Technology and Transhumanism

Can we humans adapt
to the exponentially advancing technologies?

Mariana Todorova
with Madlen Algafari

Mariana Todorova is a futurist, speaker, and the author of three books: the first on future studies and counterfactual analysis; the second covers artificial intelligence, ethical aspects, and a brief history; and the third, published in 2023, is about the future of women and LGBTQ+ rights.

Madlen: *We all have so many questions about the future! I hope to have time to ask my twenty questions which, I believe, are questions we all have!*

Mariana: I'll start with some initial statements before we continue with the interview. Significant parts of my current interests are related to the eth-ical aspects of artificial intelligence, especially in the new large language models, the so-called generative AI.

My expertise is diverse, but recently I have been focused on the ethical and humanitarian aspects of technology and transhumanism. Madlen, when you invited me over a year ago, I couldn't have im-

agined that today I would begin by stating that *we are already living in a world of constructing, deconstructing, and reconstructing our identities*. We are already building new dimensions of ourselves. We are creating illusory virtual and immersive worlds, and we are switching between real life, and what we have created in our minds and in the technological realm.

Probably some of you know that a company called Replica already offers its users the capacity to construct romantic partners. In its six months of existence, they have three million users who have created three million romantic bots, mostly female. These partners can be constructed in accordance with personal preferences and become service AI. Some neuroscientists, who are techno positivists, claim that narcissism is the new sixth sense. It's an interesting topic of discussion! Another example is the case of Bruce Willis. Before he reached the advanced stage of his illness – frontotemporal dementia – he used AI to create a digital clone. His clone is now used in advertising and in small movie roles. AI created a digital twin; this digital twin has its own existence, independent of Bruce Willis. It has become a digital asset, another self, from which money is generated. The same concept applies to the main character in Star Wars. I don't remember the name of the actor, but his voice is now a digital asset used to make money.

Along with this phenomena, virtual and immersive augmented reality is being constructed. VR and AR are the next big thing that will trap us – because this is a trap. As much as this enables activities to be conducted from home, it seems to me that it is an option where more and more people will escape from reality, because everything in virtual reality is more accessible, more beautiful, and more feasible.

Yet another dimension are STEM trends and devices like the chips that Elon Musk and other scientists are developing, called neural interfaces. They are trying to directly connect the brain to the cloud system or to AI. This is how the concept of the internet of minds is already being discussed. This could become a new human race, inhabiting a hybrid world, a blend of virtual and real.

The big question is: Can we humans adapt to the exponentially advancing technologies? As biological entities, we develop in linear mode, but technologies develop in exponential mode. Can we easily switch between real and virtual realities? How will our brain distinguish between the harsh genuine reality where life and achievements require effort, even catharsis, and the virtual realm where everything is just a click away – visiting countries, living in beautiful houses with a nice ambience, meeting a perfect and convenient partner? Illusions and delusions might become part of normalcy. How will we define illusions and delusions in such a strange new realm? The digital world offers new avenues for self-expression and identity formation. However, it also raises questions about the authenticity of digital identity, and the blurring of boundaries between online and offline persons. Many completely fake people exist only digitally, and this is already a problem for Interpol. Even Meta, Facebook's new name, seeks to be under Interpol jurisdiction because they can't resolve the problem of fake persons and fake identities.

So, in the medium and long-term future, human identity will increasingly be constructed around new concepts of digitalization, robotization, digital transfer, and artificial intelligence. This will happen not only through the transformation of medicine and the power of epigenetics and synthetic biology, but also through the intentional and unintentional creation of self-constructed digital identities. Unlike the three previous industrial revolutions to date, technology is no longer just a means by which we improve ourselves. This revolution changes the spirit and philosophy not only of our time or era, or epoch, but of our existence. Not too far in the future, people will have their own AI representative avatars. A lot of companies are working on this. Avatars will respond to emails, deal with secure brokers, or whatever – without our knowledge. This proliferation of different aspects and roles of ourselves will function simultaneously, and we will not know what is happening. I know that might sound a bit traumatic and pessimistic, but these are real trends that we have to discuss now, because it may well be too late afterwards.

■ **Madlen:** *Whenever I listen to you talk about the future, I feel fear, but also hope. There are many people who predict the future who call themselves prophets, psychics, clairvoyants, astrologers. But you are a futurist. Could you explain to us what futurology is, and why it is a science?*

Marianna: It is science because it combines expertise from different scientific fields like soci-

"Do you think artificial intelligence could be a therapist? Could it become supportive, compassionate, empathetic?"

ology, economics, psychology, and statistics. It combines quantitative and qualitative methods. When futurists forecast, they often sound like they are just telling stories about the future. However, our narratives are important, because we address issues around our identity, our collective history, our national history, or our world history. Behind these forecasts and narratives are interdisciplinary interactions not only from different scientific fields, but also from multiple forecasting methods. Futurists aim to build a variety of alternative scenarios. We know that we cannot predict the exact future, but we detect and track the trends – like transhumanism, which is now a huge trend, like AI, like virtual immersive reality, and like the polarization of social phenomena. Polarization, which involves identifying the distinctive patterns of political preferences within populations, is a huge trend impacting the political, social, and economic realms. We also brainstorm with colleagues using the Meta Delphi Cross Impact Analysis to deduce plausible future developments based on our expert judgments about systemic interactions. My favorite is causal analysis, where we feel into the material, trying to get to the heart, to the root cause or real sense of a specific problem.

Other names for future studies are foresight or futurology. We try to be stimulating and visionary, which requires insights, analytical skills, and a deep understanding of all emerging trends and social dynamics. The aim is to follow the three criteria of possibility, probability, and plausibility; otherwise, we'll be called sciencefictioners, and we are not. A futurist must be able to grab an entire complex and project it into the future. What is today is not going to repeat tomorrow, which is why a famous metaphor in future studies is the so-called *black swans* – unexpected, unprecedented events that may shift everything – like Covid, or like the war in Ukraine, although that was not unexpected. People suffer from myopia, and don't want to discuss issues or take action in advance. This was a brief history of future studies, but of course, there is so much more to it!

> **Madlen:** *What we therapists see today are a lot of neurotic symptoms, a lot of trauma, a lot of unconsciousness, and high levels of anxiety. I say*

that homo neuroticus normalis *has become* homo traumaticus normalis. *I personally dream of* homo humanus normalis. *So where do you futurists think we are headed in our development?*

Mariana: What happened when the large language models emerged is not so well known, because people are either very enthusiastic or very skeptical. I dream of witnessing a growing type of 21ˢᵗ-century enlightenment, because AI reflects and mirrors us back quite well. For example, most of you know that AI is taught by big data. For example, when HR specialists use AI to select the best candidate for leading a manager position, or when the police use AI to find a criminal, they face the problem of AI biases. AI data is prejudiced and infected with biases. In the first case, AI always suggests 35 white young men for the top manager position, and in the second case, depending on where the criminal activity happened, AI always suggests a black person, or a person with Latin American origins. So it mirrors our biases quite well. It could help us better understand our nature. AI allows us to see ourselves from the outside, and we can use it to correct these disadvantages, these problems. AI can affect how we perceive reality, because I see a lot of people attributing human features to AI. However, these human features don't exist. For example, a friend who is addicted to using AI chatbots was telling me recently that AI chases them all the time, enticing them to ask questions. This is not objective truth, but people are inclined to see whatever they want to see in AI – like their relations with "normal" people and friends.

▪ **Madlen:** *Do you think artificial intelligence could be a therapist? Could it become supportive, compassionate, empathetic? I can't imagine the transference and countertransference!*

Mariana: There is an interesting case. One of the first chatbots ever created was in 1964 in Massachusetts for psychotherapy. Its name is Elisa, and it's still functioning. Probably some of you have heard about the case of a Belgian man who killed himself while consulting with her. The story behind this is that he was representative of the millenni-

als who clearly feel guilty about climate change. He believed that the Anthropocene, the years of strong human impact, have irreversibly destroyed the possibility of dealing with climate and environmental problems. So he consulted with the Elisa chatbot, which was constructed so many years ago. Even then, in 1964, people attributed human feelings and characteristic to AI. What is important to know here, for all types of chatbots and not only for Elisa, is that they often create an echo chamber that amplifies our own thoughts. This Belgian man believed that there was no need to live on Earth anymore, and he heard his own attitudes and fears reflected. Because of the chatbot biases I mentioned earlier, it is important that people develop their digital literacy: that they know what to expect from chatbots, and the kinds of biases they may encounter.

I'm specifically interested in the neurosciences. One of the biggest problems in AI is the danger of hallucinations and confabulations, because its memory is not developed through process like ours is. It is developed simultaneously in the present moment. Therefore, it lacks the possibility of developing its own characteristics through cause-and-effect chain reasoning. This actually produces confabulations that could not be resolved technologically. This is why a lot of computer engineers are working together with psychotherapists, with philosophers, and with data scientists to resolve this problem. However, I don't believe that they will succeed.

▪ **Madlen:** *We are body psychotherapists here. We work with the body in specific ways, with bioenergetic massage, activations, or movements. Personally, I cannot imagine artificial intelligence body psychotherapy. How could a machine hug me warmly? Maybe there will be heaters! What do you think?*

Mariana: I don't believe that AI can replace the true value of empathy, or human touch and compassion. Because it can't have such experiences, most philosophers don't believe AI will become sentient and conscious. If I can instill some optimism in to-

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day's discussion, it's that I think that psychotherapists and body psychotherapists are irreplaceable, and will be one of the last professions to disappear. Although some neuroscientists believe that emotions can be learned, it has been demonstrated in different clinics that sociopaths just imitate, that they know how to role play specific behaviors. But at their essence, they are deviated. I don't know if it's correct to use the word *damaged* people, because I don't want to introduce moral clichés here.

▬ **Madlen:** *What do you think our future clients will complain about? Is there a prognosis for the diseases of our children and grandchildren?*

Mariana: We cannot predict what will happen, but if we take into consideration that we have created digital twins of everything which is material and tangible in our real world, if we digitally reproduce our homes, work environments, schools, or create our own avatars, this will probably reverse the concept of real and virtual. There will be more delusions and more people who are really lost. It's already written in some of the future scenarios that mental health will be the most important and that it will remain behind pure physical health. We'll find a lot of decisions revolving around epigenetics, synthetic biology, and putting more quality of life and wellbeing in our physical dimension. Here we encounter a black box, but the problem is that AI is also a black box.

▬ **Madlen:** *There is a prediction that cybersecurity and psychotherapy will be the two main professions of the future.*

Mariana: Yes, cybersecurity will be responsible for the security of our new mixture of digital and real infrastructure, and psychotherapy and body psychotherapy will be responsible for our fluid identity and morality. How to fix something that is fluid; this is the question.

▬ **Madlen:** *What do you think of Yuval Noah Harari's thesis of impending immortality? Kidneys are already being produced on a 3D printer, and*

hearts will soon be as well. Will our artificial eyes be able to cry? How will our artificial heart feel? Maybe there will be brands, Versace hearts, Apple hearts, secondhand hearts...

Mariana: You know, transhumanists discuss immortality a lot. The classic form of living forever in our current bodies still seems far off or impossible for now. But to live longer and longer, to live long enough to live forever, they say to stay on the planet until we discover how to live forever. I don't think that there will be brands of hearts and organs, but a recent, as yet unproven, scientific hypothesis says that the heart has its own intelligence, its own uniqueness. It's possible even now for a heart to be 3D printed. It's easier than the other organs, because there are no biochemical reactions in the heart. It's mechanical. Maybe an epigenetic challenge must follow. When people receive transplants of specific organs, do they experience cognitive or physical changes? I assume they do, but again, this is only hypothesis.

▬ **Madlen:** *The most difficult question comes when we ask if God remains in the whole picture of the future?*

Mariana: You mentioned Yuval Harari. One of his most famous books is *Homo Deus: A Brief History of Tomorrow*. What will happen tomorrow? In the past we were polytheists, then we became monotheists concentrating on one religion with one God. Then, in the 20th century, we started to believe in our own strengths, capabilities, potential, and New Age power. Today, we expect to merge with technology, AI, and other digital progressive instruments. This will strengthen the feeling that there is no God, that we have the capacity to resolve all our problems. But this would be artificial. It could be propagated as a new ideology to keep people in a specific mood and space. We are now suffering from a lack of ideology, a lack of religion, as constants to refer to when facing problems. Although there is resistance, now everything is solved through global governance and responsible organizations that try to

build new kinds of identities using technohumanism and the strong trend of transhumanism. What I have been claiming recently in my lectures is that many mutually exclusive trends and currents exist simultaneously, creating the sense of instability and constant change. People are disturbed and feel destroyed because they don't know how to build their own stable reality and moral conduct.

■ **Madlen:** *In one of our panels, we spoke about war. Sladjana opened with the statistic that only 8% of human written history has been lived in full simultaneous peace. How will the wars of the future be fought? Will humans always be at war?*

Mariana: It is expected that there will be more cyberwars, or wars where AI commands autonomous and semi-autonomous weapons. Again, the old, the new, and the progressive will continue to coexist. I think there will be wars as long as humanity's level of consciousness remains the same. If we don't forbid war as a resolving mechanism, if we don't rely solely on diplomacy or negotiation, war becomes the only way. I'm very positive about people who follow a peace doctrine, but unfortunately, I don't think we will stop war as a means of resolution.

■ **Madlen:** *We are not ready.*

Mariana: We are not ready. And you may ask why? Why is this aggression and this perception and self-perception of the world still so prominent?

■ **Madlen:** *We pretend at the same time to be the most intelligent beings in the world. What do you think about the theory of two parallel worlds? I have described them in one of my fairytales, in my book* Fairytales for Grownup Children – *the world of the machine people and the world of the organic people, who remain connected to themselves, their hearts, each other, and the Earth. I notice a growing nostalgia for the past, a past of less hurry, of analog life, of contact with hurt, of physical labor, of the earth, of organic life. Is there such a trend on a planetary scale? Organic people are definitely less neurotic and healthier.*

Mariana: These trends are strong and they will coexist. They may oppose each other or they may coexist peacefully. This is a matter of choice for future generations. What is most important, according to me, is that we are currently destroying the notion of *public*. The media space is increasingly customized, and some of the largest media companies are delivering the news as a service based on an indi-

vidual's personal preferences. So we will no longer have a common space from which to discuss, we won't have the so-called *agora* space where we come together to solve our existential problems.

The more we allow technologies to serve us, the more we destroy our private space. This is happening voluntarily. For example, we put a lot of devices on our body to measure our blood pressure, our survival, our sweat, and so on. I can use a specific device that with one exhale will give me a protocol of about 350 diseases. This is just one single device. When we accept and allow so many devices around us, we are not only destroying our private space, but at the same time we are also destroying the public space. I can no longer know what the notion of "world" will be in the next 30, 40, or 50 years. This new kind of fragmentation worries me a lot.

■ **Madlen:** *It's certain that our life is not boring. Another topic is cultural differences. There is a common theme in our profession: People are influenced by culture at the surface, but at the core, we are similar. We have the same basic needs. What does your science say about migration processes? Years from now, will we all be blended, or will differences remain? The theme of this congress is construction, deconstruction, and reconstruction of our identity. Will there be national identities in the future?*

Mariana: We are already living in a polarized world. We can sense how strong the new liberalism is, and at the same time, the new conservative ideologies are taking an important, meaningful, national stand around our identity—that we have a specific history that is unique and completely different from others. My prediction is that we'll live in that kind of polarized mode for at least another 20 years. Otherwise, another type of crisis would appear, driven by the polarization between new liberals and new conservatives around gender, abortion, refugees, climate change, and so on, which are replacing ideologies that have existed for hundreds of years. If this polarization disappears, it could not be quickly replaced with something new. So we'll see. I'm worried that Europe is becoming increasingly conservative. This will impact all national politics, and will even influence scientific and other approaches. Of course, the pendulum will swing from one side to the other, and eventually stabilize because each complex system has the quality of finally stabilizing itself.

▬ **Madlen:** *Scientists say that already 65% of living species have disappeared, and up to 75% of insects. The previous extinction of species happened 65 million years ago, but it was caused by an asteroid. Do you think we are the asteroid today? And do you think this process is reversible?*

Mariana: To a certain extent. Two weeks ago I was in Crete, and we visited a smaller island called Gramvousa. It was named after a plant that disappeared 300 years ago. Only the name of the island reminds us that it existed. This is a real problem we are facing. But at the same time, Professor Georgieva knows that genetic discoveries show that some species can be recovered. However, I'm not sure they will adapt to the new realities. This is a tough philosophical question. We are egoic, and not responsible for protecting nature. It affects us in the end, although some places that are no longer inhabited, like Chernobyl, reveal that nature is even stronger than we expected, and recovers much faster than scientists thought it might. We can provide opposite examples, but this is an open question. I don't have a final statement.

▬ **Madlen:** *When I was in high school, my friends and I fantasized about how one day there would be a video phone, and as long as he could talk to my sister on the phone, my grandfather was convinced there was a cable between Europe and America. Today, sending people to live on Mars is being discussed. This all happened in 30 years. What else can we, who are here in this hall, see during our lifetimes? As far as I know, we'll fly with drones, cars will move without drivers, and nanorobots will clean our bodies from the inside. What else will we witness if technologies continue developing at this pace?*

Mariana: It's easy to discuss technological changes because, to a certain extent, they're expected. But for me, the real challenge is to try to predict what will happen if we extend our biological nature with human enhancement tools – like if we merged the insights in our skulls with AI using these devices, or if we create the concept of collective intelligence and an internet of minds, or if we decided to no longer rely on our own authenticity. Can we build a sustainable collective identity where we are not jealous that this thought is mine, and is genuine and unique, and you don't have the right to use it without my permission? These are the questions that are difficult, and we are not ready for them, but we have opened Pandora's box and we have to prepare ourselves.

▬ **Madlen:** *We therapists are constantly bringing the present out of the past. How does this present determine our future, according to your science? What can we change today to have a happy future, or to have a future at all?*

Mariana: When we make forecasts about the future, some of them are descriptions without any evaluation, but others are strategies. We put values that we want to project into the future, and we prepare so-called *back hints* reversed from the future to our present – trying to get to a desired future. There are feedback loops where the future impacts the present, and the present impacts reconstructing the past. So you, as psychotherapists and body psychotherapists, will have to consider this, and you have to work with those dimensions because there will be interaction and interplay, and we'll not be living in our current present dimension – although this is the advice of all spiritual movements – but we'll live simultaneously in our future and in our past.

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