Here we go again.

We're in an arms race, again. But something's different this time.

Fret not for the build-up of intercontinental ballistic missiles (ICBMs), but rather for something more sinister and sly: hypersonic missiles.

Ever since the inception of the first missile near the end of World War II, these airborne devices have rained fire on enemy combatants. And over time, missiles have grown steadily more lethal, not just to infantry and localized military installations, but also to groups, nations, and transnational ideologies as a whole. Hypersonic missiles are the latest in this trend, leaving countries worried and global media even more so (see headlines like "National pride is at stake.", "America's risky hypersonic arms race with China, explained.", and "Hypersonic arms race set to change power dynamics …")

Able to travel at speeds above Mach 5, hypersonic missiles, as the Stockholm International Peace Research Institute explains, are unique in not only their speed but also their maneuverability and flight paths as well. Considering their one-of-a-kind ability to make mid-flight vertical and horizontal maneuvers while retaining supersonic speeds, hypersonic missiles are able to easily slip past enemy detection and defense systems.

While critics are quick to point out that hypersonic missiles are globally in their "prototyping phase", the sheer perception of their development has already inflamed international tensions. The U.S. Department of Defense is pouring $15 billion just this year alone into hypersonic weapons research and procurement programs. In response, China, Iran, and North Korea have collectively conducted several successful hypersonic missile tests. And lastly, Russia actually used hypersonic missiles in war to destroy a Ukraine

munitions depot on March 19, 2022, accelerating the conflict while simultaneously marking the first time that hypersonic weapons have been used in warfare by any country.

If anything, we're on the precipice of introducing yet another possible anthropogenic existential risk, which has begun to manifest itself in three different ways. First, the collapse of key arms-control mechanisms, as Toby Ord mentions in *The Precipice,* has already kickstarted the arms race (page 101). Second, because hypersonic missiles can be tipped with nuclear warheads, the speed and maneuverability of these missiles wholeheartedly prevents any possible resolution—either via diplomatic consensus or via military defense installations—in crisis situations. And third, even assuming global diplomacy fully prevents war, the prevalence of hair trigger alerts on hypersonic missile launcher systems retains a "considerable risk of nuclear war starting by accident" (page 101).

With how aggressive the situation is becoming, one may argue that it's futile to even try cooling the arms race down.

However, hope isn't lost.

Referring to recommendations from Ord's novel, the Union of Concerned Scientists, and the World Economic Forum, the greatest chance of preserving humanity's potential comes from the policymakers who can regulate these developments best. In this case, international regulators from multilateral, international organizations have the most influence and incentive to prevent a hypersonic conflict. Since these agencies have yet to include hypersonic developments into their approaches, it's clear that global regulatory agencies must re-evaluate their security strategies. Among all possible options, the agency that would be best primed to curtail the risk posed by hypersonic missiles, as I contend, would be the International Atomic Energy Agency.

As the foremost organization upholding nuclear non-proliferation treaties, sending investigators to designated global sites, and developing worldwide standards for nuclear development, the IAEA could easily adapt to incorporate missile tech and hypersonic projectile into its doctrine. Ensuring that hypersonic missiles aren't equipped with nuclear warheads or at the very least working with nations to eliminate hair triggers, for example, would ensure that hypersonic missiles aren't catalysts for global crises.

In greater detail, if the IAEA were to implement the following recommendations, it would not only bolster its relevance on the world stage but also improve its ability to de-escalate the risk of hypersonic warfare. In no specific order, I suggest, in policy-memo format, that the IAEA:

1) Work with nations around the world to eliminate hair-trigger alert systems. Ord, on page 96, writes that the "last seventy years have seen many close calls, where the hair-trigger alert … brought us far too close to the brink of accidental nuclear war." Under the inspection division of the IAEA, removing hair trigger alerts from war-engaging systems would minimize the risk of miscalculation and stabilize international security.
2) Help frame the nuclear narrative by encouraging countries to rejoin and improve existing international treaties to eliminate nuclear-tipped hypersonic missiles. From the guidance of nuclear watchdogs, the IAEA ought to take up the mantle where the United States has left off in its nuclear policy by restarting the Intermediate-Range Nuclear Forces Treaty (INF) and the Anti-ballistic Missile Treaty (AMT). It should also step in to renegotiate the terms of the New START treaty between the U.S. and Russia, which fell apart earlier this year—a multilateral approach would far supercede the bilateral strategy the U.S. has employed in countless regions, simply because U.S. bilateral relations are often skewed towards American interests, but an

intervention by an IAEA council on behalf of both countries would foster, not hinder, cooperation.

3) Create new treaties to decelerate the hypersonic arms race. As the US, Russia, China, North Korea, South Korea, Iran, Australia, India, France, Germany, Japan, and other countries continue research hypersonic missiles, the IAEA is in a prime position to unify countries together under the goal of curtailing the dangerous hypersonic arms race. In a world where no one country currently has a preeminent advantage in hypersonic weapons development and deployment, the IAEA's unbiased role might best suit it to sponsor cooperation and multilateral relations via treaty-building.
4) Prioritize tracking and anti-ballistics research instead of aggressive hypersonic development. As the IAEA is a group of weapons and nuclear experts, it is well-equipped to generate and enforce defense-related recommendations amongst its nearly 180 member governments. Integrating a novel hypersonic-minded doctrine into its recommendations would help the IAEA hold countries accountable for its aggressive hypersonic posture and could further help it play a role in incentivizing member nations to collaborate on and invest in defensive tracking and space sensors, like the Pentagon's Hypersonic and Ballistic Tracking Space Sensor (HBTSS).

These recommendations are easier said than done: working with different governments and regimes to eliminate hair triggers, expand arms control agreements, and prioritize hypersonic-minded defense will certainly be an uphill battle for the IAEA. However, a change in paradigm from the IAEA's largest donors—e.g. the United States—to reflect the growing seriousness towards hypersonic missiles, might be enough to push the institution up that very hill.

Thus, if policymakers do their job to prioritize diplomacy over destruction and prevent hypersonic missiles from adding yet another threat to the list of possible existential crises, then we have the best shot of taking care of the cradle of humanity: our Earth.

And maybe one day, if the world comes to finally value what “arms control” truly means, then we’ll never have to repeat “*Here we go again”,* again.