A critical perspective on generative AI and learning futures. An interview with Stefan Popenici

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Abstract

We present a wide-ranging interview with Stefan Popenici, a distinguished scholar and public speaker with extensive experience in higher education. Popenici's research focuses on the impact of artificial intelligence (AI) on teaching, learning, quality assurance, and student engagement in higher education. The interview delves into the themes of his book, *Artificial Intelligence and learning futures: Critical narratives of technology and imagination in higher education* (2023), exploring the intersection of AI, intelligence, and societal issues such as eugenics and racism. Popenici critiques the power of tech titans and the belief in technology as a panacea, especially in higher education. The discussion also addresses the identity crisis in higher education, the potential of revisiting Humboldt's 19th-century vision of the university, and the challenges and opportunities presented by the AI revolution. Popenici's insights into the role of AI in assessment, graduate and academic employment, and the future of academic work are particularly illuminating. The interview concludes with Popenici's reflections on his own educational journey and future plans.

Jürgen Rudolph (JR): Thank you so much for making yourself available for this interview for the Journal of Applied Learning and Teaching (JALT). You are a scholar and public speaker with over 25 years of experience in teaching, research and leadership in higher education, with universities in Europe, North America, Southeast Asia, New Zealand and Australia. For your work and strategic leadership in education, the President of Romania knighted you with the Order 'Merit of Education'.

Your research is currently focused on the impact of artificial intelligence in teaching and learning in higher education, and quality assurance and student engagement. We are big fans of your book *Artificial intelligence and learning futures. Critical narratives of technology and imagination in higher education* (Popenici, 2023a). What made you write the book? What are its main theses?

Stefan Popenici (SP): What made me write the book is a complex answer because it comes as a profound sense of panic and dissatisfaction with what I see that is happening now in education. It is ironic that I love technology. I use a lot of technology. My wife complains that I use too much technology and then I have too many gadgets and boxes that she cannot manage. But the obsession with using technology as a silver bullet in education, ignoring some of the most important parts and the lack of reflection over 'What are we actually using? What are we actually doing?' came as a strong motivator to address this in a book rather than a short article.

Mainly, it is this sense of profound crisis for education and for our civil society. This is a very important part of my identity. I believe in a civil society. I'm passionate about intellectual and personal freedom, the sense of a civil society and then the power of education to change lives for the better. I know this sounds like big words, but this is how I grew up. This is how my life developed, and it came with a very profound sense of responsibility. I was lucky. I'm privileged, and I think I have to give back. The book was my way to give back and contribute to the general discussion about what are we actually doing for our present and future. This is a very strong European sense of when you're an intellectual, you have a responsibility for society. This is the part of Europe that I love.

Figure 1. Stefan Popenici with a copy of his *Artificial Intelligence and learning futures.*

JR: Could you tell us a bit more about the main theses of your book?

SP: The main point is looking at the impact of what I find as most consequential, the most influential technology that is going to change education – and that is artificial intelligence. One of the main problems is that we don't stop to think about what we are actually doing. It's a very strange thing for education where you deal with researchers and intellectuals, and there is basically no interest in looking at what are we actually going to use. When you buy a car, you want to know what the car is going to do. When you use a technology as complex and influential as artificial intelligence, you would expect a very serious conversation about all aspects that are shaping this technology. The main point is starting from a fact. Artificial intelligence is a marketing concept. I'm jokingly saying that we are going to use cups of coffee with artificial intelligence, as it is used on everything because it sells. It's not a real thing.

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There are some research groups that went so far as to suggest banning the concept because it's so slippery and open to manipulation. As we speak, we see it in the public discourse. This is a great fight on emotions and then using this concept for marketing purposes, not for anything else but to make even more profits. We're talking about billions of dollars, there's a lot at stake. When you stop to think about this concept, you realize that there are some sources that are very problematic. Educators should stop and think if these roots of the concept of artificial intelligence are not somehow problematic for education. And if they are, what can we do?

So this is what the book is looking at. This is also something that I hope we will touch on later in our conversation – the full impact. Artificial intelligence in education is not new. I'm using an example on purpose in my book about a conference in Europe in 1990. The conference was called something like 'Artificial intelligence in higher education'. It's not a new idea at all, but the full impact is seen, in my opinion, starting with 2023. This is when we realized that education is in a profound crisis and especially higher education is under attack from various ideologies. Universities are under attack by neoliberalism and the obsession to make education a business and reduce all to profits and markets. You have this unfortunate context, and the new technology is coming to *disrupt*. I'm careful with words: Disruption is to destroy. So when you have a disruptive force that is going to change entirely the landscape in a crisis, results are going to be very problematic. This is what I think is the second main thesis of the book – that we're going to see massive changes, and we have to start paying attention to these challenges.

Shannon Tan (ST): Could you illuminate the unsavoury connections between the concepts of intelligence and artificial intelligence with eugenics and racism that you

discuss in the first section of your book?

SP: This is an important part of the book because it is a part that is universally ignored. It's impossible to turn on the news and miss artificial intelligence. It's going to be mentioned somehow. It's going to destroy the world, do something extraordinarily important, move us all to Mars, whatever! The problem is that the concept of intelligence, which is at the core of artificial intelligence, is tainted by a certain view of the world. The way we understand intelligence today is, unfortunately, shaped by the group of thinkers and researchers that looked at intelligence as a dimension that can and should be measured. This is such an important part of that conversation about artificial intelligence that I felt that it must be very well-documented.

When we speak about intelligence, we speak in general and almost universally from the perspective opened by Francis Galton. It's not the only perspective, by the way. If you look at indigenous cultures – and I'm on Larrakia land, 60,000 years of continuous history – they look at intelligence in a very different way from academia. But Galton looked at intelligence as something that should be measured, and that is ranking human beings in a certain order that was based on a concept that he invented: eugenics. Eugenics did not originate in Nazi Germany.

It's originating in this unfortunate development in human history where Francis Galton came up with the racist idea that intelligence is linked to races that are superior in terms of what he called intelligence. What he called intelligence was only what he could measure, and the next step was that because we have a ranking of intelligences based on races, we have to practice racial hygiene.

Figure 2: Francis Galton (right), aged 87, at Fox Holm, Cobham, with his biographer, the statistician Karl Pearson. Source: Wikimedia Commons (n.d.), public domain.

This idea transpires to this point in Silicon Valley. I purposely documented very well how one of the founding fathers of Silicon Valley, William Shockley's ideas of white supremacism and eugenics, are absolutely astonishing. It's important to keep in mind that he ran for office in the United States with these ideas. These guys were not hiding these ideologies. They're quite proud and organized international conferences at University College London and Stanford University. We talk about the most prominent institutions where these ideas shaped the way intelligence is seen by artificial intelligence.
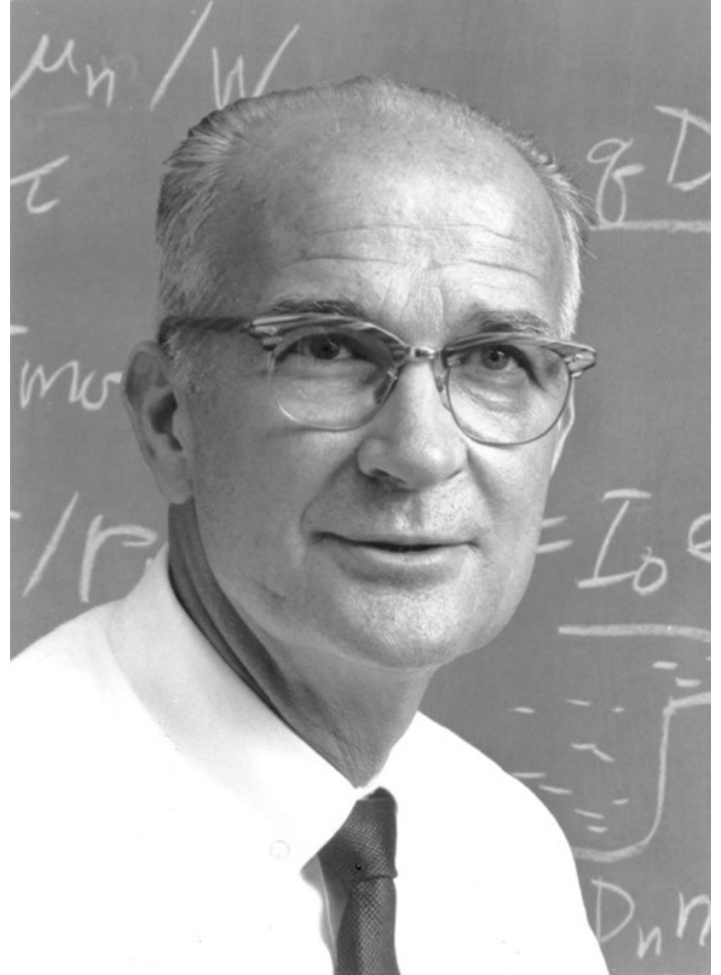

Figure 3. William Shockley. Source: Painter (1975), public domain.

Shockley not only considered that Whites are intellectually superior, but he proposed to create a welfare system with financial incentives to get rid of what he called genetically disadvantaged groups – of course, Blacks and other minorities. This is what Meredith Broussard (2023) documented so well in her latest book, *More than a glitch: Eugenics, racism and discrimination* are at the core of artificial intelligence. It's not a glitch, it's by design, and this is very important.

I can give you just one example: In an article on technology and the positions of women, John McCarthy (2006) wrote that it's a mistake to think that women are equal to men; they are inferior. This is the guy who created the concept of artificial intelligence. This is a part that we must not ignore if we are serious about that conversation. Banning or ignoring AI is a mistake. Equally bad is to ignore that this narrow view of intelligence is very problematic.

JR: What I found really shocking when reading your book was that the Nazis were looking at some of the things that were going on in the US, and they thought that was too extreme.

SP: This is a crucially important topic, and I can explain in a nutshell why. One of the main problems with the world we have today, in my opinion, is the rise of fascism and white supremacy all over the world. This is a mortal danger for our societies, and I think it's easy to argue that we had a wrong approach to looking at ourselves as the human race. I look at history because I think it's important to understand where we are today and what we are going to have tomorrow.

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We had the First World War, and then the world completely missed the lessons. They couldn't understand anything that happened. Then, we had the Second World War, and unfortunately, what happened after that, in my opinion, is that we fell on easy explanations that are very problematic and false. One of the explanations was that this horrendous example of dehumanization – and how wrong ideas create monsters – was reduced to one nation and to one narrow geographical region. This is failing to understand why we had genocides happening in Myanmar, Rwanda and other parts of the world.

More importantly, it fails to look at the truth. The truth is that the first forced sterilisation in the world did not happen in Germany. It happened in the United States. The first time Zyklon B – the gas used in Auschwitz for what was called horrendously 'the final solution' to wipe out an entire race – was used was not in Germany. The first time it was used was in the United States to clean – and this is tragically symbolic – Mexicans and other foreigners. Unfortunately, at that point, there was one German scientist, and then he came up with this idea: 'Oh, using gas to clean aliens, that's an interesting idea!' Then, when the Nazis became so monstrous, they just increased the dosage.

Where in the history of the United States can you see that? Nowhere in the public discourse. Before the Nazis became so extreme, they were always monstrous. But there were stages before they reached the final and most disturbing stages. This is documented very seriously in a book that is significantly called *Hitler's American model* (Whitman, 2017). The Nazi party sent a delegation to the United States to see how Americans solved the problem of Blacks in the United States and to learn from them how to deal with the Jewish problem in Germany. Now the horrendous lesson is that the Nazi delegation came back from the United States with the message that 'we are civilised people. We cannot do what they do in the United States'. That's documented in an archive, it's not a sad metaphor for what happened. This is how extreme the Jim Crow laws were. It's enough to read James Baldwin about the experience of Blacks in the United States to understand why people found that unacceptable and outrageous (e.g. Baldwin, 2001).

Figure 4: James Baldwin. Photograph: Warren (1969), public domain.

When we look at these problems, we should not fall into this reflex of pointing the finger at others, and say 'Oh, it's just that group, it's just that nation, it's just that party or just that set of ideas that are marginal. We shouldn't care'. I think it's important to look at these challenges and risks that somehow seem to be part of human nature and deal with them courageously. Most importantly, universities are the space that is most suitable and responsible for dealing with that. Universities don't care about this; that's the reality. There is no conversation. You read *Times Higher Education* or *The Chronicle of Higher Education*. You read research papers, and you don't see this part of the conversation. We dismiss it as philosophical, ideological, 'it is not real life'. Well, before, it was real life. It was very ideological and philosophical, as I explained with eugenics and that led later on to the very real concentration and extermination camps.

That's very real. You can't get more real than that when you kill people en masse. By the way, technology should answer to what happened. Because going back to the Nazis, there's a very important lesson. I'm not religious. I'm not Jewish. I'm not even sure if I can identify myself with a certain nationality because I travelled too much. It's not about something that is personal because it's linked to my culture. It's personal because it's linked to my status as a human being.

There is an important lesson in what happened in the Second World War when the Nazis decided to apply the final solution. One main problem they have – which I mentioned too succinctly, unfortunately, in the book – was that the

scale of killings was so massive that they could not organize it. Who came to help? IBM. The book titled *IBM and the Holocaust* (Black, 2001) is a massive doorstopper because it is extraordinarily well documented. This is what technology also did: help the Nazis get rid of human beings. It should be a serious soul-searching of the role of technology and then what technology without values and without serious thinking can do. It's not doing good things, unfortunately.

JR: I agree it's very important not to forget history. I'm not pointing any fingers at anybody else but at myself because that is my history. You were saying that you find it difficult to identify yourself with any nationality. I feel the same. But there's this huge guilt because of German history, and I don't think that's a bad thing. I was not personally involved because I'm too young. Even my father was too young to be involved, but my grandfathers were involved, and I think it's important to never forget that.

SP: When I was working in Romania, I started many projects in education. I worked my entire life in education. One of the projects I started was a national project called Education Against Racism, Discrimination and Anti-Semitism. It started with racism against gipsies. Then I reached the point of anti-Semitism. I'm a nerd: I go to archives, and I look at facts. At that time, Romania had the universally accepted narrative that Romania was a safe haven for the Jews fleeing Nazism. The truth is that the Holocaust happened in Romania in the most horrendous circumstances one can imagine.

It is important to note that the Holocaust was a European project; it was not a German project. In general, it was accepted by the whole world. Before other nations say, 'oh, that was a European problem', I don't think any continent is in the position to point any fingers if they look at their own recent history. I'm not even talking about long history. That's why I refuse to link this with nationality because it's not accurate. It's simply wrong. It's about the responsibility of human beings, and for me, what is important is the responsibility of educators. It all started with bad education.

Samson Tan Yong Tiong (STYT): I want to just keep listening to you talking about that very strong link between racism and human biases being passed on to technology itself. This is something I'm very concerned about as well. In 2015/2016, when there was already a lot of comparison between the development of AI in education in China and the US, they were installing facial recognition cameras in the classroom, and they were trying to find out about student responses to the lessons. We realized that those AI-powered facial recognition algorithms that were developed in China seemed to be able to pick up the students' responses much better across the board. Even when they applied them in the US, they were able to recognize a person who is White, Black or of any other colour, compared to the software that was developed in the US. Why was that the case? Possibly because of the biases of the algorithms that were developed in the US itself. They somehow built in those biases that weaken the software's ability to recognize people who are not white.

When I read your book, you talked about your concerns about the power of the tech giants. They are mostly dominated by US companies. They construct algorithms within a black box – we don't know what's going on inside the algorithms. Earlier, you also referred to what Meredith Broussard (2023) terms techno-chauvinism, IBM's role in the Holocaust, and what's happening in higher education. Could you elaborate a bit more on this? I really want to find out about your thoughts here.

SP: I wrote the book as someone interested in technology from an educational perspective. I don't claim expertise in engineering, though I read as much as I can in terms of research papers and books presented by engineers. In general, I trust what they are saying when they have real expertise. I apply my academic scepticism to look at what they present. The black box principle is very simple. We know what gets in. We know the kind of data and information we produce, and we see the results. What is happening inside, we have no idea, and to paraphrase Meredith Broussard (2023) again, this is not a glitch.

A couple of weeks ago, I was in a meeting with a top executive of one of the Big Five in Australia. I expressed my astonishment that Australia couldn't manage to bring a case against Meta [formerly known as Facebook] to court because Facebook simply said: 'You have no jurisdiction, we are Americans, we don't care about your stuff.' You can see the sense of impunity they have after all the scandals and disasters, including Cambridge Analytica. They still don't have any social responsibility or serious legal responsibility.

We are impressed by them having to pay millions of dollars. But it's not even change for these companies. They consciously exploit innumeracy. People can't make sense of big numbers because mathematics is not as strong in our education. (That's another discussion.) But this black box is cultivated. This executive in the meeting, when he took the floor, he said: 'So you want artificial intelligence in Australia?' when the discussion was specifically about the privacy of data and the importance of how this data is managed. 'Why do you want it? You want to speak in Australian lingo?' The dismissive and ridiculous arguments show something else behind all these types of reactions that should not exist in a serious conversation. And that was a very serious conversation with decision-makers in Australia. This principle of the black box is always defended. Google is not making clear why you show up and why you disappear from their rankings.

OpenAI made clear that they are going to be totally opaque. If you read what they've said at the beginning, it was all about the fiduciary duty to humanity (Rudolph et al., 2023a). 'We don't care about money. We don't care about anything but transparency, humanity and serving the world well'. They got $10 billion in January. So much for 'we don't care about money'.

Then, this black box principle is very important. It's at the core of the kind of education we want to create. They discriminate based on race, and social status and then you realize that tomorrow I can be one of those discriminated against. Tomorrow, you may be guilty of living in a less

affluent area. When you do that, you may be immediately the victim of one of the algorithms that is acting on your life and shaping your life. The rates you pay at the bank, the kind of credit and the kind of healthcare you get: the algorithm is deciding this. It's not only that. It's the black box principle that you don't know how the algorithm is working, and you have no idea how the decisions are made. It's even worse than that: you have no possibility of recourse when it's saying you don't deserve healthcare.

By the way, it happened, and I can give you some examples. One is an example from Europe. It is an algorithm that was used in Spain to decide the kind of help women suffering sexual abuse and then living with serious threats to their lives would receive. They used an algorithm to rank these threats. In 2021, because there was no help assigned by the algorithm, 71 women were killed. We talk about people losing their lives because it was decided by an algorithm that the police should not attend to these cases. There are numerous cases of people in the United States who were arrested and put in prison because an algorithm decided that they were guilty just because they lived in a poor neighbourhood.

There are cases of women in an American Hospital who got no medical care because an algorithm decided that they didn't need that much care. Later on, it was discovered that the algorithm was discriminating in favour of affluent White women. When you do this in education, there is the risk of discrimination against those who most need our help and attention and that we can benefit from. Just look at human history and see how many of the great inventors and artists and then people who really pushed the world ahead came from disadvantaged backgrounds. Beethoven might be imprisoned if decided by an algorithm, and this is just one example. I can give you thousands.

The second part that you destroy is education. This should be evident for anyone going through significant, meaningful education. When you are constantly under surveillance, you kill education, you kill the sense of connection, you kill the sense of trust. How can I trust you if you keep me under surveillance all the time? The saddest part of the space of higher education now is that it is guided by what we call evidence-based decisions. If you're familiar with the field, you realize that it is evidence-based as long as the evidence serves a certain ideological position. When the evidence shows that this is wrong, oh, we forget about the evidence. Just look at the research on open spaces. It shows that it is killing productivity. Just what do you see in universities? Where is the evidence that this is working? It's the same with technology. I'm using common sense, easy-to-see examples, but when you go into details, you realize that. Research shows that surveillance is changing human beings' behaviour. When you do it to kids in schools, the kind of impact can be devastating, and you just killed education that is meaningful. You pass on information, and you train the same way you train dogs to bring a ball, but that's not education.

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When you look at artificial intelligence, techno-chauvinism or solutionism (a term coined by Morozov (2013)), is a perfect example. In order for artificial intelligence to be perceived as universal and all-encompassing, the trick was to narrow down what we understand by intelligence. The second trick is to look at life as a set of problems that can be solved. Well, life is more than that. You can solve all the problems, and you have your heart crushed in love, and it's all going to fall apart. That's not a problem to solve. That's about emotions. That's about love. That's about humanity. It still matters. Emotions still matter. It's just not a problem to be solved. You cannot reduce this so badly. When you apply this colonialism of problem-solving, and you say only technology can solve that, you ignore how the world is going. That's a criminal mistake.

You ignore simple lessons that are connected to our previous points. Let's look at societies where technology was working perfectly. When you look at Nazi Germany, whether we like it or not, it was the most advanced nation on Earth in terms of technology. We can think about exploring the moon and Mars and all that because Hitler started the project on rockets. By the way, Americans took all the Nazis who used slaves and just moved them to the United States, where they continued their research. The point is that from a technological perspective, Nazi Germany was not doing badly at all. They were the most technologically advanced. They had the best weapons and the best technologically-trained people. Technology is not solving all the problems. When you reduce all problems to technology, and then technology can solve all, you create monsters. We have a long history to prove that. When we have lessons that are too painful to contemplate, then it's important to have these discussions now rather than when disasters happen.

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STYT: Your exposition reminded me of something that I was trying to explain to a group of STEM teachers. They were talking about how to explain this bias that you put into the algorithms that are problematic to all sorts of things, especially in an educational context. I was fascinated by your real-life examples from Spain and elsewhere. I used more of a science fiction approach because the STEM teachers were supposed to be targeting younger students. I referred to Marvel, where there is Captain America dealing with Hydra. Hydra developed algorithms to target people who are

against them. If you develop algorithms to target anyone that opposes you, you can take them out using that kind of sophisticated weapon. Obviously, that's in a science fiction environment.

But the point that I mentioned to the teachers was that these are the kind of things that are happening in society quietly behind closed doors in the black box. The danger of it is that we get targeted without even knowing that we're being targeted. It's not only happening in Marvel science fiction movies, but it's already intruding into our lives. I'm a convert when it comes to cautioning about the blind faith that technology can solve all problems. This is something that we need to be very aware of, not only in education but by and large. Now a lot of people are thinking that just because of generative AI, they can solve a lot of problems that we face today.

SP: Across humanity, we've been tempted to look at technology as something that is going to give us some certainty. So we reduce life to something that we can finally control, and then science and technology are going to give us that. It's nothing new in that we've always believed that the latest technology is going to give us the solution to control the world. It's a very dangerous thing, and the example I was going to use is a very real example and it can be found in the book (Popenici, 2023a). Stanislav Petrov didn't believe that all solutions coming from technologies were good. The problem was that the latest technology used by Soviet Russia showed that Soviet Russia was under attack by the Americans, and all nuclear rockets were armed. There was this guy who said, 'no, this doesn't make sense'. Petrov risked his life – I lived in a communist dictatorship; believe me, that's not a metaphor! He risked his life, and he said, 'no, I'm not going to start this'. We wouldn't be here if humanity was at that moment based on this logic that technology knows best because it's going to give us solutions. Technology without human control can spell the end of that. It's not going to be 'I don't believe in that'. If we are going to end our race and then destroy the Earth, it is going to be us. It's not going to be anything other than us, so no technology is going to do this better than ourselves.

JR: Meta is moving away from the black box idea that OpenAI and Alphabet are following because they are making their algorithms publicly available (Weatherbed, 2023). I think this is not out of the goodness of their hearts, but they are trying to catch up. Meta obviously has a lot of examples of using AI, which were quite dismal and disastrous. But I nonetheless thought that it was interesting that they were suddenly being more open than OpenAI on which Elon Musk commented that they are not open anymore (Rudolph et al., 2023a).

One very quick follow-up question: I love Beethoven, and you mentioned that he could have been in jail if he had lived in our time. Why?

SP: During much of Beethoven's life, he lived in relative poverty. Imagine a world without Beethoven.
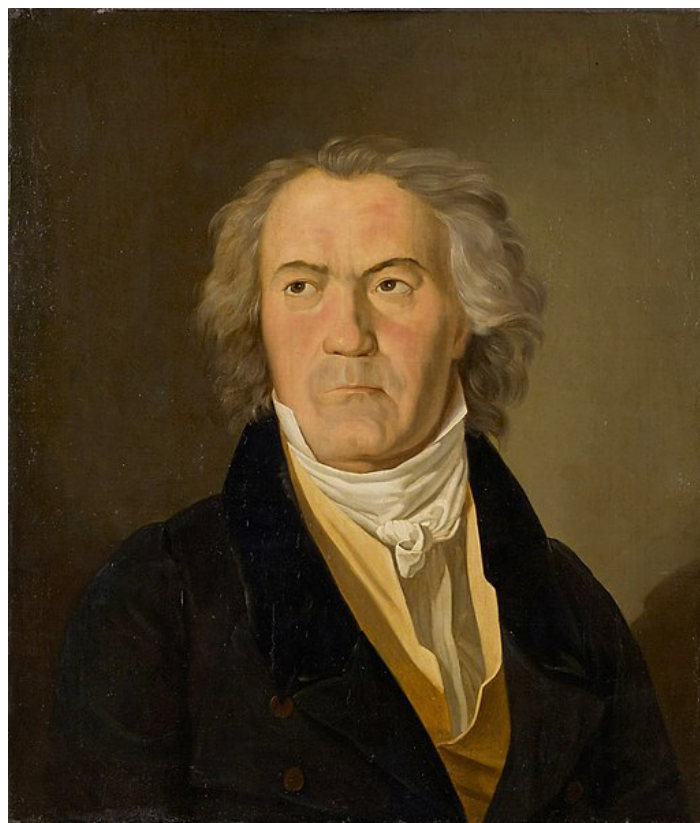

Figure 5: Ferdinand Georg Waldmüller's 1823 painting of Ludwig van Beethoven. Beethoven's (1770 – 1827) financial situation was often precarious. Complicating matters further, Beethoven struggled with health issues, including deteriorating hearing, which affected his ability to perform and earn income from concerts. He frequently accumulated debts. Facing legal actions from creditors did not prevent him from creating some of his greatest masterpieces (Swafford, 2014).

Imagine a world without so many thinkers. We all like Michelangelo (1475 - 1564) and Leonardo Da Vinci (1452 - 1519). With the kind of surveillance we have today, we wouldn't have any Leonardo's because he was breaking all the rules of his time. Leonardo conducted dissections when there were severe penalties for that. Then he came up with ideas that were outrageous.

Michelangelo also conducted dissections (Eknoyan, 2000). Then again, you can imagine Michelangelo being very young in prison rather than giving us La Pietà and then giving us the Sistine Chapel. That's the kind of thing we have to consider, especially when we talk about education. It's not a marginal thing.

Going back to your comment, Jürgen, you can blame me for my scepticism. I would believe it when I saw it. What I see so far about the Big Five tech companies [Alphabet, Amazon, Apple, Meta, and Microsoft] is a lot of PR and noise. I can give you the latest fact. Bard was released by Google as the new AI solution (see Rudolph et al., 2023b) – for transparency and openness and the love of God, whatever. When you look at where it was not released, that's 180 nations. They did not release it in the European Union. Why? Because the European Union is asking them to be more transparent and more responsible. So surprise, surprise, when you look at

facts, when you draw the line, that's what you can see. We have a long history of smoke and mirrors used by unchecked power that never ends well. This is what we have with these big tech companies. They don't answer to anyone. They are not elected, not checked. That's a problem.
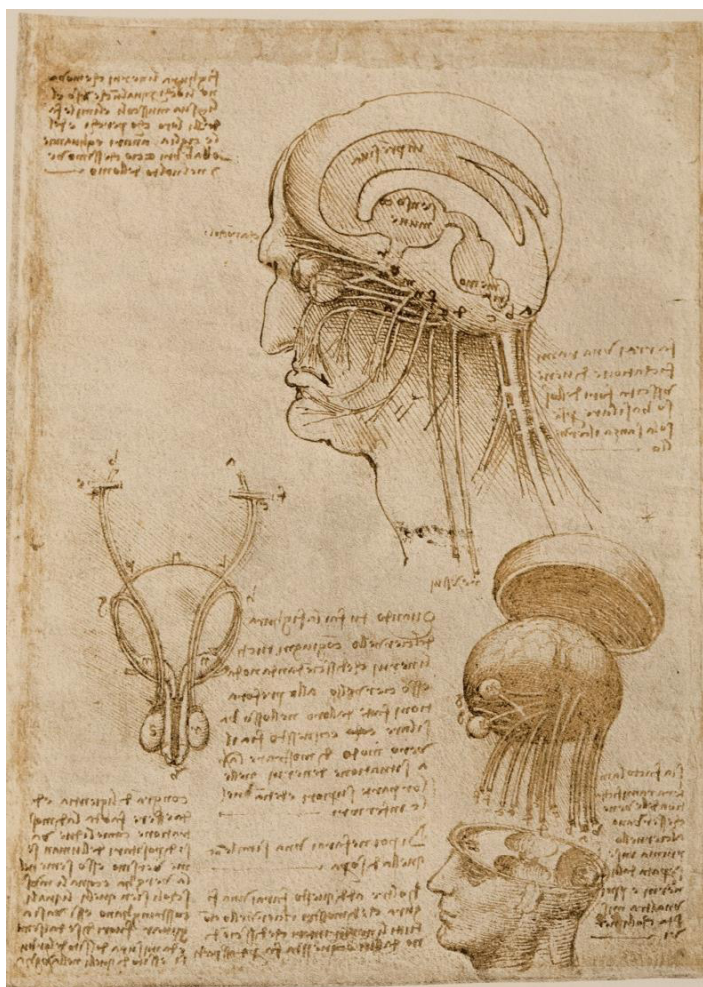

Figure 6. Leonardo da Vinci's Sketch of the Human Brain and Skull (1510). Leonardo had a deep interest in understanding the human body and was known for his anatomical studies. While the Catholic Church considered the practice of dissection as sacrilegious and immoral, Leonardo believed that it was essential for the advancement of medical knowledge (Jose, 2001). Penalties for performing dissections on human cadavers during the Renaissance ranged from fines and imprisonment to more severe punishments, including public humiliation and ex-communication from the church (Isaacson, 2017).

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JR: In the second section of your book, you diagnose that higher education is undergoing an identity crisis. In your view, rampant anti-intellectualism, the Americanisation of higher education, the audit culture and the metrification of academic life run counter to educational and human

Figure 7. Michelangelo's Madonna della Pietà (1498–1499). La Pietà, a dolorous image of Jesus and Mary at Mount Golgotha, is a key work of Italian Renaissance sculpture. Source: Traykov (2008).

values such as the love for learning, beauty, and passion. In *Dark academia*, Peter Fleming (2021) provides a historical overview of four shifts that the university has undergone. The first paradigm shift in higher education was epitomized by Wilhelm von Humboldt's 19th-century vision. He conceptualized the university as a place that harmoniously blends research and teaching within the bounds of academic freedom, aiming to nurture students into independent thinkers and global citizens. The next transformative phase began in the 1960s, known as the academic revolution, which democratized access to university education on an unprecedented scale.

However, this led to a backlash and the emergence of the neoliberal university in the mid-1980s, characterized by increased administrative control and the quantification of academic performance. The fourth evolution, triggered by the pandemic, has further propelled the transformation of universities into corporate-like entities, straying even further from Humboldt's model. Despite the shortcomings of Humboldt's idea, marked by elitism and the prevalence of white male privilege, do you think it would be feasible to revisit and adapt his concept while simultaneously eliminating its intrinsic class, race, and gender prejudices? Or is the end nigh? Fleming (2021, p. 19) cautioned, "Beleaguered by managerial bloat, business bullshit and a Covid-compromised economic environment, the idea of the modern university may soon come to an end". Would you concur with this historical overview (see Fleming et al., 2021), and is there any ideal of higher education that we can meaningfully refer to in light of the apparent AI revolution?

SP: Your question points to some very important aspects and steps in the evolution of higher education. Fleming's

book (2021) is excellent, and I really enjoyed reading that. However, the most important step is missing, in my opinion, because it all started at the end of the Second World War. The full commercialisation of education started when all these consultants, experts, generals and military guys on the winning side, especially in America, realized that they were out of a job because there was no war anymore. So they found very convenient jobs in international organizations, and they came with a certain view of the world. Amongst these international organizations are OECD and the World Bank; they shape the world and education according to their views. In the 1950s, and then especially after the '60s, people forgot the horrors and the fact that Nazis were pretty good capitalists. Technology and capitalism were not their problems; they were good at them.

There is a great danger in turning capitalism and then technocracy into a religion. It's a very dangerous path. People resisted that, but after the '60s and especially in the '70s, you see the twist of neoliberal ideas gaining ground, also in education. After that, you have the very unfortunate '80s, where you have Reagan in the United States and Thatcher in the UK. They come with this disastrous ideology that never worked.

This is another thing that is magical for me because neoliberals are supposedly good with money. The deficit started in the United States with Reagan's ideas. What is so wrong in looking at the evidence? The evidence is that neoliberalism destroyed the fabric of society, the nature of education, and healthcare. It started to erode the foundations of civil society. Even economically, it wasn't working. It made the rich richer and the poor poorer. The budget went into deficit. This is what happened both in the UK and in the United States. In terms of the misery created in the UK by Thatcher, you just have to read what people at that time were writing, including American diplomats. Even Henry Kissinger, one of the most strident supporters of Thatcher, noted that Britain at that time was a country in disaster; in private conversation with the US President, he observed that "Britain is a tragedy... it has sunk to begging, borrowing, stealing" (Kissinger, 1975).

Way before COVID-19, we have a crucial moment in the history of academia. There was the 1994 meeting in Marrakesh, Morocco, organized by the World Trade Organization, and they came up with this great idea: a General Agreement on Trade in Services (GATS). I'm being sarcastic: it's not great; it's terrible. They come up with this weird idea to include education in trade agreements, and this is causing a fundamental shift in the way we look now at education.

Fast forward to 1999 in Seattle. It was very violent when they organized the WTO conference. What the protesters were saying is entirely forgotten. What happened was that education services were included officially for the first time in human history as a tradable commodity. This shift is minor for people looking from the outside, but it is enormously consequential. You don't make a difference in terms of profits, money and markets from fridges and cars to teachers' and students' education. I'm being serious, no irony or sarcasm: it is important for any educator to attend an international education fair because it's like a cattle fair. You realize that you remove the word students and then it's like selling cattle. It is dehumanized and horrifying. Learning is not part of the discussion. It is all about profits and markets. You replace students with anything you want, and you realize where the problem is. Human learning is not happening this way, and this is what changed education entirely. I fully agree with what Fleming said: hit after hit came over education (Fleming, 2021; Fleming et al., 2021).

There is no surprise that in the United States, you see books banned. That's a very concerning sign. I lived in a dictatorship where I was reading books in secret. I got in trouble in high school because I was asked what it is to be a patriot, and I was naively honest. I was called into the principal's office, and I was threatened that I'll be thrown in prison with my family.

JR: Oh my God!

SP: I was thinking they had no idea what I was thinking about. I read a forbidden book; it wasn't a bad book. It wasn't a toxic book. It was just not aligned with the party in power. That's it. You have the attack: burning books is not far, going against teachers, going against intellectuals. They are all fascist tendencies. I call it fascism because this is a serious threat to the world. And academia is at the core of that; it is under threat, and it is under threat since the WTO said: 'Forget about what you're doing. All that matters, in reality, is how much money you bring and how much money you give back. What are your books showing? You have the right balances. This is what matters in reality.' And the intellectual conversation just ended. It becomes dangerous when the managers have no respect, no concern and no understanding of why education is important. Why are these discussions important? They are deciding your future if you can pay your bills next month. It becomes very dangerous for anyone responsible or minimally realistic to engage in an honest manner.

I use the example of the crisis of academia and what is happening in reality. A report that was published a while ago, called Google Academics Incorporated (Tech Transparency Project, 2017), shows how these big companies, unethically and potentially criminally, buy influence and target academia on purpose. What this report shows that the best and most respected scholars and universities in the world are part of this research game where they publish research. They don't disclose any conflict of interest, and then they say, 'Oh yeah, this is great; it's going to help a student. It's going to help whatever.' But they are paid in reality by those who sell that technology, and this is where the problem starts.

This is a very serious, well-documented research. Another thing that is used by big corporations is to drag you down and destroy your life through lawsuits when you dare say something against them. Even if they know that they are going to lose, they know that you will go bankrupt and then your life will be destroyed. This report (Tech Transparency Project, 2017) is so important because it's uncovering that the space of honest intellectual conversation about the social and educational implications of what is happening in the world is tainted and that you have no protection.

When I wrote this book (Popenici, 2023a), I thought about the consequences. It can be laughable, but it's not. I was thinking about 25 years in higher education. This is where I actually started to work, and I worked across the world in Southeast Asia, North America, and Europe. In all these parts of the world, you see how every day is bringing a decline. What Fleming (2021) is saying that we are close to the end, I think, happened a while ago. I don't think we have universities as we imagine them. We still imagine them, and I go back to one of the 'saints' of the conservative movement, Disraeli, a great politician and a great intellectual. I can't be blamed that I'm using someone from the right. Benjamin Disraeli said at the end of the 19th century [in a speech at the House of Commons on 11 March 1873] that a "university should be a place of light, of liberty, and of learning". We all know, if we are honest with ourselves, that learning is pushed to the margins of the conversation in universities. The most disadvantaged parts of our university are schools of education and the least relevant, and also probably the most dull. Go to law! Go to business! That's where you see the power. That's where you see the influence. 'Education is creating teachers, they should be happy that they still have a job.'

> *A "university should be a place of light, of liberty, and of learning" (Benjamin Disraeli).*

In terms of how students learn, I can quote you something that was published in The Guardian (Cassidy, 2023). They quote a student in Melbourne, and this is part of a report put together by Monash University: "International students are considered cash cows, not humans" (Cassidy, 2023). That's a real problem! Dismissing it is easy. The reality is that we have to admit that how much students learn is not at the core of what universities are doing now. Learning is just part of the mission statement, and that's why I said artificial intelligence is coming at a point of a very serious crisis for universities.

What do we have academics for? To analyse the impact of artificial intelligence with courage, intellectual vigour and substance; to warn society, this is what you're going to deal with. If you are too honest, then goodbye, research funds. You don't have research. You may not have a job. You say some controversial things that one executive in your university may be personally upset about because it's this new religion of technocracy. It's a real religion, and you have zealots with religion, and if you dare question the religion, you may end up like Giordano Bruno. You can be burned. That's a very serious context where we have this problem. We are part of the moment of the end. We have to decide now, in my opinion, what is next and who can survive in terms of institutions of thinking. Is there going to be a reaction from civil society? Is it going to be a political movement, to think? Universities are not able to attract the best and the brightest because they're just not paid; it's very hard.

> *This new religion of technocracy is a real religion, and you have zealots with religion, and if you dare question the religion, you may end up like Giordano Bruno. You can be burned.*
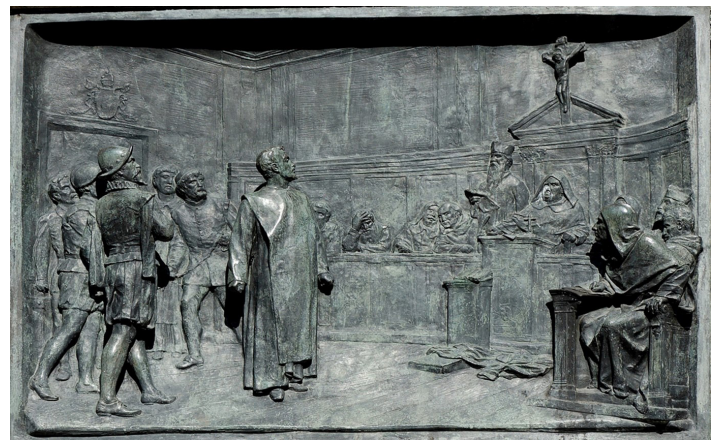

Figure 8: The trial of Giordano Bruno (1548 – 1600) by the Roman Inquisition. Bronze relief by Ettore Ferrari (1845-1929), Campo de' Fiori, Rome. Source: Relief Bruno Campo dei Fiori n1. (n.d.), public domain. At his trial, the Church authorities convicted Giordano Bruno, and he was taken to Campo de' Fiori, stripped, tied to a stake with a metal plate clamped over his tongue, and burned alive. His books were banned and placed on the Index of Prohibited Books.

It's a climate of fear, control and surveillance. I spoke recently about COVID-19 with a respected academic. I don't even think the country is relevant, and he said, 'Before I left my university during COVID, we had people from Human Resources jumping into our meetings on Teams and saying we are here to keep you under observation.' This is the culture of control. We know it's happening, and it's present. The climate of fear and intimidation, including intellectual intimidation, is very real. It's cultivated as a method of management. This is how you keep people in line: you keep them afraid. I'm lucky because I think there are things that are more important in life than your career. This comes with a certain recklessness. You can call it the advantage of being shot at during a violent revolution and getting away alive. You realize that maybe it's something more important than your next paycheck and your career. Fleming is spot on when he's talking about all the bullshit, all the managerialism and all the nonsense that comes now with academic life. But this is a very dangerous moment for all of us, and I'm not sure that politicians and civil society are aware of the great risk we face.

> *This is a very dangerous moment for all of us, and I'm not sure that politicians and civil society are aware of the great risk we face.*

STYT: Thank you, Stefan, for providing the fascinating historical context of how the whole of education has become marketized. It reminded me of my own doctoral studies on education reform across the world, during which I argued against the idea of marketization, which happens in the context of the indiscriminate use of technology in education.

JR: Is there anything about Humboldt that is worth rescuing?

SP: I think it's very important to look back at that moment. I make this point in a book that I put together with a colleague on German education (Nickl et al., 2020). What

I tried to explain in the introduction of that book within German studies is the way we understand modern higher education since WTO happened and since rankings became a thing. All these things are more recent than we realize. We think this model has been around forever, but it wasn't at all. Higher education used to be free, and now we talk about graduates starting their life with $100,000 in debt. That was not the thing in our lifetime. It's a very recent thing.

The modern idea of higher education is a creation of concepts that were common in the German space, and scholars from Harvard got in contact with that. The ideal of *Lernfreiheit* (freedom of study) was immensely influential. In the late 19th century the concept was taken by American scholars and adopted by Harvard University, and changed the landscape of higher education since then. This idea reshaped the academic direction of Harvard to such an extent that in 1897 the only compulsory course left was the freshman rhetoric, while all other disciplines became open to be selected by students. Since then, students had the option to create their own academic and learning pathways. This is how the modern idea of a university was created. Of course, you see the need to improve on it, as the Humboldtian model was a discriminatory model that favoured elites. You have to remove that. Going back to Disraeli, higher education was the idea of having a place for intellectual nobility. It wasn't about the social class. It was about the intellectual class. I grew up very poor. It was a poor society because of Communism, and I was the poorest in the poor society. That's not a nice thing. I'll never resonate with the idea of elitism because I know what it is like to be on the other side. I know from experience and it follows you your entire life.

It's not that elitism that should be grabbing our attention in the Humboldtian model; it should be this idea of the "aristocracy of the intellect". That was an expression that George Steiner (and Max Weber) used. Disraeli said that a university is a place for the cultivation of the intellect for innovation, for research – this is the place of liberty and light. There is no liberty in reality in universities now.

You can go like this if you question the new mantra. I remember questioning the wisdom of putting all the money into one thing. This is what happened in Australia: some universities put their entire budgets into the next big thing – Massive Open Online Courses (MOOCs). The University of Virginia fired its leader because she wasn't fast enough to adopt the next big thing – MOOCs. I was thinking: this is madness! We already have MOOCs. It's called iTunes U – it is not a new thing.

It is not going to change structurally and fundamentally the universities. But the argument from the zealots from this new religion was reflected in an editorial written by an executive of an Australian University (Barber, 2013). Now that we have this free flow of information – this was in 2013 – universities had just one challenge: to sell their campuses to real estate developers. That was the idea, and I was thinking, 'Oh God, another manager discovers the Internet'. It is not a new thing! We had this thing for a while. This is not how things work, and this is not what a university is about. It is not about selling packages of stuff.

This is going back to Humboldt. This is what we have to rebuild if we are going to have a future, our civil societies, and this is my dream – to live in a society that is civil and free.

You can grow and develop your own identity, and you don't live with constant fear and surveillance, and the only way is to recreate these spaces that were imagined at that time by Humboldt. I think it's a very important project that, for a variety of reasons, must be revisited and not only Humboldt. It's a sum of ideas that we had floating at that time in that European space, and it was put together by Humboldt with the modern idea of the university.

STYT: I want to find out more about your explorations of the relationship between intelligence, imagination and AI. You remind me of how George Siemens et al. (2022) wrote about human intelligence versus artificial intelligence. At that point in time, we were still not so close to what we are seeing today in 2023. You argue that higher education institutions' key challenges are not technological but political, educational and cultural. Earlier, you talked about the need to be courageous. I particularly resonate with you that we, as academics, need to have courage in these very challenging times as we move forward. I think you partially answered the question already. Could you please elaborate a bit more beyond what you mentioned earlier?

SP: The first important point is to go back to look at what is human intelligence and what is artificial intelligence. Then, if we have the patience to look at this label 'artificial', it is not something that is positive. The first thing that comes up is 'fake', 'made up'.

It is in the name; the name is warning us before anything else that it is artificial. Don't take it as the whole thing. All findings have shown that the kind of skills and abilities that are captured by artificial intelligence are very different and very limited in comparison with human intelligence. This is very important to keep in mind when we talk about education and about what artificial intelligence can do.

I can give you one funny example that is true because artificial intelligence was developed from the very beginning in collaboration with the military. Since Turing, by the way, since he came up with the inception, the label was not yet created. That came in 1956. He came up with the idea, but since then, it has been a military project. We have to think about that it wasn't an educational project. It was a military project, and then that came with a very certain focus and a very certain set of capabilities that were limited to military use: identifying patterns, looking at pictures and identifying patterns of Soviet bases and so on. That was what it was used for. It was not used to solve human problems and human challenges. That's why artificial intelligence is presented now in a way that is going to put humans out of business. Well, why don't we have a solution for COVID-19? It is a virus that we can see under the microscope. Just use this magical thing and get rid of COVID-19 because I don't want to get sick. Not even vaccines work so completely. They work, of course, but they don't get rid of it entirely. It's important to look at what key challenges humanity now faces.

When I look around, I don't see challenges with technology. I have magical technology to turn on my light. I'm just saying, 'turn on the light', and it's turning on. "Play the music", it's playing and so on. From a technological perspective, my car is magical: it is doing stuff that I never imagined a decade ago that it was going to do. We don't have a big challenge in technological terms. I think we are doing quite well but look seriously at what is dangerous: nuclear annihilation. We have a war at the heart of Europe. That's a real challenge, in my opinion. So we have wars, we have genocide, we have the rise of fascism. We have a crisis that is puzzling the minds of experts in climate change. Those are serious challenges, they are existential, not minor challenges. There are economic challenges and inequity challenges. The kind of society is proposed where the rich get immensely rich. Again, we are talking about innumeracy. It is the same as illiteracy. It's just that people cannot comprehend the kind of money some people make. As they sip their coffee they make a couple of hundreds of thousands of dollars – in just a few minutes – working people are starving. And we have international students who say, 'I came to study, and my relationship with food is changed because I can't feed myself.'

That's not a minor challenge. I think this is where we have challenges, and we are looking at technology. What can we do next? This is incomprehensible to me. I have to admit, it's not the kind of serious challenge. The majority of people in the world breathe in polluted air. And then our problem is technology. I simply don't get it. Polluted air is linked with Alzheimer's disease, public health and with survival. In some societies, when healthcare costs become a burden for society, that's a very serious problem. And then the solutionism of technology is simply not delivering on its promises. Remember IBM's Watson? It was the magical solution not too many years ago, we don't talk so much about that. It came into healthcare promising a solution for cancer (O'Leary, 2022).

I have bad news: it didn't happen. [All laugh.] This is a mechanism that is important to keep in mind: you have this new technology, and it's this magical thing that is going to solve cancer, and then you have a wave of media stuff, and then millions of voices in the public space, dealing with the same mythology and the same religious feelings of how this is going to work and after that, we forget. It's what actually was promised. Now I read that artificial intelligence is going to solve climate change.

This is a mechanism that is important to keep in mind: you have this new technology, and it's this magical thing that is going to solve cancer, and then you have a wave of media stuff, and then millions of voices in the public space, dealing with the same mythology and the same religious feelings of how this is going to work and after that, we forget.

Until then, artificial intelligence is a serious problem for clean water. That's what we have in reality happening right now because you have increased computing power, and this requires clean water. Clean water is a problem across

the world, and the latest studies show that lakes across the world are shrinking. This is our reserve of drinking water, and this is disappearing fast. Artificial intelligence is using what is crucial for our survival, and the promises that it is going to somehow magically solve our problems are questionable. There is no researcher worth their name saying that AI will solve climate change. Serious challenges are pushed aside by propaganda. Unfortunately, I lived almost two decades in a dictatorship: it's like a vaccine. I believe in vaccines. They help you because you create antibodies, and for me, it's the antibodies for propaganda. I just don't believe it, and I can smell it immediately because it's following the same formula.

I visited recently a country with my wife, and then my wife said, 'I don't know why and you may think this is crazy, but I felt like this is Communist Romania.' And I said, 'because fascism is the same, it doesn't matter what flavour, the shade can be red, brown, or green. It's fascism, and that's why you have this feeling.' This is how propaganda works. It is common that we have to look beyond propaganda if we want to deal with solutions.

ST: Now we're going beyond your very important book. ChatGPT has fired the public imagination with a vengeance. Within a couple of months, the AI chatbot has hit more than 100 million users. There is an increasing number of rival chatbots (Rudolph et al., 2023b). What are your personal experiences and impressions of the new generation of large-language-model-based chatbots?

SP: Well, thank you so much, Shannon. You don't have simple questions, right? [All laugh]. The first thing that I can say about this is that ChatGPT, as you said, is one of the things in a long list of shiny things created by artificial intelligence. But I think that ChatGPT is a very important development because it's based on generative artificial intelligence. The advantage of ChatGPT is that it came as a mirror for education, and it shows where we are because it shows that we are completely unprepared for reality. We lose perspective on what matters when we have this engine of mediocre text.

When you look at what GPT and other large language models create in terms of generative texts, they are the most advanced. If you understand how artificial intelligence works, you realize that this is the future of generative text, and you put that text, no matter how good it is, next to what James Baldwin was writing, for example. James Baldwin is coming with fire, ideas, creativity, emotions, and change. That's entirely missing from AI text. It is plausible; the text, syntax and grammar are great but the message is all mediocrity.

We created a space in education of generalized mediocrity because it's better to have mediocrity when you want to control a system that is focused on production and profit. So we managed to create this, and then you have a certain model and view of education where it becomes normal to have a class of 1,500 students. That's not higher learning. You can find a different label. You check how students learn through a standardized test; that's not learning at all. In this context, ChatGPT and other similar engines come and head straight at the core of the problem because you get that immediately in 30 seconds. That's expected and glorified

mediocrity. That's what you have automatically, and it is available to everyone. The way institutions of education reacted shows also the profound incapacity of serious thinking about education. The intellectual endeavours are extracted and dead, and now you have the kneejerk reaction. The ridiculous, laughable reaction of decision-makers in education was 'we are going to ban it'.

> *The way institutions of education reacted shows also the profound incapacity of serious thinking about education. The intellectual endeavours are extracted and dead, and now you have the kneejerk reaction. The ridiculous, laughable reaction of decision-makers in education was 'we are going to ban it'.*

I'm not against technology at all. I'm for a responsible use of technology with a critical perspective on technology. My first reaction was, 'You think you are going to ban this? Then you're going to have to ban the internet.' Because this is right next door, and this is exactly what happened. Now we have a couple of hundreds of AI apps released per month, if not per day, God knows. You have so many things that you don't know. Which one should I ban first? Now Microsoft and Google give you this as part of their normal navigation. So what are these schools going to do? Just months ago came the idea of banning it. You're going to ban Google? You're going to ban Teams? You are going to ban Skype? I spoke with someone yesterday on Skype. You have a permanent presence, your AI assistant. I can ask that thing to write an essay for me that I can submit as my assignment.

The problem we have is that we are completely unprepared due to our glorifying of technology. The very amusing thing, and it is laughable, is that technology is showing us how far we are from what we should do. The risk is that we are going to lose our legitimacy entirely. It's a massive challenge because we turned assessment into this industrial process of mass assessment, with no quality, no look of originality, and need of substance. This is what you have to submit; use citations; use good grammar, and good syntax, and you don't do massive mistakes. It's good to go. You graduate. You're good. It's fantastic when we turn the whole system to this; it's just that we lost the plot, and then it is a disgrace. Technology is showing us how much we are at risk. It is striking at the core of education. This is a consequential moment. This is going to change entirely what we are doing for good or for bad.

JR.: How do you foresee will ChatGPT and other generative AI change higher education? For instance, when hand-held calculators became common about half a century ago, there was lots of moaning that this would erode students' maths skills. And at some point in time, spell checkers were banned, and their use by students was regarded as cheating. So is ChatGPT akin to the introduction of the calculator or spell-checker, or is it something more revolutionary?

> *The problem we have is that we are completely unprepared due to our glorifying of technology. The very amusing thing is that technology is showing us how far we are from what we should do. It's a massive challenge because we turned assessment into this industrial process of mass assessment, with no quality, no look of originality, and need of substance. This is what you have to submit; use citations; use good grammar, and good syntax, and you don't do massive mistakes. It's good to go. You graduate. You're good.*

SP: It is very important to deal with this problem. ChatGPT and generative artificial intelligence are structurally and completely different, and it's a very simple fact. Calculators are dealing with things that are not on itself sufficient to pass an exam. Spell check just helps you to write better English or whatever language you speak. It's not changing much in terms of text. Now you have a tool that creates the whole text of the assignment for you, and we have shifted the whole endeavour of education to assessment. This is the core of what we are doing. It is at the point that some universities just outsource teaching and learning to videos that are pre-recorded from five or seven years ago, and tutoring, if there is any tutoring. This has been documented well (Smee, 2023). The use of media for teaching is happening around the world, and tutoring is left to people almost off the street: no skills required, no knowledge, no nothing. It's just pretending that students have some presence there. The real weight is on assessment.

No assessment can be replaced entirely by ChatGPT, and generative large language models. Because assessment is not asking you to come up with anything of substance, it's not asking you to come up with original ideas, God forbid. You have a big problem. It's fundamentally different. This is not spell check. This is hitting the model at the heart. It's a spike in the heart of the model of education as we have it today, and it's going to be a massive change. It's truly revolutionary, not because it's going to bring something necessarily better. It is revolutionary because it's going to ask institutions: what are you actually doing?

> *Generative AI is a spike in the heart of the model of education as we have it today, and it's going to be a massive change. It's truly revolutionary, not because it's going to bring something necessarily better. It is revolutionary because it's going to ask institutions: what are you actually doing?*

I did nationwide research on student motivation for learning. It turned out immediately that students find motivation for learning central. There is no surprise. There is a long literature showing that student motivation for learning is crucial for the quality of learning and the way they see their academic careers. In terms of motivation for learning,

if we don't change our project of education, this is striking again at the core of motivation for learning. Because if you reduce learning to assessment and the assessment can be outsourced by students to just write a sentence and think a bit about the text you have no motivation. Why would I do that? Why would I learn anything? Because I can just give it this AI solution. The kind of implications for universities are massive.

For society, let's imagine that you have engineers not interested to learn anything, and they build bridges. I wouldn't use that bridge built by graduates who used generative AI to pass their exams. It's going to fall apart. I wouldn't go to nurses who do that, and so on and so forth. It is very serious. I fail to see any politicians so far in Europe, the United States, or Oceania who are actually looking at these aspects. There is no discussion about how is this going to impact students' motivation to learn. How is this going to impact the nature of our universities?

The real concern is how can we jump faster than China to do artificial intelligence. How can we adapt better than this country and that country? There is a fear of missing out on the global scale and without thinking about what we are actually doing. It's just 'we have to do it faster than others'. It's a concerning moment.

ST: ChatGPT and other chatbots (like Bing Chat, Bard and Ernie) are the latest shiny thing in the long history of AI in education. It may be too early to determine ChatGPT's (and GPT-4's) place in that history, but what are your preliminary thoughts? How should higher education institutions deal with generative AI, in your view?

SP: I partially covered this previously. I'll just focus on institutions of higher education because it's going to be immensely consequential for universities. It is a revolutionary moment, it is the mirror that is put in front of us. Using generative AI is the kind of mediocre thing you do, and this is not higher learning; this passing assessment is done by a statistical model of predicting what word and then sentence comes next. The mirror is saying: "you should be ashamed of yourselves, guys!" This is what we have. This is the message.

But how universities should deal with that, in my opinion, should be a step back and question the new religion to have a serious discussion rather than the fear of missing out. What is our model of teaching and learning? Is teaching and learning still important?

I look at teaching and learning and my personal experience. I shouldn't use an anecdote, but I confess to this guilt, I'm terrible. When I wrote in 2017 about artificial intelligence in higher education (Popenici & Kerr, 2017), universally, the feedback from peer reviewers came that this topic doesn't exist in our field. Why don't you write about learning analytics? Not because they really care about learning analytics, I suspected, but because learning analytics was the fashionable topic. It was what the whole field was dealing with. But there was no interest in this, and now you have a stampede of experts in artificial intelligence. I think I'm going to get lessons in artificial intelligence from the cleaner at my university. 'This is what it is, Stefan, and this is how

you should use it.' It's just everybody, and I'm grateful that they're suddenly interested in my topic of research. I'm grateful that my book came at the perfect time. That's very lucky.

But the point for institutions is that they're still lacking any serious concern about the impact on learning and teaching. You can see this in the literature; in the kind of research projects approved or already running. The interest in artificial intelligence in higher education is not on the impact of learning and teaching, and unfortunately, this is the most significant impact. A university in the United States did a study and assessed how jobs are going to be replaced by artificial intelligence (Felten et al., 2023). Then they identified the top occupations exposed to language modelling where in universities, teachers of various disciplines are going to be replaced by these things.

It's a stab in the heart by a group of experts. It shows if you think about it, if you read literature, if you look at facts and if you look at studies like this, you realize that the most affected space is going to be learning and teaching, and it is still marginal for research, academic discourse and politicians. This is what should be at the centre of what we are talking about because if we don't have learning and good education, we don't have a future.

It's not a compliment: one of the countries that I genuinely love and admire is Singapore. I genuinely love and admire it because education is at the core of that country's project. In my country, higher education is really concerning. There is no interest in substance, and there's no interest in crucial areas like learning and teaching. How is this going to impact students? How is this going to impact teachers? How is this going to impact our model of education? 1,000 students in a classroom, is this making sense in the new context? So this kind of questions should be critically examined.

STYT: Talking about the political aspect of higher education, I just recalled something that I lamented to Jürgen a few weeks ago. I was commenting that the US Senate hearing was grilling TikTok CEO, Chew Shou Zi. I was watching it and thought they were barking up the wrong tree. You have your backyard on fire with an AI crisis, and they are not doing anything about that. Well, soon enough after that, they had this Senate hearing with OpenAI CEO Sam Altman. They were so aggressive towards Chew but so civil with Altman, almost like doves. They should be very suspicious when you have a businessman like Sam Altman asking the government to enact stricter laws in managing the growth of generative AI. It was either to stamp out competition and enact laws that favour OpenAI or to ask for a way in which he can manipulate the legislature that will favour OpenAI. Obviously, politicians know very little about AI technologies and their impact.

SP: Altman is a very shrewd and cynical operator. I remember he was quoted in Forbes a couple of years ago. And then he said, "AI will probably most likely lead to the end of the world, but in the meantime, there'll be great companies" (meaning, companies that are making a lot of money) (cited in Popenici, 2023b). [All laugh.] This is the idea. When you look at what he's doing, he's bringing a double-digit billion

US dollar amount into his company, he is making a lot of money. Obviously, when he's bringing a lot of money to this mind-boggling extent, it shows that this is his main interest and his main value. I'm just being logical here. You have to take what he's saying with some healthy suspicion, and here is my problem with what he was saying. He is saying that you have to regulate us is a very typical distraction of big tech because they don't observe any rules of common sense, decency, and laws.

You see what Silicon Valley startups are always doing and how there is no concern for workers. There is no concern for those who are going to be affected. It's just what happened. We start to film people around the world and then take photos of all streets and stuff. Is this legal? 'We don't care. We are just going to do it.' This is the modus operandi for these companies. I've never seen social responsibility in reality associated with their endeavours. So when Altman is calling for regulation, it's a bit too late. You scrubbed the Internet, you don't care about copyright. These texts were created by someone, and they're creating now value for you personally. He didn't care about regulation. He used poor people in Kenya to be exposed to some of the most horrifying and traumatic content (see Rudolph et al., 2023b), and he didn't care about the consequences of that work on their life. Suddenly he's concerned about regulation.

I think that in reality it's more a concern about distracting from specifics because I can do the same. It's just when my students, let's imagine, would say, 'Stefan, your teaching sucks because you don't have time for us; you skip over topics; you don't care about your assessments'. And then my reaction can be, 'the field of higher education is problematic'.

Let's go back to what was the discussion. Let's go back to the specifics. Let's talk about it before it ends the world. How is this going to impact the workforce and learning? All the things that I mentioned before. Is this a trick to pass responsibility back to the regulators when it's already too late? So what he's doing in reality is just, 'oh, we are the good guys here. It's you who should do the work of regulating us'. You didn't care until now. You break all the rules of common sense and of humanity (think about the poor workers in Kenya as an example). Now, after it's a fait accompli, they say, 'come, regulate us'. I'm sorry, but I don't believe it. It's very significant that this is where we are, and we miss the specifics.

JR: I'm wondering if you have any kind of final thoughts on assessment in Samson's question?

SP: This is important because, as I said, we created this space of mediocrity. This is where assessment has the greatest weight and importance in our educational project. Now large language models strike at the core. Assessments are crucial in any scenario. Imagine the future and how we organize higher education. Of course, we should have assessments that are more authentic. I'll go back to what I mentioned very briefly before. Higher education was not always 'modern' in the 20th century. It was different. We have to make some very important choices if we are going to create meaningful assessments.

In my own education, seminars were a very important part of assessments. Your work in seminars etymologically comes from the Latin *seminarium*, meaning seedbed. You plant the seeds of ideas, critique, engage with the text, and become part of the learning process as an informed contributor and participant in the conversation about the topic. This is removed when you reduce assessments to multiple-choice questions or an essay with no meaning. But when you think about assessments in a more personal, significant way, ChatGPT is becoming marginal. It is becoming, as it should be, an assistant.

Your pocket calculator is not taking the crucial role that it is playing now, and then I don't blame students for using it because, first, it's tempting; it's doing the kind of meaningless work they are asked to do in a couple of seconds. Why not? I mean, they have their own lives. They have their own challenges. They deal with this faster and more efficiently. (By the way, it has better syntax and grammar because we don't teach grammar in Australia.)

This is why it's important to look at assessments, but looking at assessments to deal with large language models such as ChatGPT requires a rethink of the project of education that we have. Lecturers discovered that in one class, 44 students used ChatGPT. My reaction was 'only 44?' [All laugh.] 'Or you're not really good at catching them.' Seriously, it's just that, or you got the laziest who just dropped entirely what ChatGPT gave and then did not even bother to look over it and think a bit about the text. Anyway, 44 students used that panic and the reaction we had was to ban it. I said, 'no, you can't ban it. It's not realistic. It's ridiculous'. The solution is to use a different approach. My solution is to ask students to use ChatGPT for this particular assignment. It was a literature review. And after that, I'd say, 'the next part of your assignment is to see what is missing.' Well, this is an easy trick because in order to see what is missing, you have to see what is there. So you have to read, and after that, you ask them to see what ChatGPT gave you and what is wrong. There are many hallucinations (made-up stuff) and factual errors.

In order to find out what is wrong, you have to know what is good. So you ask them to learn. But this is the problem: in time, we are going to have large language models that are going to cover this because they are going to have fewer errors. This is a punch. It is not going to solve forever the problem, and it's an illusion to think that it is going to solve for the long term the problem. We have to keep in mind that we have ChatGPT-3.5 for only half a year. Six months changed the conversation entirely in education. This is the pace of change. If we don't change structurally and substantially the way we look at education, we are going to have a process where students are going to use ChatGPT-like technology to submit their assignments. Lecturers overworked with 1,500 essays are going to submit these to AI for assessment, and then you end up with a process where nobody's learning anything.

JR: Exactly. [All laugh.]

SP: And I wouldn't go on that bridge again.

JR: Thanks for saying this so well. We may arrive at a situation where the lecturer creates the assessment using ChatGPT, then the students write the assessment using ChatGPT, and then the lecturer will mark the assessment using ChatGPT, and nobody learns anything.

> *We may arrive at a situation where the lecturer creates the assessment using ChatGPT, then the students write the assessment using ChatGPT, and then the lecturer will mark the assessment using ChatGPT, and nobody learns anything.*

SP: This is a very real scenario. Apple just banned some employees from using generative AI. When I was discussing this, I thought that's a very shrewd corporate talk because they say 'some employees', and you think, 'oh they're very flexible'. Some employees are free to use ChatGPT. Basically, they're free to use whatever they want, but people with anything of substance are banned to use ChatGPT. Why? Because they know that people use it, and universities should be aware that not only students but academics use this to create their own content and their own assessments and then their own stuff. So the process that you just summarized, Jürgen, is very real. It's not a stretch of the imagination, it's happening.

JR: What will generative AI do to graduate and academic employment? Daniel Susskind (2021) recently wrote a book titled *A world without work*, and Aaron Bastani (2019) a manifesto, wonderfully titled *Fully automated luxury communism*. What are important skills and competencies for graduates to become and remain employable? How do you see the future of academic work in light of generative AI?

SP: I'm familiar with Susskind's book. The future of work and unemployment is an area that frustrates me because there is no concern about these corporations making immense profits on the kind of impact in people's lives, the kind of social discontent and social tensions this is going to cause. It's definitely going to impact massively on the future of our graduates. They are going to face an even more difficult employment situation when they graduate. I have to be honest: I can't figure out how this is going to look. It depends very much on the kind of society we will have. If we are going to cultivate responsibility and civil society, then we can hope that this is going to be managed somehow. But if we are going to go to highly extractive practices and see authoritarian impulses developing even more, then for individuals graduating now, the future is bleak. I have more of a dystopian view of the future of work, and this is truly concerning.

When it comes to skills and competencies, universities again dropped the ball badly. Because the whole logic of running universities was reduced to markets and profits. As I said earlier, the most important parts of the university are considered to be business and law. It is what it is. There's nothing wrong with that. It's wrong that that focus was used against the humanities, and we are going to see some consequences. So far, what we see is that some of the most successful employees working in AI come from the humanities. I think it was in the Washington Post presenting a profile of someone working with artificial intelligence, large language models, and she was making a lot of money. And then she said, 'I have no idea about computers. I'm just a user' in the sense that she was not an engineer. Of course, she had an idea as a user, but not coding. She was a graduate of humanities. And that made her excellent at dealing with the kind of challenges posed by using large language models.

It was the Cinderella of academic life; humanities were less important for universities. I'm not going to defend humanities against anything else. I think they have a very important role, and I'm thinking this 'anti-stance' is very damaging and at the core of the problem. I'm not going to follow the same logic. I think it's important to have excellent business schools, excellent engineering schools and excellent humanities. Without any of them, I can't imagine progress. But in the book (Popenici, 2023a), I use an example that is fascinating to me about what universities are doing without thinking of consequences. This comes from an accident in research.

It was the story of two researchers. One researcher who studied something found a disproportionate representation of terrorists among graduates of engineering, and he found that's a very interesting coincidence. He started exploring that. He joined forces with another researcher, and they wrote a book. Long story short, they wrote a book called *Engineers of Jihad* (Gambetta & Hertog, 2018). When I read the first time about their research, my immediate hypothesis was, of course, that they have more terrorists with a background in engineering because they know how to make damaging stuff. Interestingly, they're not the builders, they're the ideologues. They come with the ideas, they are the masterminds, not the builders of stuff that is killing people. It's also fascinating that after that, the next step for their research was to look at other terrorist movements, not only fundamentalist Islam.

They found again, in the extreme left and in the extreme right, a disproportionate presence of engineers. This is the argument I made earlier with the missed lesson of Nazi Germany that technology without values, without humanity, is very dangerous. But the universities went in that direction at full speed. 'We don't need humanities. We don't need philosophy, only practical stuff'. The first time I heard that 'we don't care about ideas; we care about practical stuff' obsessively was in Communist Romania in the worst years of the dictatorship. It's a massive lie, but that lie was exactly at the heart of that narrative. That's exactly what they sold. 'We don't waste time thinking, we do stuff'. Well, it fell apart and led to poverty. The whole communist bloc, because they were doing stuff without thinking, that's why they fell apart. And all these things should matter.

> *Technology without values, without humanity, is very dangerous.*

This kind of thing is the essence of my answer: Thinking skills, values, creativity, and the ability to think critically. When I lived in a dictatorship, the most obsessive word used in the worst years of communism was "democracy". Everything was democratic. [All laugh.] It was all about citizens. If I hear again about critical thinking, I think I'm going to develop an allergy because you hear the words, and you don't see it in practice. This is not how it works.

If you hear the words 'critical thinking', but there is no critique, and once you see a genuine critique, you're accused of being the enemy of the people, that's the real problem. We have to cultivate the genuine capacity to put a question mark and come up with our set of arguments, engage with another set of arguments and debate the idea. We don't do that because we care about passing knowledge. We don't cover the set of skills in reality. Mostly, of course, I'm talking about general problems. This is the beauty. This is why I'm still in university. Because you find exceptions, you still find extraordinary minds, you find extraordinary people passionate about their students. But I don't want to live in a system where this is an accident. I want to live in a system that works together to advance society, not to think, 'Oh, you know what happened today. I found someone who's interested in the students learning something'. It shouldn't be extraordinary.

JR: What you say about the use of language is very apt. This is why I'm such a huge fan of Orwell's (2021a, b) *Nineteen eighty-four* and *Animal farm*. The whole idea of doublespeak, it's still extremely powerful.

STYT: We are now looking a bit more into the future. Nick Bostrom, a philosopher at Oxford University, has written a book about *Superintelligence*. He is cautioning that after computers have achieved Artificial General Intelligence (AGI – which essentially means that they can think and act like humans), superintelligence may be close. This would mean that machines would be potentially exponentially more intelligent than us humans. One possible outcome would be a humanity extinction event. A more benevolent one, perhaps, would be that computers keep us as pets. And the movie *The Matrix* immediately comes to mind. What are your thoughts on this?

SP: I read his book a while ago, and I was struck by the number of assumptions he's making. Because he's obviously a very smart man, I don't think that these are mistakes. I think they're intentional. The fundamental mistake is to equate artificial intelligence with human intelligence. And when you ignore this difference, you can reach the idea of superintelligence.

I can give you an example that I found funny because this is a topic that is a bit frustrating for me, and I'll explain why. The example comes from the army. They have been the most passionate users of artificial intelligence since 1956, and they asked some military guys to beat artificial intelligence. They used the most advanced, as you can imagine, and the artificial intelligence was defending a perimeter, and soldiers were tasked to beat artificial intelligence and bridge the perimeter. Do you know how they managed to do that? They actually found a solution in playing video games, and

all of them beat artificial intelligence when one of them found and used a cardboard box, while artificial intelligence was looking for a silhouette.

It was not identifying. It was just a box. Another soldier was dressing as a tree or whatever. Of course, you can finetune the artificial intelligence, and you see moving things. But that's not the point. The point is that artificial intelligence operates very differently from human intelligence because you don't have to finetune a human that is standing guard and say, 'no one should pass', and then if it's a box that human is going 'oh, it's just a box walking, that's fine.' We operate differently; we are different. Superintelligence is a myth. That is a distraction from the real problems of artificial intelligence, it is not a real thing.

I don't have the space, and I probably don't have the skills, but I am reading now a book that is called *The myth of artificial intelligence* (Larson, 2021). Erik Larson, who wrote the book, is a computer scientist and tech entrepreneur. He worked for DARPA, the Defense Advanced Research Projects Agency of the United States Department of Defense, responsible for the development of AI for use by the military. So he knows what he's talking about. He's unpacking specifically the myth of superintelligence of artificial intelligence, it is not a real thing. It's not how artificial intelligence works. It's not a real possibility, and it's very unscientific.

Another big problem with the whole idea is the biggest distraction of dystopian versus utopian views – these extremes of 'super AI is going to wipe out the human race' versus the utopian thing that you find mostly in higher education: 'Oh yeah, the next big thing is going to solve all our problems'. Hold on! We have even more problems than before. What's in between is missed, and this is the most important part. If artificial intelligence is going to destroy our modern model of learning and teaching and is going to undermine substantial learning, what kind of future are we going to have? This is what is going to wipe out the human civilization.

It wasn't any technology that wiped out the Roman empire and as a civilization. It was themselves with corruption and stupidity. That's what wipes out civilization, and we should pay attention to what's in between this utopian and dystopian discourse. When people spend all their energy on mostly impossible projects and miss the day-by-day manipulations and problems, we have a very propagandistic reflex to use a distraction.

ST: Could you please tell us more about your own schooling and university education? You grew up in socialist Romania, and admirably, you speak English, French, and Italian, in addition to Romanian. Your Bachelor, Master and PhD (in education sciences) degrees are all from the University of Bucharest in the post-Ceaușescu era. Could you please reflect on your own education? Were there any formative experiences that influenced you to become an academic?

SP: That's going to put me in a space that I avoided, not necessarily intentionally. I just don't find reasons to talk about that part of my identity. I grew up in Communist Romania, and in the 70s, Romania was the most open country in the

Communist bloc. That's why the President of the United States visited for the first time a country in the Communist bloc, Romania. And after that, the leader of communist Romania became, at an accelerated pace, increasingly crazy and authoritarian. I shouldn't say crazy. It's not professional, but he was totally crazy. [All laugh.] And very authoritarian.

Figure 9. Nicolae Ceauşescu and Kim Il Sung during the party and state visit to North Korea. Source: Fototeca online a comunismului românesc (1970).

The idea was to create in Europe a country like North Korea. It was one of the most extreme dictatorships that you can imagine, and that shaped my identity a lot because I remember that as a teenager, I passionately hated Communism. I grew up in a house full of books. My father was a book hoarder. When I met my wife, she said, 'I've never found a house with so many books.' It was thousands and thousands of books everywhere. I grew up reading, and that was lucky because, at that time in Romania, you didn't need to be rich to have books. They were quite cheap. Also, my father was a librarian, and I was sneaking into the part of the library with forbidden books that were locked. But I had the key, and I had access to a wide range of ideas. That time was very important for me, and the most formative part was that I had to drop out of day classes because I couldn't afford to go to them. I had to work, so that was the perfect mix for me for daily contact with real life and daily contact with intellectual life. I don't think now, as an adult, that you should have just one. You should have both for a proper understanding of how the world is going.

In 1989, it was a bloody revolution. Because I passionately believed that the regime should go, I was on the streets, and that was a very intense experience. They're shooting to kill, and I remember that people were shot and killed next to me. So I graduated from high school, and I was working, and I realized that at one point in '92, I had to go to university. It was very difficult because we had limited access. There was a quota, and university places were very limited. Most students had private tutors because one of the things in Communist regimes was that you were not equal at all. They didn't care about weaker people. When I decided that I hated the

regime, the next thing for me was to go to the public library and borrow books from Mao, Marx, and Lenin. I'll never forget the look on the face of the librarian. She looked at me like, 'you're young, and you lost your mind completely'. [All laugh.] But the next thing I realized reading was that the most aggressive propagandists (called *Politruk* – political appointees) had no idea about Communism whatsoever. So that was really interesting. It was just a dictatorship, fascism with the red shade.

When I went to university, I was lucky because the university was very traditional. But Ceauşescu banned psychology and pedagogy. What was called education sciences and sociology was also banned. They're considered dangerous disciplines, and as you can imagine, academics managed one way or another to flee from the country. So I went to university at the moment when many good professors were back in this newly re-established faculty. Then, many academics from abroad came back from the UK, Germany and parts of the world that were completely foreign to me. They came with a very different way of teaching and dealing with us. We lived in a generation that was just out of a revolution with very naive ideas but full of passion. One naive idea was that we could change this country; we could make it better.

I grew up in this constantly revolutionary mode, I hated communism. I was a terrible student in high school. I was the best student in university. I was living as a student in a traditional university, and most of my professors were coming from a very traditional background. And it drove them crazy to have the best student in that generation with very long hair. [All laugh.] It was completely against their idea of what a good student should look like, and then when I finished university, I had short hair like at present.

There was a lot of enthusiasm for learning in my generation at that time: 'We can make it better through education', and that's why it's an important project. I still keep this at the core of my beliefs. It was a very different model of education. We had groups, and we had seminars, and then we had viva voce exams. We had the real personalised education where you can actually see people in front of you, and then these people can actually hear you. In seminars, what was the model? Attending seminars was compulsory. Many unfortunate colleagues dropped out because you had to attend seminars. But if you attended the seminars without reading the books – not the book, the books you have to read for every seminar – you were a subject of ridicule, and you lost face. You didn't want to be in that position, so you had to be knowledgeable, and then you had to engage. That's why you were there. So we had vicious debates, and probably they'll call the police, students yelling at each other with arguments. They were very passionate, I remember the first year was Chomsky versus Piaget, and that was a very passionate debate. But we were talking about this, and we really engaged with that, so that stayed with me. That's genuine education; you engage with content. It is not about ticking boxes at the end, and this is your assessment. It's what you do with knowledge and how you can use it for your part to contribute to society.

Figure 10: Stefan Popenici in the early 1990s.

Now I live in a privileged position. I think I am privileged from all points of view, and I think that the responsibility is to care about those who are facing new challenges, the new graduates. This is how it reflects on my own education. It was a formative time, it was very important for me. This is why I became an academic, it was the idea that I have to give back.

STYT: When you mentioned about 1989, I remember watching on TV everything that was unfolding in Europe. It was surreal to me. Those were very tumultuous years, with lots of changes after that.

SP: It was surreal being there as well.

JR: It sounds extremely frightening what you were sharing, Stefan, about people being shot and you being on the streets. That was very brave. My perspective is quite different because I was very lucky to be born in former West Germany, and so I didn't go through the velvet revolution in East Germany or the bloody revolution in Romania. Could you tell us a bit more about your future plans? And is there anything we did not cover that you would still like to talk about?

SP: I think we covered a lot, and I think we covered the most important parts of the topics. I don't think we missed any points. In terms of future plans, the biggest plan is a new

book, it is called *Education in the age of artificial intelligence*. It is about narratives of humanity, higher learning and the challenge of artificial intelligence. It's still focused on what I consider to be the greatest challenge for universities. This book is already keeping me awake at night because I'm thinking about how I can address this. Because of this, I think I'm going to reduce my public speaking events because I try to be entirely focused on that.

Thank you so much for your work and for your time, and for your excellent questions that made me think and stay engaged. Thank you, Jürgen, Shannon and Samson!

JR: On behalf of us, thank you very much for this fantastic interview, Stefan!

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