Machine ethics and African identities: Perspectives of artificial intelligence in Africa

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Preprint / Preprint
Arbeitspapier / working paper

Machine ethics and African identities
Perspectives of artificial intelligence in Africa

Dirk Kohnert [1]

'*Artificial Intelligence in Africa*'
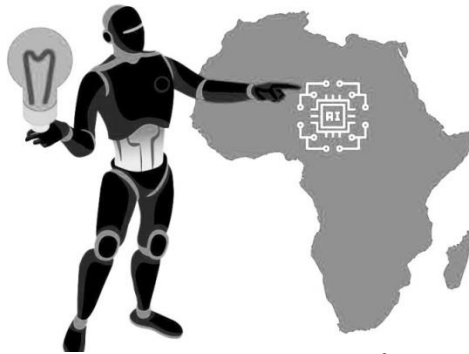
Source: EraInnovator, 2022 [2]

Abstract: Artificial intelligence (AI) has been welcomed enthusiastically by Africans as a new resource for African development. AI could allow for improved well-being by facilitating innovations in the economic sector, education, health, ecology, urban planning, industries etc. Yet, the high expectations may be little more than pious wishes. There are still unsolved questions concerning the required transfer and choice of appropriate technology and its mastering. Given, that the concept of 'technology transfer' of the modernization theories of the 1960s utterly failed, because it was not adapted to the local needs (e.g. lack of resources, widespread poverty and gross socio-economic inequality, labour-intensive technology, low productivity), some scholars called for an endogenous concept of African AI. This, however, triggered heated controversies. Africa became a battleground for 'digital empires' of global powers because of its practically inexistent digital infrastructure. Yet, African solutions to African problems would be required. Moreover, the prevailing narratives and default settings of AI-related technologies have been denounced as male gender-biased, white, heteronormative, able-bodied, and Western. Also, the hitherto existing focus on the formal sector is questionable. Innovators in the informal sector and the agency of the civil society, embedded in the local socio-cultural setting, but closely linked to transnational social spaces, often outperform the states' development efforts. Also, UNESCO cautioned that the effective use of AI would require appropriate skills, the legal framework and infrastructure. As in the past, the call for the pooling of resources, a pan-African strategy, was probably in vain. Possibly, AI will develop most rapidly in the already established African technology hubs of South Africa, Nigeria and Kenya. Yet, promising AI-focused activities also have been recognized in Ethiopia and Uganda. For AI to improve socio-economic inclusion in African settings, rather than undermine it, also gender equality, cultural and linguistic diversity and shifts in the labour markets would be required. Furthermore, ethical questions linked with a specific African identity have been raised. How far African perceptions of personhood and humanity would have to be considered in developing an African AI remains an open question. In short, AI could be a double-edged sword.

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[1] Dirk Kohnert, associated expert, GIGA-Institute for African Affairs, Hamburg, Germany. *Draft* : 17 July 2022
[2] Cartoon on AI in Africa. Source: EraInnovator (2022) © (all rights reserved). - The original coloured graph has been converted into black & white by the author.

1. Introduction

The rapid growth of artificial intelligence (AI) created great expectations in Africa. It has been hailed as the fourth industrial revolution that could also improve significantly the well-being of Africans and even augment the performance of weak and fragile states in Sub-Saharan Africa (SSA) (Rapanyane & Sethole, 2020). A paper of the Panel for the Future of Science and Technology (EPRS) of the European Parliamentary Research Service suggested that AI might solve some of the most pressing problems in SSA, from agricultural yields to providing secure financial services, and called for a pooling of resources and a pan-African strategy on AI, given the insufficient commitment of individual governments to date vis à vis a proactive approach to AI policy (Bird, et al., 2020; Cisse, 2018).

African technology hubs of South Africa, Nigeria and Kenya already deployed successfully AI methods, and even smaller countries like Ghana, Uganda and Ethiopia participated. Most applications so far focused on the health sector, agriculture and financial services (Gwagwa & Kraemer-Mbula & Rizk, 2020). The number of African tech startups grew significantly in the past years. They procured more than US$ 2.1 bn in 2021, which represented the highest venture capital acquired since 2015 (Faria, 2022).

Graph 1: Total funding value secured by tech startups in Africa, 2015 to 2021
(in US$ m)
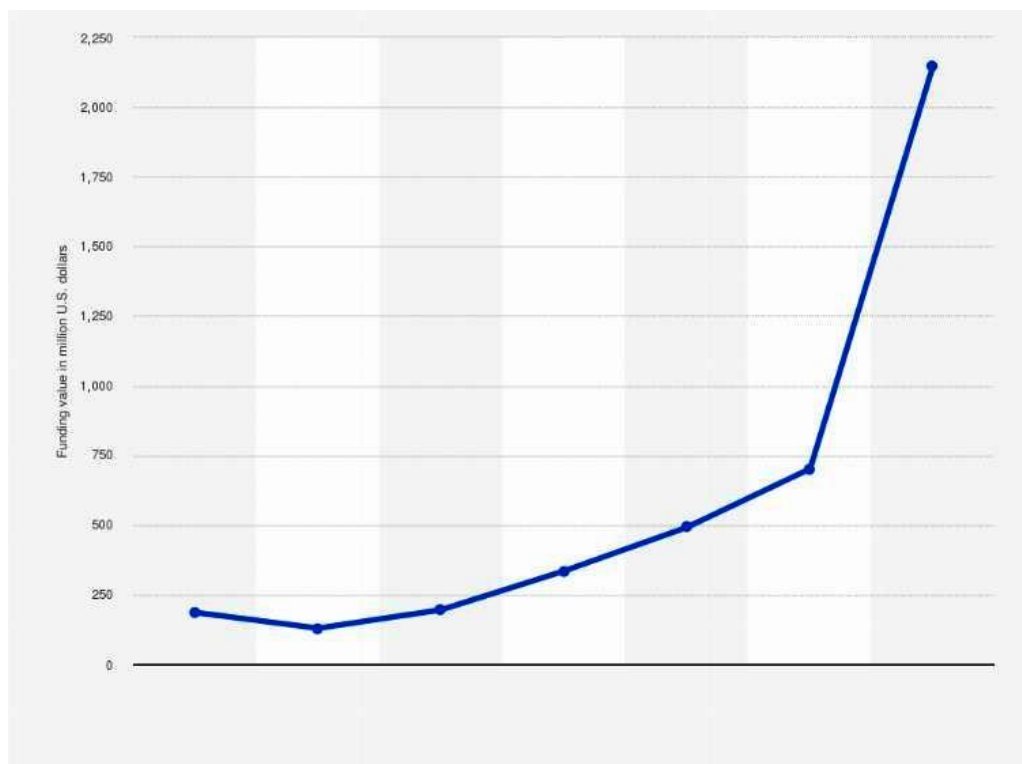
Source: Faria, 2022; Statista.com, January 2022

However, AI is a double-edged sword. It could be used for positive or negative ends, and therefore requires good systems of governance (Besaw & Filitz, 2019). Under these circumstances, it is worrying that according to the most recent Ibrahim Index of African Governance, Africa's governance performance declined for the first time in a decade. Government performance worsened especially in the following three of the four IIAG categories which all are highly relevant for AI performance: Participation, rights & inclusion,

security & rule of law and human development (IIAG, 2020). Also, the 2018 Skills Building Program of the World Bank identified nine major bottlenecks of AI development in Africa (Ludik, 2018):

1. low level of education and skills,
2. poor quality of health care and sanitation,
3. lack of employment and access to financial resources,
4. weak governance and crime prevention,
5. poor infrastructure and energy shortages,
6. food scarcities and low-agricultural productivity,
7. lack of technological and manufacturing competitiveness,
8. growing water stress (lack of drinking water) and
9. increasing pollution

Apart from that, the development and implementation of AI in Africa could entail not only the improvement of the economic and social well-being of many of the African poor but also implicates important issues of moral agency and responsibility. Yet, a UNESCO survey of 32 mostly SSA countries[3] revealed significant human resource gaps concerning the ethical implications of AI because only six of the states reported having sufficient resources to handle the ethical implications. Nevertheless, 21 out of the 32 governments accorded priority to the development and use of AI in their national development plans (Sibal & Neupane, 2021).

Moreover, the cultural perceptions of AI-related technologies are shaped by narratives of optimism, neutrality, progress, and modernization. Their construction is informed by Western norms of masculinity, whiteness, and gender perspectives. This obscures how AI-related technologies benefit some individuals and groups more than others according to race, ethnicity, gender, sexuality, and citizenship (Foster & Van Wiele & Schoenwetter, 2020).

Graph 2: Capacities to address the ethical challenges of AI in 32 African countries
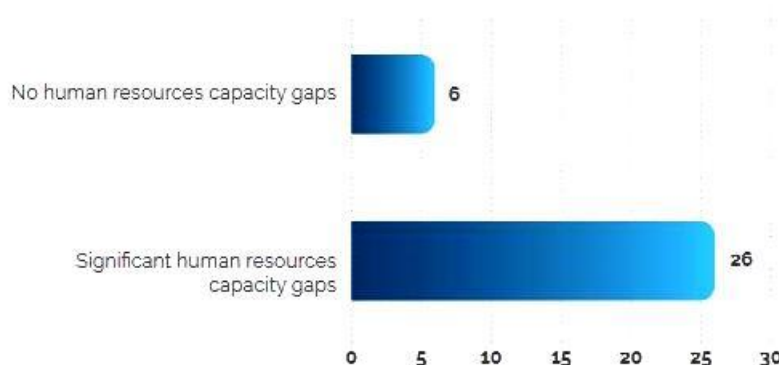
Source: Sibal & Neupane, 2021

Under these conditions, civil society should assume a vital part in ensuring that African AI systems are robust and responsible. For example, it could play a crucial role in agenda setting, policy development and as an intermediary between different stakeholders, just as in collecting, disseminating, and analysing data for use by government business and in the academic world (Access Partnership & University of Pretoria, 2018).

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[3] Except for Egypt, all sub-Saharan African countries: see Table 4: Countries and Institutions have responded to the survey (Sibal & Neupane, 2021:74).

Also, the efficiency of established AI techniques in Africa was seriously hampered by structural challenges that could undermine the rapid adoption and implementation of AI, like low internet penetration and faulty or lacking data which may lead to flawed results.

The mobile subscriber penetration rate in Sub-Saharan Africa was on average about 44 % by the end of 2018, which represented 456 million unique mobile subscribers (GSMA, 2019). But many subscribers shared their mobile with others to lower the cost. An estimated 23 % of the population used the mobile internet regularly. Therewith, SSA remained the fastest growing region worldwide, with a compound annual growth rate (CAGR) of 4.6 % and an additional 167 million subscribers over the period to 2025, to reach about half of the population. Because of the demographic hump, large numbers of today's young consumers will become adults and own a cell phone for the first time. They will represent most of the new mobile subscribers and, as 'digital natives', influence profoundly mobile usage patterns in the future (GSMA, 2019).

**Graph 3:** Mobile and internet penetration in SSA, 2018
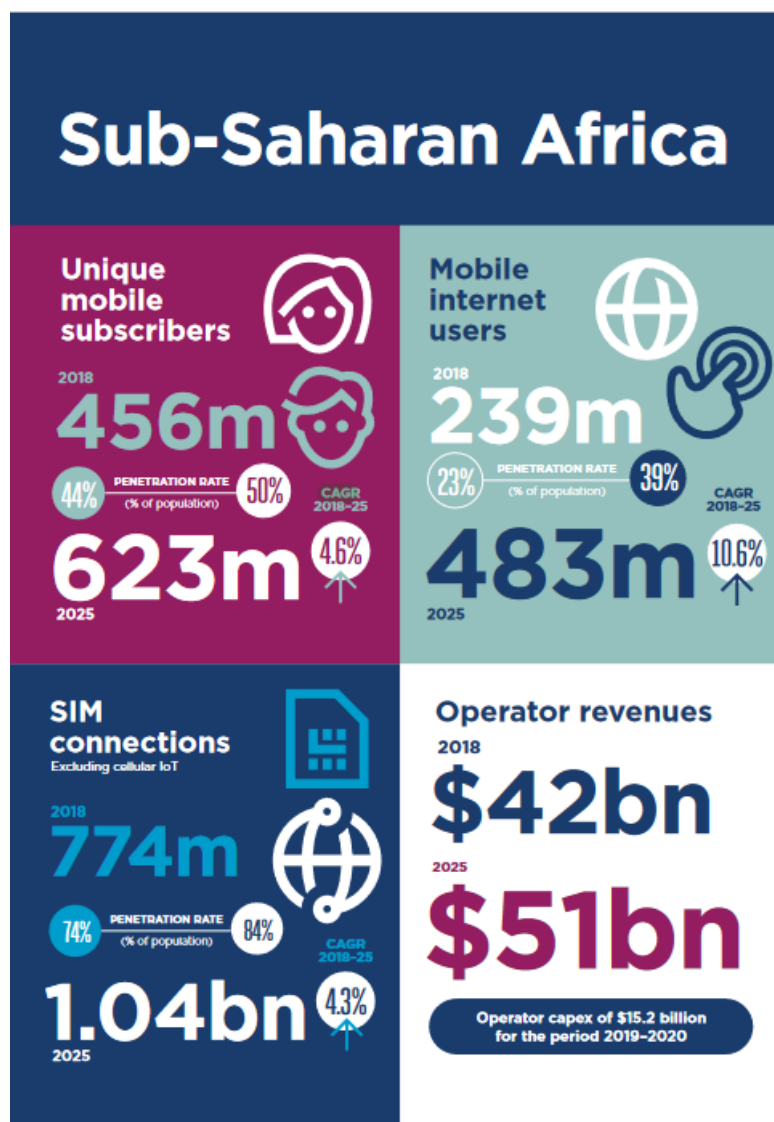
Source: GSMA, 2019

Africa has the lowest average level of statistical capacity worldwide. Thus, just half of the African countries carried out more than two comparable household surveys in the past ten

years (Gadzala, 2018). Even the biggest African data collectors would rank only in the third worst position on a scale of one to ten. In South Africa for example there exists a local search engine, called '*Anansi*', but it is no match for global market leaders like *Google*, *Facebook, Instagram* or *Twitter*. One of the big problems with 4RI is that the winner takes all (Marwala, 2019).

Thus, Africa has become a battleground for the global 'digital empires' because the continent lacked the basic digital infrastructure (Miailhe, 2018). Most African countries also lack adequate R & D investment (Travaly & Muvunyi, 2020). Furthermore, a misleading database could reproduce or even amplify existing human bias and discrimination. This may be especially grave in a social setting with age-old ethnic or regional rivalry, for example in Nigeria, Kenya and Ethiopia (Gadzala, 2018).

Graph 4: Statistical capacity indicator, African countries, 2017
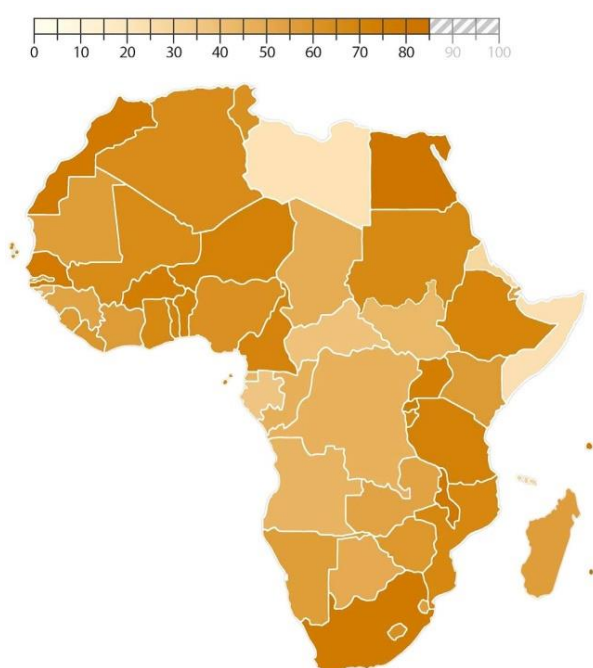
Source: Gadzala, 2018 [4]

Therefore, it is no surprise that not a single sub-Saharan African country has been listed in the top ten countries expected to benefit most from AI. They have still to tackle with problems of the first three industrial revolutions, including universal access to electricity, the mechanisation of production, and automation of industries, before being able to benefit from the fourth (4IR) which will bring about a significant shift in industrial capitalism (Fourth Industrial Revolution, Wikipedia; IRCAI, 2021; Rapanyane & Sethole, 2020).

Moreover, choices based on AI are, as in any technology application, never value-neutral, but socially constructed value judgments that are at best based upon rigorous scholarly evaluation and wide international consensus, as shown already by Max Weber in the value judgment controversy (Werturteilsstreit) in social science. Therefore, a technology, free of ethical implications, does not occur. Every technology can be used and misused. Yet, irrespectively

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[4] Source: The World Bank Databank, Statistical Capacity Indicator

thereof it may impact our social relations and model our institutions, economy, and moral values. This is why it is crucial to consider AI also from a moral perspective (Capurro, 2008).

Graph 5: General ethical and moral issues
associated with the development and implementation of AI
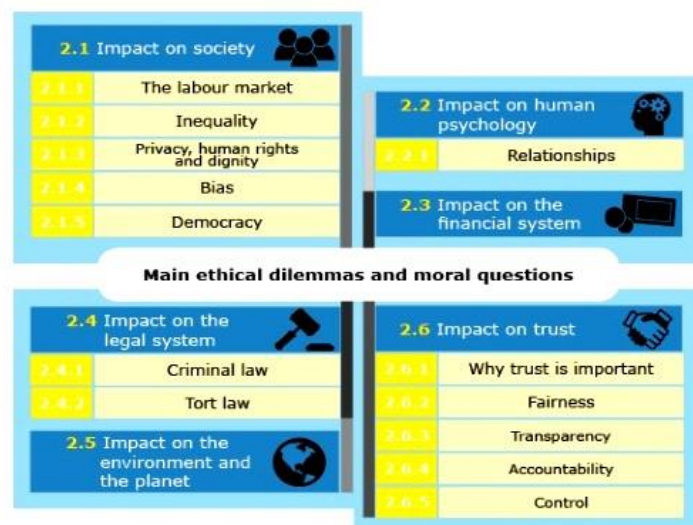
Source: Bird et al., 2020

It suggests itself, that the use of AI by Africans should be guided by specific African ethics and moral values, as for example reflected in traditional African religions (Kohnert, 2007). This holds more so because up-to-date AI is based on values of industrialized, mostly that of Western societies. Therefore, African philosophers like Sabelo Mhlambi called for a 'decolonisation' of AI. The latter allegedly undermined African dignity and human rights by developing machine ethics without regard to interconnected systems of inequality, race, gender, cultural and linguistic diversity, and labour market shifts (Mhlambi & Jahnke, 2021; Gwagwa & Kraemer-Mbula & Rizk, 2020). Thereby, the European concept of the rationality of AI denies Africans and other indigenous people, at least implicitly, alternative realities (Mhlambi & Jahnke, 2021; Kohnert, 2007).

Therefore, African scholars called for AI to be geared to be based on the traditional African philosophy of '*Ubuntu'*, which literally means 'becoming a person'. *Ubuntu* denotes the African view that a person becomes a self mainly in relation to his fellow human beings. That is, 'I am, because we are', instead of Descarte's maxim *cogito, ergo sum*, 'I think, therefore I am'. *Ubuntu* attaches great value to consensual decision-making, including the famous, though often misunderstood African institution of 'palaver' (Gwagwa & Kazim & Hilliard, 2022; Kohnert, 2019). That means, artificial intelligence should be democratized and its advantages made accessible to all free of charge (Mhlambi & Jahnke, 2021). Others, who also suggested an AI framework for moral personhood based on *Ubuntu,* addressed even broader questions, e.g. of how to design social robots to enrich human social life (Jecker & Atuire & Ajei, 2022).

Yet, up to now, this remained pious hopes. Apparently, African governments are still unconcerned about taking the reins and investing money in truly African machine intelligence or at least creating the necessary preconditions already underlined by UNESCO, i.e. improvement of skills, legal framework and infrastructure aligned with African needs and priorities (Kiyindou, 2019; Gwagwa et al., 2021). Although African leaders proclaimed already in 2007, on the occasion of the 8th AU summit in Addis Ababa (Ethiopia), the 'Year

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of Science and Technology in Africa', the dependency paradigm changed but endured (Pira, 2020). Therefore, some African scholars called for a global inclusive AI governance (Gwagwa, 2019).

2. Perceptions of African Identities

There exist diverse and sometimes contested perceptions of African identities. The question, of who is African and who is not, is more difficult to answer than it is often thought.

Cartoon 2: '*African Renaissance*'

Source : Zapiro, 13 April 2007 [5]

Proponents of the African Renaissance, like the former President of South Africa, Thabo Mbeki, suggest that Africans would successfully continue to rise out of slavery, colonialism, and neo-colonialism into liberation. Allegedly, their vision was based on the rich intellectual and cultural heritage of Africa and the common dream of its renaissance. Unfortunately, this was revealed largely as myth-making, used by the new African elite as an ideological political tool in the pursuit of particular class interests.

Cartoon 3: *Xenophobia and the meaning of Ubuntu*

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[5] Credit: Zapiro, pen name of the internationally renowned cartoonist Jonathan Shapiro, © (all rights reserved).

The Cameroonian sociologist [Axelle Kabou](#) took the same line by asserting that the '21st century Africa will be rational, or it will not be at all' (Kohnert, 2007). Yet, this (post) modernisation ideology contributed to the questioning of African local customs and indigenous knowledge as outdated barriers to development. The proponents of modernisation in Africa and elsewhere proposed to uproot this belief as soon as possible in the name of progress. Still, to date, the cultural heritage of African societies is seen by many 'development experts' mainly in terms of development constraints, dominated by characteristics such as rent-seeking, the informal sector trap, and irrational economic actors (Kohnert, 2007).

On the contrary, the Cameroonian historian and political scientist [Achille Mbembe](#), together with other African philosophers, reminded us of the deep historical roots of the awareness of Africa both in the precolonial as well as in the capitalist and Islamic world (Mbembe & Chauvet, 2020). African societies and cultures are closely interlinked both among each other as with the rest of the world. They can hardly be understood without considering the patterns of cultural exchange, itinerancy, transnational mobility, and flight and expulsion. To call global attention to this fact, Mbembe and others coined the term *Afropolitanism'*, i.e. a political and cultural stance – notably of Africans, including the African diaspora - concerning the nationhood, race, and the issue of socio-cultural pluralism, Africanised hybridity and social difference in general (Mbembe & Chauvet, 2020; Anasiudu, 2021).

Cartoon 4: *Afropolitan comics:*
from South Africa to the Continent, images in conversation

Source: [Afropolitan comics](#), exhibition, 2020, curatorial team [7]

However, *Afropolitanism* does not provide clear, alternative definitions of African [agency](#). It rather amounts to little more than the rejection of any form of victimisation. Therefore, critics refused the term and its underlying theory as apolitical or even as straining for effect and

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[6] Cartoon on nationalism & growing xenophobia. Credit: [Zapiro](#), pen name of the internationally renowned cartoonist Jonathan Shapiro, 25 May 2008, © (all rights reserved): „Xenophobia and the meaning of Ubuntu Description & Background: This powerful Zapiro cartoon shows a group of South Africans, beating up a foreigner because he did not understand the word of *Ubuntu*. The cartoon was drawn during a period of violence against political, economic, and other refugees living in South Africa. Attacks broke out in a poor neighbourhood of Johannesburg on May 11 2008 and spread across the country, targeting immigrants including Zimbabweans and Mozambicans, whom locals blamed for taking their jobs" (Zapiro).

[7] [Afropolitan comics](#),- South Africa's diverse virtual exhibition, virtual National Arts Festival, 25 June to 5 July 2020, Johannesburg, South Africa. - Tayo Fatunla (Nigeria), Cartoonist for *[Politicalcartoons.com](#)* et al., 25 June 2020, © (all rights reserved). - Supported by: [French Institute of South Africa](#) (IFAS) , [cité internationale de la bande dessinée et de l'image](#) (cité), [BD 2020](#), La France aime le [9ieme art](#).

gallery play (Rath, 2020). While the maxim 'African Solutions to African Problems' is often heralded by African leaders, they seldom agree on what African solutions precisely entail, especially concerning peace and security where the discourse dominates (Ani, 2019).

3. On the articulation of AI with African concepts of personhood and humanity

The past decade has already produced numerous significant case examples of the application of AI to the benefit of the African population, notably in the health and agricultural sector which is of paramount importance given population growth and climate change. Thus, progressive Togo's farmers introduced precision agriculture employing AI methods that focused not just on planting, fertilizing and irrigation, but also on algorithms and big data platforms by measuring, analysing and applying soil data such as temperature, inputs, weather, nutrients and vegetable health (Sonhaye, 2022). In general, AI played a crucial role in controlling the spread of the Corona pandemic in Africa, including, Research and Development (R&D) and Machine Learning (ML) models based on Big Data Analytics (BDA) (Agwah & Aririguzo & Eze, 2020).

Also, to counteract the negative effects of the COVID 19 Pandemic in Togo on the poor and vulnerable, the African Financer of Micro-Projects (Financière Africaine de Micro-Projets, FINAM), the first public limited company for microfinance, embarked on the digitalization of its services by creating '*Finam Mobile*' in response to the Covid crisis. The App allowed for managing one's account at home by using AI technology**,** including making deposits and withdrawals starting on September 11, 2020 (Kohnert, 2021 c).

Moreover, the Togolese authorities developed an algorithm assisted by AI that crosses satellite and telephone data to best target citizens in need. In a first step, spatial images were analysed, to identify the most precarious habitats by sensing the state of roads, the quality of roofs or the incidence of plantations. In the next step, data of pre-selected residents in a village were analysed in collaboration with mobile telephone operators, including frequency and duration of calls, and the amount of credit available on the phone. Users who made little calls and received little money from their relatives via mobile transfers were considered vulnerable. Thus, 140,000 vulnerable persons were selected by this system (Hervieu, 2021). Another project in Mali allowed farmers to insure their harvest themselves by satellite via AI and their mobile phones. There were plans to replicate similar models in Kenya. Almost a quarter of African start-ups linked to digital agriculture are located in Kenya (Lalanne, 2021). In Southern Senegal, rainfall modelling by artificial intelligence and machine learning was applied in Casamance, an area vulnerable to climate change (Sagna, 2021).

In Ghana, the Ghana Technology Lab, backed by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) and IBM managed an AI-based promotion program. Eleven AI startups from Ghana, South Africa, Rwanda and Uganda were selected to participate in the program, specialising in health, transport, agriculture and software development (Taibi & Lamri, 2021).

In the Ivory Coast, the country's banking services started to offer an 'all digital' service, supported by AI. This could lead to changes in tasks, jobs, skills and arrangements, to the advantage of both banking employees and users of the banking sector. However, customers apparently still had reservations about the reliability of the security system implemented in

online financial transactions. Cybersecurity remained in general a serious problem in Africa (Doua, 2022).

Regardless of these largely positive evaluated case studies of AI, African scholars maintained that the question of articulation of AI with its users should focus on its relational potential, away from concentrating on general and abstract innate properties (Jecker & Atuire & Ajei, 2022). Thus, an African relational approach would reveal important insights about the moral standing of social robots that many Western approaches do not have on the screen. Therefore, they propose to design AI by considering a framework for moral personhood, to enhance human life by incorporating more culturally diverse points of view (Jecker & Atuire & Ajei, 2022). Yet, this proposition has its pro and cons. In the past, the insistence on cultural identity has been misused repeatedly for legitimating despotism, for example, by African autocrats, like Uganda's Idi Amin, Zairian Mobutu Sese Seko and the Togolese Gnassingbé Eyadéma [8]. They asserted that the Western concept of Human rights and democracy would not fit with African traditions and its social and cultural setting. In addition, the conservative and patriarchal structures of African chieftaincy often offset the devolution of power to the local people as well as gender equality (Kohnert, 2021a).

Yet, in pre-colonial acephalous African societies, the so-called 'tribes without rulers', let alone African kingdoms, checks and balances had been provided, e. g. by councils of notables, elders and various consultative assemblies. But colonialism further restricted popular participation to empower the chief's administration, notably to facilitate the levying of taxes and imposing forced labour (Soudan, 2022). Hence, Sabelo Mhlambi's call, quoted above, for a 'decolonization' of AI because of its Western inclination that allegedly undermines human rights and human dignity, is apparently of limited suitability.

Cartoon 5: '*Cynical African leaders assert that Human Rights are a non-African concept*' [9]

Source: Mark Wiggett, 30 October 2015

Nevertheless, the growing technological dependence of Africa on foreign technological facilities like AI and transnational data centres (*Google, Facebook, Twitter, Instagram,*

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[8] Authoritarian presidents have been able to invoke a seemingly apocryphal proverb to assert their personal supremacy, i.e. that "there cannot be two male crocodiles in the same backwater"(Kohnert & Preuss, 2019; Soudan, 2022).
[9] Mark Wiggett, 30 October 2015 © (all rights reserved); Hall, 2015.

TikTok etc.) could have crucial negative consequences in the economic, political and social realm. This could provoke new forms of post-colonial cyber-colonization (Badaoui & Najah, 2021).

Still, a reinforced wholehearted dialogue between the local and the global could enhance the development potential for AI and create creative tensions between cultures, including African symbolic and mythical dimensions (Frimousse, 2021). No civilization should be satisfied just with its own values and its own heritage on the precondition that it provides for socio-economic inclusion in African settings, thereby embracing, equality, gender equity, and African cultural and linguistic diversity (Gwagwa & Kraemer-Mbula & Rizk, 2020).

Whether AI should, under certain conditions, also be granted a personal individual status, comparable to a human being, is a controversial question. Although African concepts of personality contradict in the first instance the notion that AI could ever be a 'person', some African authors consider this perspective as a valuable alternative, despite the prevailing anthropocentrism (Wareham, 2021). Although there rightly are high hurdles to confer social robots anything equal to human personality, some African scholars of AI ethics advocate involving AI entities in communal relations of identity and solidarity in different, but analogous ways in that we welcome a new-born human person (Wareham, 2021).

Notwithstanding the above, the African Union (AU) adopted already during its summit in Malabo, Equatorial Guinea, on 17 June 2014 a 'convention on cyber-security and personal data protection' (the so-called 'Malabo Convention'). Moreover, the AU listed cyber security as a flagship program of its Agenda 2063, adopted in 2015 in Addis Ababa (El Manir, 2019). Also, Southern African countries meet every two years for an 'Africa Cyber Defence Summit'. Three cyber-operation defence centres, in Nigeria, Mauritius and Senegal are in the pipeline, in addition to a 'Blockchain Academy', already working in Cape Town, South Africa (El Manir, 2019).

4. On the implementation of AI in African economy and society

Cartoon 6: *South Africa's long walk to 4IR*

Source: Hansrajh, 2020, eNCA.com

Great expectations concerning the use of [AI](#) as a strategic pillar for African development continue to persist despite considerable differences in the developmental stages of AI between African countries. In [francophone West Africa](#), for example, there is hope to improve governance in the [WAEMU](#) (UEMOA) member states by increasing transparency in tax collection and other payment systems. AI could also ease the problem of lacking qualified personnel in the health and education sector, notably in the countryside. Furthermore, it could strengthen the modernization of agriculture as well as improve security and law enforcement through AI identification and control of potential wrongdoers, e.g. with [remote surveillance](#) and facial recognition (Ndione, 2022). Yet, the latter shows that this would be a ridge walk. For instance, it could open doors for autocratic regimes to observe their opponents more closely.

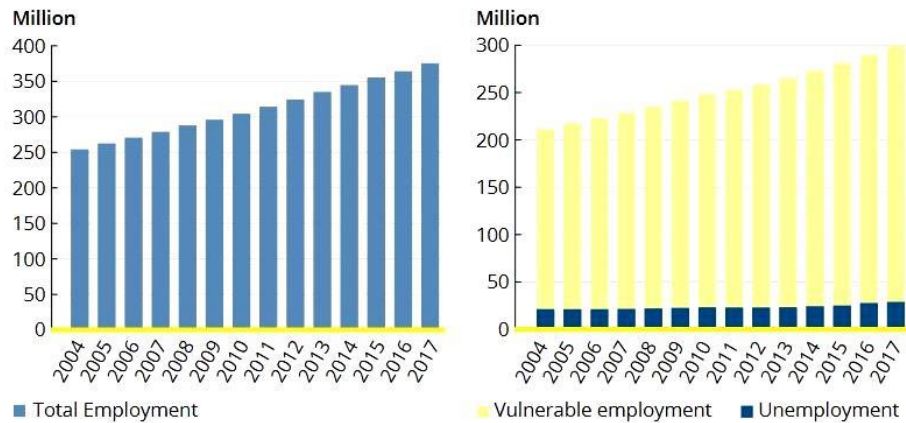**Cartoon 7:** *South Africa's unemployment rate increased once again*
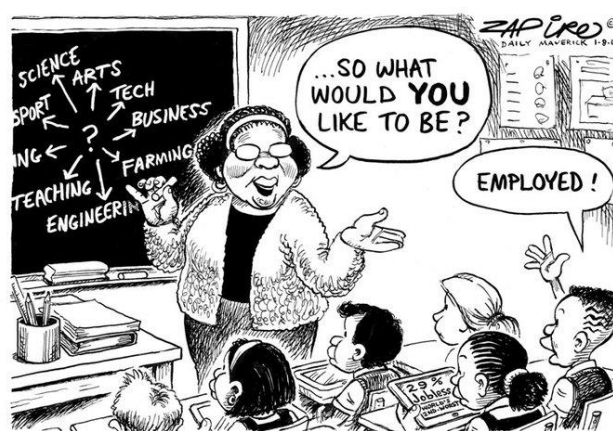
Source: [Zapiro](#), 30 November 2021, on [Twitter](#) [10]

Negative effects of AI are also expected concerning employment, thus adding to the already disastrous consequences of the [COVID 19 pandemic](#) (Kohnert, 2021 b). According to a report by the International Labor Organization (ILO) in 2017, the workforce in SSA was estimated to grow by around 200 million between 2017 and 2030. Yet, jobs and employment would not develop fast enough to absorb all job seekers. While total employment grew from around 254 million in 2004 to around 375 million in 2017, vulnerable employment and total unemployment also increased, leaving a large number of people in poverty (Gaus & Hoxtell, 2019).

Graph 6: Total employment and vulnerable employment in Sub-Saharan Africa

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[10] Just announced by @StatsSA: South Africa's unemployment rate has increased once again to 34,9% in the third quarter of 2021. Zapiro's archival cartoon published @dailymaverick, (1 August 2019) Prospects-https://zapiro.com/190801dm

For example, the unemployment rate in South Africa for the first quarter of 2022 was 63,9 % for those aged 15-24 and 42,1 % for those aged 25-34 years according to official figures (stats-sa, 2022). AI and social robots were expected to take further jobs, and the 4thIR was regarded as triggering the worst imaginable reality for jobs in South Africa (Rapanyane & Sethole, 2020). According to a study published in 2018, it was estimated that around 5.7 million South African could lose their jobs because of automation in the fourth industrial revolution (4IR) (Hansrajh, 2020). This would also entail increasing social and political unrest in an already fragile environment because of South Africa's gross inequality.

Apart from that AI routines can turn into discriminatory practices and lead to stigmatisation if they are not properly customized to mirror the specific characteristics of the target group (Mahomed, 2018). Without a regulatory framework and corresponding law enforcement the 4th Industrial Revolution may not become the largest benefit to mankind, but on the contrary, turn into a criminal tool to suppress the majority of the people.

5. Conclusion

Machine ethics and artificial intelligence imply not only crucial technical and ethical issues. They are also contested fields of the philosophy of artificial intelligence. A key problem for both AI and philosophy is to understand common sense knowledge and abilities (McCarthy, 2006). Important questions would be for example: are human intelligence and machine intelligence one and the same? Would the human brain essentially function like a computer? Could a machine have a mind, a mental status, consciousness and free will like that of a human being? Could machines feel how things are?

Yet, not all scholars and developers of AI share this philosophy. Some even consider such questions detrimental to the further development of machine intelligence, because they distract from the main points of technical and human progress. However, there are still pressing questions about the articulation of AI utilization with crucial issues of justice and injustice, including institutional discrimination, structural injustice, and epistemic injustice. Speech-based AI, for example, could be of utmost importance for the poor and deprived in Africa and developing countries in general. For example, it can distribute information in a targeted, personalized way and also reach people who cannot read.

Graph 7: *An artificial intelligence with consciousness?*
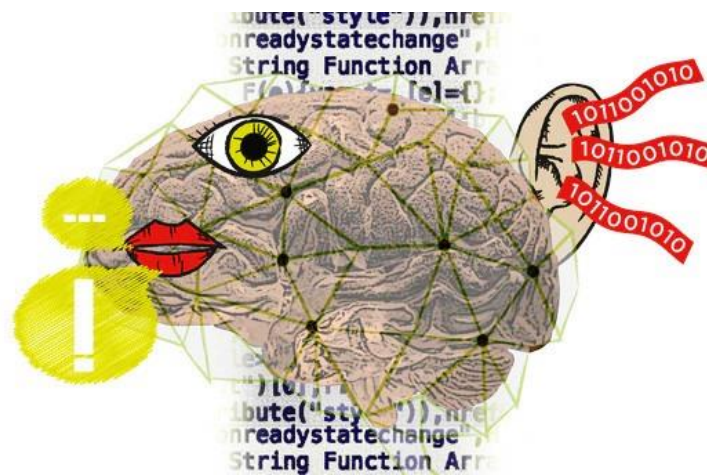
Thus, in Rwanda, a project of German technical cooperation provided tools that allowed millions of people will receive advice on the COVID-19 pandemic via a chatbot in their local language (Olbrich, 2021). In July 2022, Meta (Facebook) announced that it had created the first open source AI-model, 'No Language Left Behind' (NLLB-200), to translate around 200 different languages, with a focus on African languages. Already 55 African languages have been provided. There should be a great demand for such Apps, because there exist for example more than 20 million people who speak and write in Luganda, a Bantu language spoken in the African Great Lakes region, including Uganda, but examples of this written language would be extremely difficult to find on the Internet until now (Adepetun, 2022).

From an optimistic point of view, the application of AI could represent a new way of controlling human power, making questions of justice central to its responsible mission, far from taking power out of human hands (Rafanelli, 2022). Less enthusiastic scholars, like the internationally renowned theoretical physicist, mathematician and cosmologist Stephen Hawking at Cambridge University cautioned already in 2016 that artificial intelligence will be "either the best, or the worst thing, ever to happen to humanity", and recommended researching the future of AI as "crucial to the future of our civilisation and our species" (Hern, 2016).

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Résumé : [*Éthique des machines et identités africaines : Perspectives de l'intelligence artificielle en Afrique*] Résumé : L'intelligence artificielle (IA) a été accueillie avec enthousiasme par les Africains comme une nouvelle ressource pour le développement de l'Afrique. L'IA pourrait améliorer le bien-être en permettant l'innovation dans les affaires, l'éducation, la santé, l'écologie, l'urbanisme, l'industrie, etc. Cependant, les attentes élevées pourraient n'être rien de plus que des vœux pieux. Il y a encore trop de questions ouvertes sur le transfert nécessaire, le choix de la technologie appropriée et sa maîtrise. Étant donné que le concept de « transfert de technologie » des théories de la modernisation des années 1960 a complètement échoué parce qu'il n'avait pas été adapté aux besoins locaux, certains chercheurs ont appelé à un concept endogène de l'IA africaine. Cependant, cela a provoqué de nombreuses controverses. L'Afrique est devenue un champ de bataille des empires numériques des puissances mondiales en raison de son infrastructure numérique pratiquement inexistant. Pourtant, des solutions africaines aux problèmes africains seraient nécessaires. De plus, les récits dominants et les paramètres par défaut des technologies liées à l'IA ont été dénoncés comme masculins, sexués, blancs, hétéro-normatifs, puissants et occidentaux. L'accent mis précédemment sur le secteur formel est également discutable. Les innovateurs du secteur informel et de la société civile, ancrés dans l'environnement socioculturel local, mais étroitement liés aux espaces sociaux transnationaux, surpassent souvent les efforts de développement du gouvernement. L'UNESCO a également averti que l'utilisation efficace de l'IA en Afrique nécessite des compétences, un cadre juridique et une infrastructure appropriés. Comme par le passé, les appels des politiques africains à une mutualisation des ressources, une stratégie panafricaine, ont probablement été vains. L'IA pourrait se développer plus rapidement dans les pôles technologiques africains déjà établis que sont l'Afrique du Sud, le Nigeria et le Kenya. Mais des activités prometteuses axées sur l'IA ont également été identifiées en Éthiopie et en Ouganda. L'égalité des sexes, la diversité culturelle et linguistique et les changements sur les marchés du travail seraient également nécessaires pour que l'IA améliore plutôt que sape l'inclusion socio-économique. En outre, des questions éthiques liées à une identité africaine spécifique ont été soulevées. La mesure dans laquelle les idées africaines d'humanité et d'humanitarisme devraient être prises en compte lors du développement d'une IA africaine reste une question ouverte. Bref, appeler au déploiement rapide de l'IA en Afrique pourrait être une arme à double tranchant.

Zusammenfassung: [*Maschinenethik und afrikanische Identitäten: Perspektiven künstlicher Intelligenz in Afrika]* Künstliche Intelligenz (KI) wird von Afrikanern begeistert als neue Ressource für die afrikanische Entwicklung begrüßt. KI könnte ein verbessertes Wohlbefinden ermöglichen, indem sie Innovationen in den Bereichen Wirtschaft, Bildung, Gesundheit, Ökologie, Stadtplanung, Industrie usw. ermöglicht. Die hohen Erwartungen könnten jedoch kaum mehr als fromme Wünsche sein. Es gibt noch zu viele offene Fragen bezüglich des erforderlichen Transfers und der Auswahl geeigneter Technologie und ihrer Beherrschung. Angesichts dessen, dass das Konzept des „Technologietransfers" der Modernisierungstheorien der 1960er-Jahre völlig gescheitert ist, weil es nicht an die lokalen Bedürfnisse angepasst war, forderten einige Wissenschaftler ein endogenes Konzept der afrikanischen KI. Dies löste jedoch heftige Kontroversen aus. Afrika wurde aufgrund seiner praktisch nicht vorhandenen digitalen Infrastruktur zu einem Schlachtfeld „digitaler Imperien" globaler Mächte. Dennoch wären afrikanische Lösungen für afrikanische Probleme erforderlich. Darüber hinaus wurden die vorherrschenden Narrative und Standardeinstellungen von KI-bezogenen Technologien als männlich, geschlechtsspezifisch, weiß, heteronormativ, leistungsfähig und westlich angeprangert. Auch die bisherige Fokussierung auf den formellen Sektor ist fragwürdig. Innovatoren des informellen Sektors und der Zivilgesellschaft, eingebettet in das lokale soziokulturelle Umfeld, aber eng verbunden mit transnationalen sozialen Räumen, übertreffen oft die staatlichen Entwicklungsanstrengungen. Die UNESCO warnte ebenfalls davor, dass der effektive Einsatz von KI in Afrika entsprechende Fähigkeiten, den rechtlichen Rahmen und die Infrastruktur erfordert. Wie in der Vergangenheit war die Forderung afrikanischer Politiker nach einer Bündelung der Ressourcen, einer panafrikanischen Strategie, wohl vergebens. Möglicherweise wird sich KI in den bereits etablierten afrikanischen Technologiezentren Südafrika, Nigeria und Kenia am schnellsten entwickeln. Aber auch in Äthiopien und Uganda wurden vielversprechende KI-fokussierte Aktivitäten erkannt. Damit KI die sozioökonomische Inklusion verbessert, anstatt sie zu untergraben, wären auch Geschlechtergleichstellung, kulturelle und sprachliche Vielfalt und Veränderungen auf den Arbeitsmärkten erforderlich. Darüber hinaus werden ethische Fragen im Zusammenhang mit einer spezifischen afrikanischen Identität aufgeworfen. Inwieweit afrikanische Vorstellungen von Menschlichkeit und Humanität bei der Entwicklung einer afrikanischen KI berücksichtigt werden müssten, bleibt eine offene Frage. Kurz gesagt, die Forderung nach dem zügigen Einsatz von KI in Afrika könnte ein zweischneidiges Schwert sein.