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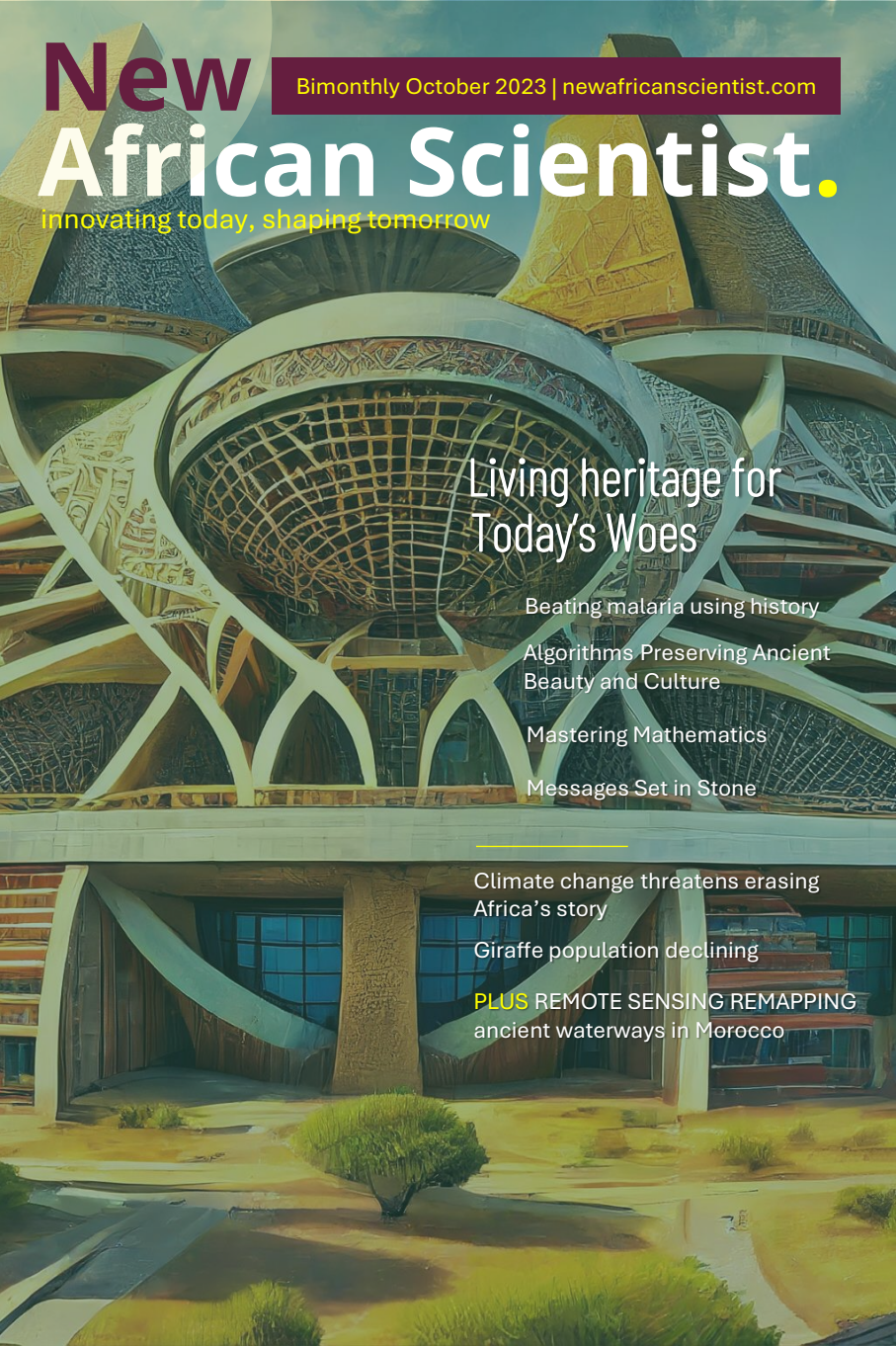

Living heritage for Today's Woes

Beating malaria using history

Algorithms Preserving Ancient Beauty and Culture

Mastering Mathematics

Messages Set in Stone

Climate change threatens erasing Africa's story

Giraffe population declining

PLUS REMOTE SENSING REMAPPING ancient waterways in Morocco

Ancient Roots, Modern Gains

From the timeless stories whispered by our ancestors to our vibrant dances, living heritage is Africa's heartbeat, a profound testament to our rich culture and wisdom. But beyond its historical and cultural significance, can it genuinely influence the trajectory of modern science?

Consider the fight against malaria. The very herbs, barks, and roots once masterfully used by our forebearers are today's subjects of intense scientific scrutiny. Inside labs across the continent, these ancient remedies are paving the way for transformative treatments.

In the realm of technology, Africa's traditional designs are no longer confined to fabric and pottery. They're setting the blueprint for innovative computer algorithms, pushing the boundaries of what's possible in the digital landscape.

Meanwhile, in the classrooms of Ghana, folklore is receiving a contemporary renaissance. These age-old tales are becoming foundational to education, ensuring that every lesson is culturally resonant, vibrant, and memorable.

Climate change casts a foreboding shadow on our cultural landmarks. Rising sea levels threaten the very foundations of sites that have stood for millennia, putting at risk tangible legacies of our shared history.

Preserving our living heritage isn't just a matter of pride; it's a duty. Yet, ironically, the most significant investments in this preservation often come from foreign shores. Could it be their subtle way of making amends? A penance for the climate crises largely of their making? Ah, the unexpected ways in which the world seeks balance!

Africa is a cauldron of vibrant traditions that hold the keys to future scientific marvels. When will we embrace this union of past and future?

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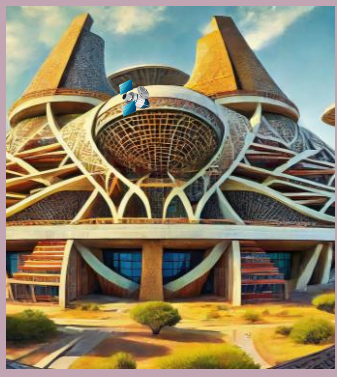
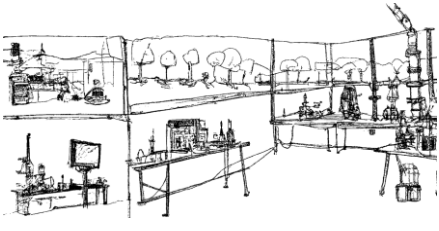


Cover: A model fractal structure showing a science innovation center generated by Adobe Firefly showing a fusion of past and present: where ancestral artistry meets modern design, reflecting the heart of Africa's innovations. This marvel imagines our rich heritage, pointing to a future where tradition and technology harmoniously intertwine, building bridges between epochs. (p8)



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DATA

A culture of data secrecy: So much of Ubuntu?

In a continent that prides itself on the philosophy of Ubuntu – "I am because we are" – the reluctance to share scientific data is a glaring contradiction. At a recent Nairobi conference, the issue took center stage. Phoebe Oduor underscored the wastefulness of repurchasing already available data, all because of fear of sharing. However, not all is bleak. The Eastern Africa Forest Observatory is championing data sharing among its member nations, hinting at a potential shift towards genuine Ubuntu in research.

HEALTH

Malaria Funding: Empty Pockets or Empty Promises?

As the African Union and global health leaders sound the alarm on the escalating malaria crisis, one can't help but wonder: Where's the political will? While leaders lament the "biggest malaria emergency" in decades, citing climate change, treatment resistance, and financial crises, they conveniently sidestep their commitments. Remember the pledge by African nations to allocate 1% of GDP to research? Most haven't come close, with many too embarrassed to report their paltry contributions.

AGRICULTURE

Ugandan Women Reel in Benefits from New Fish Kiln

Uganda's National Agricultural Research Organisation has unveiled a fish smoking kiln rooted in indigenous knowledge, offering a cheeky nod to the West's often problematic food processing methods. This kiln, championing traditional practices, slashes cancer-causing agents from 40,000 parts per billion to a mere two. Beyond health, the kiln has expanded market horizons for the women to neighboring countries. So, while the West grapples with its food processing pitfalls, Uganda's women are reviving age-old wisdom, proving that sometimes, old ways are the best ways.

Morocco's Ancient Waterways: A Blend of Tradition and Tech

Morocco is breathing new life into its ancient water management systems, the *khettara*, by fusing oral traditions with modern geospatial analysis. These millennia-old underground tunnels have sustained communities like the Aït Ouarhou tribe in the rain-scarce Anti-Atlas Mountains. Using satellite imagery, 28,000 km of these life-giving channels were mapped with the aim of rejuvenating them. Originating possibly from ancient Persians and refined during the Islamic conquest, the *khettara*'s gravity-driven design remains vital for present-day communities.

Foodscape Hub: Kenya's New Blueprint for Sustainable Agriculture

The Nature Conservancy is joining forces with the CGIAR Excellence in Agronomy Initiative to launch the Foodscape Innovation Hub in Kenya. Serving as a nexus for collaboration, the hub will connect communities, governments, NGOs, and businesses, offering a holistic approach to sustainable farming. With a focus on water conservation, climate adaptation, and efficient land use, the initiative seeks to balance increased crop yields with environmental preservation. Emphasizing the roles of youth and women, this partnership is set to reshape Kenya's agricultural future.

ENVIRONMENT

Saudi Oil Money's Bittersweet Dance with African Heritage

The recently ended meeting of the UNESCO World Heritage Committee has shown that intergovernmental policies and regulations are funnier than a Netflix comedy special. The country touted its $20 million gift to rebuild Mauritania's flood-devastated City of Tintane. Who would have imagined a world where Saudi Arabia, a country whose wealth is bludgeoning because of the global gross disregard for the link between fossil fuels and climate change, is now positioning itself as a champion in heritage preservation in Africa? The United Arab Emirates, not to be outdone, promised undisclosed amounts to protect sites and monuments in Africa.

Will New Africa-Europe Innovation Deal Deliver for Africa?

Despite its vast coastline along the Indian and Atlantic oceans, Sub-Saharan Africa remains conspicuously absent from global ocean research collaborations. A recent study found that while international collaborations in ocean research have grown, Africa's contribution remains stagnant at a mere 3%. Only Egypt and South Africa have made significant research contributions. The reasons? Limited research funding, scarce ocean science infrastructure, and overall low research output.

ARCHEOLOGY

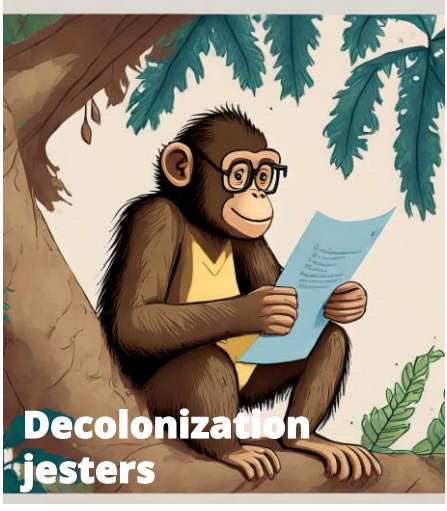
World's Oldest Wooden Structure Discovered in Zambia

Archaeologists from the University of Liverpool have unearthed a wooden structure near Zambia's Kalambo Falls, dating back an astounding 476,000 years. This structure, crafted from logs of a large-fruited willow tree, predates Homo sapiens, suggesting that our ancient ancestors had advanced cognitive abilities. The discovery challenges previous beliefs about early human intelligence, as the structure's intentional design indicates significant skill and planning. This find hints at a shift from nomadic lifestyles, as its creation suggests extended stays in one location.

Galactic Gaffe: Virgin's Space Stunt Sparks Outrage

In a questionable move, Sir Richard Branson's Virgin Galactic took a precious hominin fossil, including a type specimen of *Australopithecus sediba*, to space. This stunt, void of scientific merit, risked damaging the invaluable relic. Meanwhile, Taung residents in NorthWest, South Africa, are still awaiting the return of the iconic Taung Skull, the continent's first hominid fossil. While the discovery site stands as a neglected National Heritage Site, locals believe the skull's return could rejuvenate the community.

Predator's prey



Mukanya waGwazhi

Zvirisei, villagers! Today, let's dive deeper into the tangled jungle that is academic decolonization, using your favorite analogy: farming.

Imagine your village as a vast, fertile farm. For ages, you've been tilling this land, planting seeds passed down from your ancestors. Then, enter the landgrabbers with their shiny tools and grandiose hats. They march in, declaring, "Plant your maize this way and use this imported chemical. It's 'fertilizer'." But when the harvest moon rises, who's feasting on the biggest, juiciest cobs?

Not us, *I mean you*, that's for sure.

Recently, these landgrabbers have adopted a new strategy. They've graciously allowed a few of your villagers onto their elite farming committees. But here's the twist: our representatives are given plots so tiny that they might as well be gardening with teaspoons. It's like asking a lion to hunt with a butterfly net. Sure, you're "included," but mostly to add a sprinkle of diversity to their group photos.

Now, some of our fellow villagers, tired of these shenanigans, have ventured into becoming *amakorokoza* - small-scale gold miners. But from my lofty perch, I see the truth. These mining endeavors, while promising golden dreams, come at a cost.

The excessive use of cyanide and mercury poisons the environment and slowly chips away at the health of our brave miners. It's the equivalent of trading our rich soil for a handful of glittering dust.

To justify this detour, some argue, "The landgrabbers' methods are colonial!" And they aren't wrong. Their farming techniques prioritize their crops, leaving our indigenous plants wilting in the shadows.

But let's not forget we've always believed in the power of communal farming. Before introducing any new crop, we'd gather, debate, and critique. It's the OG peer review!

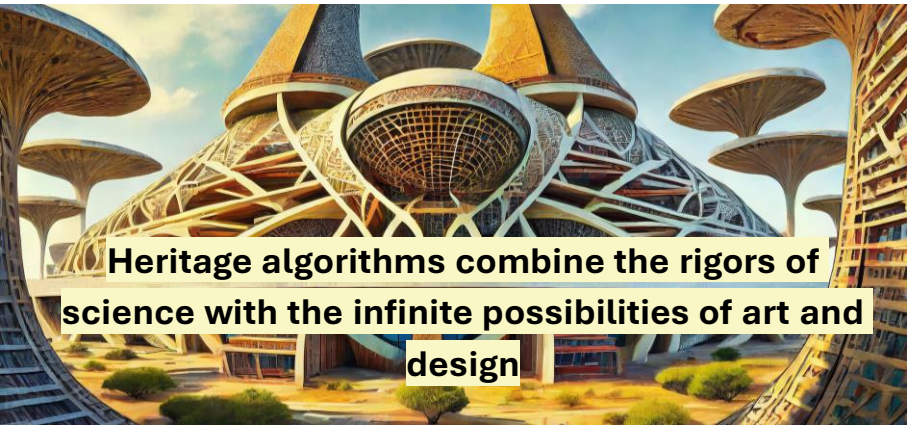
Remember when your Auntie Nala proposed growing ground nuts in the village cemetery? You chuckled, debated, and then, as a community, opted for intercropping with sorghum.

So, dear villagers, as you wade through this academic farming quagmire, never lose sight of your roots.

Resist the allure of shiny tools that are only there to extract and steal from you. Instead, unite, pool your ancestral wisdom to cultivate a harvest that mirrors your rich heritage.

Until our paths cross again, may your bananas always be golden and your fields perpetually lush!

Only those who have something to hide are afraid to see their ideas scrutinized, and only those who have something new to add do not worry about who is asking whether the idea is indeed new.



Heritage algorithms combine the rigors of science with the infinite possibilities of art and design

Audrey G. Bennet & Ron Eglash

The model of democracy in the 1920s is sometimes called "the melting pot" – the dissolution of different cultures into an American soup. An update for the 2020s might be "open source," where cultural mixing, sharing and collaborating can build bridges between people rather than create divides.

Our research on heritage algorithms aims to build such a bridge. We develop digital tools to teach students about the complex mathematical sequences and patterns present in different cultures' artistic, architectural and design practices.

By combining computational thinking and cultural creative practices, our work provides an entry point for students who are disproportionately left out of STEM careers, whether by race, class or gender.

Even those who feel at home with equations and abstraction can benefit from narrowing the gap between the arts and sciences.

What are heritage algorithms?

Traditional STEM curricula often present science as a ladder you climb. For example, you might be told that math starts with counting, then goes to algebra, then calculus and so on.

But our research has found that the global history of science is more like a bush: Each culture has its own branching set of discoveries. Some of these discoveries offer a perspective that's different from the theorem-proof approach for math or hypothesis-experiment approach for biology. Understanding the rules and techniques that create cultural patterns from the maker's point of view can help bridge the gap between knowledge branches. We refer to these hybrids of computation and culture as heritage algorithms, and there are examples everywhere.

Flying over an African village, you can see the recursive geometry of African fractals in their architecture: circles of circles, rectangles within rectangles, and other "self-similar" structures. These fractal patterns also appear in their textiles, carvings, paintings, ironwork and more.

Other kinds of algorithms underlie the repeating sequences of bent wood arcs that make up Native American wigwams, canoes and cradles. Even henna tattoos demonstrate the interactions among computation, nature and culture.

These heritage algorithms challenge the myth of "primitive cultures" – the idea that early Africans had no math past counting on fingers or that Native American agriculture lacked sophistication.

The computational thinking that is embedded in Indigenous artifacts and other creative practices, such as weaving, beadwork and quilting, is not merely decorative. It also reflects different ways of thinking about the world. Our interviews with artisans revealed how they visualize spiritual concepts in formal techniques and numerical sequences.

Audrey Bennett tries her hand at Adinkra stamping in Ghana. Ron Eglash, CC BY-ND

Bringing heritage algorithms to the classroom

Heritage algorithms give students a way to blend the abstract rigors of math, the grounded legacies of culture and the infinite possibilities of art. To bring these algorithms to the classroom, we have created interactive computer programs and simulations that we call culturally situated design tools, or CSDTs.

Each CSDT was created in collaboration with Indigenous elders, street artists, traditional crafters and others. With the creators' permission, we transfer their knowledge of pattern creation into digital tools that students enjoy using and teachers enjoy implementing in their lesson plans.

It's important to craft each CSDT to reflect the way those artisans think about the cultural practice. For instance, the slope of the line y=x, mathematically calculated as "rise over run," is 1 – for every unit you move up the line, you move a unit to the right. This line forms a 45-degree angle with the x-axis. But when Navajo weavers use this "up one, over one" pattern, the slope is closer to a 30-degree angle. This is because they weave yarn horizontally through vertical cords that are thicker than the yarn. So we made sure to preserve this feature in the weaving simulation we built.

A crucial aspect of CSDTs is that students may use them to follow their interests. This freedom and independence lets students encounter new cultures, delve deeper

into their own identity or mix designs from different cultures to create something completely new.

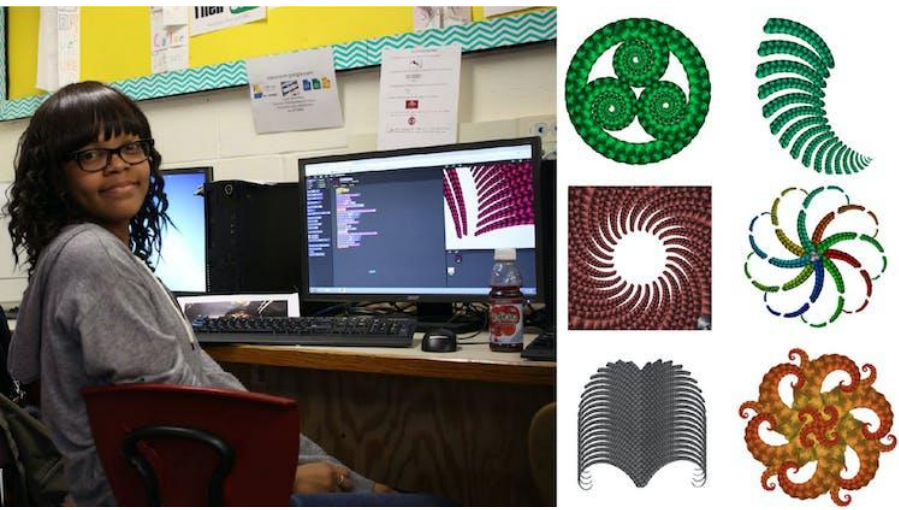
We have seen Black students choose an Appalachian quilting simulation, Native American students choose cornrow simulations and white students create beadwork simulations. Students' creative designs often mix many cultures together – cornrows become "powwow braids," and African fractal simulations turn into plants, lungs and river deltas.

Heritage algorithms and CSDTs provide a powerful starting place for students to improve their computing skills and confidence. These tools even provide a foundation for a variety of careers, from architecture to environmental engineering.

When computation and culture collide

The reach of heritage algorithms has recently extended beyond learning environments to contemporary art spaces. Artists are generating a bold new creative style using "ethnocomputing" – an understanding of computer science from a cultural perspective.

You can see fresh interpretations of heritage algorithms in the African fractals embedded in the work of visual artist Tendai Mupita, the cornrow simulations integrated in the work of Rashaad Newsome, the blending of the African diaspora and



A high school student uses a CSDT to simulate cornrow hairstyle patterns. Ron Eglash, CC BY-ND

technology by Nettrice Gaskins and the creative duo Tosin Oshinowo and Chrissy Amuah.

An exhibition on display in New York City, the U.K. and Los Angeles explores the textile techniques of artists inspired by the African American quilting tradition of Gee's Bend, Alabama.

Students from Harlem Academy create designs using the Appalachian and Lakota quilt CSDTs. Many Appalachian quilts contained the 'radical rose,' symbolizing support for abolition. Ron Eglash, CC BY-ND

Our research on heritage algorithms is partially driven by a philosophical desire to reframe STEM as a source of radical joy for every ethnicity and identity. Inspired by the radical feminist phrase "sex-positive feminism," we sometimes call our perspective "race-positive design" – thinking of race not in purely negative terms of oppression but instead as a rich source of creativity, liberation and a free-thinking mindset for curiosity and scientific inquiry.

This philosophical stance also has a practical side: statistically significant improvement in STEM scores for underrepresented students. Many teachers have recognized the potential of heritage algorithms for getting students invested in STEM. One teacher using the graffiti tool told us this was the first time students asked if they could stay in her math class after school. Another said she would never teach negative numbers again without the bead loom CSDT.

Heritage algorithms, both in the classroom and beyond, open up a two-way bridge between humanistic and technical knowledge. They offer a space where everyone – teacher and student, young and old, geek and artist – can learn, share and collaborate.

This story was originally published by The Conversation.

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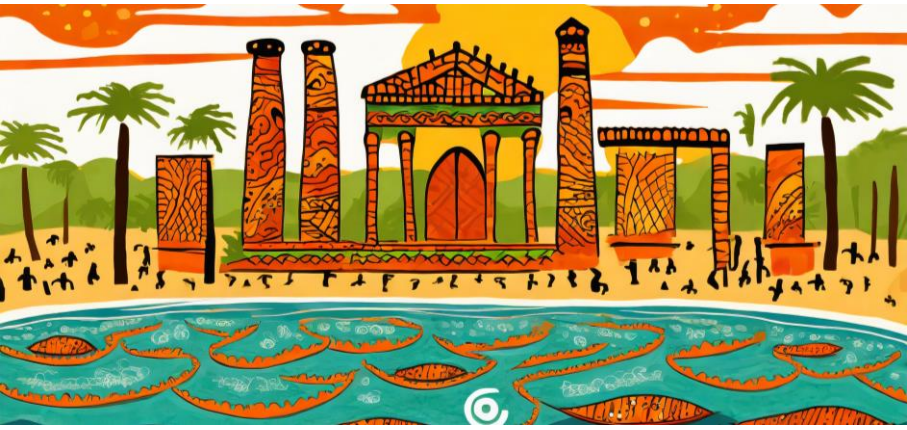
Ron Eglash is a tenured professor in the School of Information and Penny W. Stamps School of Art and Design (Stamps) at the University of Michigan. He holds a B.S. in Cybernetics, an M.S. in Systems Engineering, and PhD in History of Consciousness, all from the University of California.



Mapped: African world heritage sites threatened by sea level rise 'to triple by 2050'

Daisy Dunne

Three times as many sites of sacred value, scientific wonder and natural splendour across Africa could face risks from human-caused climate change by the middle of the century, a study concludes.

The research finds that 56 natural and cultural heritage sites across Africa already face threats from coastal flooding and erosion exacerbated by rising sea levels.

By 2050, this figure is projected to increase to 191 under a "medium" emissions scenario and 198 under a "high" emissions scenario, if no further coastal defences are built.

Places at risk range from Sabratha, a second-century trading-post in Libya, to Kunta Kinteh Island, a Gambian site that serves as an "important, although painful" reminder of the slave trade.

The study suggests there is an "urgent need" for more investment in methods to protect African heritage sites from the impacts of climate change, a study author tells Carbon Brief.

The "crucial" research sheds light on how climate change is driving "tangible and intangible" loss and damage around the coast of Africa, a researcher from Ghana says.

"A lost cultural and natural heritage could mean erasing our story," adds a young climate activist from Nigeria.

Cultural loss

The research, published in Nature Climate Change, is the first to examine how coastal African heritage sites could be threatened by sea level rise. It considers 284 heritage sites in 38 countries.

The study includes heritage sites that are recognised or under consideration by the UNESCO World Heritage Centre and the Ramsar Convention on Wetlands of International Importance.

The list includes important bird migration routes, waterways that are key to coastal fishing communities and archaeological sites containing vital clues on the evolution of humans. Some of the sites are pictured below.

Despite being the most comprehensive list of its kind, it does not capture all sites of cultural importance in coastal Africa, says study author Prof Joanne Clarke, a climate and heritage researcher from the University of East Anglia. She tells Carbon Brief:

"We modelled climate risks for sites that are supported by the World Heritage Centre or the Ramsar Convention, but there are hundreds of sites that are not supported.

"Many [unrecognised sites] are incredibly fragile and important to local communities. Really pressing are indigenous sites, which may not have global recognition but are highly valued to local people."

The research specifically examines how African heritage sites could be affected by extreme events associated with sea level rise, including coastal flooding and erosion.

Across the globe, sea level rise is being driven by the melting of land ice and the expansion of water as it heats up. Sea levels around Africa rose at a faster rate than the global average over the past three decades, according to the Intergovernmental Panel on Climate Change (IPCC).

Ancient heritage preserved in heritage sites could be lost as sea level rises and damage these fragile sites. Adobe Firefly

Sea level rise can increase coastal flood risk by raising water levels, which means that, during high tides or a storm, coastal defences are more likely to become overwhelmed.

Higher sea levels can also increase the average height of a "storm surge" – a rising of the sea above the normal tide level during a storm, which can cause coastal flooding.

Mapped

For the study, the scientists combined maps of flooding projections with those showing possible shoreline change across Africa.

The analysis examined threats to Africa's heritage sites under two scenarios.

The first is a "medium" emissions scenario, where global greenhouse gases continue to rise for the next few decades before levelling off in the second half of the century ("RCP4.5").

The second is a "high" emissions scenario, where global greenhouse gas emissions continue to rise until the end of the century ("RCP8.5").

For each heritage site, the researchers estimate the extent of area exposed to "100-year" coastal flooding and erosion events at present, as well as in 2050 and 2100. ("100-year" is a term used to describe an event that is so severe that at present it only has a 1% chance of occurring in a given year.)

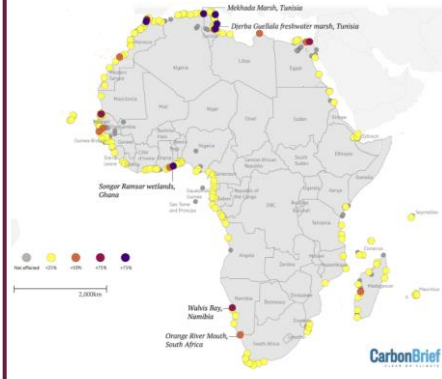
The map below shows the results for each heritage site. On the graphic, colour illustrates the percentage of the site's total area that is exposed to coastal flooding and erosion (yellow represents less than 25%; orange represents less than 50%; purple represents less than 75% and dark blue represents more than 75%). Meanwhile, grey is used to show unaffected sites.

The research finds that the number of cultural and natural heritage sites at risk from coastal flooding and erosion is expected to triple by 2050, from 56 to 191 under a medium emissions scenario and 198 under a high emissions scenario.

In the second half of the century, the number of sites exposed to coastal flooding and erosion is expected to reach a maximum and stabilise, the research finds. However, the extent of area exposed in each site is projected to continue increasing.

By the end of the century, the average exposed area for each site is expected to be 6.5 times greater under a medium emissions scenario and 9.5 times greater under a high emissions scenario.

The research finds that several African countries will see all of their cultural and natural heritage sites put at risk by 2100 in either scenario. These countries include Cameroon, the Republic of Congo, Djibouti, Western Sahara, Libya, Mozambique, Mauritania and Namibia.



African heritage sites at risk from climate change. Data source: Vousdoukas et al. (2022). Map by Tom Prater for Carbon Brief.

One cultural site at risk in Cameroon is the Lobé Waterfalls, a globally unique set of waterfalls up to 20 metres high that flow directly into the Atlantic Ocean.

The waterfalls "represent a strong basis of the symbolic beliefs of the Batanga, Maabi and Pygmee peoples that live in the environs and associate the falls with various cultural rites", according to UNESCO.

'Erasing our story'

The findings show that protecting Africa's heritage sites requires "meaningful climate action", says study author Dr Nick Simpson, a postdoctoral research fellow at the African Climate and Development Initiative at the University of Cape Town. He tells Carbon Brief:

"We showed if climate change mitigation successfully reduces greenhouse gas emissions from a high emissions pathway to a moderate emissions pathway, the number of exposed sites can be reduced by 25% by 2050. This would be a significant saving in terms of loss and damage to heritage from climate change."

"Loss and damage" is a term used to describe the inevitable consequences of climate change, such as the loss of human lives during extreme weather events.

(The concept of loss and damage featured prominently at the COP26 climate summit in Glasgow in 2021, where developing nations called on rich economies to take more responsibility.)

The research also highlights the need for adaptation measures to protect Africa's heritage sites from climate impacts, Simpson adds:

"Investment in heritage adaptation to climate change is urgent. Hybrid protections that include ecological infrastructure, such as rock sills combined with saltmarshes, seagrasses or restored mangroves, may prove effective protections for exposed sites.

"But engineered solutions will only address one dimension of the risk. Improving local and Indigenous governance can further provide enabling conditions for site protection."

The findings have "implications for populations living along the coast of Africa", says Dr Frederick Dapilah,

Ancient African City. Adobe Firefly

a climate researcher from the Simon Diedong University of Business and Integrated Development Studies in Ghana, who was not involved in the study. He tells Carbon Brief:

"Increasing attention is being paid to loss and damage resulting from climate change at both local and global scales. Therefore, [this study] is crucial. It shows that human-driven climate change could lead to the loss of economic or tangible and intangible cultural heritage as well as indigenous local knowledge along the coast of Africa."

The research suggests that Africa is "bearing the brunt" of climate impacts, adds Oladosu Adenike, a young climate activist from Nigeria. She tells Carbon Brief:

"In Africa, our natural and cultural heritage defines us – it tells our story and can trace our history. Once it is lost, it can neither be replaced nor restored.

"How do we adapt to a lost heritage? Eventually, a lost cultural and natural heritage could mean a cancelled history. Likewise, a lost cultural and natural heritage could mean erasing our story."

This story was originally published by Carbon Brief.

Daisy Dunne holds a BSc in biology from the University of Bristol and a science journalism MA from City, University of London. She was The Independent's climate correspondent from November 2020 to 2021. Prior to this, she was Carbon Brief's science writer from 2017 to 2020.

"[O]ur natural and cultural heritage defines us – it tells our story and can trace our history. Once it is lost, it can neither be replaced nor restored. How do we adapt to a lost heritage?"
- Oladosu Adenike

Illustration of Anansi the Spider, Folkloric deity, Akan people of Ghana. Adobe Firefly

Akan folklore contains ancient wisdom that could benefit Ghana's western-style education system

Samuel Amponsah

Philosophies of education serve as frameworks for producing lifelong learners and a knowledgeable and skilled human workforce who develop their societies. Ghana's education system currently favours a western educational philosophy, relegating its indigenous philosophies to the back burner.

I am an academic in the field of curriculum studies. In a recent paper, I argue that education in Ghana needs to incorporate more elements based on an authentic Ghanaian framework. Based on the view that education, culture and development should be connected, I highlight the educational strengths of African folklore.

I conclude that aspects of Akan folklore, including its stories and proverbs, its kinship rights and rules, its moral codes, its corporate and humanistic perspective, complement the country's current westernised education.

It is in this spirit that education lecturer Kofi Poku Quan-Baffour has referred to the Akan proverb *Tete wobi ka, tete wobi kyere*. It means "heritage has lots to say, heritage has lots to teach". Folklore holds benefits.

The case for Akan folklore

Ghana has about 92 ethnic groups. The largest of these is the Akan. They can be found in eight of the 16 regions of the country and in parts of Côte d'Ivoire and Togo. The influence of the Akan in Ghana and west Africa is not just by virtue of their numerical strength but also due to their strong culture and the spirit that binds them. They have been able to maintain their culture throughout the blows of colonial history.

I argue that Akan folklore can be integrated into the school curricula to teach social skills and emotional intelligence. After all, education seeks to provide learners with the

knowledge, skills and attitudes that will make them functional and responsible members of their communities.

This tool may also benefit learners in colleges of education and universities offering Ghanaian languages and related courses. The crucial question here is: where is the place of indigenous pedagogy as a tool in nursing and agricultural training colleges, technical universities and the like?

Without indigenous components in their course curricula, students may graduate from such institutions as professionals who have lost their culture. They will not pass on indigenous values in their own teaching practice.

Not just proverbs and stories

Researchers such as Grace Diabah and Nana Appiah Amfo have established the power of folklore types like proverbs to deal with important topics like gender. Unfortunately, the focus of education has leaned heavily towards examination performance and readying learners for the job market. There is no recourse to the rich culture of the people. The absence of indigenous components in course curricula results in a graduate population without any appreciation for cultural identity.

In their study on integrating indigenous knowledge in the teaching of intermediate mathematics, for example, James Owusu-Mensah and Kofi Poku Quan-Baffour argue that Akan indigenous knowledge systems such as storytelling and games could make subjects easier for learners to relate to and comprehend.

Women working together to harvest cocoa illustrating the proverb Kwan nkyɛn ade yɛfɛ, wɔde sika na ɛyɛ, which roughly translates to “money is needed for everything”. Adobe Firefly

Furthermore, short Akan sayings add spice to the debate that African philosophies can contribute to sustainable quality education for development. Examples such as Kwan nkyɛn ade yɛfɛ, wɔde sika na ɛyɛ, which roughly translates to “money is needed for everything” and wɔnsom ɛne nipa (success accrues from collective efforts) undoubtedly take most Ghanaians back to their roots to learn hard, work diligently and live cooperatively.

The urgent need to preserve the environment and its biodiversity also resonates in traditional taboos. These establish rules on days not to farm, hunt or go fishing. This is also done to keep certain flora and fauna sacred and protected.

Looking ahead

My research revealed that there is a need to develop and use an alternative indigenous philosophical framework, drawing on Akan folklore. There is a need to display a sense of commonalities, affirm culture, tradition and value systems, and foster comprehension of the local consciousness in a bid to resolve the challenges people are facing.

In a nutshell, while western philosophies open students up to global understandings and perspectives, Akan folklore grounds them in their own culture. Quality education of the kind proposed in this article will produce students and graduates who are beneficial to their societies while understanding, appreciating, cooperating and contributing to global issues and development.

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Teacher using Akan folklore in a laboratory session.
Adobe Firefly

Cape to Cairo

Is Living Heritage Africa's Untapped Resource for STEM Advancements?

Image: Adobe Firefly

With the Editor

Childhood memories often carry lessons that resonate long into adulthood. I recall visits to my grandmother in Vuti, Hurungwe at my uncle's farm. Bouts of fever rampaged the farm and I had to witness my grandmother's famed malaria diagnostic ritual.

Amurefu, as we called her because of her tall frame, would rub the hands of the person with a fever, take a deep sniff, and confidently declare whether the person had malaria or not. I was used to someone sticking a thermometer in my mouth and other normal diagnostic procedures.

Amurefu would not end there, if you had malaria, she knew the right herb to qual the fever and if it was just another fever, there was always *zumbane*, lemon juice, and eucalyptus and guava leaves. Amurefu knew how to deal with malaria, they were places we were not allowed to go because they had lots of mosquitoes, and standing waters were not allowed close to the houses.

As a young science enthusiast, I dismissed this. Amurefu had a last laugh in her grave, two decades later, decades later, a study in the Proceedings of the National Academy of Sciences revealed that malaria does indeed alter human odor, making individuals more attractive to mosquitoes.

This scientific validation was a humbling reminder: traditional knowledge, often overlooked in the face of modern science, carries insights that are both profound and deeply rooted in empirical observation and can help African countries leverage science and technology in economic development. But it all begins with how primary and secondary school curriculums are shaped and how and what science is funded.

A story of two living heritage linked Nobel Prizes

Malaria, a devastating disease, has long been a scourge in Africa, claiming hundreds of thousands of lives annually. The disease's origins trace back to mosquitoes, with specific species like *Anopheles* acting as vectors, transmitting the Plasmodium parasite responsible for malaria to humans. Sir Ronald Ross, in a landmark discovery, identified the mosquito transmission of malaria, earning him the distinction of being the first Briton to receive the Nobel Prize in Physiology or Medicine in 1951.

Given the profound impact of malaria, finding an effective treatment was paramount. Enter Youyou Tu, who embarked on a meticulous journey into the annals of traditional Chinese medicine in search of a cure. Tu's team sifted through over 2000 recipes, narrowing down to 640 for further evaluation. The plant *Artemisia annua* emerged as a recurrent ingredient.

Initial tests on rodent malaria showed varying results, leading Tu to a revelation from a 1700-year-old recipe by Ge Hong.

Traditional knowledge, often overlooked in the face of modern science, carries insights that are both profound and deeply rooted in empirical observation and can help African countries leverage science and technology in economic development.

This ancient recipe suggested using cold water to extract 'juice' from the Artemisia annua plant, a deviation from traditional boiling methods. Acting on this insight, Tu used ether to extract active ingredients from the plant leaves, leading to a sample that showed 100% activity against rodent and monkey malaria. Clinical trials followed, with Tu herself testing the medicine for safety, and the results were groundbreaking, showing 95-100% inhibition. This discovery catalyzed a nationwide effort in China to further refine and produce the compound, now known as artemisinin.

In a poetic twist of fate, Tu's name "Youyou" is derived from a poem that speaks of a deer consuming artemisia, a plant that would later become intrinsically linked to her life's work and legacy. In 2015, Youyou Tu, together with two other scientists, Youyou Tu was awarded the Nobel Prize in Physiology or Medicine in 2015 demonstrating the importance of living heritage as an answer of today's bad air.

Bridging Ancestral Wisdom with Modern Science

The intricate tapestry of Africa's living heritage, woven with tales, traditions, and time-tested wisdom, offers more than just cultural insights. As the stories of malaria research demonstrate, this heritage holds invaluable keys to unlocking scientific advancements.

From ancient folklore guiding community behaviors to traditional Chinese medicine leading to groundbreaking treatments, the past continually informs and enriches the present. In a world increasingly reliant on technology and data, it's essential to remember that sometimes, the answers we seek lie in the wisdom of those who came before us.

But how?

Youyou Tu's work was only possible because of how Chinese societies valued preserving their living heritage. It was also easier because much of the living heritage was in written text. For mist African communities, this ancient wisdom is in individuals who might not be there in ten years' time due to old age. My grandmother went with her wisdom on sniffing malaria. Therefore, governments should invest in efforts to document and digitize traditional knowledge, ensuring its preservation and accessibility for future generations.

As we tap into living heritage for scientific advancements, it's crucial to approach it with respect, ensuring that communities are acknowledged, compensated, and that their knowledge isn't exploited.

Till next time,

Edmond Sanganyado

Fresh Steps

A trip from Cape to Cairo exploring new research findings by african researchers and their implications to everyday life.

HEALTH

Promising Malaria Vaccine Underway in Tanzania

Researchers from the Ifakara Health Institute in Tanzania made great progress in the fight against malaria. They've tested a new vaccine malaria vaccine. Early results from their tests in Tanzania are promising, especially for infants, who are often most vulnerable to the disease. The vaccine not only proved to be safe but also showed strong immune responses in the young participants. This could be a game-changer in the global effort to eradicate malaria, especially in regions hardest hit by the disease.

DOI: 10.1016/j.medj.2023.07.003

ENVIRONMENT

Truth or Lies: Opinions on Cameroon's "Killer Lakes"

In the 1980s, tragic gas eruptions at Cameroon's Lakes Monoun and Nyos claimed numerous lives. Researchers found that a significant portion of survivors and residents attribute the events to nuclear tests or mystical causes. Only a minority recognized the scientific explanation. This disparity highlights the gap between scientific understanding and indigenous beliefs in African communities. The study underscores the need for bridging this gap and promoting scientific awareness.

DOI: 10.1016/j.sciaf.2023.e01626

EDUCATION

Embedding Traditional Games in Ghana's Math Curriculum

Ghanaian researchers have unveiled the potential of traditional games in enhancing primary school mathematics education. The study showcased how games like Chempɛ, which focuses on fractions, and Pilolo, which aids in discovery learning, can be integrated into the curriculum. Another game, Oware, was highlighted for its problem-solving aspects. While the significance of games in education is known, this research provides practical lesson plans for teachers, emphasizing the blend of traditional teaching methods with innovative strategies using cultural games. The findings underscore the importance of culturally rich games in improving pedagogy and student engagement.

DOI: 10.1080/2331186X.2023.2207045

ARCHITECTURE

Harnessing Egypt's Date Palm Heritage in Modern Houses

Ain Shams University researchers explored the evolution of data palm residues in ancient to modern architecture. Prefabricated date palm midribs panels, derived from traditional methods, were identified as a sustainable alternative to conventional construction materials. These panels offer cost-efficiency, versatility, and are rooted in local handicraft techniques, presenting a sustainable solution for future construction.

DOI: 10.13189/cea.2023.110407

Preserving Egypt's Cultural Identity in Modern Architecture

Researchers from Zagazig University in Egypt investigated architectural designs of modern houses. They found many modern houses ignored traditional architectural elements, risking the erosion of Egypt's cultural identity. The team assessed these homes for their regional adaptation and design language and found designs that skillfully intertwine traditional values with modern aesthetics not only safeguard Egypt's architectural heritage but also meet contemporary demands, creating a harmonious blend of the old and new.

DOI: 10.13189/cea.2023.110541

Illustration of giraffes close by a river. Adobe Firefly

Giraffes 'more endangered than previously thought'

Dann Okoth

[NAIROBI] Giraffes in East Africa may be more endangered than previously thought, researchers reveal in a study calling for more focused conservation strategies to protect them.

Of particular concern is the lack of interbreeding among Masai giraffes, found in Tanzania and Southern Kenya and separated geographically by the Great Rift Valley, according to the analysis.

The area with its spectacular wildlife attracts substantial tourism and conservation revenues, supporting pastoral communities affected by poverty and mounting food insecurity.

The researchers from Penn State University in the US say the divided giraffe populations have not exchanged genetic material or interbred in more than a thousand years—and in some cases hundreds of thousands of years.

They suggest this could play a part in the decline of populations, also threatened by illegal hunting and habitat loss.

"We have shown compelling evidence that eastern and western Masai giraffes are reproductively isolated and have been so for thousands of years," the study published 12 June in the journal Ecology and Evolution says.

As such, they should be treated as two distinct populations for conservation purposes, the researchers propose.

Giraffes under threat

Giraffe populations have declined sharply in the last 30 years, according to the International Union for Conservation of Nature (IUCN), with fewer than 100,000 of the animals remaining worldwide.

The number of Masai giraffes fell from 70,000 to 35,000 in that period and the species was declared endangered by the IUCN in 2019.

Those that remain are geographically separated by the steep cliffs of the Gregory Rift Valley escarpments in Tanzania and Kenya, dividing them into two populations, one west and one east, the researchers say.

The cliffs are formidable barriers to east-west dispersal and gene flow

and the few remaining natural corridors through them are occupied by human settlements, the researchers explain.

"We therefore propose that conservation efforts should be focused on maintaining and developing corridors among populations within the eastern Masai giraffe population and within the western Masai giraffe population, as separate but coordinated efforts," said Douglas Cavener, a biology professor at Penn State University and lead author of the study.

DNA tests

To assess the impact of the landscape on Masai giraffe gene flow, the researchers examined whole genome sequences of nuclear DNA and mitochondrial DNA (mtDNA) from animals located east (in the Tarangire ecosystem) and west (in the Serengeti ecosystem) of the escarpments in northern Tanzania.

The scientists collected fecal samples from 320 Masai giraffe and used remote biopsy darts to obtain tissue samples from 100 giraffes, all living in protected areas.

"Evidence from mtDNA variation, which measures female-mediated gene flow, suggests that females have not migrated across the GRE [Gregory Rift escarpments] between populations in the Serengeti and Tarangire ecosystems in the past 289,000 years," the researchers say.

"The analysis of nuclear DNA variation suggests that male-mediated gene flow across the GRE has occurred more recently but stopped a few years ago."

Giraffes on guard

Cavener noted that Masai giraffes likely numbered between 500,000 and two million a century ago and would have had a large impact on the ecology and food preferences of other animal communities.

"In some areas their density is still high enough that they remove much of the understory foliage, thus impacting other browsers such as kudu and impala," Cavener told SciDev.Net.

"They also serve as important predator sentinels [guards] for other animals such as zebra and wildebeests that tend to congregate around giraffes."

Julian Fennessy, conservation director at the Giraffe Conservation Foundation, who did not participate in the research, says the study advances knowledge on this unique species of giraffe.

"Such research provides a basis from which conservation management can be furthered," he told SciDev.Net, adding: "It is the start, not the end product."

He noted that since the IUCN assessment, Masai giraffe numbers have been increasing, pointing to a wildlife census by the Kenya Wildlife Service.

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SPECIAL ISSUE

The Walls *and* the Stones

TRACING THE SIGNIFICANCE OF SOUTHERN AFRICA ART

"...the talent that wove the architecture:

friezes of dentelle

herringbone

check patterns,

chevron

and all

the many hands that put all this silence

together..."

M. Zimunya (1982: 99-100) - displayed in the Great Zimbabwe National Monument site museum.

Southern African art is expressed in various forms that cut across social and religious life. Each form of expression represents the diverse cultures that shape various African societies. This art has survived for over a millennium and has significance in the everyday lives of modern southern Africans.

Israel M. Dabengwa

Southern Africa can be considered a melting pot of several cultures and sub-cultures that conjoin what is known as the "Bantu" speaking tribes or Neolithic people (late Iron Age people who practiced farming) that originated from central and western Africa over 3,000 years ago (AD 500), and merged with the locals (the San, who are not necessarily one tribe, but the term is used to denote several tribes with click languages) who had been there for over 10,000 years.

In the book: African Saga: A brief introduction to African history, Stanlake Samkange (a historiographer), detailed how the Bantu tribes spread out from Central and West Africa into different parts of southern Africa, forming unique identities, languages and building civilizations or nation-states.

Historical evidence shows that there were several points of interaction between some of the civilizations through cooperation, marriage, trade, religion, and war.

Though some of the Bantu-speaking tribes have distinct languages, they share similarities in their artwork, showing that there was a period of intersection.

This artwork is expressed using common patterns of religious and social life and the symbols that are used to express them. Zimbabwe seems to be the centre of the artworks and connects diverse Bantu-speaking cultures.

Perhaps this may be caused by the fact that Zimbabwe is the home of the Great Dyke (a linear geological feature that has kopjes), which has all the rocks that were needed to build this cultural exchange and its resultant belief system and artworks.

Although, this news feature article touches the surface on a subject that has historical significance, connections are made on the modern-day southern African society.

This may sound like an unachievable task considering the diverse cultures one has to explore. But here it goes...

Rock painting art

Early southern Africans (the San people) are known for art pieces such as rock paintings and rock engravings (also called friezes) that are over 13,000 years old (covering both the Stone Age and the Iron Age).

The paintings were developed using an artistic style called dot motifs.

This artistic style uses small dots to closely visualise an image with geometric shapes such as "formlings," "tectiforms," or "bee hives," (as shown on Image 1) [1].

Most of the Zimbabwean dot motif paintings are found in Chimanimani Mountains (Manicaland), Domboshawa (Mashonaland East), Matobo Hills (Matabeleland South), and Zombepata (Mashonaland Central).

There are thousands of San rock artefacts sites in southern Africa, e.g., Botswana, Lesotho, Namibia, Mozambique South Africa and Swaziland.

Most of these sites are in Zimbabwe, especially Matobo/ Matopos (derived from the word "matombo" which means hills or stones), where the rock art dates back at least 13,000 years.

The formlings are found in caves and rocks around this rugged hilly terrain characterised by batholiths (e.g., "whaleback" and "castle kopjes") and sandy valleys.

This rock art interconnects five elements that represent the San belief system, cosmology and supernaturalism or mythology.

The **five elements** of the San beliefs are:

1. the sky (relating with spirituality, e.g., the belief that good people become stars when they die)
2. the underworld (joining with spirituality, e.g., the intersection with the dead);
3. hunting ground (fitting together with worldly entities, e.g., the animals, birds, plants and reptiles);
4. hunting and gathering territories (connection with worldly entities); and
5. water (the interconnection of all these elements).

The formling images have white oval and dark rectangular shapes with images of animals such as giraffes (which happen to be the majority and linked with healing), porcupines, birds, ostriches, lions, hyenas, zebras, elephants, rhinos, and kudu.

There are also images of botanical plants, humans (especially women) and mythical humanoids (people with features of animals which are part of the San mythology) or chimera animals (animals with features of other animals which are part of the San mythology).

Remarkably, some variations of this art (mostly found in Zimbabwe) have abstract parallel lines and grids of white dots.

These variations include contours, which are circular formlings; outlines, which are singular or multiple borderlines; the cores are oval; the interstices are thin lines dividing the cores; orifices, which are openings on the edges; crenellations, which are triangular projections that cover the edges of an image; microdots (covering the whole image), oval flecks that are round or semi-circle forms painted in black and white, and the caps cusps are round images on the top of images [1].

The cores are often adorned with parallel lines and grids of white dots, which may cover the entire surface of the oval design.

Siyakha Mguni a renowned archaeologist and ethnographer, hypothesized that this type of formling is not necessarily abstract but bears resemblance to bee hives, honeycombs, and termite nests.

This hypothesis may be supported by the similarities in shape between the real objects and those painted on the rock.

Previous explanations had assumed that this abstract art was just a way of decorating the walls with various patterns and had no meaning, while the paintings with human figures were hypothesised to represent burial tombs of kings, e.g., a rock painting called “Diana’s Vow” found in the eastern part of Zimbabwe [2].

Perhaps, the historical theory that assumed that formlings are a metaphysical expression of ancient tombs of dead kings and chiefs was formed by associating these artefacts with the findings from archaeological sites in ancient Egypt.

But the latest evidence from Mguni points the rock carvings and paintings to the cosmology and spiritual life of the San people [2].

Mguni has cross-examined rock art sites in southern Africa to make connections between images found on one site and those found on another.

Mguni’s findings show that the San civilisation developed a complex system of symbols using the tools that they had and the environment around them (probably like some type of hieroglyphics).

Mguni hypothesised that the bee hives, honeycombs, and termite nests that comprise the images found in the formlings may represent fertility or potency, abundance, sweetness (in the modern day we would say “good life”), and community cooperation.

A formling showing a beehive, zebra and human figures found in Zombepata Cave, Guruve in northern Zimbabwe

Who knows maybe this could be reason why southern Africans have a craze for gathering fly-ing termites (*amahlwabusi* or *izinhlwa* or *inhlwa* or *inkulungwane/ishwa*) during the rainy sea-son?

These flying termites usually bring communities together as they harvest the insects when the first rains emerge.

Often the flying termites symbolise the start of the rainy season and a hope for a bountiful harvest.

Folklore has it that dreaming of catching these flying termites may symbolise a future encounter with luck!

Whereas honey is both traditionally a food and medicine for healing various ailments.

Perhaps the San hunter gatherers attached the same value to bee-hives as a farmer would do to a kraal full of cattle?

Maybe, this would mean that the San people regarded bee-hives as a form of wealth in their hunter-gatherer society.

The Great Zimbabwe artworks (the stones)

The Great Zimbabwe (which means the house of stones) civilisation can be considered a cul-tural hegemony that spread its influence in what is known as present-day Botswana, Mozam-bique, South Africa, and Zimbabwe (where it was most dominant and located Masvingo, Zimbabwe, is considered to be the capital of this civilisation).

The Great Zimbabwe civilisation (11th–15th century) is known for its distinctive symbols, ar-chitecture, crafts, and economic strategies.

This civilisation only came to light among Europeans in the 1500s, when the Portuguese made trade contacts with the locals.

However, despite historical and oral evidence, 19th century British archaeologists denied that Africans were the original architects of this infrastrutre and its resultant culture.

The 19th century British archaeologists attributed this development to Phoenicians or Arab merchants (a hypothesis largely perpetuated by Cecil John Rhodes, Theodore Bent, and Rich-ard Hall).

This hypothesis was based on connections between the symbols and artefacts found on the site with those from Arabia, Egypt and Kemet in Sudan.

For example, Richard Hall's book, the "Great Zimbabwe, Mashonaland, Rhodesia: an ac-count of two years' examination work in 1902–4 on behalf of the Government of Rhodesia" gives the following explanation about the origins of the Great Zimbabwe birds and other arte-facts:

"...highly probable that Zimbabwe was a Sabæan (Yemen) Almaqua (the goddess Venus or sometimes known as Ashtaroth) temple, as it is orientated and geometrically built for astro-nomical purposes, as in all cases of such buildings used for the worship of Almaquah (Venus). Sacred birds found at Zimbabwe are said to represent Venus the 'Morning Star.'" Richard Hall wrote.

But to the locals, the Great Zimbabwe birds are known as "Shiri Yedenga" ("the needle that stitches together heaven and earth" and are messengers between the heaven and earth).

The birds are interpolated to be metaphoric representations of eagles (chapungu).

Oral traditions suggest that Shiri Yedenga could be the eagle, which is a symbolic representa-tion of a messenger who communicates messages between heaven and earth.

Just like the formlings, the birds have geometric patterns (friezes of chevron or dentelle pat-terns) that tell a story of the craftsmen who did the work and the cultures that were represented in the civilisation.

It is unclear how many Zimbabwean birds were made, as some were stolen when the site was ransacked in the 19th century (e.g., Richard N. Hall's destruction of the walls and William Posselt's theft of one of the Zimbabwe birds that were later sold to Cecil John Rhodes).

Official records have recorded a total of eight birds that were found in the Great Zimbabwe site.

Although Richard Hall claimed that there were some miniature soapstone birds found at the Great Zimbabwe site, their exact number is unknown.

Also, there are no records of the birds being found at the other sites.

The Great Zimbabwe birds are made out of soft green-grey soapstone (schist or steatite), varying in size and each bird is 30 centimetres long which rest on long monoliths (a large single free-standing structure) [3].

The birds have two artistic styles of wing positions.

One style wraps the wings on the vertical body with a tail, and the other has short, fan-shaped folded wings that slop over the back.

These birds cannot be identified with any bird species because they also have humanoid features such as the sitting position, limbs, five toes, and some of the heads are abstract.

One bird (bears chevron friezes that are similar to patterns found on the walls of the Great Zimbabwe site, while some of the birds have decorations that are similar to pottery work that was found on the sites e.g., Dlodlo, Khami, and Mapumbugwe, etc.) [4].

This bird also has circles in between the chevrons and a crocodile on the side of the monolith.

The crocodile seems to be climbing upward toward the bird.

There are various interpretations of these circles and the crocodile.

Some ethnographers claim that the circles are representative of the "eyes of crocodiles" that are found in Great Zimbabwe's pottery, while other theories believe that these are representative of eggs [3].

Ethnographers such as Phathisa Nyathi have linked the crocodile with fertility and potency based on the traditions of the VaVenda's ceremonies when installing a new king.

"It is understood that the stone pebbles were obtained from the belly of a crocodile during [the installation ceremony] which the chevron and fertility-endowed crocodile passed its fertility qualities to the stone pebbles." He wrote [5].

Archaeologists believe that the eight birds were placed on the walls of the Great Zimbabwe site, perhaps acting as sentries.

Some of the birds overlooked the outer walls, while the others stood over the inner walls, which could have housed the royal family.

It can be hypothesised that the above symbols and meanings can be taken to mean that the Great Zimbabwe birds are a representation of a nation's prayer for protection and prosperity.

It is no wonder why the Great Zimbabwe bird is a central figure in Zimbabwe's national emblems, flag, and currency.

Shona stone sculptures

After Frank McEwen (a British-born art curator) took the Director job at the then Rhodes National Gallery (now called the National Art Gallery of Zimbabwe), he remarked that the locals did not have any noteworthy art pieces [6].

"Nothing had been ever been produced in that part of Africa." He spoke.

"All the great art was in the southwest – you know – Nigeria and Ivory Coast and all that." He continued.

"I did not find any particular art there, but I did perhaps – I thought I could find some 'unspoiled' people, which was Herbet Reed's (Director of New York's Museum of Modern Art) idea." He concluded.

Frank McEwen and Tom Blomefield (a tobacco farmer credited for marketing the Tengenenge art form that originated in Guruve) are widely credited for the "renaissance" of modern Zimbabwean soapstone art in the 1950s, while Joram Maringa is credited as the "Father of Shona Soapstone Sculpture".

By Marius Loots, CC BY-SA 3.0

McEwen is known to have revised his erstwhile sentiments about Zimbabwean art, to an appreciation that the art was grounded in the local culture, oral traditions and, natural heritage [6].

"They [Zimbabwean sculptors] showed a talent, first of all for wood carving, and then carving in local varieties of stone, notably serpentine and steatite, with immediate and dramatic success."[6].

"And so was brought about a 'renaissance' (rather than a new birth) of the talent for stone carving, whose existence had remained dormant for and unsuspected since long before the coming [of] European civilisation to this country a hundred or so years ago."[7].

This sentiment probably caused his deportation from the then Rhodesia, as it perpetuated a view that African craftsmen built the Great Zimbabwe.

Although these are well-documented historical accounts, there was already evidence that these artworks had existed in southern Africa for over a millennium.

Perhaps this was not a renaissance, but rather the "marketing" of these art pieces to the Western world.

It is rather obvious that southern African art pieces such as the formlings and the Great Zimbabwe sites show fine workmanship that has survived thousands of years!

Just like its predecessors, the modern art form is a continuation full of symbolism and aesthetics, preserves cultural and natural heritage, and depicts the social life of southern Africans.

This artwork uses similar materials as those found in Great Zimbabwe, e.g., serpentine (which is either green, black, or brown and has various patterns), springstone/verdite (with a deep green colour), opal stone/opalite (a hard stone with a rich green colour), and limestone (a sedimentary rock).

Although the term "Shona Sculpture" has been used to define this artwork, styles like the Tengenenge (which is translated to mean "the beginning of the beginning") are a fusion of several cultures from southern Africa, e.g., the BaVenda, Chewa, Manyika, Nyanja, and people as far away as the Democratic Republic of the Congo, etc.[7].

In the Documentary, Talking Stones Shona Sculpture Documentary, one sculptor expressed that the term "Shona Sculpture" is a misnomer [7].

"I would like to think of myself as a sculptor from anywhere. I don't need to be paired to any culture". He spoke.

"But when it comes to sculpting it's a matter of whether I have a piece which is good or bad. Calling it whatever does not make it good". He continued.

"It is the life that you put into the piece of sculpture that talks to people [7]."

Hence, it can be argued that southern African art signifies a representation of several cultures that have interacted with each other during or after the Bantu migrations.

The languages may differ, but the art forms made them one people.

The interviews with modern artists during this renaissance phase have taught us three things about their art.

The first is that the stone determines the art piece that will be made from it, as it has a life of its own.

The second is that artists work in communities of practice (groups or sometimes even families that constantly share ideas on how to represent the art or the use of materials). The third is that the stone determines who will own the art piece.

What value does Southern African art hold in modern society?

Southern African art has a lived heritage that cuts across socio-cultural life and socioeconomic spaces (see Image 3).

There are historical reasons why Zimbabwe seems to be the epicentre of this art movement, perhaps due to its endowment of natural resources, its centrality in the Bantu movements, religions, trade with other parts of the world and the dominant civilisations that have been borne there.

Below are some of the modern depictions of this art and or its relevance.

1. Symbolism and Aesthetics: Besides the use of official government emblems, the oval and chevron designs are placed in some artworks, even if they do not have a connection with the Great Zimbabwe sites. At times artists make their replicas (e.g., in wood or soapstone) of the Great Zimbabwe.

2. Cultural Identity and Heritage: Southern Africans use totems like the animals and plants found in the formlings and the Great Zimbabwe sites to define their cultural identity. This cultural heritage is like a fine tapestry that joins persons from different cultures and traditions.

3. Nation Building: The Great Zimbabwe connects several ethnicities into one historical landscape. There is a rich oral history of different tribes that occupied these sites in various areas (e.g., Domboshava and Matopos), but still had connections with the Great Zimbabwe.

4. Social Commentary and Environmental Awareness: Totems have been used as a subtle way to raise environmental awareness. Southern Africans usually do not eat animals that bear their totems as it is considered taboo. This can be seen as a conservation strategy.

5. Artistic Dialogues and Collaborations: Contemporary Southern African art suggests collaborations between artists from one region to another. For example, 19th century pointillism (a renowned painting technique that uses small dots of varying colours to represent an image) spread by Georges Seurat and Paul Signac uses the same technique as the formlings from the San people.

Israel Mbekezeli Dabengwa is a freelance writer. The information and views expressed in this article are for informational purposes and are not a reflection any of the stated institutions. Thorough investigations have been made on the accuracy of the information presented.

References

[1] S. Mguni, King's monuments: identifying 'formlings' in southern African San rock paintings, Antiquity. 80 (2006) 583–598. https://doi.org/https://doi.org/10.1017/S0003598X00094059.

[2] S. Mguni, Termites of the gods: San cosmology in southern African rock art, Wits University Press, Johannesburg, 2015.

[3] T.N. Huffman, The Soapstone Birds from Great Zimbabwe, African Arts. 18 (1985) 68. https://doi.org/10.2307/3336358.

[4] P. Garlake, Early Art and Architecture of Africa, Oxford University' Press, New York, 2002.

[5] P. Nyathi, Journey to great Zimbabwe links between a chevron pattern and the crocodile in expressions of fertility, Sunday News. (2018). https://www.sundaynews.co.zw/journey-to-great-zimbabwe-links-between-a-chevron-pattern-and-the-crocodile-in-expressions-of-fertility/ (accessed August 28, 2023).

[6] P. Zvomuya, In praise of African art: How Shona sculpting emerged, Mail Guard. (2021). https://mg.co.za/friday/2021-06-04-in-praise-of-african-art-how-shona-sculpting-emerged/ (accessed August 16, 2023).

[7] Talking Stones - Shona Sculpture Documentary, (2017). https://www.youtube.com/watch?v=PLCfVo0plrU&t=1477s&pp=

Vanishing Future