The Global South Is Done Waiting For The UN To Solve Humanity's Challenges

Roger McKenzie – Photo: Morningstar

Dag Hammarskjöld, the tragic second United Nations secretary general, once said the organization "was created not to lead mankind to heaven but to save humanity from hell."

Of course, this depends very much on what kind of hell you had in mind.

The fallout from Adolf Hitler's extermination camps must have dominated Hammarskjöld's world during his tenure from 1953 until his sad death in a plane crash in 1961. So must have the shadow of possible nuclear annihilation arising from the Cold War between the United States and the Soviet Union.

What he may have been able to say, even back then, is that the U.S. saw itself as the predominant world power, prepared to unleash its own version of hell whenever and however it wanted.

Hammarskjöld must have known that the UN was completely powerless to reign in the U.S. and it could, and usually did, do pretty much anything that it wanted on the world stage.

The UN is, and has been for some time, a pretty meaningless institution that merely acts as a useful idiot when the White House decides it has some role to perform in protecting U.S. interests.

The proxy war being conducted by the U.S. against Russia in Ukraine and the ramping up of tensions against China with no meaningful sign of life from the UN to stop what's happening is a clear example.

The UN, based in the belly of the beast itself in New York, is a body devoid of any worthwhile criticism of the U.S.

The fact that for the last 30 consecutive years, the vast majority of countries at the UN General Assembly have demanded the lifting of the illegal embargo by the U.S. on Cuba is completely ignored. But every country is expected by the U.S. to follow its instruction to sanction Russia for its invasion of Ukraine.

In 2003 Colin Powell told the UN Security Council, supposedly the organization's key body, that the U.S. had evidence that Iraq had clear weapons of mass destruction and this was a justification for going to war.

Of course, President George W. Bush was going to invade Iraq anyway but the White House clearly felt it was important to send their top diplomat to the UN to tell what everyone in their administration knew to be a lie to get international support for their misadventure.

Even the U.S. Congress found that the administration had lied but at the UN there has been a deafening silence about any sanction against the U.S. for lying to the world so it could kill hundreds of thousands of people in the name of regime change.

While China and Brazil appear to be making efforts to bring about peace in Ukraine, there are no meaningful peace moves from the UN.

It took the Chinese to bring Saudi Arabia and Iran together to broker a deal that looks as though it might bring about peace in the nearly nine-year-old conflict in Yemen. The UN failed.

Just this week the U.S. tried unconvincingly to insist that after originally bringing the Saudis and the Iranians together the Chinese had done nothing to bring about peace in Yemen.

That, apparently, was done by a junior official from the U.S. State Department making a phone call to the Saudis.

One can only presume that the UN knows that the U.S. and the military-industrial complex it administers are deeply woven into both conflicts, making any attempt to go against its will futile.

There seems little chance that the US will ever have to face the music even when its wrongdoing is universally acknowledged.

When, in 2010, Julian Assange and WikiLeaks demonstrated clear breaches of international law through leaks provided by U.S. Army intelligence analyst Chelsea Manning, there was never the remotest chance that the U.S. would be held to account.

For the U.S., this was in fact a signal to go after Manning and Assange rather than be held accountable.

Its diplomats even had the gall to walk out of a UN meeting recently when a Russian representative, accused of war and human rights violations alongside President Vladimir Putin, began to speak.

The UN is reduced to being a mere conference organizer on important issues such as the climate emergency, water, and a range of other issues.

The fact that these conferences take place is important. But there are rarely real outcomes that make any difference from the marathon “negotiation” sessions that are usually highlighted from these conferences.

When observers believe that there are real outcomes, the reality is that the UN has no teeth or desire to hold the most difficult nations, such as the US, to account for anything they choose to do or not do as a result of the conference.

I am not arguing that bringing all the nations of the world together under one roof to debate the challenges facing the planet is not important. Far from it—it is vital. But it is only important if the organization has the teeth to hold everyone equally to account.

This has led countries of the Global South to look for new ways to do business.

Within the UN system, for example, the African Union is demanding permanent representation on the Security Council. It will likely achieve that as the scramble for influence over the still abundant natural resources of the continent continues.

But many countries of the Global South are now seeing much more value in creating structures that take their interests into account—not just as pawns of the U.S.

The BRICS alliance of Brazil, Russia, India, China, and South Africa is attracting major interest from other countries such as Saudi Arabia and Iran.

The BRICS nations are also set to trade among themselves in their own currencies as a prelude to developing their own common currency for the Global South. This will smash the dominance of the dollar over the vast majority of the world's population.

The message for the UN is that you can be relevant to the Global South or you can sit in your rocking chair smoking your pipe, chatting about the good old days with the U.S. while large swathes of the global population go about their business to make a real difference to their people.

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Source: Globetrotter

A New Leader's Big Banking Opportunity To Improve Global Development

Marco Fernandes – Photo: Twitter

Will the New Development Bank and the Contingent Reserve Arrangement be able to fulfill their original mission with the arrival of the new bank president Dilma Rousseff?

The first event of President Lula da Silva's long-awaited visit to China in mid-April 2023 is the official swearing-in ceremony of Dilma Rousseff as president of the New Development Bank (popularly known as the BRICS Bank) on April 13. The appointment of the former president of Brazil to the post demonstrates the priority that Lula will give to the BRICS countries (Brazil, China, India, Russia, and South Africa) in his government. In recent years, BRICS has been losing some of its dynamism. One of the reasons was the retreat of Brazil—which had always been one of the engines of the group—in a choice made by its right-wing and far-right governments (2016-2022) to align with the United States.

A New Momentum for BRICS?

After the last summit meeting in 2022, hosted by Beijing and held online, the idea of expanding the group was strengthened and more countries are expected to join BRICS this year. Three countries have already officially applied to join the group (Argentina, Algeria, and Iran), and several others are already publicly considering doing so, including Indonesia, Saudi Arabia, Turkey, Egypt, Nigeria, and Mexico.

The BRICS countries occupy an increasingly important place in the world economy. In GDP PPP, China is the largest economy, India is third, Russia sixth, and Brazil eighth. BRICS now represents 31.5 percent of the global GDP PPP, while the G7 share has fallen to 30 percent. They are expected to contribute over 50 percent of global GDP by 2030, with the proposed enlargement almost certainly bringing that forward.

Bilateral trade between BRICS countries has also grown robustly: trade between Brazil and China has been breaking records every year and reached $150 billion in 2022; between Brazil and India, there was a 63 percent increase from 2020 to 2021, reaching more than $11 billion; Russia tripled exports to India from April to December 2022 compared to the same period the preceding year, expanding to $32.8 billion; while trade between China and Russia jumped from $147 billion in 2021 to $190 billion in 2022, an increase of about 30 percent.

The conflict in Ukraine has brought them closer together politically. China and Russia have never been more aligned, with a "no limits partnership," as visible from President Xi Jinping's recent visit to Moscow. South Africa and India have not only refused to yield to NATO pressure to condemn Russia for the conflict or impose sanctions on it, but they have moved even closer to Moscow. India, which in recent years has been closer to the United States, seems to be increasingly committed to the Global South's strategy of cooperation.

The NDB, the CRA, and the Alternatives to the Dollar

The two most important instruments created by BRICS are the New Development Bank (NDB) and the Contingent Reserve Arrangement (CRA). The first has the objective of financing several development projects—with an emphasis on sustainability—and is regarded as a possible alternative to the World Bank. The second could become an alternative fund to the IMF, but the lack of strong leadership since its inauguration in 2015 and the absence of a solid strategy from the five member countries has prevented the CRA from taking off.

Currently, one of the major strategic battles for the Global South is the creation of alternatives to the hegemony of the dollar. As the Republican U.S. Senator Marco Rubio confessed in late March, the United States will increasingly lose its ability to sanction countries if they decrease their use of dollars. Almost once every week, there is a new agreement between countries to bypass the dollar, like the one recently announced by Brazil and China. The latter already has similar deals with 25 countries and regions.

Right now, there is a working group within BRICS whose task it is to propose its own reserve currency for the five countries that could be based on gold and other commodities. The project is called R5 due to the coincidence that all the currencies of BRICS countries start with R: renminbi, rubles, reais, rupees, and rands. This would allow these countries to slowly increase their growing mutual

trade without using the dollar and also decrease the share of their international dollar reserves.

Another untapped potential so far is the use of the Contingent Reserve Arrangement (totaling $100 billion) to rescue insolvent countries. When a country's international reserves run out of dollars (and it can no longer trade abroad or pay its foreign debts), it is forced to ask for a bailout from the IMF, which takes advantage of the country's desperation and lack of options to impose austerity packages with cuts in state budgets and public services, privatizations, and other neoliberal austerity measures. For decades, this has been one of the weapons of the United States and the EU to ensure the implementation of neoliberalism in the countries of the Global South.

Right now, the five BRICS members have no issues at all with international reserves, but countries like Argentina, Sri Lanka, Pakistan, Ghana, and Bangladesh find themselves in a bad situation. If they could access the CRA, with better conditions for repaying the loans, this would mean a political breakthrough for BRICS, which would begin to demonstrate their ability to build alternatives to the financial hegemony of Washington and Brussels.

The NDB would also need to start de-dollarizing itself, having more operations with the currencies of its five members. For instance, from the $32.8 billion of projects approved so far at NDB, around $20 billion was in dollars, and around the equivalent of $3 billion was in Euros. Only $5 billion was in RMB and very little was in other currencies.

To reorganize and expand the NDB and the CRA will be a huge challenge. The leaderships of the five countries will need to be aligned on a common strategy that ensures that both instruments fulfill their original missions, which won't be easy. Dilma Rousseff, an experienced and globally respected leader, brings hope for a new beginning. Rousseff fought against Brazil's civil-military dictatorship in the 1960s and 1970s and spent three years in prison for it. She became one of President Lula's key ministers in the 2000s, and she was elected Brazil's first female president and then won reelection (2010 and 2014). She was in office until she was overthrown by a coup based on fraudulent grounds by Congress (2016)—which has already admitted the fraud. She just returned to political life to run one of the most promising institutions in the Global South. After all, President Dilma Rousseff has never shied away from huge challenges.

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Source: Globetrotter

Fifty Years After Chile's Coup, The First Year Of Popular Unity

Taroa Zúñiga Silva – Photo: Twitter

Ten days after the 1973 coup against the Popular Unity (UP) government of President Salvador Allende, the military opened the Río Chico concentration camp on Dawson Island, located in the Strait of Magellan, near the southern tip of Chile. The island had served as an extermination camp by a Catholic order between 1891 and 1911 to confine the Selk'nam and Kawésqar peoples, who died due to overcrowding, the spread of disease, and the cold.

The coup regime sent 38 officials of the UP government to the Compañía de Ingenieros del Cuerpo de Infantería Marina (COMPINGIM) naval base and then to the Río Chico camp. It also sent hundreds of political prisoners to Punta Arenas, near Dawson Island. The officials were interrogated, tortured, and forced to work on the island's infrastructure. The Río Chico camp was dismantled in 1974.

One of the prisoners at the camp was Miguel Lawner, an architect who led the government's Urban Improvement Corporation (CORMU). During his imprisonment, Lawner walked around the prison to calculate the size of his room, the buildings at the camp, and the camp itself. He drew the layout for the camp but then destroyed it for fear of discovery by the guards. When he was in exile in Denmark in 1976, Lawner redrew the plans from memory. "The function creates the organ," he said. "I developed an organ: the drawing, capable of fulfilling the function of leaving testimony of our captivity."

During his imprisonment, Lawner told me, he worried that the military might accuse him of corruption for his leadership of CORMU. "I was trying to calculate how many millions of dollars had been [spent] in my name," he recalled. "I calculated it to be between $150 million and $180 million. Later, I learned that the military spent six months investigating me and came to the conclusion that they owed me a per diem!"

The UP government (1970-1973) felt that the ministries of Housing and Public Works should be the engine of the economy, as "the two easiest institutions to mobilize," Lawner said. Other areas, such as industrialization, "required more prolonged prior studies." "In housing," Lawner told me, "if you have a vacant lot, the next day you can be building." In addition, there was a huge need for housing. The CORMU management decided to speed up the bureaucratic procedures and authorize the immediate disbursement of funds through an official, who was Lawner. "Our first year of government was a year of marvelous irresponsibility," Lawner told me with a smile on his face.

Never Deviate From the Fundamentals

During the 1970 campaign for the presidency, Lawner accompanied Allende to a camp on the banks of the Mapocho River, where the people lived "outside the walls of society." As they left the camp, Allende said to Lawner, "Even if things go badly for us, to get these comrades out of the mud—for that, it would be worthwhile for them to elect me president." One year into the government,

Lawner said, “We delivered the first houses of Villa San Luis. In April ’72 we had this project completely delivered: a thousand houses, the great majority of which corresponded to these two camps, *el encanto* and *el ejemplo*, which sat on the banks of the Mapocho River.” The main task of the UP government, he said, was “to resolve the fundamental demands of the sectors that had always been dispossessed.”

Under Lawner’s leadership, the CORMU officials—not all of them part of the UP project—postponed vacations and worked without overtime pay. “We gave all these officials the conviction that they were operating for the benefit of the common good and not, obviously, for the enrichment of a private company or the banks. In other words, they knew that they were working so that people could live better.” Also, he said, the objective of “making things beautiful” was imposed, arguing “that in social housing, beauty does not have to be the birthright only of the rich.”

The Explosion of the Countryside

Lawner recalled his great pride at the UP government’s nationalization of copper, its delivery of houses, and its role in the “explosion of the agrarian world.” The agrarian reform and the law for peasant unionization were passed in 1962, before the UP government. However, agrarian workers “continued to exist like serfs from feudal times,” Lawner noted. A week into his presidency, Allende was invited by the peasants of Araucanía to a meeting to which he brought his minister of agriculture, Jacques Chonchol. When an Indigenous leader spoke, Allende leaned over to Chonchol and said, “Listen, minister, I think you should remain here.” The minister, who “had to send for even his toothbrush,” remained there for three months, beginning his term installed in the countryside. Half a million hectares were transferred to the landless in the first year of the government.

The UP’s first year, Lawner recalled, was a “year of unbridled aspirations.” “For a person like me who was never a public official, the feeling of power is infinite, and the conviction that you are capable of doing anything is equally infinite… we promised more than we were capable of doing [having done three or four times more than the most that had ever been done in the history of the housing ministry], but everything we could do was done because of what is now lacking: the commitment of the officials. You have to have good leadership, it is true, but if you don’t have the commitment of the base, there is nothing you can do.”

Generations Contaminated by the Model
When we talked about the differences between the experiences at the end of the first year of the UP and the first year of Chile's current President Gabriel Boric's progressive government, Lawner pointed out that, in Chile "we have effectively been fed for 50 years the neoliberal doctrine of a formation contradictory to what you require in a progressive government. Imperceptibly, generations were formed that are, in my opinion, corrupted by the model. It is incomprehensible to them any other way."

The current president of Chile's Senate is Juan Antonio Coloma, a man of the extreme right. "When the 50th anniversary of the coup comes this September," Lawner told me, "Coloma will be the country's second most important political official." Fascism's rise, he said, is a global phenomenon, not only taking place in Chile. But Lawner does not despair. "You cannot determine when there is a spark that lights the fire again, but there is no doubt that it is going to happen."

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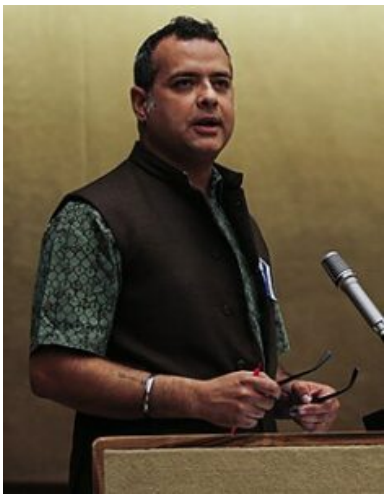
Source: Globetrotter

The World Bank And The BRICS Bank Have New Leaders And

Different Outlooks



Vijay Prashad

In late February 2023, U.S. President Joe Biden announced that the United States had placed the nomination of Ajay Banga to be the next head of the World Bank, established in 1944. There will be no other official candidates for this job since—by convention—the U.S. nominee is automatically selected for the post. This has been the case for the 13 previous presidents of the World Bank—the one exception was the acting president Kristalina Georgieva of Bulgaria, who held the post for two months in 2019. In the official history of the International Monetary Fund (IMF), J. Keith Horsefield wrote that U.S. authorities "considered that the Bank would have to be headed by a U.S. citizen in order to win the confidence of the banking community, and that it would be impracticable to appoint U.S. citizens to head both the Bank and the Fund." By an undemocratic convention, therefore, the World Bank head was to be a U.S. citizen and the head of the IMF was to be a European national (Georgieva is currently the managing director of the IMF). Therefore, Biden's nomination of Banga guarantees his ascension to the post.

A month later, the New Development Bank's Board of Governors—which includes representatives from Brazil, China, India, Russia, and South Africa (the BRICS countries) as well as one person to represent Bangladesh, Egypt, and the United Arab Emirates—elected Brazil's former president Dilma Rousseff to head the NDB, popularly known as the BRICS Bank. The BRICS Bank, which was first discussed in 2012, began to operate in 2016 when it issued its first green

financial bonds. There have only been three managing directors of the BRICS Bank—the first from India (K.V. Kamath) and then the next two from Brazil (Marcos Prado Troyjo and now Rousseff to finish Troyjo's term). The president of the BRICS Bank will be elected from its members, not from just one country.

Banga will come to the World Bank, whose office is in Washington, D.C., from the world of international corporations. He spent his entire career in these multinational corporations, from his early days in India at Nestlé to his later international career at Citigroup and Mastercard. Most recently, Banga was the head of the International Chamber of Commerce, an "executive" of multinational corporations that was founded in 1919 and is based in Paris, France. As Banga says, during his time at Citigroup, he ran its microfinance division, and, during his time at Mastercard, he made various pledges regarding the environment. Nonetheless, he has no experience in the world of development finance and investment. He told the Financial Times that he would turn to the private sector for funds and ideas. His resume is not unlike that of most U.S. appointees to head the World Bank. The first president of the World Bank was Eugene Meyer, who built the chemical multinational Allied Chemical and Dye Corporation (later Honeywell) and who owned the Washington Post. He too had no direct experience working on eradicating poverty or building public infrastructure. It was through the World Bank that the United States pushed an agenda to privatize public institutions. Men such as Banga have been integral to the fulfillment of that agenda.

Dilma Rousseff, meanwhile, comes to the BRICS Bank with a different resume. Her political career began in the democratic fight against the 21-year military dictatorship (1964-1985) that was inflicted on Brazil by the United States and its allies. During Lula da Silva's two terms as president (2003-2011), Dilma Rousseff was a cabinet minister and his chief of staff. She took charge of the Programa de Aceleração do Crescimento (Growth Acceleration Program) or PAC, which organized the anti-poverty work of the government. Because of her work in poverty eradication, Dilma became known popularly as the "mãe do PAC" (mother of PAC). A World Bank study from 2015 showed that Brazil had "succeeded in significantly reducing poverty in the last decade"; extreme poverty fell from 10 percent in 2001 to 4 percent in 2013. "[A]pproximately 25 million Brazilians escaped extreme or moderate poverty," the report said. This poverty reduction was not a result of privatization, but of two government schemes developed and

established by Lula and Dilma: Bolsa Família (the family allowance scheme) and Brasil sem Miserία (the Brazil Without Extreme Poverty plan, which helped families with employment and built infrastructure such as schools, running water, and sewer systems in low-income areas). Dilma Rousseff brings her experience in these programs, the benefits of which were reversed under her successors (Michel Temer and Jair Bolsonaro).

Banga, who comes from the international capital markets, will manage the World Bank's net investment portfolio of $82.1 billion as of June 2022. There will be considerable attention to the work of the World Bank, whose power is leveraged by Washington's authority and by its work with the International Monetary Fund's debt-austerity lending practices. In response to the debt-austerity practices of the IMF and the World Bank, the BRICS countries—when Dilma was president of Brazil (2011-2016)—set up institutions such as the Contingent Reserve Arrangement (as an alternative to the IMF with a $100 billion corpus) and the New Development Bank (as an alternative to the World Bank, with another $100 billion as its initial authorized capital). These new institutions seek to provide development finance through a new development policy that does not enforce austerity on the poorer nations but is driven by the principle of poverty eradication. The BRICS Bank is a young institution compared to the World Bank, but it has considerable financial resources and will need to be innovative in providing assistance that does not lead to endemic debt. Whether the new BRICS Think Tank Network for Finance will be able to break with the IMF's orthodoxy is yet to be seen.

Rousseff chaired her first BRICS Bank meeting on March 28. Banga will likely be appointed at the World Bank-IMF meeting in mid-April.

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Afghanistan, and the Fragility of U.S. Power.
Source: Globetrotter

The Fear Of AI Is Overblown—And Here's Why

Bappa Sinha – Photo: virtunetsystems.com

The unprecedented popularity of ChatGPT has turbocharged the AI hype machine. We are being bombarded daily by news articles announcing humankind's greatest invention—Artificial Intelligence (AI).
AI is "qualitatively different," "transformational," "revolutionary," "will change everything,"—they say. OpenAI, the company behind ChatGPT, announced a major upgrade of the technology behind ChatGPT called GPT4.
Already, Microsoft researchers are claiming that GPT4 shows "sparks of Artificial General Intelligence" or human-like intelligence – the Holy grail of AI research. Fantastic claims are made about reaching the point of "AI Singularity" of machines equalling and then surpassing human intelligence.

The business press talks about hundreds of millions of job losses as AI would replace humans in a whole host of professions. Others worry about a sci-fi-like near future where super-intelligent AI goes rogue and destroys or enslaves

humankind. Are these predictions grounded in reality, or is this just over-the-board hype that the Tech industry and the VC hype machine are so good at selling?

The current breed of AI Models are based on things called "Neural Networks." While the term "neural" conjures up images of an artificial brain simulated using computer chips, the reality of AI is that neural networks are nothing like how the human brain actually works. These so-called neural networks have no similarity with the network of neurons in the brain. This terminology was, however, a major reason for the artificial "neural networks" to become popular and widely adopted despite its serious limitations and flaws.

"Machine Learning" algorithms currently used are an extension of statistical methods that lack theoretical justification for extending them this way. Traditional statistical methods have the virtue of simplicity. It is easy to understand what they do, when and why they work. They come with mathematical assurances that the results of their analysis are meaningful, assuming very specific conditions. Since the real world is complicated, those conditions never hold, and as a result, statistical predictions are seldom accurate. Economists, epidemiologists and statisticians acknowledge this and then use intuition to apply statistics to get approximate guidance for specific purposes in specific contexts. These caveats are often overlooked, leading to the misuse of traditional statistical methods with sometimes catastrophic consequences, as in the 2008 Great Financial Crisis or the LTCM blowup in 1998, which almost brought down the global financial system. Remember Mark Twain's famous quote, "Lies, damned lies and Statistics."

Machine learning relies on the complete abandonment of the caution which should be associated with the judicious use of statistical methods. The real world is messy and chaotic and hence impossible to model using traditional statistical methods. So the answer from the world of AI is to drop any pretense at theoretical justification on why and how these AI models, which are many orders of magnitude more complicated than traditional statistical methods, should work. Freedom from these principled constraints makes the AI Model "more powerful." They are effectively elaborate and complicated curve-fitting exercises which empirically fit observed data without us understanding the underlying relationships.

But it's also true that these AI Models can sometimes do things that no other technology can do at all. Some outputs are astonishing, such as the passages ChatGPT can generate or the images that DALL-E can create. This is fantastic at wowing people and creating hype. The reason they work "so well" is the mind-boggling quantities of training data—enough to cover almost all text and images created by humans. Even with this scale of training data and billions of parameters, the AI Models don't work spontaneously but require kludgy ad-hoc workarounds to produce desirable results.

Even with all the hacks, the models often develop spurious correlations, i.e., they work for the wrong reasons. For example, it has been reported that many vision models work by exploiting correlations pertaining to image texture, background, angle of the photograph and specific features. These vision AI Models then give bad results in uncontrolled situations. For example, a leopard print sofa would be identified as a leopard; the models don't work when a tiny amount of fixed pattern noise undetectable by humans is added to the images or the images are rotated, say in the case of a post-accident upside down car. ChatGPT, for all its impressive prose, poetry and essays, is unable to do simple multiplication of two large numbers, which a calculator from the 1970s can do easily.

The AI Models do not have any level of human-like understanding but are great at mimicry and fooling people into believing they are intelligent by parroting the vast trove of text they have ingested. For this reason, computational linguist Emily Bender called the Large Language Models such as ChatGPT and Google's BART and BERT "Stochastic Parrots" in a 2021 paper. Her Google co-authors—Timnit Gebru and Margaret Mitchell—were asked to take their names off the paper. When they refused, they were fired by Google.

This criticism is not just directed at the current large language models but at the entire paradigm of trying to develop artificial intelligence. We don't get good at things just by reading about them, that comes from practice, of seeing what works and what doesn't. This is true even for purely intellectual tasks such as reading and writing. Even for formal disciplines such as Maths, one can't get good at Maths without practicing it. These AI Models have no purpose of their own. They, therefore, can't understand meaning or produce meaningful text or images. Many AI critics have argued that real intelligence requires social "*situatedness.*"

Doing physical things in the real world requires dealing with complexity, non-linearly and chaos. It also involves *practice in actually doing those things*. It is for this reason that progress has been exceedingly slow in Robotics: current Robots can only handle fixed repetitive tasks involving identical rigid objects, such as in an assembly line. Even after years of hype about driverless cars and vast amounts of funding for its research, fully automated driving still doesn't appear feasible in the near future.

Current AI development based on detecting statistical correlations using "neural networks," which are treated as black-boxes, promotes a pseudoscience-based myth of creating intelligence at the cost of developing a scientific understanding of how and why these networks work. Instead, they emphasize spectacles such as creating impressive demos and scoring in standardized tests based on memorized data.

The only significant commercial use cases of the current versions of AI are advertisements: targeting buyers for social media and video streaming platforms. This does not require the high degree of reliability demanded from other engineering solutions; they just need to be "good enough." And bad outputs, such as the propagation of fake news and the creation of hate-filled filter bubbles, largely go unpunished.

Perhaps a silver lining in all this is, given the bleak prospects of AI singularity, the fear of super-intelligent malicious AIs destroying humankind is overblown. However, that is of little comfort for those at the receiving end of "AI decision systems." We already have numerous examples of AI decision systems the world over denying people legitimate insurance claims, medical and hospitalization benefits and state welfare benefits. AI systems in the United States have been implicated in imprisoning minorities to longer prison terms. There have even been reports of withdrawal of parental rights to minority parents based on spurious statistical correlations, which often boil down to them not having enough money to properly feed and take care of their children. And, of course, on fostering hate speech on social media. As noted linguist Noam Chomsky wrote in a recent article, "ChatGPT exhibits something like the banality of evil: plagiarism and apathy and obviation."

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Source: Globetrotter

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We Are Living Through A Paradigm Shift in Our Understanding Of Human Evolution

Chris Stringer – Photo: wikipedia

An interview with Professor Chris Stringer, one of the leading experts on human evolution.

There's a paradigm shift underway in our understanding of the past 4 million years of human evolution: ours is a story that includes combinations with other *Homo* species, spread unevenly across today's populations—not a neat and linear evolutionary progression.

Technological advances and a growing body of archaeological evidence have allowed experts in the study of human origins and prehistory to offer an increasingly clear, though complex, outline of the bio-historical process that produced today's human population and cultures.

For the most part, the public is presented with new findings as interesting novelty items in the news and science coverage. The fuller picture, and the notion that this information has valuable implications for society and our political arrangements, doesn't usually percolate into public consciousness, or in centers of influence.

But there is an emerging realization in the expert community that humanity can greatly benefit from making this material a pillar of human education—and gradually grow accustomed to an evidence-based understanding of our history, behavior, biology, and capacities. There's every indication that a better understanding of ourselves strengthens humanity as a whole and makes connection and cooperation more possible.

The process will realistically take decades to take root, and it seems the best way at this point to accelerate that process is in articulating the big picture, and giving people key footholds and scientific reference points for understanding.

I reached out to discuss some of the bigger conclusions that are emerging from the research with Professor Chris Stringer, who has been at the forefront of human evolutionary understanding for decades. Stringer helped formulate the "Out of Africa" model of our species' origins and continues to pursue pioneering projects at the UK Natural History Museum in London as research leader in human origins in the Department of Earth Sciences.

Jan Ritch-Frel: A good place to start is that we know that today's humans produced fertile offspring with relative *Homo* species that had separated from us hundreds of thousands of years ago, and this went on with ancestor species for as far back as scientists are able to trace. This is against a backdrop that for primate species it was possible to produce fertile offspring with other species sharing a common ancestor as far back as 2 million years—with a generally decreasing chance of success across the passage of time and divergence between *Homo* species.

Chris Stringer: We know that our species produced some fertile offspring with

Neanderthals, and with Denisovans. We also have negative evidence that there were limits on infertility between some of the *Homo* species because we don't find a lot more evidence of it in our genomes (at least at the level at which we can detect it)—thus matings between more distantly related species either didn't occur, were not fertile, or we can't detect them at the level of our current technology.

There are barriers, and we know that in our genomes today, there are areas of deserts where there's zero Neanderthal and Denisovan DNA. And we know that some of those deserts are in areas that influence things like speech and vocalization, and how the brain works. There are also suggestions that male children may have been less fertile or infertile compared with the female children of those hybrid matings. At the level we can detect it, there is no strong evidence so far of infertility between *Homo sapiens* and our more distant relatives such as *Homo floresiensis* or *Homo naledi*.

So we don't yet know all of the *Homo* species which could have hybridized or did hybridize during the last 2 million years, but certainly some of them would have been interfertile. We know that we, Neanderthals, and Denisovans were interfertile, for example.

Ritch-Frel: Unpacking what you've said here, it changes the coordinates of how we explain human evolution to ourselves—not a linear progression, but a series of combinations, of different groups that occasionally produced advantages for survival. In some cases, survival for a migrating *Homo* population could be assisted by hybridizing with a resident species that had survived in a region for hundreds of thousands of years or more, picking up their adaptions—to the immune system, to the ability to process oxygen, or other traits—not to mention the informational exchange of culture and lifestyle.

The more one learns about this, the easier it is to see that the passage of time is better thought of as just an ingredient in the human evolutionary story. With this in mind, it's easier to grasp how far astray the concept of "primitive" can take us in understanding ourselves and our evolutionary process.

As the world begins to put this information at the center of human education, it's so important to get the root words right as best we can.

Stringer: "Archaic" and "modern," "human" and "non-human"—they're all loaded

terms. What's a human? And there are many different definitions of what a species is.

There are some people who only use "human" for *sapiens*, and then the Neanderthals even wouldn't be human. I don't agree with that, because it means that we mated with "non-humans" in the last 50,000 years, which I think makes the conversation very difficult.

In my view, the term "human" equates to being a member of the genus *Homo*. So I regard the Neanderthals, *rhodesiensis*, and *erectus* as all being human.

And the terms "modern" and "archaic"—these are difficult terms. And I've tried to move away from them now because on the one hand, the term "modern" is used for modern behavior, and it's also used for modern anatomy, so these terms get confused. For example, some ancient human fossil findings have been described as "anatomically modern" but not "behaviorally modern"—I think that's just too confusing to be useful.

When we look at the early members of a *Homo* species, instead of having the term "archaic," as in having "archaic traits," I think it's clearer if we use the term "basal." Basal puts us on a path without the confusion and baggage that can come with terms like "archaic," "primitive," and "modern." In this usage, "basal" is a relative term, but at least one where we can come up with criteria (such as skeletal traits) to delineate it.

It helps here to consider the evolutionary process outside of *Homo sapiens*. Neanderthals had a process of evolution as well from the period they split off with our common ancestor. Neanderthals at the end of their time were very derived, quite different from how they started potentially 600,000 years ago, and yet under conventional thinking they are called "archaic" (compared with us "moderns"). Over the period of hundreds of thousands of years, they developed a number of new physical features that were not there in the common ancestor with *Homo sapiens*. For example, they developed a face that was pulled forward at the middle, a spherical cranial shape in rear view—even some of the ear bones were a different shape. And like us, they evolved a bigger brain. The derived *Homo neanderthalensis* looked quite different from their ancestors 300,000 years earlier.

So let's scrap the verbal framework of "primitive" and "archaic" and "modern"

and go with “basal” and “derived” along both our and the Neanderthal lineage.

Ritch-Frel: Another recent shift in understanding is the story of how we learned to walk. A growing body of research suggests it happened on tree branches and that our arms had a role to play in providing balance.

Stringer: When you look at orangutans and gibbons, who are our close living relatives over in Southeast Asia, we see that when they’re in the trees they already are walking upright, and they branch walk. Some of the tenderest leaves and fruits are out on the ends of branches, so using their longer arms, they will actually walk along the branches, supporting themselves by holding on with one or two hands to the branch above. And then they can also jump across easily from the ends of the branches to the next tree, to carry on feeding.

So the view is that this is a physique that is pre-adapted to bipedalism. Their bodies are already part-adapted to an upright posture, and the pelvis is already in a situation where they can support themselves on two legs. The working idea would be that our ancestors went through a similar stage where they were branch walking, feeding in the trees, beginning to regularly get their body into an upright position. And then when they come down between trees, the trees maybe start to thin out if areas become drier, and they stay upright as they walk between the trees until they get to the next clump of trees.

I don’t think we really have a very convincing evolutionary alternative scenario. Consider that this adaption to bipedalism takes place over millions of years. If you imagine a creature that is on all fours, what’s going to make it start walking upright and do it for long enough for the skeleton to be modified by evolution to become fully bipedal? They have to survive along the way of that process. Very difficult to imagine.

People like Darwin originally speculated that bipedalism came out of the need to use tools or carry things, and it’s certainly useful to do those things, once you are bipedal. But what’s going to modify a skeleton, modify the musculature and all of that, in the way that evolution tells us that primates evolve over the course of generations?

Ritch-Frel: Taking that point as to the origins of learning to walk, it leads into the discussion on two *Homo* fossil groups found in Southeast Asia, *Homo floresiensis* on the island of Flores, Indonesia, and *luzonensis* in Callao Cave on the island of

Luzon in the Philippines—and *floresiensis* with an adult height at somewhere only a bit over a meter tall.

Floresiensis caught the attention of the world public back in 2003. We were presented with the discovery of a "primitive creature," one that more often gets called an "it" than a person. The more curious members of the public who dig deeper into this discovery are usually told that these "hobbits" were a product of evolutionary dwarfism, often found on islands, where larger creatures are reduced in size from resource constraints and smaller gene pools. Always present in discussions about *floresiensis* is a focus on their small "primitive" brains. We're beginning to learn that size may not matter as much as the layout of the brain when we compare ourselves to our ancestors and their core capacities. (I'll ask you more about this later on.)

More recently, in 2019, archaeologists announced a fossil discovery found almost 2,000 miles away in the Philippines currently given a species name *Homo luzonensis* that has a lot of similarities to *floresiensis*.

Until their discovery, it was thought that the first hominins/humans to arrive in Southeast Asia were *Homo erectus*, who is known to have left Africa about 2 million years ago.

It's notable that some experts argue *floresiensis* was able to walk, but not run. And that *floresiensis*'s humerus, the upper arm bone, was longer than its femur, the upper leg bone. This is typical of a body type adapted for climbing. The wrist bones also point to climbing. That kind of evolutionary branch, I understand, goes back closer to somewhere beyond 2.5-3 million years ago, and would force a rethinking about which *Homo* species locomotion style first left Africa and possibly set the stage to influence and hybridize with African relatives who came after.

Floresiensis/luzonensis is an area where there is no consensus among the experts—and the public might find the schools of thought illustrative about the frontiers of our understanding about the human evolutionary story.

Stringer: Some experts argue that the most convincing scenario is that the *floresiensis* material is derived from *Homo erectus*—that this is a dwarf form of *Homo erectus* that somehow got to Flores, underwent dwarfing, and… retained some *erectus* characteristics. We know *erectus* left Africa approximately 2 million

years ago. Some of the dental features of *floresiensis* have been suggested to be clear evidence of an *erectus* ancestry. For this idea to work, *floresiensis* would have needed to have an ancestor who independently developed or redeveloped basal features—features which look more like ancestral features of previously developed species in Africa. As you've mentioned, the body proportions, the upper body that seems to show adaptations for climbing. Perhaps *floresiensis* may have gone back into the trees for feeding. That's a possibility.

This dwarfing process would have had to occur subsequently in the island migration process in Southeast Asia. That is a scenario which some people who know their *Homo erectus* fossils will argue is there. That's one school of opinion on *floresiensis*.

And on the other hand, you have some experts working along the lines you've alluded to, that actually this is evidence of a pre-*erectus* exit from Africa. A *Homo habilis* or even an australopithecine grade came out of Africa, somehow got all the way over to Southeast Asia, in terms of fossils we know about, and maybe on Luzon in the Philippines as well for *Homo luzonensis*. In favor of that, we've got these basal features in the wrist bones and in the pelvis and the shoulders, and the smaller brain.

That's a pretty convincing scenario. But if you agree with that, then you've got to conclude that some convergent, or independently similar, evolution in their teeth toward *Homo erectus* had to happen. Aspects of the skull look *erectus*-like. *Floresiensis* has a small face that's tucked under the cranial vault, which required some derivation. *Floresiensis* would have had to have both independent similar evolution to *erectus*, and a return to some more basal elements of their ancestors.

There is a compromise view, that *floresiensis* is the product of a basal *erectus*. Some of the *erectus* skeleton fossils found at a site called Dmanisi in the country of Georgia, they're much smaller-brained. One of the fossils has a brain size not too different from *floresiensis*.

We could be starting from an *erectus* that's smaller-bodied, smaller-brained, and maybe then it could have gotten across to Flores eventually, and evolved and survived there for more than a million years. We have to bear in mind that we actually don't know the full anatomy of *erectus* anyway. So what were the wrist bones like in Dmanisi? Were they like those found in Flores? We simply don't

know yet, because they're not preserved so far.

In any of these cases you've also got the mystery of how they even got to Flores—there are no land bridges there that appear when sea levels drop during ice age periods. The people who argue *floresiensis* was more closely related to humans via the *erectus* line suggest there was a capability of maybe using watercraft to get to Flores.

But the other option is that its arrival on Flores was accidental. Tectonically this part of Indonesia is one of the most active areas in the world, caused by volcanic eruptions and earthquakes. There was a major tsunami in the Indian Ocean in 2004. People were found out at sea days later, surviving on clumps of vegetation. That was something that happened in the last 20 years. When you've got a time scale of thousands, hundreds of thousands, millions of years potentially, these "rare" events can happen. We know that's how many other animals must have gotten across to these islands between Java and Papua New Guinea/Australia.

It's possible that some ancestors of *floresiensis* were maybe foraging in mangrove swamps on the coast, and a tidal wave ripped a whole area away, and they're left in there, and somehow miraculously a few weeks later they arrive on Flores or on another island, because it could have been accomplished in stages. It doesn't have to be straight all the way to Flores.

Ritch-Frel: Whether *floresiensis* rafted by design or accident, there is this other piece of evidence that we identify with human advancement—stone toolmaking. Archaeologists found at two sites on the island of Flores tools associated with butchering meat that are 700,000 and even over a million years old.

With *floresiensis*, we have a body that was perhaps unable to run, able to walk, but better suited for climbing. We have a brain described as tiny, yet able to make tools. Turning to the 2013 discovery of *Homo naledi* in South Africa, we have 230,000-to-300,000-year-old evidence of another *Homo* species that had curvature on the finger bones that is associated with primates who spend their time climbing, and also a hand bone structure that allows people to bring complexity in their toolmaking. It has a foot structure similar to ours. Like *floresiensis*, *naledi* also has a brain much smaller than ours, but also like *floresiensis*, it has a similar brain structure. Tools have been found in the area that the archaeologists believe may have been created by *naledi*.

The archaeological team that is working on the *naledi* site tells us there is evidence of a culture with traits that we and our cousin species would recognize—returning to the same cave to deposit their dead, and using fire to navigate it. Neanderthals left a record of depositing dozens of their dead in a cave in Spain called Sima de los Huesos about 430,000 years ago. Whether what we are looking at in these caves are cases of mass murder or ritual or something else, we just don't have the evidence to say. In Bruniquel cave in France, we have evidence of Neanderthal use of fire and potentially habitation in the cave at least 175,000 years ago.

Remembering the dead, of course, is not unique to us. Elephants visit and mourn the remains of their relatives and herd members throughout the decomposition process. Chimpanzee mothers will carry their dead infants with them for days.

Stringer: Naledi is very intriguing. We can explain the survival of *floresiensis* long term and its divergent evolution in isolation, and *Homo sapiens* doesn't get there until maybe the last 50,000 years, and then *floresiensis* disappears. But in the case of *naledi*, we've got it in South Africa, on a continent where we're pretty sure *Homo sapiens* had already evolved, where other *Homo* species, such as *rhodesiensis*, were present. And yet *naledi* is surviving in South Africa with an ape-sized brain successfully, seemingly, and may be spending its time deep in the cave systems there.

I have been one of the critics of the intentional burial disposal idea, because I've argued that "How complex could the behavior be of a creature with a brain the size of a chimpanzee or a gorilla?"

But I'm more than happy to be surprised by much greater complexity in *Homo naledi* when peer-reviewed research makes the case for it (which may be soon).

Ritch-Frel: There's a big emphasis on the size of the brains of our relatives in the public and expert conversation on human origins, for comparing ourselves to our ancestors and cousins. In the case of *floresiensis* and *naledi*, the public conversation keeps returning to how small their brains are. *Naledi* had a brain size of 600 milliliters; each of us has around 1,300. Could that be a bit of a red herring in terms of their core capacities? Should we be putting more emphasis on the layout of the core brain structures? Does that deserve to get some more emphasis in comparison to us?

Stringer: The whole question of brain size and complexity of behavior, it's been a long-running debate.

Neanderthals and *sapiens* have relatively big brains in the *Homo* family. You can see a rough correlation between increasing behavioral complexity in stone tools and the size of the brain. It's a rough correlation, not a one-to-one. That's why I think *naledi* is going to be very important, because if the research team demonstrates complexity of behavior I think it will certainly put a nail in the coffin of the idea that a small hominin brain can't accomplish complex things.

Ritch-Frel: Given that, and going back to some of the tree-dwelling morphologies retained, is it fair to wonder now whether the intelligence that humans tend to prize about themselves and use as a marker of our difference from other animals was developed up in trees rather than exclusively on the ground? We know that young chimpanzee females make dolls, for example, with which they simulate child-rearing.

Stringer: I think even looking at chimps and gorillas, they have clear intelligence greater than most other creatures, most other mammals. Certainly it was there in the common ancestor. So I think the common ancestor of us and chimps about 7 million years ago already had complex behavior and potentially even toolmaking behavior at that early stage.

Why not? So I think yes, it could have started to develop in the trees. And as I say, orangutans are intelligent too. So I think the common ancestor would've had that degree of intelligence. But there are arguments that by the time we get to *Australopithecus*, there has been some restructuring of the brain, which implies maybe a reorganization for more complex thought.

Ritch-Frel: We now know that there are at least as many as five distinct human species that were living on Earth as recently as 70,000 years ago: *Homo sapiens*, *neanderthalensis*, *denisova*, *floresiensis*, and *luzonensis*. And we can demonstrate through several lines of evidence that they not only had different anatomy, but that they also had varying physical capacities, and behavioral traits or tendencies.

A 1-meter-tall human species in Indonesia had a foot that made running difficult. Research tells us that Neanderthals tended to be aggressive, be morning people, have depression; that they would have struck us as dogmatic, and that they had repetitive behaviors.

On top of this, we also know that *sapiens* across the planet today carry genomic material from hybridizing with at least six *Homo* species, some of whom we think went extinct as an independent, separate species long before 70,000 years ago. Two of these species we can name, Neanderthal and Denisovan, and the other four science hasn't named yet—but we have genomic evidence for these "mystery ancestors."

It's not yet part of the public conversation, but can you see a future where people might identify themselves and their behaviors as typical of their family, religion, regional origins, and also of their inheritances from ancestor species in an environment where understanding ourselves strengthens the bonds of cooperation and provides us with a universalizing framework of relatability?

Stringer: There's definitely evidence of *sapiens* interbreeding with Neanderthals, and that is still thought to be one fairly closely related group of Neanderthals that hybridized with *Homo sapiens*. But for Denisovans, it's at least three different population groups of Denisovans who diversified approximately 300,000 years ago that interbred with *Homo sapiens* in different parts of Asia and Southeast Asia.

And back to your question about identity. Yes, I think that we know from studies of what the Neanderthal DNA is doing in us today that bits of Neanderthal DNA are related, for example, to whether you're a morning or an evening person. We know that some bits of Neanderthal DNA have given protection against COVID. The age of menopause and the start of menstruation. Addictive behavior appears to be related in some cases to bits of Neanderthal DNA.

There are suggestions that autism, schizophrenia, certainly autoimmune diseases, they also are influenced to an extent by the presence of Neanderthal DNA, and probably we will find similar things for Denisovan DNA. So it's certainly affecting us, our core biology, our personalities.

And for Denisovans, in some populations there's double the amount of Denisovan DNA than Neanderthal DNA. Populations in Southeast Asia have Neanderthal DNA at the same level as, say, Europeans or Asians, but they've got an additional maybe 4 percent of Denisovan DNA. So theoretically we imagine that's going to have an even greater effect. We know it affects the immune systems, but it may have other effects as well.

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