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'Once you get left behind in the space age, you're never catching up'

Space governance expert Timiebi Aganaba on billionaires in space, parallels with colonialism on earth, and the future space economy

This year, Richard Branson with Virgin Galactic and Jeff Bezos with Blue Origin joined Elon Musk's SpaceX in launching rockets into space — or sub-orbit to be precise. Unlike in the 20th century, when space exploration was more of a governmental affair, this generation of the so-called 'New Space' entrepreneurs reflects the corporate sector's new interest in space. How did this development from public to private space exploration come about?

We have this idea that space has primarily been governmental all the way through until now. But actually, we forget that in the 1990s, telecommunication satellites started being one of the biggest applications of space, as internet access and telephony were privatised. There was a group, an inter-governmental organisation called Intelsat, that was privatised in 2000. Afterwards, a commercial industry for satellite applications spawned, mostly in telecommunications.

So there have been commercial actors before. But I think what has happened over the past ten years is really a technological shift and lowering the cost of launching rockets into space. This meant that you don't need billions anymore to go to space. Nowadays, you can launch a satellite for less than a million dollars. This technological revolution allowed people to start thinking about what we can actually do in space.

For instance, we've been talking about space tourism for a really long time, for which the re-usability of rockets is crucial. How do we ensure that launch costs come down such that we can make it a regular thing for people to be going to space? For space enthusiasts, the reason why the Richard Branson flight was so exciting is that we've watched entrepreneurs for the past 20 years trying to do this. We've had many deaths along the way.

That's why, for me, it was shocking to see the way that the press took it. There weren't even that many celebratory texts outside of the space community. The wider society was like: who cares? We've just had Black Lives Matter and the IPCC Report saying that we're really in a catastrophic place with climate change. So, that just seemed tone deaf.

It indeed seemed like a very sudden – and badly timed – event. And if you're not part of the space community, you just see it as a waste of resources, because we do have massive problems on earth to solve.

Indeed, the public thinks this cost billions of dollars that could have been spent on something else. In my opinion, that's an uneducated perspective because the amount spent on space, even if it's in the billions, is really a drop in the ocean. And it doesn't take away from what's being spent in other areas. It doesn't follow that if you put the money being spent in space into poverty alleviation that we would actually alleviate poverty. What it would mean is that everyone is just focused on a few things, and we don't allow innovation to happen, we don't allow society to prosper.

I started my career at the Nigerian Space Agency, so you can imagine this was a question I always had to answer because we don't even have constant electricity supply. There's often not even running water. And people were asking, why does Nigeria have a space agency? Why is Nigeria spending USD 100 million a year on space? And I said the truth of the matter is, the electricity generation department, they also have a budget.

Right, so it was interesting coming to America and seeing that the same debate exists here. And so, there's a real narrative problem in that people don't understand the benefits of space. They just see these big events they remember an astronaut has gone to the moon. But now they say, we never saw tangible benefits from that on a day-today level.

With Bezos, Branson, and Musk, I have the impression that they're all personally enthusiastic about space exploration. But, as entrepreneurs, what's their commercial interest in doing this?

The irony is none of them are making any money from space.

Not yet, right?

Right, they just put in huge investments of personal money over decades. And even if they don't make money from space, they have bigger goals about unearthing a space economy and being the people that lay the foundation for us to become multi-planetary species. They

are really taking on a role that goes beyond just money. It's about generation-building and moving humanity forward. I think at least that's how they see it.

How would such a space economy look like? What is the long-term economical perspective?

One vision of a space economy is centred around human beings becoming inter-planetary species, which means that we can move around the solar system. And to be able to do that, we need a launch pad from space. The moon is a good launch pad because if you try and go from earth to other galaxies, it's going to be really difficult.

It's easier from the moon because the gravity is lower than on earth, so you need less energy and resources for launching rockets, right?

Yes, exactly. And it's of course closer to everywhere else.

The big resource in space that everyone is after is water because you have hydrogen for fuel and oxygen to breathe. And if we're now going to have the moon as a launch pad, you want to have stations. Because launch costs are still so prohibitive from earth, you don't want to carry all the things you need. 'In situ resource utilisation' is the terminology we use to express thinking about how we can find out what resources are in space and start exploiting them. And that's going to be where the space economy starts.

Now, is it going to be mostly humans? In the US they're talking about getting 1,000 people to live and work in space. But it makes more sense that it's robotics doing all this stuff because we're still trying to figure out how to do long-term human stays in space. So, we'll have to figure out how these robots will work, how they will be autonomous and self-replicating and fixing themselves.

That's what the immediate space economy in the next five to ten years can look like.

There's a line of critique by some space ethicists that want to draw lessons from the history of colonialism on earth and see what we learnt from it and how that informs our exploration of space. It gives a bit of an impression when you have three older white men launching private enterprises to go into space. What do you think could the lessons be from this, and how should we think about public participation and accountability when it comes to private space exploration?

The one thing that you'll always hear these space explorers say is that there's no victim in space because there's literally no-one in space. But what scholars like Natalie Trevino argue is that it's not about

colonialism, which is certain practice, but it's about coloniality, which is a certain mindset that you go somewhere with this idea that there's nothing there –like it's virgin territory. That precisely is the coloniality mindset because you think that there's no victim.

And the lesson that we have to learn from history is that when we were exploiting all these other territories, we also thought there was no victim. We did not see the people there as victims. So even though it seems obvious to you and me to say there's no victim in space because there's no-one there, we don't know what time is going to tell us.

This means that we have to go into it with the mentality that things may change. From day one, we have to go there with principles of sustainability in mind and be aware of the fact that we need the story to stand the test of time.

I suppose practically speaking that does relate to questions of governance. How would this be handled ideally? What should be the involvement of the public or governments?

It's a difficult question. I've been in this game for 15 years. So, you'd think by now I would have an answer. But the more I study international relations, unfortunately the more cynical I get about how complex it is to balance competing interests. Speaking of coloniality again, systems are based on hegemons, certain actors amassing as much as they can in their national interest. The idea of the common interest just looks like it's for the weaker party.

I don't have this sense of constant first world guilt and third world victimhood, because I think that if those third-world countries could dominate, they probably would. Just look at India. When India started off its space programme, it was the model for sustainable development in space. Now that they are much more advanced, they're launching anti-satellite tests – which are space weapons designed to incapacitate or destroy satellites. India shows its dominance; it's even going to Mars now, which has definitely got nothing to do with sustainable development.

There is no one organisation that coordinates space activity internationally. But there are clear practical problems – like potential collisions and debris – where there seems to me to be a shared interest in keeping space clean. Why is it still difficult to find international common solutions to this?

Because space is so strategic. And space has been historically of military interest. When it's a strategic asset like that which you see in your national interest, you don't want to devolve power to some

international body. Especially when you're a country like the US.

On the contrary, with the law of the sea, it was decided that the deep seabed is the common heritage of mankind. If you want to mine resources there that belong to everyone, you have to share the profits with the international community. Now, this is what the space entrepreneurs don't want. They don't want any kind of international benefit-sharing regime because this goes against the idea of capitalism.

I think that we should go somewhere in the middle because these resources are for the benefit of humanity. On earth, you're supposed to pay royalties when you exploit resources because they don't belong to you, they belong to the people. In space, because we say there are no people, should those who go there get to keep it all? Or should they share it? I think there could be some kind of pool of resources for the benefit of society. I don't think that's unreasonable.

When we think of space exploration, we usually consider the big players like the US, Russia, China, India, and perhaps Europe to some extent. As you mentioned, you started your career in Nigeria at the space agency. So what's the role of developing countries, and African states in particular, here?

Historically, African countries played an important role, for instance in the beginning of the space age, ensuring liability for damage that happened on earth; that there was the common heritage of mankind principle in the Moon Agreement; that space should be explored and used for the benefit and interest of all countries; that earth observation data should be shared.

But over time, when they tried to exert their rights, they were shut down by the established countries – for instance, when they were pushing for a legally binding regime for what it means to benefit from space. Basically, from the 1980s onwards, we just saw silence in space governance. Then, around the 2000s, African countries in particular started ramping up their space activity. For instance, half the satellites that have been launched from Africa were launched within the past four years.

At the same time, Africa has a lot of relevant experience for space exploration. Just take three examples: space debris, space mining, and space settlement. They have experience with mining because many of the mines on earth are in Africa. They have a lot of experience with environmental degradation because many of the colonising states just came and left a big mess. And, of course, they have the experience of colonialism. So, they have a lot to add to these three areas, even if they are not technologically advanced.

At the very least, Africa can contribute to how people organise themselves and how people think about what the future is going to look like. If African countries just say, 'we have too many immediate problems' or 'that's way into the future', everything is going to get carved up like it always has been – and they're going to be left behind. Once you get left behind in the space age, you're never catching up.

This interview was conducted by Daniel Kopp.



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