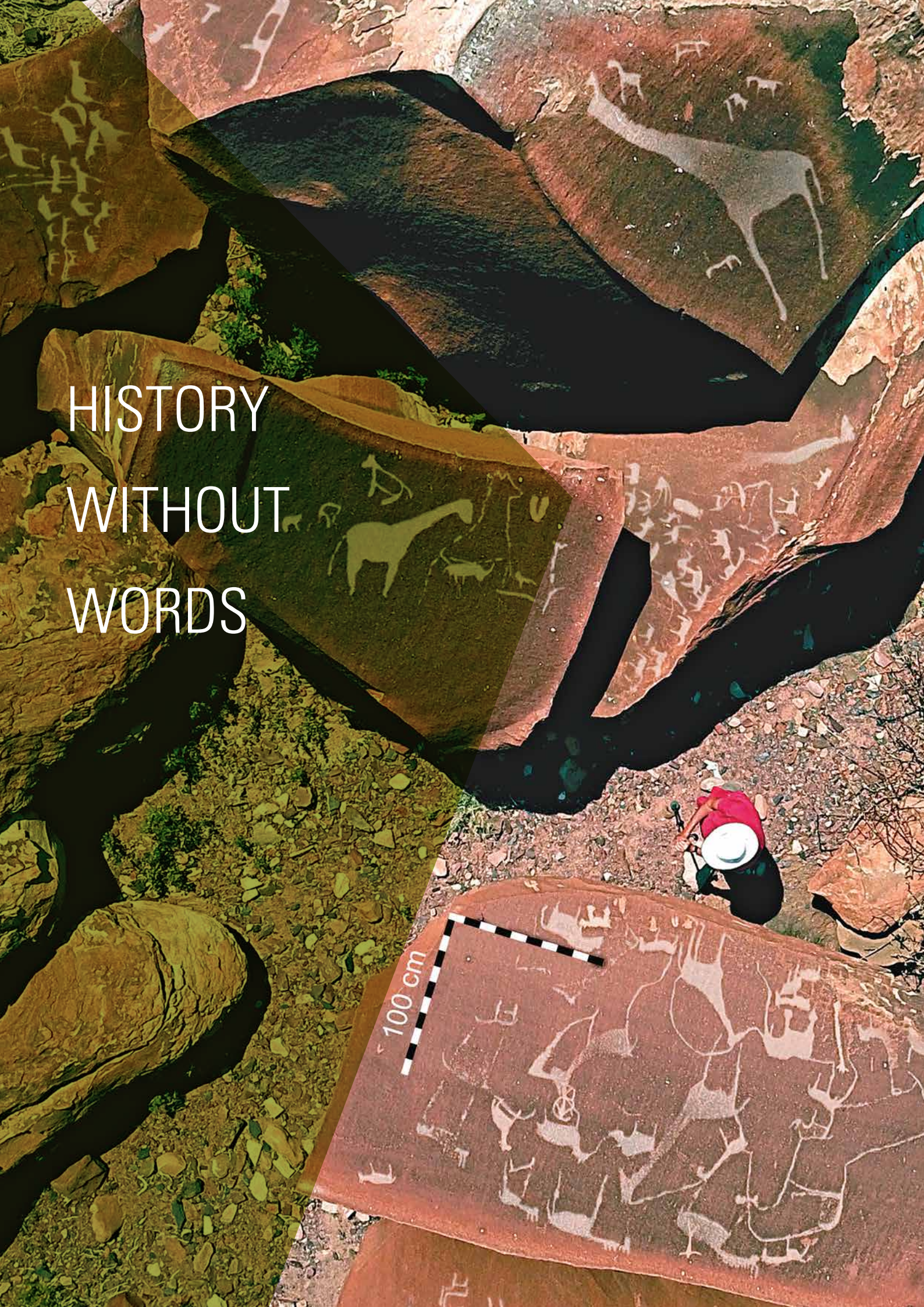
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Interview: Dirk Frank

HISTORY
WITHOUT
WORDS



News from the Stone Age

Archaeologists from Frankfurt study rock art in the Namib Desert

By Peter Breunig and Gabriele Franke

Stone Age artists left behind thousands of rock pictures in the Namib Desert. A team from Goethe University Frankfurt has devoted itself to conducting research in inhospitable environments. A somewhat different research report.

From the waterhole at the end of the gorge, we can hear the roar of a lion. Shortly afterwards, it walks past us – just a few metres away. A second one climbs up the steep face opposite. A little later, from a safe distance, we see three more lying in the shade next to the water. In the previous nights, a game camera with an automatic release was positioned there and took pictures of leopards, hyenas, jackals, honey badgers, rhinoceroses, zebras, ostriches and antelopes. During the day, a horde of baboons occupied the same spot. Another time, elephants visited our camp at night. This is the setting for research work conducted by Goethe University Frankfurt in north-western Namibia.

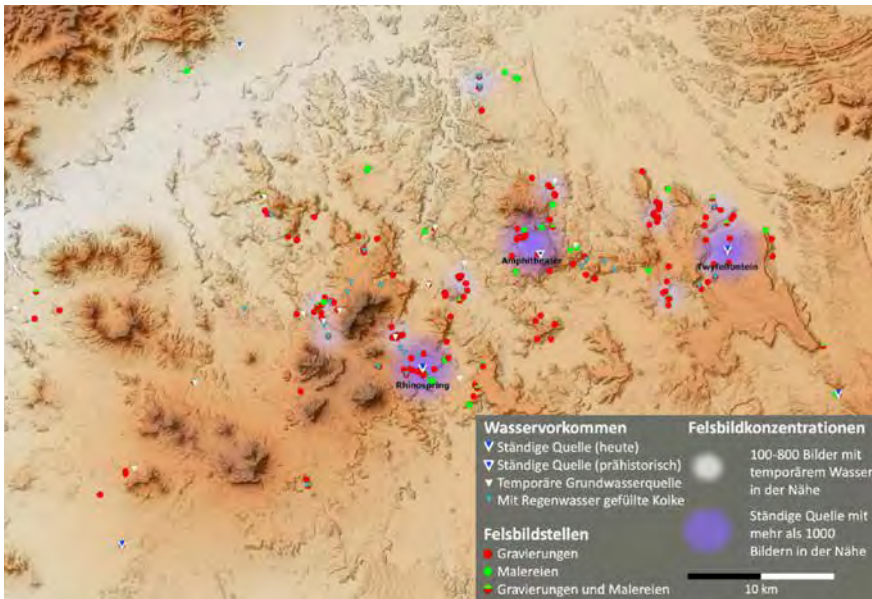
Readers might feel slightly hoodwinked to learn that we are not in the lush green tropics but in the heart of the hyperarid (i.e. extremely dry) Namib Desert. Nor is our research concerned with living animals that somehow manage to survive despite the drought, but about prehistoric rock art. The pictures painted with colours or carved into the rock are fascinating because they express an ancient world of human imagination. The paintings mostly show people and animals, the rock engravings primarily animals, tracks and geometric patterns.

Unexpected mass of pictures

Rock art is found almost everywhere in Africa, in the north, east and south. But nowhere is it more concentrated than in Namibia. There are 1,466 individual rock engravings in the gorge with the lions alone and 445 at the place where the elephants came to visit at night. Nearby is the UNESCO World Heritage Site of Twyfelfontein, which, with 2,500 pictures, has long been considered a highlight of rock art in southern Africa. Yet Twyfelfontein is only the small, eastern part of a much larger area where people produced rock art in times that cannot be dated precisely. Since 2012, our African archaeology team from Frankfurt has documented and analysed over 11,000 engravings and 1,200 rock paintings. These are distributed over more than one thousand rock faces in a strip that stretches 40 kilometres from Twyfelfontein westwards into the centre of the Namib Desert. The intention is to digitally preserve this unique cultural heritage for the future using high-resolution 3D models and special methods for enhancing the contrast if pictures are very faded.

The research region, which covers about 1,600 km², does not bear an official name on any map. It is called Mik Mountains in Afrikaans and Doro !nawas in the native Damara language, which means Rhinoceros Desert. Nobody would have expected such a mass of pictures in one of the driest areas on Earth. Why did people enter this hostile desert? Why did they produce so many pictures there in particular? Since 2017, a project at Goethe University Frankfurt funded by the German Research Foundation has been searching for answers.

Pictures of animals carved into rock in Rhinospring Gorge, one of the main sites of the Frankfurt project. The pictures have been highlighted in white to make them clearly visible.



IN A NUTSHELL

- Rock art is found throughout the world, but is particularly concentrated in some areas of Namibia: since 2012, the team of archaeologists from Frankfurt has documented and analysed over 11,000 engravings and 1,200 paintings in the Namib Desert in the north-western part of the country.
- Since 2017, a German Research Foundation project has been dealing among others with the question of why so many pictures were produced explicitly in the hostile desert.
- The concentration of pictures in the radius of the few waterholes might be interpreted as marking territorial claims to scarce resources, such as the water itself and the animals that come to drink there.
- Occasionally, destroyed pictures were found. This is interpreted as evidence that the use of the resources may not have been without conflict.

This map of the research region in the Mik Mountains shows the sites of rock paintings and rock engravings, all close to permanent and temporary waterholes.

Today, like in the Stone Age, the waterholes still attract numerous animals – a porcupine can be seen here, photographed with an automatically activated game camera.

tain, hardly any rain has fallen in the last ten years, and many animals migrated from the region or died of thirst. In the spring of 2022, however, heavy rains ended the dry period, making the desert green and leading to the animals' slow return. It is likely that humans and animals adapted their behaviour to such fluctuations in the past as well.

Rock art and water

For hunter-gatherers, who were responsible for producing most of the rock art, procuring food

played a central role. The Mik Mountains presumably boasted resources that were not available on the same scale in other regions. It cannot have been plants. Botanical studies have revealed that it was not possible to survive solely on the few plants that were edible.

This leads us to think that people stayed in the Mik Mountains at times when animals lived there as well. Many of the animals we regularly encountered are undemanding and persevere in the desert as long as they can find food and water. Unlike in the humid east of Namibia, in the Mik Mountains water is only permanently available in a few places. That there is water at all is a hydrogeological peculiarity of the region – and ultimately the reason for the wealth of archaeological remains. Twyfelfontein is one such site, and others are located deeper in the desert. Far to the west, in the dry heart of Rhinoceros Desert, lies GaiAs, a small depression that always contains water. When it rains enough, temporary water reservoirs are additionally formed. These places are the focal point of life in the desert. Sooner or later, the animals photographed by our cameras come there to drink. Easy prey for hunters: if you know the spots, all you need to do is lurk in wait for the animals. In humid areas, hunting is more laborious and less certain. If the animals find water almost everywhere, hunting necessitates complicated tracking and stalking. Does that make Rhinoceros Desert a godsend for hunter-gatherers because prey congregates in predictable places and ensures their survival in this way?

This is supported by the fact that there are camp sites near the waterholes with a large number of finds, especially stone artefacts. These camps are off the beaten track and not visible from the water, so that the animals coming to drink are not frightened away by humans. The waterholes themselves were central places for the groups of people, for hunting as well as for their own supply of precious water. The huge concentration of rock art at the waterholes also testifies to this. By far the majority of it in the Mik Mountains is found within their radius.





A section of one of the richest sites in the research region. On this rock alone, 333 individual rock engravings were counted. Most of them show animal tracks and occasionally humans.

Purpose of the pictures

Is there a connection between the fact that pictures were mainly found close to water and the puzzle about their purpose? Here we can only speculate. Following the ethnographic accounts about the San, the traditional hunter-gatherers of southern Africa, the theory emerged that the pictures might be associated with shamanistic activities and trance. However, motifs painted on or engraved in the rocks in Namibia do not quite match this theory because the depictions of people mainly show everyday situations: there are individual figures just standing there, people in groups, people on the move with equipment, mostly walking, sometimes running, occasionally sitting as if taking a break. Among the exceptions are complex actions such as life in a dwelling, dancing or hunting. Even rarer are the supernatural themes to be expected from shamanism and trance, such as animal-human hybrids. The same applies for the many depictions of animals: the antelopes, ostriches, zebras, rhinoceroses, elephants, big cats, hyenas and jackals, painted with fine brushes or chiselled in stone, are a more or less accurate and realistic reflection of the local animal world. Supernatural fantasy creatures are largely absent. In the case of the rock engravings, which only rarely depict people, there are two additional groups of motifs:

human and animal tracks as well as geometric shapes composed of circles and lines. In the latter, the representatives of the shamanism/trance theory see entopic patterns (created in the inner eye), as these are said to occur in an early stage of trance.

The observations made in the research region of the Frankfurt team permit an alternative explanation: paintings and engravings differ significantly in terms of technique, but also regarding the topics depicted and the composition of the various pictures on the walls. It is hardly imaginable that both types of rock art could have been produced by the same people. Rather, the difference is a sign of two traditions with their own values, norms, and perhaps their own reasons for expressing themselves in pictures at all.

Painters vs. engravers

Whether the painters and engravers ever encountered each other or existed at the same



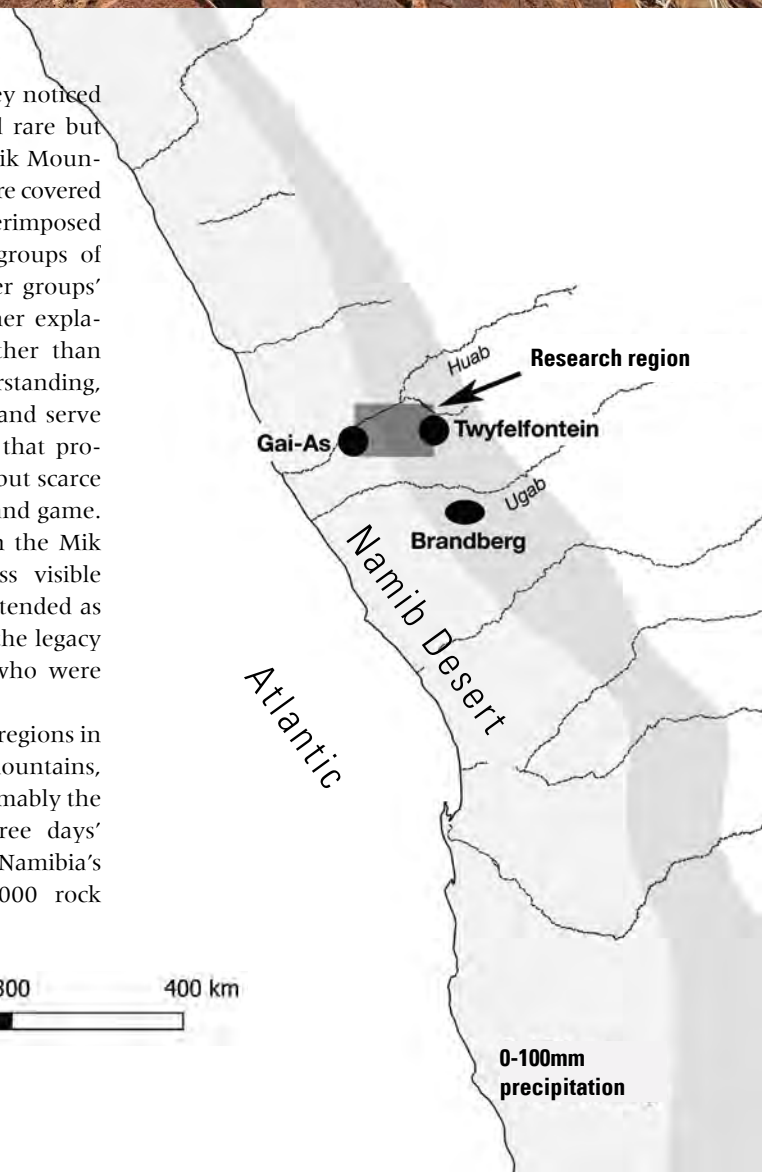
The pictures engraved in the rock often show animals that are depicted in a naturalistic style. The most common ones are ostriches.



Here, the former inhabitants of the Mik Mountains have carved rhinoceroses and zebras into the rock.

time, we do not know. But at least they noticed each other's pictures. We have found rare but unequivocal evidence of this in the Mik Mountains. For example, paintings exist that are covered with impact scars, scratched, or superimposed with engravings. It seems that the groups of engravers wanted to destroy the other groups' paintings. This finding suggests another explanation for the rock art's purpose other than shamanism and trance. In our understanding, engravings mark ancestral territories and serve as clearly visible signs to the groups that produced them of their claim to the vital but scarce resources found there, such as water and game. Paintings, by contrast, are far rarer in the Mik Mountains and mostly occur in less visible places. It seems as if they were not intended as clear territorial markers, but more as the legacy of groups not native to the region who were aware that they were intruding.

Thus, there are two major rock art regions in north-western Namibia. In the Mik Mountains, engravings dominate; they were presumably the home of the engravers. Two to three days' march south is the Brandberg. In Namibia's highest mountain range, some 50,000 rock



paintings attest to the homeland of the painters. Due to their proximity, both groups were likely familiar with the respective other region. It is therefore conceivable that people advanced into foreign territory in times of need because the resources of the two regions are very different and thus complement each other. The destroyed paintings in the Mik Mountains could be evidence of a violation of foreign territory. Interestingly, the opposite could also apply. For example, on the Brandberg, engravings are only found in a ravine at the foot of the massif, which partly respect the paintings but are also partly superimposed on them. Perhaps the engravers advanced as far as here, but never into the heart of the Brandberg. Due to a lack of suitable dating methods, we are unable to reconstruct the chronology of events, we can only get closer to what happened in prehistoric times on the basis of hypotheses.

The research project on the rock art and archaeology of the Mik Mountains, funded by the German Research Foundation, is practically concluded and will end in February 2023. A detailed catalogue of all 222 sites with extensive picture material will be handed over to the National Heritage Council in Namibia and made available for future research. The Frankfurt team would now like to extend its studies to other rock art regions in Namibia and has already begun with documentation in the south, east and north of the country for this purpose. They are currently working on a new research proposal. ●



The authors

Peter Breunig, born in 1952, was professor for African prehistory at Goethe University Frankfurt until 2019. Upon his “retirement”, he was designated Distinguished Professor. Breunig, who originates from Flörsheim, studied prehistory and early history as well as history, geology and ethnology at Goethe University Frankfurt and the University of Cologne and earned his doctoral degree with a thesis on the C14 chronology of the near eastern, south-eastern and middle European Neolithic. He also earned his postdoctoral degree (habilitation) in Cologne. In 1989, he returned to Frankfurt as a research associate in the archaeology subproject of CRC 268 on “History of Culture and Language in the Natural Environment of the West African Savannah”. In 1992, he was appointed as professor for African prehistory, from 1998 to 2002 he was spokesperson of CRC 268, from 2004 to 2009 spokesperson of Research Unit 510 “Environmental and Cultural Change in West and Central Africa” of the German Research Foundation and from 2009 to 2020 head of the long-term research project “Development of Complex Societies in Sub-Saharan Africa: The Nigerian Nok Culture” of the German Research Foundation. The German Research Foundation project “Rock Art in the Mik Mountains”, of which he is in charge, has been running since 2017.

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Gabriele Franke, born in 1963, is currently a research associate at the Frobenius Institute in the German Research Foundation project on the Mik Mountains in Namibia. From 2009 to 2021, she worked at the Institute for Archaeological Sciences at Goethe University Frankfurt as a research associate in the long-term research project of the German Research Foundation on the Nok culture of Nigeria. From 2002 to 2007, she studied prehistory and early history, historical ethnology and archaeometry in Frankfurt, where she earned her doctoral degree in 2015. For her thesis on the ceramics and chronology of the Nok culture, she was awarded the Christa Verhein Prize in 2016. Her main research interests are the archaeology of West Africa and African rock art.

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Small pieces, big impact

What carbonised plant remains
and clay shards reveal about the
Nok culture 3,000 years ago in
West Africa

By Katja Irle



The Nok culture: their terracotta sculptures, which are among the oldest figurative art in Africa, are famous throughout the world. But how did their originators live? What did people's everyday life look like and what did they subsist on? This is what researchers from Goethe University Frankfurt have been studying for twelve years in Central Nigeria within a German Research Foundation project. Under the leadership of archaeologist Professor Peter Breunig and archaeobotanist Professor Katharina Neumann, and in collaboration with chemists from Bristol, the team has unearthed some astonishing things.

For archaeobotanist Alexa Höhn, jigsaws are an old family tradition. She used to puzzle over ones with up to 2,000 pieces. Today, it's a little less often, but when she has time, she still likes to do jigsaws. In a way, she even pursues her hobby at work. With a lot of patience and meticulousness, she and her colleagues try to piece together a coherent overall picture from the smallest of pieces. It can take years, sometimes decades, until that succeeds. And when one puzzle is solved, the next one pops up. In fact, it never ends.

"You have to enjoy guessing games," says Alexa Höhn, pulling open a drawer of the archaeobotanical reference collections at the Institute for Archaeological Sciences in the IG Farben Building. Real treasures are stored here, each one as small as a piece of jigsaw. Their structure can often only be seen under a microscope: tiny parts of plants, such as pollen grains, and slightly larger ones, such as fruits, seeds or wood. They were extracted from the present-day vegetation surrounding excavations during numerous field trips. The almost 20,000 objects in the collections, which have grown over 40 years, help archaeobotanists to identify plant remains discovered at archaeological sites.

Encounter with people from thousands of years ago

Unlike jigsaw puzzles as a hobby, archaeological finds are a window into the history of mankind. This is something that archaeobotanist Professor Katharina Neumann also finds fascinating. She remembers her first research stay in the Sahara in the 1980s. She was digging for cultural remains of cattle herders who had settled there around 7,000 to 8,000 years ago – in a Sahara that was still green, not a desert of stone and sand as it is today. Already back then she found and analysed carbonised plant remains, as they

would also later play a major role in the excavations related to the Nok culture in Nigeria: "This allowed me to encounter people who lived thousands of years ago, I could touch what they had used."

To reconstruct environmental conditions, changes in vegetation or the dietary habits of past cultures, archaeobotanists rely, among others, on fruits and seeds from archaeological sites because these plant remains are astonishingly resilient and can be preserved in carbonised form for thousands of years. For example, carbonised seeds of pearl millet (*Cenchrus americanus*, syn. *Pennisetum glaucum*) up to 4,000 years old are stored in the Frankfurt archives. This millet species plays an important role in the study of the Nok culture, which is known for early iron production in West Africa in the first millennium BCE and for its elaborate terracotta sculptures, which first became known to the scientific public about 80 years ago, after some finds had been discovered during tin mining.

Seeing the past in the present

But what remained obscure for a long time was the social context in which the figures were created: How did the Nok people live? What did they eat, which plants did they cultivate? Did they have domestic animals? That is the reason why Frankfurt researchers led by archaeologist Professor Peter Breunig and archaeobotanist Professor Katharina Neumann were on the trail of these people for over twelve years, starting in 2009, within the long-term research project "Development of Complex Societies in Sub-Saharan Africa: The Nigerian Nok Culture of Nigeria" funded by the German Research Foundation. To preempt the outcome: the researchers came nowhere close to answering all the ques-



Top picture: Carbonised grain of pearl millet from a Nok site – as an enlarged view and bottom right in original size.

Left picture: These pearl millet grains from the archaeobotanical reference collection in Frankfurt help to categorise archaeological finds.

tions surrounding the prehistoric community. But they were able to debunk some old assumptions and gain new insights. For example, Professor Breunig's team could show, among others, that the Nok culture began earlier than previously assumed, namely about 3,500 years ago. And the German Research Foundation research also sowed doubts as to whether many of the fully preserved Nok sculptures, which are traded on the art market for vast sums, are really genuine, as the archaeologists themselves did not find a single complete figure during their excavations.

Archaeobotany, an important subdomain of the research project, has recently also been able to unveil a lot about Nok history. Alexa Höhn was herself involved in the excavations in Janjala, Central Nigeria, in 2016. "The time on site was a great experience," recalls Höhn, who worked closely with locals at the research station. At some times, the German Research Foundation project was the largest employer in the region. But six months after Alexa Höhn had returned to Frankfurt from Janjala, there was a serious incident: Professor Breunig and his doctoral candidate were kidnapped for several days, and two Nigerian employees were shot dead at the same time. "That was a shock for all of us," says Alexa Höhn. The incident also meant that fieldwork in the area could not continue. To this day, the political situation is too unstable, and the German Foreign Office warns strongly against travelling to the region.

A terracotta figure from the Pangwari site.



Nok pots from the Ifana site.



Hard to corroborate: yam

In Frankfurt, research into the Nok culture continued nevertheless – with the help of the insights already gained and new soil samples taken on site. The archaeobotanists' objective was to reconstruct vegetation and dietary habits. Alexa Höhn and her colleagues had found carbonised remains of pearl millet, among others, in archaeological sediments – a total of 10,000 grains over the entire duration of the project. However, whether the Nok people's diet also

included other starchy plants, such as yam, which today is a fixed part of the traditional diet in the region, was previously unclear because – unlike pearl millet or cowpea (*Vigna unguiculata*) – it is difficult to find evidence of yam: the finer tissue of the yam tuber, also when carbonised, is more fragile than seeds or charcoal.

"When we find remains of plants or animals during our excavation work, we usually only see a small detail of the people's diet at that time," says Katharina Neumann. In the case of the Nok

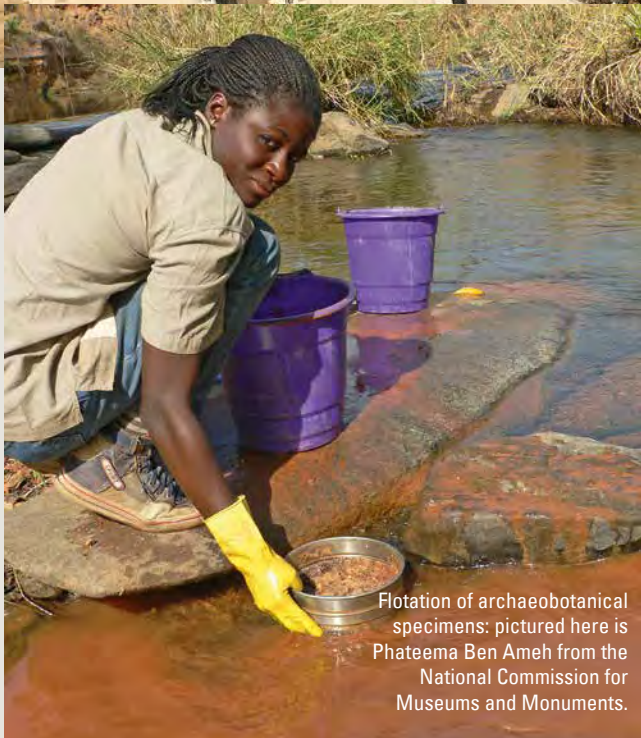
culture, she adds, an additional complication was the fact that animal bones had not been preserved at all in the acidic soil, meaning that further pieces of the puzzle were necessary in order to get closer, step by step, to people's living habits. These were found in the pores of clay shards from old pots in the form of lipids, that is, water-insoluble natural substances. The chemists brought in from the University of Bristol ultimately succeeded in separating out these lipids and evaluating them by means of gas chromatography (a separation process for mixtures of substances). "The result was a large and complex spectrum of plant lipids, among others from leaves," says Katharina Neumann. She says that this is very unusual: "If you throw a leaf on the compost heap at home, it's gone in two to three weeks. That's why the analysis from Bristol was a real sensation for us."

Enlightening molecules

Still today, the leaves of herbs and trees form the basis for sauces eaten in West Africa together with cereals and tuberous plants. The chemical analyses from Bristol also provided evidence of the very early origins of this African cuisine. It seems that similar dishes were already part of the everyday diet 3,500 years ago. In addition, the researchers were able to detect chemical compounds derived from suberin, which in turn



A peek inside the archaeobotanist's workshop: reference material, reference books, archaeobotanical samples and other equipment.



Flotation of archaeobotanical specimens: pictured here is Phateema Ben Ameh from the National Commission for Museums and Monuments.

Archaeobotany in West Afrika

Archaeobotany is concerned with the role that vegetation and various plants played for people in the past. It is a discipline at the intersections of archaeology, botany, ethnology and geosciences. What are known as macroremains (fruits, seeds, wood (charcoal) and other vegetative plant remains) and microremains (pollen, starch, phytoliths – small silica crystals) found during archaeological excavations are analysed. Many things are invisible

to the naked eye, which is why archaeobotanists look at the plant remains under a microscope and try to work out what species they might be on the basis of features such as surface structure or internal composition. The archaeological context of the find can also be revealing. Depending on whether the plant remains came from a hearth, a waste pit, an iron smelting site or a grave, they tell a different story. In this way, archaeobotany, in collaboration with other disciplines, can make statements not only about crop history but more generally about people's diet in the past, about the cultivation and processing of foodstuffs, technology and culture and society. Archaeobotany can also contribute to a better understanding of climate and vegetation changes.

There has only been archaeobotanical research in West Africa for a few decades, and now African universities are also showing growing interest in conducting their own archaeobotanical studies. For example, Alexa Höhn, in collaboration with colleagues in archaeology and botany from the University of Ghana in Accra, is supervising the first students interested in archaeobotany. "We look forward to working together with African researchers on archaeobotanical topics in the future and are curious to hear the African perspective on questions of prehistoric land use and landscape development," says Alexa Höhn. Katharina Neumann and Peter Breunig's long-term research project funded by the German Research Foundation was obliged to manage without such cooperation for its archaeobotanical research. However, it would have been impossible without local support: the archaeobotanical sampling on site was supervised for several years by Phateema Ben Ameh, a member of staff at the National Commission for Museums and Monuments.



Insight into the archaeological “treasure chamber” in Frankfurt: the reference collection for fruits and seeds.



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is a main constituent of tree bark – and the cortex of tuberous plants. It is quite probable that the suberin originates from yam tubers – even if one hundred percent evidence is still pending.

But the lipid analysis in Bristol brought another surprise for the German Research Foundation team. Chemist Dr Julie Dunne discovered beeswax residues in the ancient pottery shards. “Of course, we had suspected that honey had been used because it is the most important natural sweetener and there are honeybees in the savannah,” says Katharina Neumann: “But we were now able to prove it at first hand and for the first time for Sub-Saharan Africa.”

And in this way the researchers in Frankfurt have added further essential pieces to the Nok puzzle. The long-term research project of the German Research Foundation might be over for now, but the guesswork surrounding the long-vanished culture in Central Nigeria? Far from it! ●

ABOUT KATHARINA NEUMANN

Katharina Neumann (right), born in 1953, established African Archaeobotany as a focus area at Goethe University Frankfurt and headed the department from 1995 to 2019. She has also been an adjunct professor at the Institute for Archaeological Sciences since 2007. From 1974 to 1982, she studied botany, pharmacognosy, ethnology and soil science at Goethe University Frankfurt, where she also earned her doctoral degree. From 1983 to 1988, she was a research associate at the University of Cologne, and from 1989 to 1994 within Collaborative Research Centre 268 at Goethe University Frankfurt. Her special interests are prehistoric plant use and the history of African vegetation. In 2019, she was appointed as an honorary member of the Senckenberg – Leibniz Institution for Biodiversity and Earth System Research (SGN).

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ABOUT ALEXA HÖHN

Alexa Höhn, born in 1968, has been working since 2005 as a research associate within various projects of the African Archaeology and Archaeobotany Working Group at Goethe University Frankfurt. Since 2019, she has been part of the Priority Programme “Entangled Africa” of the German Research Foundation with her own project “Cultivated Landscapes”. She studied botany, zoology and physical geography in Frankfurt and also earned her doctoral degree there. Höhn’s research interests lie in complex human-environment relationships in West Africa, especially the influence of land use on the woody vegetation of the savannahs and the rainforest. At the centre are questions about the development history of today’s cultural landscape in conjunction with the emergence and propagation of different land use systems as well as the sustainability of these systems.

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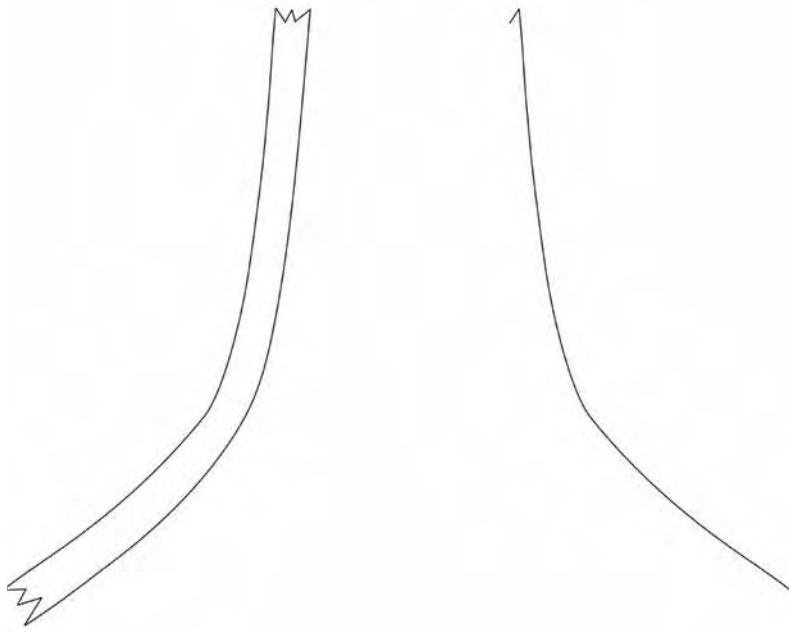
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Far-travelled fragments

Archaeology wants to trace intra-African connections by analysing pottery

By Sonja Magnavita and Oumarou Amadou Idé

Travelling tradesmen, pilgrimages and visits to relatives, medical tourism and labour migration: Africa is extremely mobile. That is, however, far from new. With the help of inconspicuous sherds of pottery, African archaeology researchers at Goethe University Frankfurt are tracing the travel routes of earlier millennia.

People in Africa connect. Constantly, everywhere and over various distances. The local weekly market lures traders and customers from the wider region, the service area on the motorway invites people in transit to take a relaxing break. The place of pilgrimage is a strong magnet for believers from near and far, and wedding celebrations entice relatives even from other parts of the country. The reasons for

travelling are many and can be economic, religious, social or political. What is found everywhere today may also have been important to human society in times long past. When history handed down in writing or by word of mouth falls silent, it is archaeology's task to make purely material legacies speak too.

Similarly to the present day, we can assume that there were very wide-ranging motives for people or things moving from one place to another. As a rule, looking at purely material sources does not disclose a lot about these motives – this especially applies for the legacies of our consumer society: if a broken plate from a well-known Swedish company ends up in our household rubbish, it reveals nothing about whether the owner had purchased it in the furniture shop close to home, received it as a gift from a third party, or even brought it himself



To date, archaeological studies of interregional contacts within Africa have mainly concentrated on the analysis of rare items such as prestige goods. For example, a number of copper alloy and glass artefacts examined in the past appear to corroborate suggestions from written sources that various major, early historical places in West Africa and the Sahara were once connected via trade routes to and from North Africa. For example, glass beads from the West Asian region and brass from the Mediterranean, among others, have been discovered during excavations at various early historical sites between Mali, Niger and Burkina Faso, that is, far apart from each other. However, since such finds are extremely rare, it is difficult to make general statements about distribution mode, trade networks and flow of goods. The number of glass artefacts from the time before 400 CE lies in the single-digit (!) range for the entire greater West African region and that

The fragment originates from the early medieval site of Marandet in today's Niger and was once part of a bottle-shaped vessel that had been transported across the Sahara from North Africa. Certain manufacturing features already corroborate its distant origin, but this can also be proven by means of chemical methods.

of non-ferrous metal artefacts is not much larger. Little is known about the interaction of such places with others in the wider region from other sources either: there is no written evidence for this, and comparable unique finds are lacking or have not been analysed.

from the region where it was made – whereby quite other constellations would also be conceivable. Even if speculation might sometimes be appealing – when looking at almost exclusively material sources, like in prehistorical and early historical archaeology, first of all reliable evidence is called for.

Evidence for the mobility of objects

The fact that an object has moved from one place to another can soonest be laid bare if it is provable that it clearly originates from a different place than where it was found. Was a special material used, for example, that does not exist in the wider area where it was found, such as a seashell far from the coast or an exotic rock? Special manufacturing techniques or styles, which are proven only to have occurred in a specific region but not near the site where the object was found, also often indicate directly via the object itself that the region of origin and the region where it was found are perhaps not identical. But this is where things can already start getting difficult: What if specialists from that known production region worked at the later site where the object was found and applied their special traditions and techniques there? It is impossible to see that from an artefact with the naked eye. To find out whether an artefact is of local origin or not, archaeology can today, however, draw on increasingly sophisticated scientific analysis methods.

Making sherds speak

A new research project on the prehistoric and early historic archaeology of Africa at the Institute for Archaeological Sciences of Goethe University Frankfurt will now pursue an entirely different path – and prove that the study of archaeological pottery, which is available in large quantities, ideally complements rare objects. As the most common find in archaeological sites of recent prehistory and early history, sherds are a suitable instrument for revealing connections between places and areas in neighbouring regions. Similar to other human-made objects, in the case of pottery, evidence obtained through scientific provenance analyses can also be included, in addition to evidence regarding style and manufacturing technique.

With the help of extensive analyses of the chemical composition of pottery from known early historical sites in West Africa and the Sahara, it is possible to obtain new, tangible evidence for interregional contacts in the first and early second millennium CE. Preliminary work using portable X-ray fluorescence analysis (pXRFA) on pottery finds from Marandet, an



Snapshot of a caravan of dromedaries at the archaeological site near Marandet (above). It is here that the three sherds (left) were found.

However, they match specimens in type, make and chemical composition such as the one shown on the right from the Lake Chad region.

early medieval trading place near Agadez in the Republic of Niger, showed very promising results, especially regarding trace elements in the fired clay. In this way, locally produced pottery from Marandet, which is located on the edge of the Air Massif, could be distinguished from likewise locally produced pottery from neighbouring regions such as the inner Chad Basin or the eastern arc of the Niger River because the proportions of certain main constituents and trace elements in relation to one another produced a “fingerprint” characteristic of the respective region of origin.

This conjecture could be verified on the basis of such a chemical fingerprint of pottery assumed – due to its stylistic and technical characteristics – to have been imported from neighbouring regions. In some cases, the foreign-looking pottery could indeed be confirmed as chemically consistent with pottery from the presumed region of origin. However, some initial assumptions had to be corrected: pottery with characteristic stylistic features from contemporaneous cultures on the eastern arc of the Niger River was revealed as evidently made locally in Marandet.

The aim now is to corroborate the findings from the preliminary work. To this end, further pottery inventories will be incorporated, and the differences detected in the chemical fingerprint examined in more detail. Since no comprehensive “chemical maps” of potentially exploited clay deposits in Africa are available and cannot be compiled in the foreseeable future either, the project will deal exclusively with archaeological pottery. It will not be possible to

IN A NUTSHELL

- Extensive human mobility is characteristic of the African continent. Archaeology might provide insights as to whether this was also the case in earlier centuries.
- To date, archaeological studies on interregional contacts in Africa have concentrated on the analysis of rare items such as prestige goods.
- A German Research Foundation project at Goethe University Frankfurt is also using scientific methods to examine the large number of ceramic finds.
- Preliminary work in the Republic of Niger has yielded promising results: for example, it was possible to distinguish locally produced pottery from one region from likewise locally produced pottery from neighbouring regions on the basis of their proportions of certain main constituents and trace elements. Each region of origin evidently has its own characteristic “fingerprint”.

identify a specific production site in this way, but it will be possible to unveil connections between regions.

The finds used originate from sites in Mali, Chad and Niger that have already been archaeologically examined and will be studied in close collaboration with those responsible for the respective material. The project, which will be funded by the German Research Foundation for the next three years and includes a qualification position, is an integral part of the foundation's Priority Programme "Entangled Africa: Intra-African Relations between Rainforest and Mediterranean (approx. 6,000 to 500 years BP)" (SPP 2143), which has already been running since 2019 and is coordinated by the German Archaeological Institute. In a total of ten sub-projects, researchers are dealing systematically with questions about intra-African connections at very different levels and in various regions of Africa. ●

Project title

Tracing Connections:
Chemical composition analysis
of archaeological pottery as
indicator of interregional contacts
in Western and Saharan Africa
before AD 1300

Project Manager

Professor Sonja Magnavita

Funding

German Research Foundation,
Project Number 467208885



The author

Sonja Magnavita, born in 1974, is Professor for Pre- and Protohistoric Archaeology of Africa at the Institute for Archaeological Sciences of Goethe University Frankfurt. Having studied and earned her doctoral degree in Frankfurt, she worked on different projects in West Africa and, as co-editor and publisher, developed the Journal of African Archaeology into an acknowledged peer-reviewed journal. She earned her postdoctoral degree (habilitation) at RUB (Ruhr-Universität Bochum); since 2020 she has taught and conducted research in Frankfurt.

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Teeth of our ancestors

Discovery of a lower jaw in Malawi and what happened next

By Markus Bernards

The rich fossil deposits in northern Malawi have revealed traces of the oldest humans – after almost ten years of searching. Palaeontologists Friedemann Schrenk and Ottmar Kullmer tell the story of their sensational find, the role that pigs' teeth played in it, and how a museum in Northern Malawi Province came into existence.



Anyone wishing to visit palaeobiologist Friedemann Schrenk can meet him at the Senckenberg Museum in Frankfurt where he picks them up at the ticket office. Although his face is hidden by a mask due to the COVID-19 pandemic and his clothes are unprepossessing – black jeans, black T-shirt – his high forehead and white, slightly tousled hair are unmistakable: he has achieved a certain degree of fame since he found a fossil in 1991 of what is presumably the oldest *Homo* species, the 2.5-million-year-old lower jaw of *Homo rudolfensis*, in Malawi in south-east Africa.

Schrenk leads his guest through small groups of museum visitors, past dinosaur skeletons and mammal dioramas, and through an inconspicuous door into the museum's research and administration wing, where the hubbub dies away and the manifold shapes and colours of the museum exhibits give way to the sober objectivity of the office. In a small library with metal shelves under neon lights, they are joined by Schrenk's colleague Ottmar Kullmer, who also played an important role in the discovery of the lower jaw. That was in 1992, one year after Schrenk's spectacular find.

The story of the discovery of the pre-human began in the early 1980s. While still a geology

student, Friedemann Schrenk had obtained a scholarship to study fossils in South Africa. It was there that he met his American colleague Timothy Bromage, and together they started the Hominid Corridor Research Project in Malawi in south-east Africa. The two researchers wanted to find fossil evidence for their hypothesis that pre-humans and early humans had moved along Africa's Great African Rift Valley, that is, to cor-

Members of the excavation team show their finds at the Malema excavation site in the Karonga District. Front: Tyson Mskika with the 2.5-million-year-old lower jaw of a *Homo rudolfensis*. Photo: <http://www.warmheartof-malawi.org>

IN A NUTSHELL

- Northern Malawi harbours many mammal fossils that allow palaeontologists to reconstruct the habitat of pre-humans and early humans and determine their age.
- One spectacular find was that of a toothed lower jaw of the oldest human species *Homo rudolfensis*.
- In the years following the find, a local museum and cultural centre were built, with an exhibition spanning the period from the origins of humankind in Malawi to the present day.

roborate that there is a connection between the fossil sites thousands of kilometres apart in South Africa on the one hand and Kenya and Ethiopia on the other. Schrenk and Bromage had to endure a lot of ridicule for the ambitious title “Hominid Corridor Research Project” because although the researchers, supported by many local helpers, recovered plenty of animal fossils over the course of almost a decade, of antelopes, for example, or pigs, they didn’t unearth any hominin finds. Not really surprising, according to Schrenk, as these are rare: “You can’t be sure whether you’ll find anything at all, in fact.” At a meeting in 1990, a fellow researcher sneered (Schrenk mimics his high-pitched voice): “That’s not a hominid corridor,

Perfect fit:
Ottmar Kullmer has inserted
the broken tooth fragment into
the fossilised lower jaw.
Photo: Markus Bernards



that’s a pig corridor, an elephant corridor, an antelope corridor. Where are your hominins?”

Then, one year later, the big moment came after all: the practised eyes of team member Tyson Mskika discovered the two halves of the lower jaw. The excavation camp celebrated with a big party; the great scientific goal was in the bag. At this point, Schrenk briefly interrupts his narration, leaves the library, and returns shortly afterwards with a silver-coloured metal case. He takes something out of it and places it in front of the visitor, on a small brown cushion: the lower jaw of a human being turned to stone, 2.5 million years old, at a broken edge on one side even the root of a tooth is recognisable. Even in 2022, this is still an almost auspicious moment.

The lower jaw is incomplete, incisors are missing and the posterior molar on the left, on

Friedemann Schrenk and
Ottmar Kullmer (right) present
the 2.5-million-year-old lower
jaw of an early human of
the species *Homo rudolfensis*
found in Malawi.
Photo: Markus Bernards

the right an almost square piece of the second molar has broken off. That was a bit of bad news in the euphoria after the find – in the media too – because the number of cusps on the second molar could have revealed whether it was the lower jaw of a representative of the genus *Homo* or of an older pre-human (*Australopithecus*).

Ottmar Kullmer, in 1991 a graduate geologist who writes geological reports as a freelancer, read about the missing piece in the newspaper and, together with two friends, wrote a letter to Schrenk, who then invited them to Darmstadt. Kullmer: “It was a long letter about how great we are and whether we could tag along to Malawi at some time. We tended to brag a bit back then, and evidently our letter was so impressive that he wanted to meet us.” During the conversation in Darmstadt, Schrenk then said that they could accompany him to Malawi if they could find the missing piece of the tooth. “We were quick as a shot and said, ‘We’ll find it,’” says Kullmer. “Then we walked out and thought, ‘For God’s sake, what did he just say? This is total madness!’”

Just a few months later, this “madness” consisted of building a track in Malawi to the site where the lower jaw had been found, coordinating the camp with 50 helpers (Schrenk had already travelled on to Tanzania), and clearing away the top few centimetres of earth from an entire slope, 15 tons of material, filling it into rice sacks and transporting it by Land Rover to Lake Malawi. There, the sediment was first of all spread out to dry on grass mats, then the fine sand was sifted out with water from the lake and what remained – grains and fragments



ranging from centimetres to just millimetres in size – were picked over by hand. The whole thing took the entire excavation season – eight weeks. Finally, in the last sack, the missing piece of tooth from the lower jaw was indeed found, confirming: the lower jaw once belonged to one of our ancestors of the genus “*Homo*”.

Kullmer did not write any more geological reports after that; he completed his doctoral



Photo: <http://www.warmheartofmalawi.org>

Radio Dinosaur and the Cultural & Museum Centre in Karonga, Malawi

Malawi stretches along Lake Malawi for about 1,000 kilometres, creating large distances within the country. For a long time, the sparsely populated north of the country was considered politically and economically isolated – even when the capital was moved from the south to the centre of the country. But the northern district of Karonga is rich in fossils; petrified dinosaur bones were discovered there back in 1924, which in the 1980s could be attributed, along with other finds, to *Malawisaurus*.

In the 1990s, three gentlemen from Karonga, Oliver Mwenifumbo, Lawrence Mwamlima and Archibald Mwakasungula, set themselves the goal of making their district's history accessible to the local people. This is how the first idea of the Cultural & Museum Centre in Karonga was born. Under the motto "From Dinosaurs to Democracy", the museum's exhibition today spans the period from the geological prehistory of the Karonga region, the time of the dinosaurs (with a spectacular *Malawisaurus* skeleton), the first hominins (including a cast of the lower jaw of *Homo rudolfensis*), the settlement of the Ngonde people and the time of slave traders and missionaries to Malawi's independence, dictatorship and today's democracy. Many exhibits were donated by the people of Karonga for their museum. Attached to the museum are workshops and a large stage for events.

Malawisaurus was also the "godparent" of the local station "Radio Dinosaur", a community radio (free radio) with a regional licence. Twelve people meanwhile produce a daily programme from 6.00 a.m. to 8.00 p.m. Raymond Mwenifumbo, who is responsible for project management and fundraising at

the station, explains: "Radio Dinosaur is an educational station. Our topics include, for example, health, agriculture and news from different parts of the district, and we broadcast – unlike the national radio stations – mainly in the local languages Kyangonde and Chitumbuka. Sixty percent of our listeners can neither read nor write, so some people send us letters they don't understand, which we then read out on the radio."

The District Commissioner has also used Radio Dinosaur to disseminate important information, for example about COVID-19 or flooding, and with the help of Radio Dinosaur Karonga Police Station has organised community policing exercises with citizens on two occasions to prevent crime and improve relations with the police. The Chiefs, especially traditional leaders, and the community radio's youth and radio clubs also work closely with the station.

Very often, of course, the programme is about Malawi's early history, for example when Friedemann Schrenk or Timothy Bromage are on the programme or when Harrison Simfukwe, palaeontologist and senior curator at the Cultural & Museum Centre, discusses the origins of life with a priest from the African Church.

From the beginning, high expectations were attached to the start of Radio Dinosaur's broadcasting operations. The views of some traditional leaders:

"The idea of a community radio station for Karonga is great. It will complement and accelerate socio-economic development activities in the district; including cultural life and heritage. I want this to succeed. You have our support," said **Paramount Chief Ntemi Waba-Temi Kyungu**.

"I welcome the idea of a community radio for Karonga District. It is long overdue. For a long time, I have been wondering why we people in Karonga do not have a community radio station to broadcast in the Ngonde and Tumbuka languages, as is done elsewhere. This is a welcome development. We need this radio station," said **Senior Traditional Authority Ntemi Kalonga**.

"The museum is about dead history, the community radio is about live history: the two complement each other. Right now, we are preparing a week of cultural events that will also include traditional music and dances. You are free to make recordings for our radio station," said **Senior Traditional Authority Themba Wasambo**.

"I welcome the community radio station. It will help us in promoting development activities in Karonga District," said **Traditional Authority, Themba Mwilang'ombe**.

Radio Dinosaur broadcast on the origins of life:

<https://tinyurl.com/RadioDinosaurShow>

Links

**Hominid Corridor
Research Project**

<http://paleobiomics.org/hcrp.html>

**Tyson Mskika and
Timothy Bromage report on
discovering the lower jaw**

<https://tinyurl.com/LowerJaw>

URAHA Foundation
www.uraha.de

**Weaning phase in
Neanderthals**

<https://tinygu.de/NeanderthalMilkTeeth>

degree on the developmental history of prehistoric bushpigs and giant hogs (suids), which had experienced a relatively rapid evolution. For this reason they are important as index fossils because they make it possible to date fossil layers, such as that containing the lower jaw of *Homo rudolfensis*, quite accurately to 2.5 million years.

But is it really worthwhile searching for hominin fossils for so many years if there are ultimately so few finds? If there are more hominin researchers than hominin finds, as Schrenk once mocked in “Der Spiegel” magazine? “Hold on a minute, not so fast,” says Schrenk. “After all, we’re not just hunting for these human remains, our goal has always been to understand the whole environment, the ecology, food resources, metabolic exchange, all the organ-

isms in a habitat.” The two scientists call this approach “palaeobiomics”, the holistic analysis of a biome system millions of years ago.

The many fossils have helped to draw this overall picture, and new methods today facilitate, for example, the analysis of the fine structure of fossil teeth and bones. Kullmer explains: “Tooth enamel grows in crystallites, in prismatic structures with daily growth lines, over two to four years. If you study the composition of the chemical elements, you can observe cycles, perhaps rainy seasons in which food resources change. When children are weaned, that’s also reflected in their teeth.”

Out of the distant past arise exciting questions for the present, think the two palaeontologists: they are planning research projects on the

ABOUT FRIEDEMANN SCHRENK



Friedemann Schrenk, born in 1956, studied geology, palaeontology, mineralogy, zoology and anthropology in Darmstadt and Johannesburg, earned his doctoral degree in biology at University Hospital Frankfurt and his postdoctoral degree (habilitation) in palaeontology in 1994 at the Technical University of Darmstadt. From 1988 to 2000, he worked at the Hessian State Museum Darmstadt and was its director from 1993 to 2000. He then moved to Goethe University Frankfurt as Professor for Palaeobiology of Vertebrates. In the same year, he additionally became head of the Palaeoanthropology Section at Senckenberg – Leibniz Institution for Biodiversity and Earth System Research. From 2008 to 2010, he was in charge of the Centre for Interdisciplinary African Studies. Friedemann Schrenk has curated numerous exhibitions, including “From Dinosaurs to Democracy” at the Cultural & Museum Centre Karonga. He has received many awards, for example the Communicator Prize of the German Research Foundation in 2006, which he was awarded for his school project on hominins. In this project, which was also funded by the Uraha Foundation initiated by Schrenk, schools in Europe and Africa are given castings of hominin finds and corresponding teaching materials.

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ABOUT OTTMAR KULLMER



Ottmar Kullmer, born in 1964, studied geology, palaeontology, zoology and anthropology at the University of Mainz, earned his doctoral degree there in 1997 in palaeontology and geology and his postdoctoral degree (habilitation) in 2014 in zoology at Goethe University Frankfurt, where he has since worked as a private lecturer and since 2022 as an adjunct professor. Ottmar Kullmer worked at the Hessian State Museum Darmstadt and at the University of Mainz and was visiting professor at the University of Vienna before moving to the Senckenberg – Leibniz Institution for Biodiversity and Earth System Research, where he is head of the Tertiary Mammals and Morphometrics Section. Since 2016, he has also been in charge of its Palaeoanthropology Department. He has designed and supervised numerous exhibitions, including the travelling exhibition “Humans in 3D – in the focus digital techniques”, which was shown in Germany, Austria and France, and the exhibition “Caveman Safari” (“Safari zum Urmenschen”) at the Senckenberg Museum.

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ageing of teeth, where they will examine how a set of teeth reacts biologically when the teeth are worn down – by pushing them out of the jaw, for example, or pushing them forward – and how dental treatments try to intervene in this process. They also want to explore the long-term effects of repeated C-sections. Today, according to Schrenk, the evolutionary process described by Darwin, according to which the organism best adapted to its environment has the highest chance of reproduction, has been replaced in many parts of the world by cultural evolution: the first stone tools made by *Homo rudolfensis* have evolved into countless instruments and machines without which we could not survive today. To feed the growing population, we have switched to mass-produced carbohydrates. And we now spend most of our days sitting, which has an impact on our bodies.

Research will, however, continue to centre on the fossils in Malawi, which has become a second home for Schrenk and to where the lower jaw will return (once again) as soon as the new National Museum in Malawi's capital Lilongwe opens its doors. And where Schrenk is also involved in many ways beyond his palaeontological research work: in the education of schoolchildren, students and doctoral candidates, as an adviser to the Malawian government on mining and the use of hydropower, in the shape of popular science lectures in the region and in the founding of an association in

Germany, which – as the association itself says – “wants to tell the history of humankind where it originated – in Africa”. The Uraha Foundation, named after the village close to where the lower jaw was found, campaigned with numerous supporters for the construction of a museum in the district capital Karonga, where the “Cultural & Museum Centre” opened in 2004. Ten years later, the community radio station “Radio Dinosaur” started broadcasting (see box) – once a month, Friedemann Schrenk is on air in the station's educational programme: by telephone from Germany or – preferably – on site in the studio in Karonga. ●

Searching for fossils: palaeontologist Harrison Simfukwe, Senior Curator at the Cultural & Museum Centre Karonga, Alick Malema, Friedemann Schrenk and Ipyana Mwalwanda (from left). Photo: Stefan Schmid



The author

Markus Bernards, born in 1968, holds a doctoral degree in molecular biology. He is a science journalist and editor of *Forschung Frankfurt*.

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Photo: Matthew Forrest

CLIMATE, EARTH,
ENVIRONMENT

An attempt to rescue the savannahs

Impacts of climate change and adaptation strategies

By *Andreas Lorenz-Meyer*

Ecosystem protection and climate protection are not separate things. Rather, they belong together and must also be considered together, as a German-South African project involving Goethe University Frankfurt shows. It centres on landscapes with unique flora and fauna.

In the northeast of South Africa, near the border with Mozambique, lies one of the most famous nature reserves in the world: the Kruger National Park. Its vast grasslands with the occasional tree or bush are home to hundreds of species of birds, reptiles, fish and amphibians. There are 147 mammalian species in the savannah, including, of course, the “Big Five”: lion, elephant, leopard, buffalo and rhinoceros. They attract over a million visitors each year and promise a spectacular experience in the wild.

However, the future of this semi-arid ecosystem, dominated by alternating rainy and dry seasons, is uncertain because climate change will presumably hit southern African very hard. Climate scenarios predict more drought and higher temperatures, especially for southwestern Africa. This will also affect savannahs such as the Kruger National Park. What does climate change mean for ecosystems? How can we preserve their immense biodiversity?

EMSAfrica, an interdisciplinary German-South African research project, is exploring these questions. In addition to the consequences of climate change, it is also looking at the effects

of land use. The aim is to deliver sound scientific data that will help in the future to make the right decisions concerning adaptation to climate change and the sustainable management of ecosystems.

Climate change is shifting vegetation zones

EMSAfrica builds on the results of ArsAfricae, the predecessor project. Between 2014 and 2018, the Thünen Institute of Climate-Smart Agriculture in Braunschweig, Germany, set up six observation stations in South Africa, where, among others, land-atmosphere carbon dioxide exchange is measured. EMSAfrica is divided into six work packages. Thomas Hickler, Professor for Quantitative Biogeography at Goethe University Frankfurt and work group leader at the Senckenberg – Leibniz Institution for Biodiversity and Earth System Research, is responsible for work package 4, “Vegetation and Ecosystem Modelling for Climate Impact Assessment”. Together with his team, he is studying how plants and animals are distributed on Earth. In addition, he is looking at ecosystem functions and the growth of forests: topics that are subsumed in English under the term “Ecosystem Ecology”.

“Within the EMSAfrica project, we’re trying to simulate changes in vegetation induced by climate change in the whole of southern Africa,” explains Hickler. Here, the focus lies on possible shifts in vegetation zones, especially in the savannahs. Professor Guy Midgley from Stellenbosch University, Hickler’s South African

Regular fires are important for preserving the open grassland of the savannah.



Photo: Maurizio De Mattei/Shutterstock

The EMSAfrica Project

The three-year EMSAfrica research project (Ecological Management Support for Climate Change in Southern Africa) is funded by Germany's Federal Ministry of Education and Research via the SPACES programme (Science Partnerships for the Adaptation to Complex Earth System Processes in Southern Africa). Five German institutions are involved – besides Goethe University Frankfurt, the University of Bayreuth and the Thünen Institute of Climate-Smart Agriculture, as well as various South African researchers and institutions, including Professor Guy Midgley from the Department of Botany and Zoology at Stellenbosch University and Dr Gregor Feig from the South African Environmental Observation Network (SAEON). Carola Martens from Goethe University Frankfurt is completing her doctoral degree within the project, and Dr Simon Scheiter from the Senckenberg – Leibniz Institution for Biodiversity and Earth System Research is also a project partner. South African scholar Mulalo Thavhana is currently conducting research in Germany within an exchange programme of the German Academic Exchange Service. EMSAfrica combines various scientific disciplines and approaches: direct measurements of greenhouse gas, remote sensing, vegetation modelling, ecophysiological measurements of plants, socioeconomic studies, computer-based simulation models.

www.emsafrica.org

colleague, describes their significance as follows: “From an economic perspective, these semi-arid grasslands are the basis primarily for sheep and cattle farming. In addition, they provide ecosystem services – water cycles, nutrient cycles, carbon storage. They are also special because they are so old and varied. Their biodiversity is extraordinary. There are many endemic species and genera and even entire families of animals and plants that are found only here.”

Studying how the flora in the savannahs alters as climate change progresses is no easy feat. “The dynamics of these systems are determined by complex interactions between climate, grazing animals and regular fires,” says Hickler. Nailing down this complexity calls for a powerful computer simulation model and many different observational data, from experimental field data to satellite observations. Model development is one of the main tasks of Hickler's research group. The ones used are often referred to as Dynamic Global Vegetation Models (DGVM) and are increasingly being developed by the international scientific community in collaboration. Hickler's research group is using two such models in the project. One of them was specifically adapted for the conditions in the tropical and subtropical grass-tree systems of Africa: the adaptive Dynamic Global Vegetation Model, in short aDGMV, originally developed by his Senckenberg colleague Simon Scheiter and Steven Higgins (University of Bayreuth).

Computer simulates vegetation

The model's capabilities are astonishing. “It can show how individual trees compete with each other for water and light,” explains Hickler.



Marek Jakubík, cooperation partner at the Global Change Research Institute in the Czech Republic, is examining how much CO₂ the soil emits – through respiration by plant roots and microbial decomposition processes of organic material – in the Nama Karoo near Middelburg, an ecosystem of dwarf shrubs and grasses found only in South Africa and Namibia.
Photo: Carola Martens



Photo: Vision2030, Wikimedia

Effectively, environmental conditions, above all climate, soils and land use, determine which plant species and characteristics manage to dominate, for example evergreen rainforest trees or deciduous savannah trees or grasses. The model takes into consideration a range of ecophysiological processes, such as photosynthesis, transpiration and carbon accumulation in roots or leaves. aDGMV can also illustrate the effect of fire on individual trees. Fires are a regular occurrence in the savannahs, which is why savannah trees are more fire-resistant than rainforest trees.

The model simulates many plant characteristics and processes, and plant height determines whether trees survive a savannah fire or not. aDGMV thus masters complex connections within the ecosystem. The model is parametrised with a wide range of data, such as measurements of the photosynthesis of various plants, results of field experiments including experimental fires, measurements of CO₂ exchange as well as satellite-based assessments of the vegetation's seasonal development.

That climate change will lead to extensive changes in southern Africa is clear. And there are already signs of what's in store for the savannahs, as Hickler says: "Some observations and our models suggest that these are increasingly overgrown with bushes, which threatens their unique biodiversity." The cause is probably also the increased CO₂ content of the atmosphere, which brings with it "a certain fertilisation effect".

More CO₂ leads to more plant growth

The background: more CO₂ in the atmosphere not only heats up the planet but also directly

increases plant growth. This effect is known as CO₂ fertilisation. How intensive it is depends on the plant species, on how plants conduct photosynthesis. Bushes and trees are C3 plants. C3 because the first product of their photosynthesis has three carbon atoms. C3 plants have to close their stomata, through which they release water vapour, when it is very hot and dry. This protects them from drying out, but at the same time CO₂ can no longer enter their leaves, which the plants need for photosynthesis. The grasses of the savannah do not have this problem. They are among the rarer C4 plants, as during photosynthesis they first store CO₂ temporarily in a molecule with four carbon atoms and then concentrate it in special cells where the actual CO₂

To benefit from its advantage when hunting, the cheetah needs the open savannah: in three seconds, it can reach a speed of 95 kilometres per hour (top left, in the Kruger National Park, South Africa). Should bushes conquer the savannah like here in Namibia (top right), Africa's meanwhile rarest big cat and many other animal and plant species will lose their habitat.

IN A NUTSHELL

- In the EMSAfrica project, computer models simulate how South Africa's savannahs are changing as a result of climate change.
- Bushes and trees, which are increasingly displacing grass, are likely to benefit from the higher CO₂ content of the atmosphere. This might endanger many plant and animal species in the ecosystem.
- Artificial bushfires and smart management of land use, for example by planting crops, could help to counteract bush encroachment in the savannahs.



The six EMSAfrica observation stations are situated close to towns, grazing land or natural environments and are all paired: an area claimed by humans and a near-natural site as close as possible with similar climatic conditions. In the case of the Skukuza/Agincourt pair in north-east South Africa, one site is in the Kruger National Park, where human impact is minimal. The other site is near a settlement. Photo: Visible Earth/NASA

Triple crisis for Africa's biodiversity. Press release on the study published by Martens et. al. in Conservation Biology 2022. <https://tinyurl.com/2dkktaty>

fixation takes place. Their advantage over C3 plants: it makes them independent of how much CO₂ diffuses passively through the stomata and they can manage well even with little CO₂ in their leaves. If extreme drought and high temperatures prevail, they keep their stomata closed to prevent water loss. And there is still sufficient CO₂ to conduct photosynthesis.

However, this more efficient CO₂ storage is now proving to be a disadvantage because the C3 trees and bushes of the savannah are benefiting more from the rising CO₂ content in the

atmosphere than the C4 grasses are, with the result that the former are displacing the grass more and more. Such bush encroachment can already be observed in many places and is hardly explainable by anything other than the rise in CO₂.

Less frequent savannah fires are becoming a problem

Positive feedback could make matters much worse: this has to do with the fact that the grasses need regular savannah fires to hold their ground against trees and bushes because the

ABOUT THOMAS HICKLER



Thomas Hickler, born in 1972, worked as a postdoctoral researcher at the Department of Physical Geography and Ecosystem Science at Lund University in Sweden from 2004 to 2010, where he had also earned his doctoral degree in geobiosphere science in 2004. He has been Professor for Quantitative Biogeography at the Institute of Physical Geography of Goethe University Frankfurt and the Senckenberg – Leibniz Institution for Biodiversity and Earth System Research since 2010. Hickler is particularly interested in the interactions between biodiversity, ecosystems and climate at local and global level. His main research tools are process-based computer models for simulating biodiversity and ecosystem dynamics. He also plays an active role at the interface between science and politics, among others as author of various reports by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services and the Intergovernmental Panel on Climate Change. What he likes about the binational EMSAfrica project is how activities complement each other: "We're contributing our expertise in ecosystem modelling to the consortium and learning a lot about ecology and ecosystems in South Africa from colleagues on the ground."

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Reports by the IPCC
(Intergovernmental Panel
on Climate Change)
and the IPBES
(Intergovernmental Science-
Policy Platform on Biodiversity
and Ecosystem Services)

Ecosystem protection and climate protection must be on an equal footing, says Thomas Hickler. He meanwhile sees some progress being made here. For example, there is the Synthesis Report published in 2021 by the very well-known Intergovernmental Panel on Climate Change (IPCC) and the Intergovernmental Science Policy Platform on Biodiversity and Ecosystem Services (IPBES), which is not yet quite so well-known. Hickler was a co-author. One of the report's key messages: "The ambitious implementation of land- and ocean-based actions to protect, sustainably manage and restore ecosystems have co-benefits for climate mitigation, climate adaptation and biodiversity objectives and can help to contain temperature rise within the limits envisaged by the Paris Agreement."

fires prevent too many new woody plants from growing back, which would take light away from the grasses. If bushes and trees grow faster, however, there is less grass and thus less fuel for fires. They burn less often, and as a result even more woody plants grow, casting shade over even larger areas. That is bad for the grasses and also likely to affect the fauna in the long term, says Hickler: "If the savannah becomes overgrown with bushes because of the CO₂ fertilisation effect, grass-eating grazers such as zebras and cattle will have a problem."

What adaptation strategies to halt CO₂-induced bush encroachment make sense? Hickler's preliminary answer: "Fires are already being laid today to keep savannahs and grasslands free for livestock. Such controlled fires could become even more important." In addition, human use of the savannah must be managed wisely because too much cropland and pasture also endangers natural ecosystems. "In general, we will need to be flexible and continually adapt our strategies to the latest research findings." Especially since preserving ecosystems such as the savannahs in southern Africa is not only of regional but also of global importance,

The riverine rabbit (*Bunolagus monticularis*) is found exclusively on the banks of rivers in the Karoo Desert in South Africa that only carry water at certain times of the year. Already today, it has been driven out of 60 percent of its habitat by agriculture. As climate change progresses, it will presumably disappear altogether.
Photo: Adisha Pramod/alamy.de



namely, for climate protection: "Terrestrial ecosystems absorb about a quarter of CO₂ emissions worldwide. Global warming without this service would be far greater. We shouldn't forget that."

Guy Midgley thinks that the savannahs have a good chance of surviving climate change. "They are very resilient and adaptable. In the course of their development, they have experienced dramatic climate fluctuations and consequently exhibit considerable resilience to such changes. What's more, they are able to recover after severe droughts." However, there are also rare succulents that might react more sensitively to extreme droughts; and local endemic animals such as the riverine rabbit, some bird species, or amphibians and reptiles that could be more afflicted by climate change. ●



The author

Andreas Lorenz-Meyer, born in 1974, lives in the Palatinate and has been working as a freelance journalist for 13 years. His areas of specialisation are sustainability, the climate crisis, renewable energies and digitalisation. He publishes in daily newspapers, specialist journals, university and youth magazines.

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Here we go gathering!

A German-Beninese team is studying
the world of fungi in West Africa

By Stefanie Hense

Meike Piepenbring, mycology professor at Goethe University Frankfurt, is studying the fungi of Benin together with a mycology group led by Professor Nourou S. Yorou at the Université de Parakou. Their aim is not only to discover new species in the largely unexplored realm of fungi. The scientific team also wants to develop new cultivation methods for edible mushrooms.

Fungi are found everywhere, on the forest floor, on human skin, in the deep sea and possibly even in space; as spores, as filamentous webs, as mushrooms. They break down all kinds of organic material, grow as parasites in or on living organisms, or enter into partnerships for life with plants or – in the case of lichens – with algae and/or cyanobacteria. In 2017, researchers from London and Berlin reported in the journal *Microbiology Spectrum* that the fungal world presumably has the second greatest biodiversity on our planet after the animal kingdom. According to their estimates, there could be between 2.2 and 3.8 million fungal species, of which to date only around 140,000 are known and have been described by scientists.

That most fungal species are yet to be discovered is particularly true for tropical Africa. Mycologist Meike Piepenbring is aware of this: “Two years ago, my research group at Goethe University Frankfurt compiled and published a list of all the fungal species known for West Africa. It contains the names of over 4,800 species. We assume that this list doesn’t include even 15 percent of the species that actually exist in this area.” Together with her collaboration partner Nourou Yorou from the Université de Parakou in Benin, Piepenbring is searching for unknown fungal species. The chances of the German-Beninese working group finding them there for the first time – and of describing unknown species or even genera as new to science – are quite good.

Edible and medicinal mushrooms

In a first step, the research team is documenting fungi already known to the local people. The people of Benin greatly value mushrooms, as they make an important contribution to the population’s diet. “Mushrooms contain a lot of

1 The edible mushroom *Lactifluus gymnocarpus* grows in the tree savannahs of tropical Africa. Its common name, Kpayenkping-gbèka, indicates the place where it is found: “Mushroom that grows under the uapaca tree”.



- 2 Off to spot fungi: Nourou S. Yorou from the Université de Parakou.
- 3 A new species of fungus from Benin, a previously unknown bolete, the species or genus of which even the most modern molecular genetic methods have so far been unable to determine.
- 4 Meike Piepenbring underway in the forest with doctoral candidates Affoussatou Tabé, Université de Parakou, and Miguel Bermúdez, Goethe University Frankfurt.

IN A NUTSHELL

- Mushrooms can play an important role in a person’s diet as a substitute for meat. In addition, some species are used to treat diseases.
- According to estimates, so far only about five percent of all fungal species have been described by scientists.
- Researchers from Goethe University Frankfurt and the Université de Parakou are busy classifying locally known and new fungal species in Benin and developing techniques to cultivate edible mushrooms.



The author

Dr Stefanie Hense, 51, is a freelance science journalist. Having studied physics and earned her doctoral degree, she was first a trainee at the FAZ newspaper and then worked there in the political newsroom. Today she writes for UniReport and GoetheSpektrum, media of Goethe University Frankfurt.

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protein, as well as D vitamins, minerals and trace elements,” says Yorou. “That makes them a potential substitute for meat and a valuable supplement to millet, manioc and yam, above all when supplies are depleted towards the end of the dry season and new crops cannot yet be harvested at the beginning of the wet season.” Knowledge about how to use fungi, for example as food and as medicinal mushrooms, has a long tradition in the various ethnic groups of Benin and is passed on by word of mouth from parents to their children, especially in rural areas. “By documenting this knowledge, we want to preserve it at the same time. This is all the more important as more and more young people are moving to the cities, with the result that this knowledge is being lost,” comments Piepenbring.

That is why the members of Yorou’s working group are travelling to villages in Benin and asking which mushrooms the people collect and what names they give them. They compare the

results of this research, referred to as “ethnomycology”, with standard mycological classification: To which genus, to which species, does a particular mushroom traditionally belong? Do different names exist for it in various parts of the country? Do ethnic groups agree on the properties of a certain species, or is the one or other type considered edible and tasty in the first village, inedible in the second, and even poisonous in the third?

Analysis of genotype and constituents

The “FunTrAF” project (Diversity and Uses of Fungi in Tropical Africa), which started in 2020, is funded by Germany’s Federal Ministry of Education and Research, and in the summer of 2021 a container set off across the North Sea and the Atlantic Ocean with equipment for the laboratories in Parakou. Inside: a sterile workbench, refrigerators, freezers, PCR devices for analysing genetic material as well as computers, glass devices and consumables to the value of €45,000. The Université de Parakou had provided Yorou with rooms beforehand, and through the arrival of the lab equipment it became clear to Yorou that he also needed to improve the labs’ power supply, as Piepenbring reports. “Nourou told me how the fuse regularly



Photo: Meike Piepenbring

also testing whether the fungi grow on shredded crops and harvest waste instead of on artificial culture media containing sugar: millet husks, potatoes, other starchy tubers or the inner part of corn cobs.

Free licences for farmers

The intention is to protect the newly developed techniques against foreign corporations through patents, says Yorou. Local farmers, by contrast, will receive licences free of charge as soon as the development work has been completed. “By doing this, we want to foster economic independence, especially among women and young people,” explains Yorou. Our aim is to reduce unemployment, food insecurity and extreme poverty in Benin’s rural communities.”

5 In the mycology laboratory at the Université de Parakou, doctoral researcher Azize Boukary looks at his fungal cultures in the refrigerator, which has just been delivered by container from Frankfurt.

6 This yellowy-green fungus was first described scientifically in 2018 by Nourou Yorou and his team. They named it *Pulveroboletus sokponianus* after the Beninese ecologist Nestor Sokpon.

blew as soon as someone switched on the steam steriliser!”

The mycologists from Frankfurt and Parakou like being out and about together for field work, that is, gathering fungi in the forest or savannah or at the roadside, and learn from each other in the process: from the technical equipment and scientific background of the one as well as from the knowledge of the fungi, plants, climate and other local conditions of the other. And last but not least from the collection and export permits that the Beninese colleagues obtain from local authorities. The team collects specimens for the herbaria in Parakou and Frankfurt, and together the researchers begin examining and documenting the morphology of the fungi directly on site with the help of the “donated” binoculars and microscopes. In future, the scientists in Benin also want to sequence the genetic material of the fungi, while the natural products of mushrooms are analysed in Germany by means of high-pressure liquid chromatography, among other methods.

Mushrooms as meat substitute

The purpose of the mycological project is not just basic research: Yorou and his group are looking for ways to cultivate edible mushrooms and thus expand and improve their use. “In this subproject, we’re developing locally adapted techniques that can be used to cultivate edible mushrooms,” explains Yorou. There are many native species that are popular with the local people, he says, and yet no one has ever tried to cultivate them.

“So we’ve devised or optimised production techniques for four native species,” he continues. “We isolated cells from fungi in the forest as pure strains.” A series of analyses followed in order to find out under which conditions a particular fungus reproduces best: at what temperature, pH and humidity, as well as requirements concerning special minerals. The researchers are



Photo: Felix Hampe & Cathrin Manz



Russula congoana is often found in semi-open savannah forests. Although it is relatively small, it is often gathered as an edible mushroom due to its mild taste, especially since it forms fruiting bodies in large quantities at the beginning of the wet season.

Photo: Felix Hampe & Cathrin Manz

ABOUT MEIKE PIEPENBRING



Meike Piepenbring, born in 1967, studied biology in Cologne and Clermont-Ferrand (France). After her diploma, she discovered fungi, which is why she then completed her doctoral degree (1994) and her postdoctoral degree (habilitation) (1999) in mycology in Tübingen. She was appointed as a professor at Goethe University Frankfurt in 2001 and has since devoted herself to the search for undiscovered tropical fungi in Central America and Africa, the phylogeny of specific groups of fungi and the diversity of fungi and their significance in the Taunus or in the Science Garden of Goethe University Frankfurt on Riedberg Campus.

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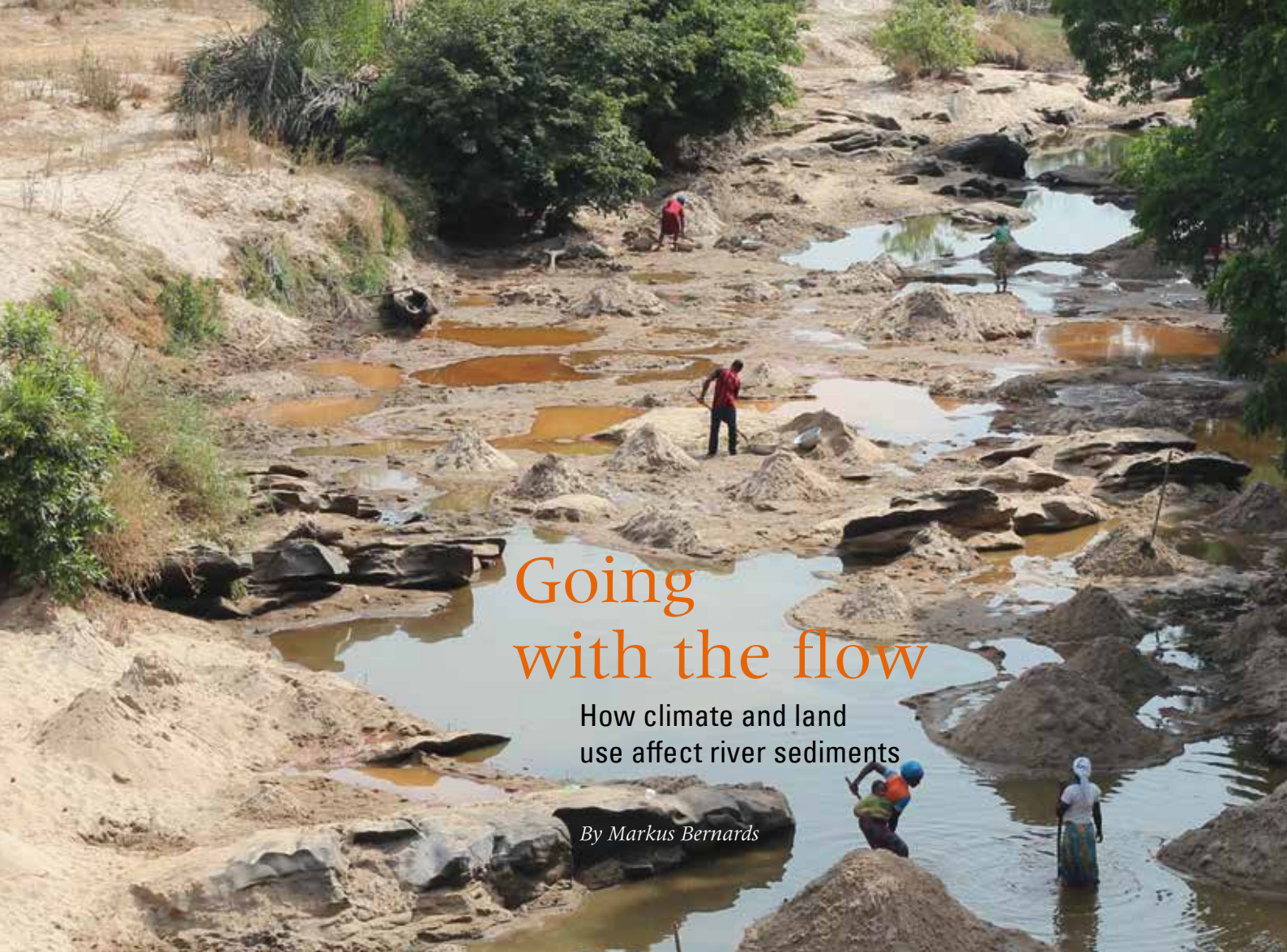
ABOUT NOUROU S. YOROU



Nourou S. Yorou, born in 1974, studied agricultural science in Abomey-Calavi (Benin) and then went to LMU Munich to work on the anatomy, phylogeny and evolution of tropical fungi from the Thelephorales order for his doctoral degree. After that, he led a junior research group at LMU for three years on the mycology of tropical Africa. Since taking up a professorship at the Université de Parakou in Benin in 2014, his main interest has been the sustainable cultivation of fungi, the symbioses of fungi and plants (mycorrhiza) as well as the preservation of endangered fungal species and their partner plants.

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Piepenbring makes a remark to which she attaches particular importance: “What we’re doing as German researchers in Benin is not development aid, but development cooperation.” Many Germans, she says, believe that they are technically superior to people in African countries, but this is not the case. For example, Piepenbring has personally experienced that Africans have sophisticated knowledge of cultivation and preservation methods for their crops which do not require electricity or fossil energy sources. That’s why reporting on her experiences, continuing to take young people from her research group to Benin and showing them a different picture of Africa are important to her. “In addition, we’re pursuing an overarching objective with FunTrAf,” she adds. “We want to provide our partner in Benin with equipment and methodological knowledge in such a way that he can conduct good research independently in the long term and train his own young team. And then he will advance African mycology under his own steam.” ●



Going with the flow

How climate and land use affect river sediments

By Markus Bernards

In search of some experience in the tropics, it was in Togo that geography student Jürgen Runge first set foot on the African continent. A somewhat bumpy start developed into a great affection for Central and West Africa. Today, Runge is Director of the Centre for Interdisciplinary African Studies at Goethe University Frankfurt and, together with partners in the region, conducting research above all on landscape development, river sediments and climate change.

When Jürgen Runge arrived in Togo in 1983, he was obliged to go to bed hungry. At that time, the future African studies scholar had just passed his intermediate exam in geography and wanted to do an internship in a tropical country; his professor in Giessen had sent him to West Africa. It was only with some difficulty that he had managed to find the guest house of the *Deutsche Gesellschaft für Technische Zusammenarbeit* (GTZ, now GIZ). Darkness had fallen very quickly, the night watchman

was already on duty, the guest house empty, and somewhere chickens were clucking. It was a little eerie. Still, he met a member of the GTZ staff inside, who merely called out to him, however, that she was very sorry, but they had completely forgotten that he was supposed to arrive that day. Dripping with sweat, only moderately fluent in French and without Google Maps – there would be no internet for another ten years – Runge spent his first night in the tropics.

Today, Jürgen Runge is Professor for Geoecology and Physical Geography at Goethe University Frankfurt, with a special research focus on Sub-Saharan Africa, and Director of the Centre for Interdisciplinary African Studies. The first, rather gloomy evening in West Africa is long behind him, and the “culture shock” has given way to a great affection for Africa. “The next day, the staff introduced me to the localities, and today, when I’m sitting on the plane on my way to Togo, I look forward to the kebabs from the woman around the corner,” smiles Runge.

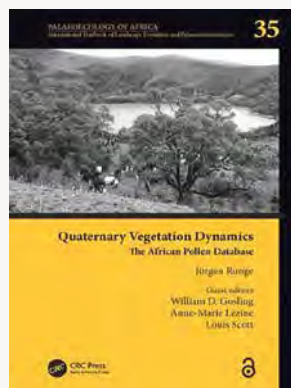
Mining sand from riverbeds like here in the Mò River in Central Togo also increases erosion.
Photo: Jürgen Runge



Charcoal, which these women are carrying to the market, is the most important energy source in West Africa for cooking.
Photo: Michele Burgess, alamy.de

Prehistoric pollen

Pollen grains stay preserved in organic sediments for a long time. Because they are of very different shapes, they can be assigned to the plants that once released them. This makes it possible to characterise the features of past landscapes, for example whether they were closed forests or open grassland. Pollen also reveals changes in biodiversity and substantiates how vegetation responds to climatic changes and human activities. In the 35th volume of “Palaeoecology of Africa”, published for the first time as open access, new environmental data from the lower latitudes and extensive synthetic overviews are presented that provide an insight into vegetation dynamics during the most recent epoch of Earth’s history, the Quaternary, which spans the past 2.6 million years. During this epoch, cold and warm periods alternated around the globe, and towards the end of this period humans increasingly began to use the land, changing ecosystems as they went. The book’s objective is to give a better understanding of how and why vegetation changed in the past by making comparisons with the present in order to better predict future changes in vegetation and thus landscapes.



Publishers: Jürgen Runge (Goethe University Frankfurt), William D. Gosling (University of Amsterdam), Anne-Marie Lézine (CNRS, Paris) and Louis Scott (University of the Free State, Bloemfontein). CRC Press/Routledge, Leiden, Netherlands. 2021 Open Access: <https://www.routledge.com/Palaeoecology-of-Africa/book-series/POA>



Geographer Tignoati Kolani examines alluvial sediments from the Keran River, a tributary in the Oti River Basin.
Photo: Jürgen Runge



From his six-month internship, during which he mapped lowlands to document possible areas for vegetable cultivation, he brought soil samples back to Germany and showed them to geomorphologist Professor Jürgen Hövermann in Göttingen, who held the sand sealed in plastic bags up to the light and exclaimed: “Hell and damnation, that looks like desert sand!” That was ultimately incorrect, they were “normal” erosion sediments from the slopes. “But with that he motivated me because finally someone was showing a scientific interest in what I’d brought back from Togo,” says Runge. He moved to Göttingen, where he completed his doctoral degree after his studies and continued to devote himself to Togo and other African countries, and primarily to how tropical rivers shape landscapes over time.

Research in the riverbed

In the spring of 2022, Jürgen Runge had just returned from another research visit to Togo, where he and his colleague Dr Laldja Kankpénandja from the University of Kara had studied river sediments: a basic research project where the scientists are looking at sediment structures to understand how rivers develop in the tropics. Runge: “The rivers there often erode only a minimal amount of material because of today’s low gradient; we call these peneplains. The sediments near the surface and the soil are eroded and deposited elsewhere over a very long period of time, that is, 60, 80 or 100 million years. To compare: the Middle Rhine Valley formed in the past 800,000 years, meaning that the Loreley Rock – from the perspective of geological history – is comparatively young.”

In March, at the end of the dry season in West Africa, the rivers carry scarcely any water and the sediments are clearly visible. However, the intense heat really got to the researchers: when the sun is high in the sky, the thermometer can easily climb to 40 degrees. Runge: “We get up early and leave our quarters at five o’clock in the morning. It gets light at six, and

then we can study the alluvial sediments in detail for a few hours before it gets unbearably hot at around noon.”

The river sediments also reveal when and how the climate changed in the past – through pollen grains, for example, which can be preserved in organic sediment deposits and are so different in shape that they can be assigned to different plant species (see box, p. 104). Palaeoecology is the term used for this specialist field in the reconstruction of past ecosystems. A research group, in which Jürgen Runge led a subproject, studied the “First Millennium Crisis” in the middle of the first millennium BCE in Nigeria and Cameroon, together with soil scientists, archaeologists and archaeobotanists. It can also be seen from the sediment layers that the climate of equatorial Africa became far drier within a relatively short period of time. Runge reports: “We can tell from the pollen in the sediment layers that the vegetation changed at that time and the rainforest disappeared in many places.” This had an impact on the migratory movements of the people living there at that time because the impenetrable rainforest had become sparse savannah, across which they could advance southwards more easily. This can still be seen today in the way Bantu language has spread throughout large parts of central and

Jürgen Runge examines geological structures near Défalé in the Kara Region, Togo.
Photo: Tignoati Kolani



ABOUT JÜRGEN RUNGE

Jürgen Runge, born in 1962, studied geography, soil science, geology and botany in Giessen as well as geography, botany, tropical agriculture and forestry in Göttingen, where he graduated in physical geography. He earned his doctoral degree at the same university in 1989 and his postdoctoral degree (habilitation) in 2000 at Paderborn University with a thesis on Central Africa. In the same year, he was appointed at Goethe University Frankfurt as Professor for Geoecology and Physical Geography with a regional focus on Sub-Saharan Africa. From 2007 to 2010, he worked as a project manager for the Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ, now GIZ) in the Central African Republic. In 2003, he was founding director of the Centre for Interdisciplinary African Studies, which, after some interruptions, he has now headed again since 2013. Jürgen Runge organises summer schools and workshops to train forestry and environmental experts (<https://www.giz.de/akademie/en/html/59600.html>), whose task it is to ensure sustainable forest management in the Congo Basin.

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First image of the black hole at the centre of the Milky Way

Theoretical physicists at Goethe University Frankfurt have been instrumental in interpreting the data gathered by a worldwide network of radio telescopes. These data have enabled scientists to publish the first image of the black hole at the centre of our own galaxy, the Milky Way. It was captured by the international research team called the Event Horizon Telescope (EHT) Collaboration and reveals that the object is indeed a black hole. At the same time, the research results yield clues about the workings of such supermassive black holes, which are thought to reside at the centre of most galaxies.

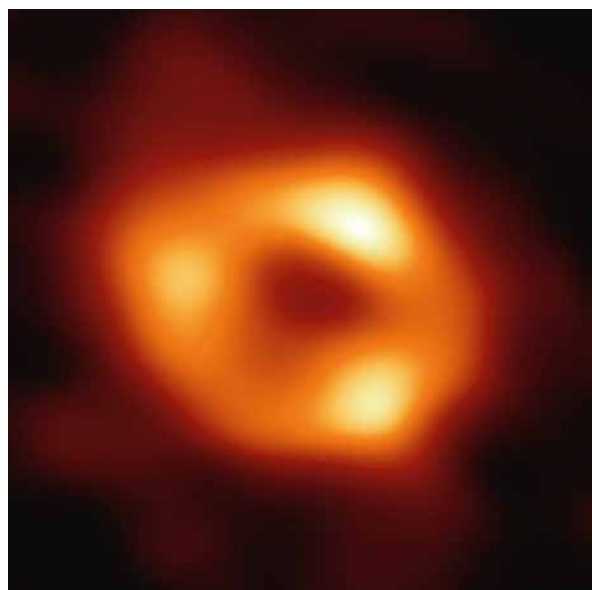
Although we cannot see the black hole itself, the glowing gas around it reveals a tell-tale signature: the image of Sgr A* shows a dark central region (a “shadow”), surrounded by a bright ring-like structure. This is the light bent by the incredibly powerful gravity of the black hole – whose

mass is four million times that of our Sun.

The enormous quantity of observational data had to be interpreted theoretically – a task assumed by a research team led by theoretical astrophysicist Luciano Rezzolla from Goethe University Frankfurt. The researchers used supercomputers to simulate what a black hole might look like when observed by the EHT – based on what was already known about Sgr A*. In this way, the scientists created a library with millions of different images. They compared this library with the thousands of other images generated by the EHT observations in order to deduce the properties of Sgr A*.

The image of Sgr A* is the second one of a black hole to be produced by the EHT Collaboration, following the first image of another black hole, M87*, at the centre of the Messier 87 galaxy.

<https://tinygu.de/BlackHoleMilkyWay>



The Sgr A* black hole at the centre of our Milky Way. Image: EHT Collaboration

Pandemic: more zombie firms

The COVID-19 pandemic triggered a short but severe recession. Countries around the world tried to mitigate its consequences through state aid programmes, in particular for small companies. When governments made aid payments without a needs assessment, some firms survived in the market although their bankruptcy would have been the better alternative. This is the conclusion of a working paper by the Leibniz Institute for Financial Research SAFE, based on an analysis of the US-American COVID-19 “Paycheck Protection Program” (PPP).

The SAFE analysis compares the PPP, which distributed federal aid in a scattergun approach, with a hypothetical scenario where governments paid funds to targeted companies. “Both scenarios would have a similar percentage of saved companies. However, in the case of targeted payments, the share of zombie firms artificially kept in the market is only 1.3 percent, compared to 16.6 percent due to the PPP,” says Leo Kaas, SAFE fellow, Professor of Macroeconomics and Labour Markets at Goethe University Frankfurt and one of the authors of the working paper.

Accordingly, the PPP prevented 35 percent of all small US business liquidations at the beginning of the COVID-19 pandemic. However, it did not increase either overall economic production or employment, says Kaas. The reasons for this are twofold: the state aid predominantly rescued small, unproductive companies and the PPP often resulted in workers remaining at these firms instead of switching to more productive companies.

<https://tinygu.de/ZombieFirms>

Asian monsoon causes ice clouds

The Asian monsoon transports enormous quantities of air from atmospheric layers close to Earth's surface to a height of around 15 kilometres. The effect is like a gigantic elevator taking anthropogenic air pollutants to the upper troposphere. A research team from the CLOUD consortium (Cosmics Leaving OUTdoor Droplets), including atmospheric researchers from Goethe University Frankfurt, has reproduced the conditions prevailing there, among them cosmic radiation, in their experimental chamber at the CERN particle accelerator centre in Geneva.

They discovered that up to 100 times more aerosol particles form from ammonia, nitric acid and sulphuric acid than when only two of these substances are present. These particles are then available on the one hand as condensation nuclei for liquid water droplets in clouds, and on the other as solid seeds for pure ice clouds known as cirrus clouds. The research team also observed that ice clouds with the three-component particles already form at lower water vapour supersaturation than anticipated. This means that the ice clouds develop under conditions that atmospheric researchers worldwide had



Air pollutants form the condensation nuclei for icy cirrus clouds (here: *Cirrus spissatus*). Photo: Joachim Curtius

until now assumed did not lead to the formation of cirrus clouds. With model global calculations, the CLOUD research team was also able to show that the cloud nuclei can spread across large parts of the Northern Hemisphere within just a few days.

"The experiment in the cloud chamber was a response to the results of field measurements over Asia. These measurements showed that ammonia is present there in the upper troposphere during the monsoon," explains CLOUD member Joachim Curtius, a professor at Goethe University Frankfurt. "Previously, we had always assumed that ammonia, being water soluble, was washed out of the rising air masses before it reached the upper troposphere." As the CLOUD researchers' experiment now corroborates, ammonia is an essential ingredient for more cloud formation. Ammonia emissions in Asia come predominantly from agriculture. Researchers worldwide are investigating processes associated with clouds as a climate factor in order to improve climate models.

<https://tinygu.de/IceClouds>

Resistance in cancer treatment

At the Frankfurt Cancer Institute (FCI), a LOEWE research centre, a group of researchers led by Professor Florian Greten from Georg-Speyer-Haus, in cooperation with Professor Claus Rödel and Professor Emmanouil Fokas from the Department of Radiotherapy and Oncology, has identified a new resistance mechanism in the treatment of rectal carcinoma. By examining patient samples from University Hospital Frankfurt, the scientists showed both in the laboratory and in preclinical models that it is not primarily the tumour cells themselves but the surrounding inflammatory connective tissue cells that significantly modulate the response to radiotherapy. If the inflammatory messenger known as IL-1a was inhibited, cellular changes could be halted and the cancer again became vulnerable to radiotherapy. A receptor in the blood serum was identified as a good prognostic marker for the response to treatment.

<https://tinygu.de/Enddarmkrebs>

Trust in the police

A study by Christian Czymara of Goethe University Frankfurt and Jeffrey Mitchell of Umeå University (Sweden) focuses on the trust placed in the police by immigrants in Europe. The two social scientists have analysed data of almost 20,000 immigrants from 22 European countries between 2006 and 2019. These data, which originate from the European Social Survey, show that trust in the police is in fact on average higher among immigrants than among the native population. However, the longer people live in the destination country, the more their trust tends to decline.

The authors have two explanations for this: first, the memory of the country of origin, and of the situation there, fades with time. The contrast between the country of origin and the country of destination is particularly significant for people who have immigrated from countries where the rule of law is not so well established to a country that is very advanced in this respect. Secondly, immigrants in new surroundings often experience discrimination, especially those



Migrants' trust in the police often diminishes, the longer they stay in the host country. Photo: Pradeep Thomas Thundiyil/Shutterstock

belonging to an ethnic minority there. Moreover, comparisons between European countries clearly demonstrate that trust is on average lower where there are more police officers – for example in Cyprus, Croatia and Greece. The authors conclude that the size of a police force alone is insufficient to boost trust in the police, and instead experiences of discrimination must be reduced.

<https://tinygu.de/police>

Study finds that women are underrepresented in economics worldwide

Women are still underrepresented in many academic professions. This is particularly the case in economics, as shown in a study by economist Professor Guido Friebel from Goethe University Frankfurt and his team in cooperation with the Toulouse School of Economics. The situation for women is especially difficult in senior positions and at universities that are particularly strong in research.

In total, the study collected data from 238 universities and business schools worldwide, involving over 34,000 individuals. Subsequent analysis revealed that in the US women hold only 20 percent of senior-level positions, that is, professorships, whereas the figure in Europe is 27 percent. The global average is 25 percent. At entry level, 32 percent of positions in US institutions are held by women, in Europe 38 percent. Worldwide, the figure is 37 percent. But there is no reason for European countries as a whole to rest on their laurels as far as support for women is concerned, let alone give themselves a pat on the back: "Once again,

we have the Scandinavian countries to thank for the positive numbers, but also Spain, France and Italy," explains Friebel, who was surprised by the poor US result. He also found it surprising that few women work at institutions with a particularly high research output. Here, too, women are at a greater disadvantage in the US than in Europe.

This disparity can have different origins, as the study shows. Correlating the figures with existing statistics revealed a close connection with the general attitudes prevalent in the respective society. The organisational culture of the particular university, institutional rules, but also the behaviour of women and men in economics are additional factors.

As far as Germany is concerned, Friebel sees one reason for the underrepresentation of women in the fact that when a professorship becomes vacant and is re-advertised, it is often dedicated to the same topic – and thus to the research preferences of men. Women are less often involved in macroeconomics or economic theory than



Since 1969, the Nobel Prize for Economics has been awarded to two women – Elinor Ostrom (2009, photo) and Esther Duflo (2019) – and to 89 men. Photo: Holger Motzkau, Wikipedia/Wikimedia Commons

men and more often work in development economics, health, labour and organisations – areas that should be strengthened anyway.

<https://tinygu.de/FemaleEconomists>

Developing bio-based products

Early assessment during the development of new bio-based products makes it possible to gauge the potential risks arising from subsequent release of toxic substances. This is shown by a proof-of-concept study headed jointly by Goethe University Frankfurt and RWTH Aachen University. In the course of the study, the toxicities of sustainable biosurfactants, e.g. for use in bio-shampoos, and of a new technology for the economical deployment of plant protection agents were analysed using a combination of computer modelling and laboratory experiments. The study represents the first step towards a bioeconomy that is safe in eco-toxicological terms and which uses sustainable resources and processes to greatly reduce environmental burdens. Two scientists from Goethe University Frankfurt supported the study within the interdisciplinary project "GreenToxiConomy": Professor Henner Hollert and Dr Sarah Johann from the Department of Evolutionary Ecology and Environmental Toxicology.

<https://tinygu.de/bioproducts>

Reading centre in the brain creates word filters

Recognising words is the basis for understanding the meaning of a text. When we read, we move our eyes very efficiently and swiftly from one word to the next. As a rule, this flow is only interrupted when we encounter an unfamiliar word. In experiments using functional magnetic resonance imaging (fMRI), an international team of scientists from Goethe University Frankfurt and the University of Vienna has now discovered that the distinction between familiar words and unfamiliar strings of characters, in the sense of a filtering process, also serves well as a model for the patterns of brain activity observed during reading. This filter is located in the lower left temporal lobe, a brain area which is important for visual word recognition. The study was headed by Professor Christian Fiebach from the Institute of Psychology at Goethe University Frankfurt.

Investigating political violence

What effects do global developments such as technologisation and climate change have on political violence? How can political violence be limited – or legitimised – by international institutions? How is it interpreted and justified? These are the questions addressed by the new joint interdisciplinary project "Regional Research Centre – Transformations of Political Violence (TraCe)", in which five Hessian research institutes are cooperating: the Peace Research Institute Frankfurt (PRIF), part of the Leibniz Association, Goethe University Frankfurt, Justus Liebig University Giessen, the University of Marburg and the Technical University of Darmstadt. Germany's Federal Ministry of Education and Research is providing funding of €5.2 million for the collaborative project. The project team includes Professor Astrid Erll, Professor Hanna Pfeifer, Professor Constantin Ruhe and Professor Lisbeth Zimmermann from Goethe University Frankfurt.

southern Africa, as Bantu originally stemmed from present-day Nigeria north of the tropical rainforest. Runge believes that this “ecological determinism” is at least highly probable.

When rivers shape the landscape

Later, the rainforest spread out again, and today it is human-induced climate change that is causing it problems. Applied research on the consequences of climate change and land use by the growing population in West Africa, that is, sustainability research, is Runge’s second research pillar. Here, he is working together with his Frankfurt team in a network of scientists from Benin, Burkina Faso, Cameroon, Côte d’Ivoire and, of course, Togo. They are studying how transport links can be designed so that they are ecologically sustainable, how uncontrolled land use or charcoal production are abetting the savannah’s encroachment into the forest, or

how yam, maize, rice, millet and pearl millet cultures behave under changing rainfall.

The rivers also react sensitively, as Runge knows: “Land use and charcoal production are shrinking the forest from the edges. This is indeed slightly less dramatic in Central Africa than in Brazil, where vast areas of the rainforest are being systematically chopped down. But here, too, the forest is diminishing and can retain less water as a result.” Together with the impact of battering raindrops no longer slowed down by a dense

canopy of leaves, soil erosion is increasing, and the rivers sweep the soil away with them in the form of suspended particles. The outcome: “Rivers are becoming much wider, which can be seen now and again at bridge foundations from the colonial era that are eroded. At the same time, the suspended particles form new islands in the riverbed. Large areas of agriculturally productive land are carved up and unusable for food production.” This means that reservoirs have to be dredged more frequently. Elsewhere, excessive sand mining for construction by the population can increase fluvial erosion in riverbeds.

sustainable use of forest and savannah ecosystems in the Congo Basin, has taken up the cause of protecting the forest, which is so important for soil conservation. It needs trained forestry and environmental experts, and Runge, in cooperation with the *Deutsche Gesellschaft für Internationale Zusammenarbeit* (GIZ) and other partners, organises summer schools for COMIFAC lecturers, in which scientists from numerous West and Central African countries are involved. The aim is to preserve the important biodiversity and the large carbon dioxide storage capacity above all of the tropical rainforest.

More students from Africa!

The topic of climate change makes it clear once again how much Europe and Africa are in fact dependent on each other. For this reason, Runge would like to see much closer exchange between Germany and the countries of the African continent. “We still have room for improvement at Goethe University Frankfurt too,” says Runge. “Of our 45,000 students, only perhaps 500 are from Africa, most of them from the Maghreb. Yet Sub-Saharan Africa has an enormous wealth of inquisitive and educated young people. Should they all go to China or Malaysia?”

But German students today are also rather hesitant about spending a few months alone in Central or West Africa for an internship or to write a thesis, without their professor as “travel guide”. But only in this way can you get to know people, culture and nature, says Runge. “The infrastructure is not so good in many places, and sometimes you simply get stuck somewhere for days and can’t move on with your journey. But I think it’s great when you’re then often invited into local communities’ homes and can see how they live. Video conferences are not enough to really make contacts. You need to be able to shake hands, sit down to a meal together or have a beer. It’s always a bit chaotic, you have to go along with that, but you also decelerate a lot down there.” Perhaps this is precisely what makes West and Central Africa so appealing. ●

IN A NUTSHELL

- Sediment layers in central and west African rivers show that there was a distinct dry season in equatorial Africa around 2,500 years ago, during which large parts of the rainforest gave way to savannahs.
- When the tropical forest shrinks due to charcoal production or conversion to agricultural land (and possibly in future as a result of climate change), erosion increases.
- The training of foresters and environmental experts by the Commission of Central African Forests aims to contribute to the preservation of the rainforest and its sustainable use.

The author

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 (see p. 91)

Sustainable forestry protects against erosion

The Commission of Central African Forests (COMIFAC), a supranational body for the sus-

The roots of #BlackLivesMatter

Not just since the death of George Floyd has there been massive public resistance to police violence directed against African Americans. The #BlackLives-Matter movement, founded in 2013, is experiencing broad support worldwide. A new research group led by Professor Simon Wendt, American Studies scholar, is now exploring the forerunners of this movement in the 20th century and analysing the successes and impacts of Black Power.

Over the past 20 years, historians' interest in Black Power has grown, yet many historiographical gaps remain. The new research group aims to bridge some of them. The researchers want to take a fresh look at the Black Power movement in order to better understand its influence on America's democracy and the associated values.

"The Sixties and Seventies had a profound impact on debates about racism and democracy – and continue to do so today. In this context, we want to examine the lesser known Black Power groups as well as neglected topics and, by doing so, shed light on the struggle between competing ideals of US democracy and their long-term effects," Wendt explains. The prime intention

A research group at Goethe University Frankfurt is turning its attention to the historical forerunners of the #BlackLivesMatter movement. Photo: ryanbphoto-graphy/Shutterstock



is to combine gender, social, intellectual and political history. What effect did the Black Power movement's anti-racist struggle have on ideas about a just and democratic society?

One of the research group's projects focuses on the tensions between the Black Power and Gay Liberation movements and how they collaborated. To what extent did different perceptions of what constitutes a just and democratic nation help or hinder the

two movements' quest for full equality? Another project analyses the arguments used by contemporary critics of the Black Power movement in order to find out how debates about racism left their imprint on various social groups' understanding of democracy. The third project traces the history of the National Black United Front (NBUF), an African American organisation founded in 1980 in New York by former Black Power activists.

Novel crystals for future computer electronics



Innovative materials are expected to minimise the electricity consumption of electronic components. Photo: raigvi/Shutterstock

While modern computers are already very fast, they also consume vast amounts of electricity. For some years now, a new technology has been much talked about, which although still in its infancy could one day revolutionise computer technology – spintronics. The name is a portmanteau word created by combining "spin" and "electronics", as with these components electrons no longer flow through computer chips and only the spin of the electrons serves as the data carrier. A team of researchers including scientists from Goethe University Frankfurt has now identified materials that have

surprising properties for spintronics as far as speed is concerned.

Above all crystals with atoms from the group of rare earths are regarded as interesting candidates for spintronics because these comparatively heavy atoms have strong magnetic moments. The rare earth metals include elements such as praseodymium and neodymium, which are also used in magnet technology. The research team has now studied a total of seven materials containing different rare earth atoms, from praseodymium to holmium.

"The most important finding is that in the crystals we have grown, the rare earth atoms react magnetically with one another very quickly and that the strength of these reactions can be specifically adjusted through the choice of atoms," says Cornelius Krellner, Professor of Experimental Physics at Goethe University Frankfurt. This paves the way for further optimisation – as at present spintronics is purely fundamental research.

<https://tinygu.de/spintronics>

Bacterial biobattery

A team of microbiologists from Goethe University Frankfurt, headed by Professor Volker Müller, has found an enzyme in anaerobic bacteria which binds hydrogen directly to CO₂ to produce formic acid. The process is completely reversible – a basic requirement for hydrogen storage. Fabian Schwarz, who wrote his doctoral thesis on this topic at Professor Müller's laboratory, has succeeded in developing a bioreactor that can store hydrogen for several weeks and then release it again. Schwarz fed the bacteria hydrogen for eight hours and then put them on a hydrogen diet during a 16-hour phase overnight. The bacteria released all the hydrogen. The bioreactor serves as a model for a possible bacterial hydrogen storage device for municipal or domestic biobatteries of the future

<https://tinygu.de/biobattery>

Theory debunked: no evidence that lipid messengers are involved in resolving inflammation

Inflammation is the result of an active defence reaction by our immune system. It was once assumed that resolution of inflammation was a passive process because the immune cells involved, having done their work, gradually die off or migrate elsewhere. Today, we know that our bodies also actively control the resolution of inflammation. Yet, contrary to a concept propagated for almost 30 years, specialised pro-resolving lipid mediators (SPMs), which our bodies produce from polyunsaturated omega-3 fatty acids, apparently do not actively stop inflammation. Since their discovery in 1984, SPMs have given an ever-growing group of “resolutionists” reason to hope that it would one day be possible to intervene therapeutically in inflammatory processes using synthetic “inflammation resolvers” (resolvins).

Indeed, a doctoral thesis in the Research Training Group “Resolution of inflammation – Mediators, signalling and therapeutic options” established at Goethe University Frankfurt in 2017 showed that anti-inflammatory macrophages form the two enzymes



The resolution of inflammation seems to function in a different way than had long been supposed. Photo: staras/Shutterstock

needed to produce SPMs. However, it was possible to detect tiny amounts of SPMs only under non-physiological conditions. Further suspicion was triggered by earlier work on SPM receptors by Professor Stefan Offermanns, who is a project leader in the Collab-

orative Research Centre “Signalling by fatty acid derivatives and sphingolipids in health and disease” hosted by Goethe University Frankfurt.

On the basis of these findings, a research team headed by Professor Dieter Steinhilber from the Institute of Pharmaceutical Chemistry at Goethe University Frankfurt combed through all the papers on SPMs published so far. This review endorsed their dismantling of the SPM concept: human leukocytes, which include macrophages, can at best synthesise small quantities of SPMs. These amounts are so tiny that they cannot be reliably quantified even with state-of-the-art analytics. There is no correlation between SPM synthesis and the resolution of an inflammatory reaction nor with a targeted intake of polyunsaturated omega-3 fatty acids. To date, there is no valid evidence for SPM receptors. There has to be another mechanism of active inflammation resolution, Steinhilber says.

<https://tinygu.de/inflammation>

Basis for developing a new class of antibiotics

In collaboration with researchers led by Professor Volkhard Kempf and using the human-pathogenic bacterium *Bartonella henselae*, scientists from University Hospital Frankfurt and Goethe University Frankfurt have unravelled how bacteria adhere to host cells. Bacterial adhesion to the host cells can be traced back to the interaction of a certain class of adhesins – called “trimeric autotransporter adhesins” – with fibronectin, a protein common in human tissue. Adhesins are components on the surface of bacteria which enable the pathogen to adhere to the host’s biological structures. Homologues of the adhesin identified here as critical are also present in many other human-pathogenic bacteria, such as the multi-resistant *Acinetobacter baumannii*.

<https://tinygu.de/bacterialAdhesion>

How the brain filters sounds

Bats are renowned for their echolocation skills. They navigate by means of their extremely sensitive hearing, by emitting ultrasonic calls and forming a picture of their immediate environment on the basis of the reflected sound. Bats live in an auditory world. A group of researchers led by Professor Manfred Kössl from the Institute of Cell Biology and Neuroscience at Goethe University Frankfurt has looked at how Seba’s short-tailed bat identifies particularly important signals – for instance warning cries from other bats, the isolation calls of infant bats or reflections from fruit in the labyrinth of leaves and branches – from among the wide variety of different sounds. Recordings of the bats’ brainwaves showed that a rare and thus unexpected sound triggers a stronger neuronal response than a frequent sound. This means that the bat’s brain regulates the strength of the neuronal response to frequent echolocation calls by suppressing these and amplifies the response to infrequent communication calls. The signals are apparently already processed in the brain stem.



Seba’s short-tailed bat (*Carollia perspicillata*) on the wing at night in search of food. Photo: Julio Hechavarria

Similar mechanisms are at work in human beings (known as the cocktail party effect). We filter out the conversations of people in our immediate environment in order to concentrate fully on our interlocutor. Bats and humans have similar hearing processes, meaning that a better understanding of how bats hear sound could help us to understand what occurs in disorders such as ADHD (attention deficit hyperactivity disorder), which disrupts adequate processing of extraneous stimuli.

<https://tinygu.de/soundfilter>

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NEXT TIME



Galaxies and
cosmic nebulae
of gas and dust
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Alien Worlds

When astronomers look deep into space or astrophysicists explore it from a theoretical perspective using the known laws of nature, they encounter highly exotic objects, such as neutron stars or black holes. Again and again, such discoveries challenge our view of the world. They symbolise the spirit of research at Goethe University Frankfurt, which transforms our understanding of the world at the frontiers of knowledge. In the next issue of *Forschung Frankfurt*, researchers will report on such alien worlds that can be found in the vastness of space and in the microcosm of atoms and biomolecules, in science fiction and quantum materials, in foreign worlds of ideas and in cyberspace.

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