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Thinkers Lodge Summit on Nuclear and Climate Crises

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Interviews with the Thinkers

Catastrophic Risks to our Civilization

By Karalee Clerk

“NASA climate scientists have calculated that detonation of less than 1% of the global arsenal of nuclear weapons would cause a global nuclear winter with catastrophic climate consequences.”

Nancy Covington

2021 finds us on the brink of ecological and societal collapse. The lessons of past eras—arising from times of war, struggle, prosperity, and sometimes, even peace—seem to have been lost and forgotten.

What is the nature of humankind that they can so easily ignore the obvious, but more critically, what are the whys that makes this so possible?

Two thinkers consider human nature and the situations contributing to the risks and threats facing all of us in these times.

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NANCY COVINGTON



When Nancy Covington adopted Nova Scotia as her home province, she dreamt of one day having a great garden. Eventually, she discovered the province wasn't always foggy or windy, and as she roamed, she found it to be filled with beautiful places—land, sea, lakes and forests. Now living on a stretch of land in Indian Point, on Mahone Bay, she has that garden, and she wants to do what she can to ensure that beauty of place and gardens will continue to thrive in an increasingly worrisome world.

Nancy attended Carlton University for a degree in physics, and then Queens for medical school. It was there she realized her bent in medical school was looking at prevention of disease and public

health—with an emphasis on keeping people healthy, as opposed to treating problems later. She carried that idea of prevention forward as her career took an unexpected turn into nuclear weapons and disarmament.

Growing up nuclear ...

I was born two days before they dropped the bomb on Hiroshima, August 4th 1945. My dad actually saved the newspaper clipping describing the bomb, which was about a $\frac{3}{4}$ inch column in the paper that said it was ‘dropped successfully.’

Basically, I grew up during the cold war era. In school, we had two types of drills—one was a fire drill and the other an air raid drill, and I reasoned—*okay, for one drill I run outside, so I don't burn up and for the other I ran into the hall or under my desk. For sure, I am going to get those bells mixed up and run the wrong way.*

It was also a time when people in my own neighborhood were building their own basement bomb shelters and stocking them with food. My dad said, we have a basement room, so we aren't going to do anything special. He also noted there was an extra shelf of canned goods down there for us.

My thinking was rather practical—why would I want to live in a basement for an hour, let alone a month? Where is the toilet, water... how could you possibly live there? I preferred the outdoors. And thought the whole idea ridiculous. But then, so was the fact that nations all over the world were exploding nuclear test bombs on a regular basis, just because.

The (supposed) logic of nuclear weapons...

The theory was based on a Deterrent Rhetoric—*we have bombs, you have bombs, we're equal in numbers, so we're all safe*—which was really at the heart of it - a Mutually Assured Destruction. What this approach meant was if your bombs go off and my bombs go off we're all in a nuclear winter, and this theory is still in effect.

Whether anyone delved into the idea of Nuclear Winter is questionable. I remember Life magazine created a cover visual that showed a nuclear winter as a place that one could not grow food for a number of years, following the detonation of nuclear weapons, representing less than 1% of current nuclear weapons. The concept was developed then, and it remains true today. And I was struck by what I saw and wondered how we would grow food, and it's something that I've never forgotten.

As an adult, my involvement really began with two cardiologists with opposite ideologies, Eugene Chaov and Bernard Lown. They realized the biggest threat to the health of human civilization was nuclear weapons, and they worked with their respective political leaders to pass on that message, efforts that eventually helped to de-escalate the Cold War.

In 1980, they founded the International Physicians for the Prevention of Nuclear War (IPPNW), and in 1985, they co-received the Nobel Peace Prize for their work during the Cold War along with IPPNW. A Canadian chapter of the organization was formed, and that's where I came in, becoming a part of the many working toward nuclear disarmament.

Onto forced forgetting...

Canada actually provided the uranium for the bomb that landed on Hiroshima. The uranium was refined in Port Hope, and was used to build atomic weapons until the 60s. Canada also had nuclear weapons until 1963, when Prime Minister Diefenbaker had the weapons dismantled.

After WWII, people realized nuclear weapons were more terrible than they thought, yet governments still wanted to investigate them. So they made it palatable by focusing on using nuclear for power generation. President Dwight Eisenhower proposed the term *Atoms for Peace* (instead of for war), and then went on to sell that to the public with propaganda marketing—*this is where we are going and this will be good for you*. The intention was to manage emotions and fears around nuclear armament by cloaking nuclear in peace and energy. So nuclear was repackaged to the public as nations continued to develop and stockpile weapons, without the public's knowledge.

Along came greenwashing...

Hiroshima and Nagasaki are on no one's minds. And all these years later, there remains no known meaningful medical response to the effects of a nuclear detonation. Yet, the recent surge in modernization of nuclear weapons means the risk of an accidental or intentional nuclear catastrophe has increased markedly since the Cold War.

Meanwhile, generations today are aware of nuclear power primarily as an energy source, such as for small modular nuclear reactors. The accompanying rhetoric has turned these reactors into a very palatable acronym, SMR. The nuclear industry came up with the catchy term, eliminating the 'N' that stands for Nuclear, and SMRs been adopted and sold to the public as energy that is green, clean and safe. The public accepts this. The media accepts this.

The truths are being greenwashed.

Nuclear waste—the untold story...

So, how much of this nuclear process is environmentally responsible? Think about what we're already dealing with from existing and decommissioned CANDU nuclear power plants, being they only last from 20 – 40 years. Radioactive material builds up in the physical infrastructure because eventually, all materials become radioactive. While the talk speaks of retro-fitting these plants, this cannot be done. Rather, they have to be decommissioned, leaving behind a pile of radioactive materials from the physical plant—rods, cement and more—to contend with.

No one knows what to do with our current nuclear waste and now the plan is to put NMRs everywhere, and what these small reactors do is take nuclear waste and make it an even more difficult waste, is even harder to get rid of.

Nuclear power is more expensive than renewable solar, wind, or energy conservation, and plans for these reactors have not yet even been developed, and experts estimate it may take 10 years to build a functional unit. Now add Climate Change. By the time the SMRs come online, they'll be too late to make any positive impacts on the issue.

Yet the government is absolutely behind the use of nuclear for energy, in spite of the risks. Experts have been writing to Trudeau and the government that if you allow the development of small modular reactors, you will be creating a security threat worldwide. Extraction of plutonium to make the SMRs on Canadian soil also causes an increased risk for nuclear terrorism. As yet, he has not responded to any of these concerns, and further, beyond the public's lack of knowledge, province to province, there is also a lack of awareness.

This issue of radioactive waste gets bigger every day, while the government and industry have basically become one, working hand in hand. For example, right now, the federal government is injecting millions into the development of SMRs. New Brunswick, in fact, has been given \$50 million by the feds, taxpayers money that is, to investigate and develop these. And as this happens in real time, my colleagues in British Columbia don't even know about it because there they are worried about the TransCanada pipeline. Each province worries about its own worries, and necessarily doesn't pay attention to what is happening elsewhere.

The cost of great riches...

I think it is both a lack of education and people wanting to make money, including Ontario and New Brunswick who must be very busy dreaming about all the money to be made. For example, there is currently a plan to extract plutonium in the Maritimes, in New Brunswick.

Add up the dollars. Someone gets to do the extraction and transportation to other places, another gets to make SMRs, and another installs them, not to mention the truckloads of cement necessary to build facilities. Another gets to build the roads to deliver units to mining sites and Indigenous communities, and then there is the fleet necessary to market and sell SMRs to the rest of the world.

On ignoring the obvious...

I'm not so sure that most people know that nuclear is not good because even when you go on the government websites, it looks like the industry is highly regulated.

The government makes it look safe when it isn't, and young people believe it is safe.

In reviewing Canada's nuclear waste policy, the International Atomic Energy Commission noted glaring deficiencies in Canada's nuclear waste policies and wanted Canada to correct the issues.

The agency that promotes nuclear energy is also the one that regulates it, and this is how it works both internationally and in Canada. In Canada, the regulatory agencies are linked to the government, rather than operating at arm's length. Citizens are asking for an arm's length regulatory to be created to keep them accountable.

A different meaning of can-do...

Nuclear power and nuclear weapons are something we can do something about, but climate change is much trickier. Its continuing impacts and destruction are becoming more obvious, and they're on a more long-term timeline, while nuclear weapons could destroy everything in short-term. Yet the world is getting lost in words and definitions and perceptions, rather than focusing

on gathering as one for what needs to be done. Spinning wheels makes the change we need even more difficult.

Maintaining hope...

The reality is all civilizations go downhill and come up again in a different way. But the way I look at it is I can't think that way. I want my grandchildren to enjoy the beauty of nature the way I do. And that is why I continue to put effort into making change.

I don't think of my efforts as a drop in a very large bucket. I believe if microscopic snowflakes gather on the tree bough, eventually that bough will bend. But there have to be enough of us working to make the change.

This year, the Treaty for the Prohibition of Nuclear Weapons became international law, making nuclear weapons illegal. The catch is it is only illegal for the nations that have signed the treaty. But there is hope that those nations who have not signed it, will abide by it, similar to what happened with the treaty to ban land mines. This is the best news ever on nuclear disarmament because it prohibits them, and prevention is the only way forward

Petition the government on the treaty and be another snowflake on that tree bough. Seek out and join different groups that are working toward change. While things don't look good, we can still work at it. If we hadn't been doing this all along, where would we be now?

Just imagine if the money and resources spent on nuclear weapons could be more humanely redirected to address the unsolved issues facing humankind, such as climate change issues, poverty or pandemics.

I have to keep hope up, and I'm keeping it for those who will come next. I have to think long-term. I've had a wonderful life, and I want that for others. Giving up, is that a solution? I don't think so.

NATALYA SAMOYLOVSKAYA



33-year old Natalya Samoylovskaya lives in Moscow, Russia. While studying International Relations, she quickly became interested in it from a global perspective.

As she works on her PhD, she continues to delve into nuclear issues at deeper levels, noting the continuing lack of progress in arms control and how that feeds uncertainty in international relations. She believes that is far more dangerous in this digital age, whereby no one wants to have a dialogue on the strategic issues.

While she can't explain right now why that is, she knows those discussions are crucial for nuclear disarmament, as is forming one language, common to all through which to have conversations.

She also understands as technology advances in Artificial Intelligence (AI), and it's application to all industries and sectors, it will accelerate everything. She understands the use of AI in nuclear weaponry, and because of AI, the decision-making process to bomb or not to bomb is an ever increasing danger.

Autonomous weapons...

The position of civil, non-governmental society is very clear—autonomous weapons are a danger. Humankind should be informed and should make the decisions on their development, particularly in the military.

Some countries are very close to functional AI systems, which impacts the development of and ways of warfare.

Protests are happening about decisions being made without humans. Without that psychological dimension unique to our species, decision-making by machines leaves no place for humility and the grief of war. It creates an immunization of war, robbing it of the emotional elements that are an important to humanity in preventing war and in thinking about war.

Conversation in a common language...

The debates in the UN on autonomous weapons definition seem endless. There is much under discussion—decision-making, the need for power and security, concerns for artificial intelligence—it's important to speak in one language, so we can all understand each other. We should think about standardization of words with AI to help form the language. We should focus on similarities.

Talk is important and common language is useful to understand each other, but when we focus only on definitions, we will not find the solution because different countries have different approaches, depending on their definitions.

Ready, or not...

Humans aren't always ready for technology, and we make mistakes before we figure out how to work with the technology, as Hiroshima and Nagasaki have shown us. We used nuclear bombs on *people*, before we understood the capacity of these weapons.

I believe the same is happening with AI. We're trying to develop applications with the military before we fully understand the technology, using both massive military budgets and the influence of politicians that possess great powers as this development continues.

We should be thinking about solving the problems that could make a change in lives, like housing and food security. Now that we have technologies with the potential to improve our life, we should apply them global problems.

Why, instead, do we go to military and warfare?

The whys behind stockpiling and AI...

Priority of power may be a contributing factor. If you don't have power, it is difficult to protect yourself. It's a base instinct, as is the struggle for leadership.

If we speak of AI with China and US and difficulties with these countries, it is obviously about leadership. It's difficult to comprehend where powers will stop in the pursuit of leadership. The technological dimension is a new aspect of this.

What do you predict?

One important dimensions of such leadership should be global responsibility.

What I would like to see is one or maybe two great powers demonstrate a different type of leadership, to stop and think about global responsibility.

