

## Interview for Popular Science podcast

*Andrey Dey is on the microphone. Hello. Max Kamo is on the air today. Researcher, theorist, anthropologist. We will discuss an important topic concerning global challenges and transformations. Let's get started.*

Andrey Dey: Have a good day and evening. We are starting.

How do you define the era of Anthropocene and what are the key prerequisites for its formation?

Well, look, the Anthropocene era, yes, is an era of great acceleration. In general, it is associated with the period after the Second World War, during which the global population growth, The pollution and exploitation of natural resources has increased at an enormous rate. And all this has led to large scale economic, social, yes, transformations, yes, and to the circumstances in which we find ourselves.

We'll say the key to determining the anthropocene. Yes, it is the newest geological era, which lasts in such an extreme sense that there are about 70-80 there years. Well, in general, it is tied to the whole so-called scientific and technological revolution.

Andrey Dey: Climate change is currently worrying society. I would like to ask how you see the connection with the Anthropocene?

Well, yes, we see it, yes, literally every day, every year. All say, the media there, and all the rest, Well, in fact, temperature rises, those or other hurricanes, snowfalls in Africa and all that stuff. Yes, it seemed absolutely impossible there 5-10 years ago.

Well, at the same time, yes, the scientific community has been sounding the alarm for a long time. There have been many appeals signed by Nobel laureates -- World Scientists' Warning to Humanity, and many other appeals.

There are numerous assessment reports on the climate. This is a huge task in which thousands of experts are involved.

Let me give an example from GRACE data, the most accurate model of the Earth's global gravity field to date. The results of the measurements provide valuable information on various phenomena related to global transport in the Earth system, such as changes in the continental hydrological cycle (depletion of groundwater, floods, or droughts).

Satellite data from GRACE show many signs of climate change, such as record mass loss from Greenland glaciers -- about 500-600 Gt per year, making Greenland the largest contributor to modern sea level rise.

Andrey Dey: The connection between climate change and population growth is an important topic. What do you think are the consequences of these changes?

Well, look, it is indeed common knowledge that warming leads to population growth, and this is one of the factors. This was also the case during the Holocene -- before the extinction.

And for a long time, if we take the key demographic parameters, such as birth rates, death rates, yes, we were in a situation of population explosion and growth.

And now we have a completely opposite situation. The Western world, including Russia, there is no longer population growth there -- they have already passed the demographic transition. The most critical demographic situation is now in the Global South.

The global demographic trend and the demographic transition itself - demography will either be negative or zero.

I would like to recall an article published in 1960 in the journal Science by the famous mathematician Heinz von Foerster under the title "Doomsday". November 15, 2026. That is, literally, on the horizon, yes, in the nearest, nearest years.

And he predicted that if the rate of growth of humanity remains the same as it was then, then, on November 13, 2026, the population of the Earth should become infinite.

Then these mathematical models were rethought, there was a famous report by Meadows and co-authors within the framework of the Club of Rome, which was called The Limits to Growth.

All economic models were built within the framework of these models, which have now stopped working.

Andrey Dey: And I would like to ask about this transition to the information age and the concept of singularity. There are a lot of questions here. And what does this transition mean for us? And what consequences, the most interesting, are waiting for us?

Well, look, I am now agreeing, uh, yes, uh, again emphasize the importance of demography, yes, in the context of singular transition, yes, to information society, and uh, uh, the fact is that, yes, uh, the growth of numeracy, yes, uh, It is reflected in all phenomena of culture and consciousness.

Yes, and well, this is also connected with the fact that more and more new masses have appeared, who have no time to absorb culture. And, in fact, they, uh, cannot, uh, yes, and they have no time to absorb culture.

Moreover, all this demography has caused a colossal number of social, humanitarian problems, migration crises and so on. Which in turn led to a management crisis, the previous management mechanisms stopped working.

These changes are also prerequisites for the transition to an information society. Yes, the social models themselves are changing, the social stratigraphy itself is changing, the economy is changing.

The dynamics of demographic growth in the sum of the fruits of the scientific and technological revolution -- led to the creation of a well-known infrastructure, with all our servers, microprocessors, everything that is commonly called the technosphere.

And today, to understand the numbers and the scale, we can say that the flow of data generated by satellites, sequencers or social networks is multiplying in a very short time.

The growth of information is essentially unlimited. And it will continue with some intervals, slowing down to a new, yes, period of intensity. And today this data flow cannot be processed without AI.

The flow of data generated by satellites, sequencers, and social networks is multiplied by orders of magnitude in short time intervals. Every day, 328.77 million terabytes of data are created in the world, an annual growth rate of about 30%. In 2025, data generation will reach 180 zettabytes.

The accumulation of information can continue almost indefinitely, with intervals of slowing down to the stage of new growth in intensity. Such a flow of data cannot be processed without AI systems, a person is forced to transfer some of the functions of goal-setting and development to machines, we are already observing this process in some areas.

The accumulation and reproduction of information is becoming the main process to which all other development processes are adjusted

The thing is that, indeed, since it is impossible to process the data flow without an artificial intelligence system, yes, a number of functions of social development, yes, these tasks, have already been transferred to artificial intelligence. And, accordingly, global management, yes, it is already largely management, yes, of machines, yes, of such systems.

AI as a whole will determine the parameters of our social development. There are many topics for further clarification, discussion, but I would not look at all this dramatically, because we must understand that we are in such a large historical process. And today the role of man is qualitatively different than in the old days.

Andrey Dey: Okay, let's focus on artificial intelligence. What do you think are the real threats?

Look, the thing is that the structure of the economy is changing. And, let's be honest, all these masses that used to service something, some production or something else, are economically inexpedient. And now, yes, we are already seeing the decline of the industrial world, industrial giants are collapsing, concerns such as Audi, Volkswagen, yes.

And the changes are quite obvious -- changes in the labor market, yes. It is clear that machines, artificial intelligence systems, will be everywhere, in all practices, in all areas, yes, as they are already today in transport or in some more complex areas, like medicine, even in surgery.

And the main issue is regulation. And some countries, yes, or some unions, are losing. Yes, this fight with machines, so to speak, because they cannot reformat themselves and they are lagging behind, they are reaching a dead end. But other countries will develop successfully.

Yes, because I am talking about the boundaries between man and machines, right? And if these distinctions are precise, adequate to the conditions of rapid changes, depending on some new challenges, then enormous opportunities await us.

And those societies that are not able to compete, in the sense that they are not able to comprehend, yes, in general -- they will lose and will obey machines, some other subject.

Andrey Dey: We have five minutes now to talk about the global perspective. From what has been said, it is clear that in general the world economy will develop rapidly, everything will be very good, accelerating, improving. And those countries whose economies will not have access to artificial intelligence, they will lag further and further.

Don't you think that man will be cut off from man from the new world. That is, man will not even be able to influence anything? That the future is such that the world of robots will develop on its own.

Well, you see, I agree with this opinion, yes, but I would not talk about some kind of gap, yes, because this gap happened a long time ago, and not today.

The world has globalized, this is a given, but not today, and, yes, moreover, I can say that the world has always been globalized. Objectively, but geographically on a different scale. Imagine what it was like 2-3 thousand years ago. There was a huge Roman Empire and some barbarians somewhere on the periphery. But the entire civilization was concentrated on the Mediterranean coast. This was the global world.

Now the thing is that the speed of change, the speed of information transfer is instantaneous. Super-powerful infrastructure, of course, has changed the world, but its essence has not changed.

In a sense, the world has not become more global than it was two-three-four thousand years ago.

As for the gap between the human masses and access to technological capabilities...

The masses, they had little influence on anything in the past, if we talk about some political decisions. Well, with some exceptions.

In this regard, we need to understand what is at the center of the modern world, at the center of the modern economy.

And we see that the key point is related to the reproduction of information. It is information that, yes, all other processes are built around. And capital itself will also be tied primarily to information, to its generation and reproduction.

In this regard, not only the economy is changing, but the financial system itself is changing. We see all the prerequisites for this, the emergence of new digital currencies, and numerous financial technologies that have emerged.

Andrey Dey: I have a question about the boundaries of the human-machine. What will this division bring us in the future? How will it affect our society?

We need to understand what reality we are in. Yes, indeed, artificial intelligence systems are already endowed with the function of goal-setting in many areas of our lives.

Andrey Dey: Yes, Max, clarify this.

Okay, because what is artificial intelligence? It is a well-known Search engine. But we see at the level of all our gadgets that each new generation of iPhones or other communication systems - in them, each time, the memory capacity increases by 100%.

The transition today is associated with the fact that all the tools that were developed and existed for many decades are reaching another level, which is associated with the growth and volume of information and, accordingly, with the constant improvement of computing capabilities and models.

And, in fact, yes, the generative intelligence system, which is now entering all spheres of life, is a consequence of this. In this regard, again, there is no revolution, because it happened a long time ago. Yes, and the predictive capabilities of these systems are incredible.

Why is artificial intelligence an evolving system?

Because there is a constant growth of information, which allows us to obtain more and more accurate global, regional, and any models. Therefore, in such areas as adaptation to climate change, yes, in such a large climate, biosphere systems -- these tasks are already entirely assigned to AI.

But it cannot be said that there will be some kind of total triumph of machines. Which will change everything for the better on the entire planet. This will not happen, because the world is structured differently anyway.