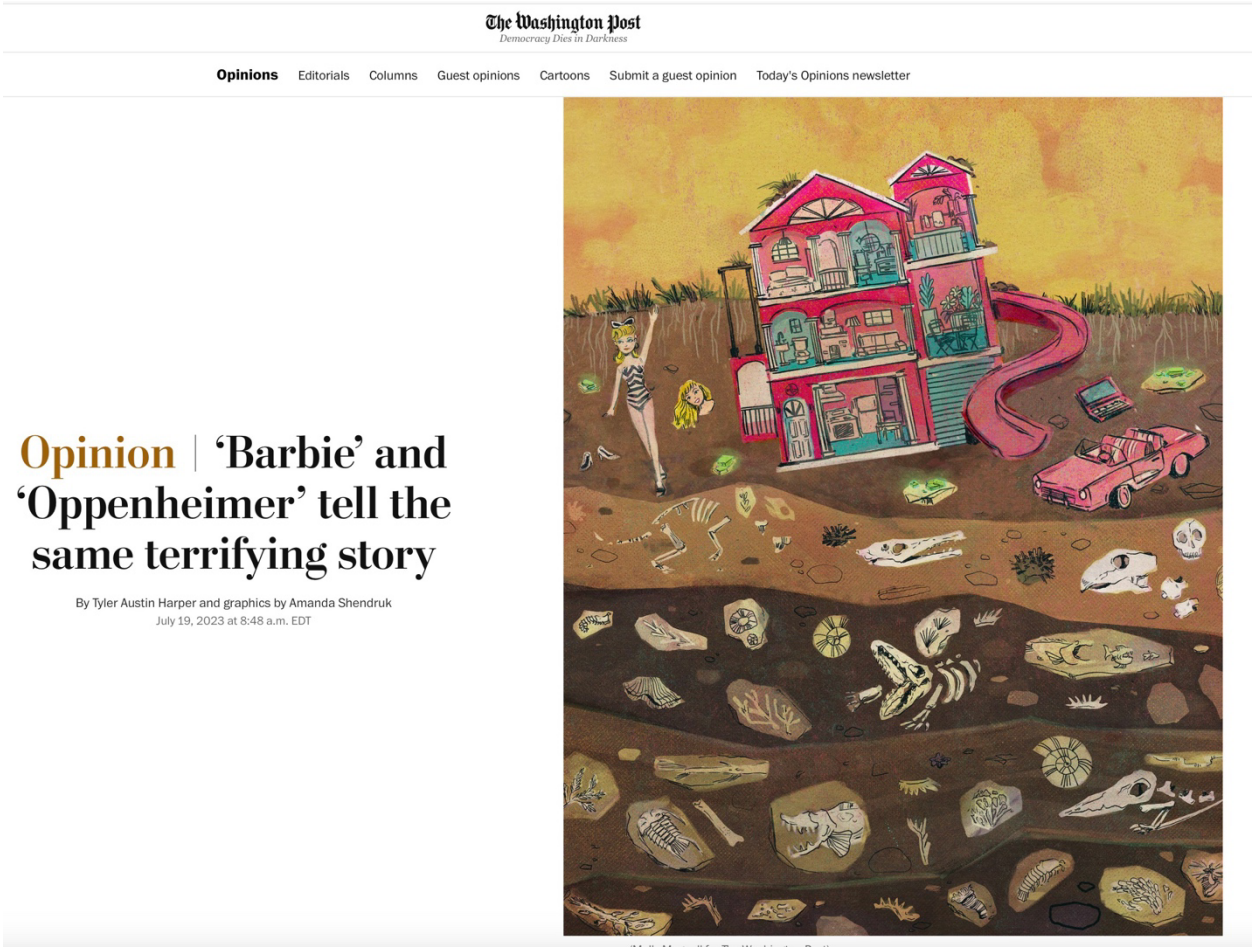

By Tyler Austin Harper
and
graphics by Amanda Shendruk
July 19, 2023 at 8:48 a.m. EDT

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For months, the looming box office war between "Barbie" and "Oppenheimer" has provided endless social media fodder. The flood of jokes, which have taken the form of Twitter threads and movie poster mash-ups, cash in on the supposedly radical difference between these two films: One is a grave, highly stylized biopic of the man who helped invent nuclear weapons, while the other is a whimsical live-action movie about a child's toy. "Barbenheimer," as the internet phenomenon has been dubbed, has generated its own Wikipedia page, not to mention an entire cottage industry of merchandise.

(Images from Redbubble, Twitter and Teepublic)

As an unabashed enthusiast of all things lowbrow, I've delighted in the campy, mindless confection of Mattel-meets-mushroom-cloud content that this nuclear meet-cute has produced. As an environmental studies professor who has spent a lot of time studying the history of science and technology, however, I've found "Barbenheimer" strikes a darker chord.

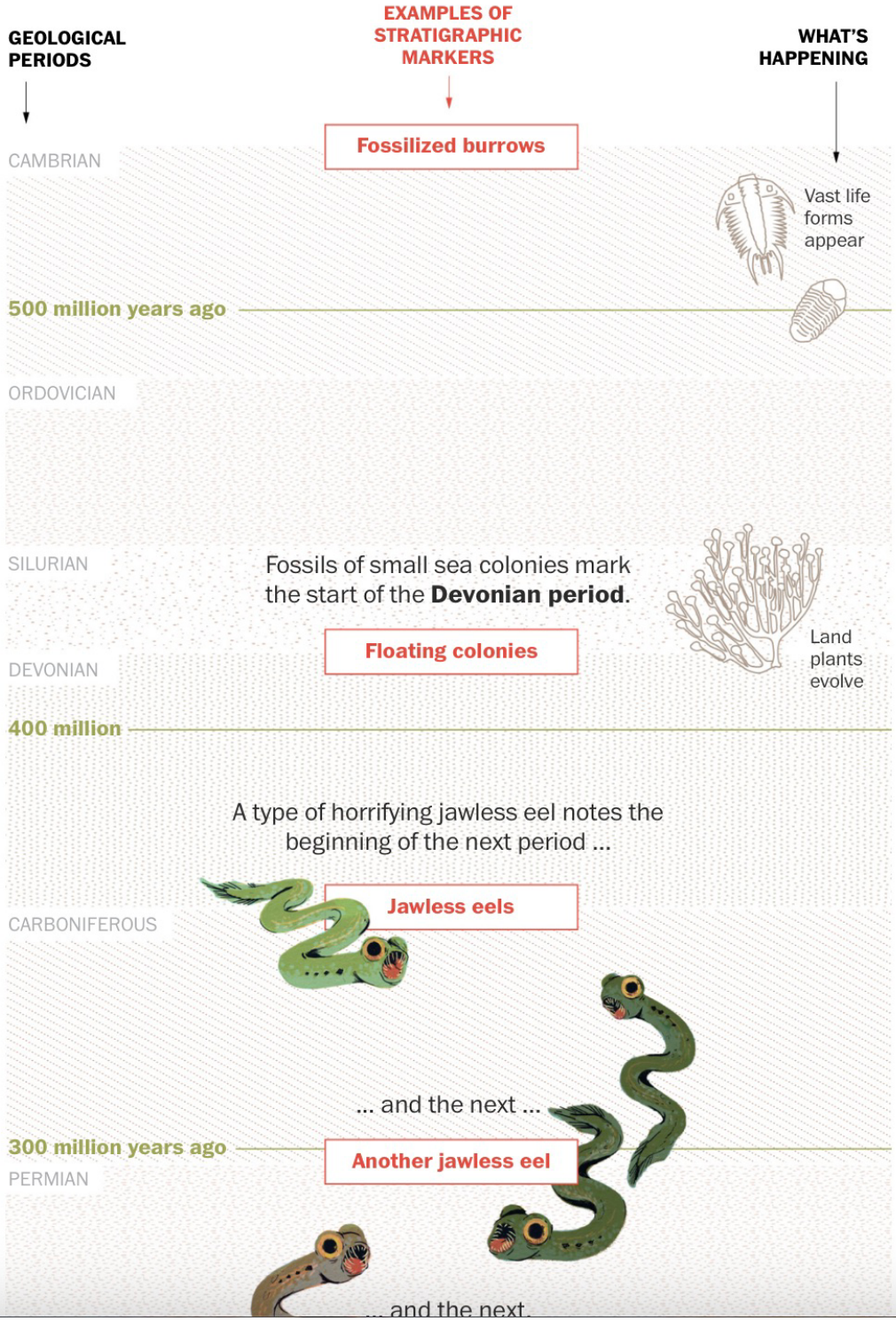
The underlying premise of all the jokes — that these films come out on the same day but are about hilariously different subjects and have wildly different tones — is misguided. The two movies actually have a fundamental, and disturbing, common ground. J. Robert Oppenheimer, the man behind our nuclear age, and Barbie — a toy that takes more than three cups of oil to produce before it lingers in landfills around the world — both tell the story of the dawn of our imperiled era.

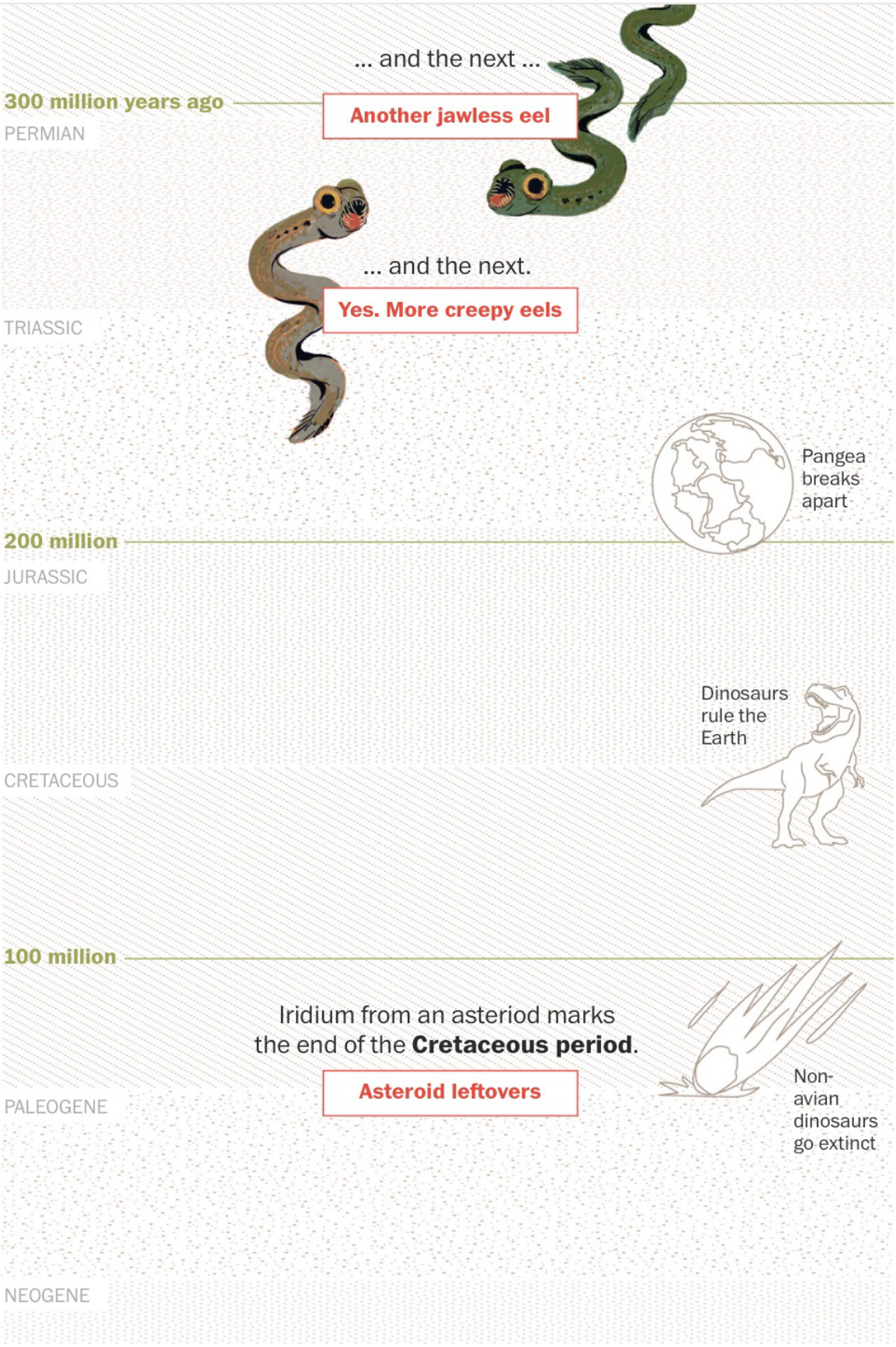
"Barbie" and "Oppenheimer" each offer a window into the creation of the Anthropocene, the suggested term for our present geological epoch, in which human beings have become the most significant influence on the natural environment at a planetary scale.

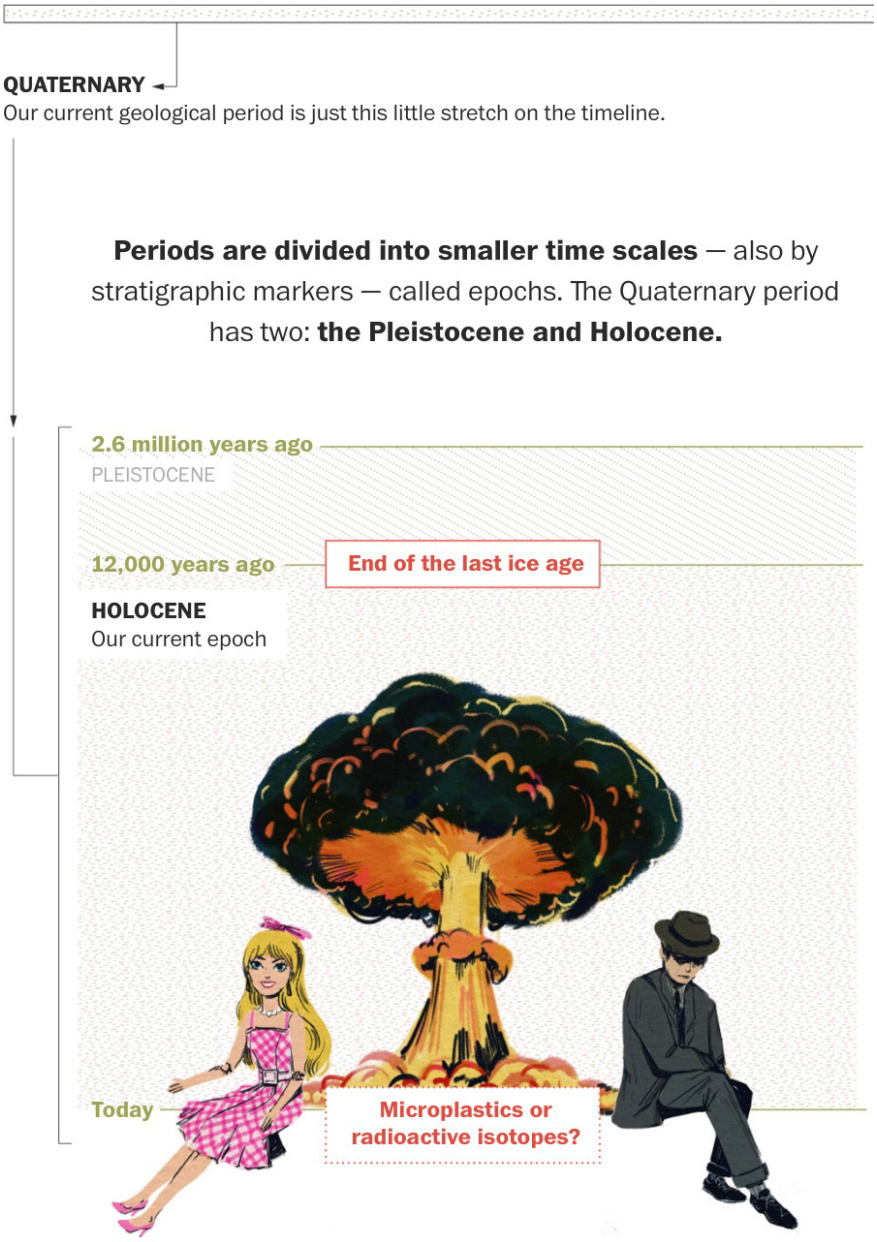
That story began 4.5 billion years ago, when Earth formed into a rocky mass from a swirling mixture of dust and gas. Those rocks now hold important markers of our planet's history.

But we don't need to go that far back. The Cambrian period, when multicellular life started to proliferate, began only a few hundred million years ago. The start of the Cambrian — or any geological time frame — is decided when there's a clear change in the physical characteristics of rock layers. This change is called a stratigraphic marker.

About 542 million years ago, a worm-like organism dug burrows around the Earth. The fossilized remains of those burrows are the **stratigraphic marker** of the Cambrian period.




... and the next ...
300 million years ago
Another jawless eel
PERMIAN
... and the next.
Yes. More creepy eels
TRIASSIC
Pangea breaks apart
200 million
JURASSIC
Dinosaurs rule the Earth
CRETACEOUS
100 million
Iridium from an asteriod marks the end of the Cretaceous period.
Asteroid leftovers
Non-avian dinosaurs go extinct
PALEOGENE
NEOGENE



The age of nukes and plastic

The Atomic Age began in the red pre-dawn of New Mexico. A group of scientists and soldiers gathered in the barren landscape of the Jornada del Muerto to behold the “Gadget.” Jornada del Muerto — or when literally translated, the “Route of the Dead Man” — is the name bequeathed by the conquistadors to

describe this 90-mile stretch of waterless desert. Unknown to the colonizing Spanish, that name would prove prophetic centuries later. At 5:29 a.m. on July 16, 1945, the “Gadget” exploded half an hour before sunrise. Watching a spectacle worthy of a god, Oppenheimer worried that man had become one. Exactly three weeks later, a ball of light consumed the cloudless Hiroshima skyline. That summer marked the first significant introduction of plutonium-239 into the atmosphere.

In the years to follow, the United States, the Soviet Union and the United Kingdom conducted an additional 456 atmospheric nuclear tests, 67 of which took place at the Marshall Islands.

On July 25, 1946, a mushroom cloud rose above Bikini Atoll in the Marshall Islands after one of the many atomic tests by the U.S. military in the region. (AP)

This included the largest U.S. nuclear test ever conducted, code-named Castle Bravo, which hollowed out a mile-wide crater in the Bikini Atoll’s reef. Across the island chain, vaporized radioactive coral descended as fallout, leaving many Marshallese — some of whom had already been evacuated from their homes — with health consequences that continue today.

On Aug. 5, 1963 — 18 years after that day in New Mexico, and one day before the anniversary of the Hiroshima bombing — the United States, the Soviet Union and the United Kingdom banned atmospheric nuclear testing.

(Copernicus Sentinel Data 2017/Gallo/Getty Images)

Half a century later, members of the Anthropocene Working Group — a body of scientists tasked with identifying the start of a new, human-influenced geological epoch — began studying the viability of radioactive isotopes produced by nuclear testing as potential stratigraphic markers. They found plutonium-239, which tends to both endure and penetrate the darkest recesses of the ocean, to be a strong candidate.

Yet, the 1950s was not only the decade of plutonium. It was also the decade of plastic.
The war was over, and Americans were being promised "better things for better living … through chemistry." Only days before Hiroshima was consumed by a second sun, the president of DuPont advised his employees that Americans, drunk on peace and whose homeland was largely untouched by the war, would crave new trinkets and luxuries.

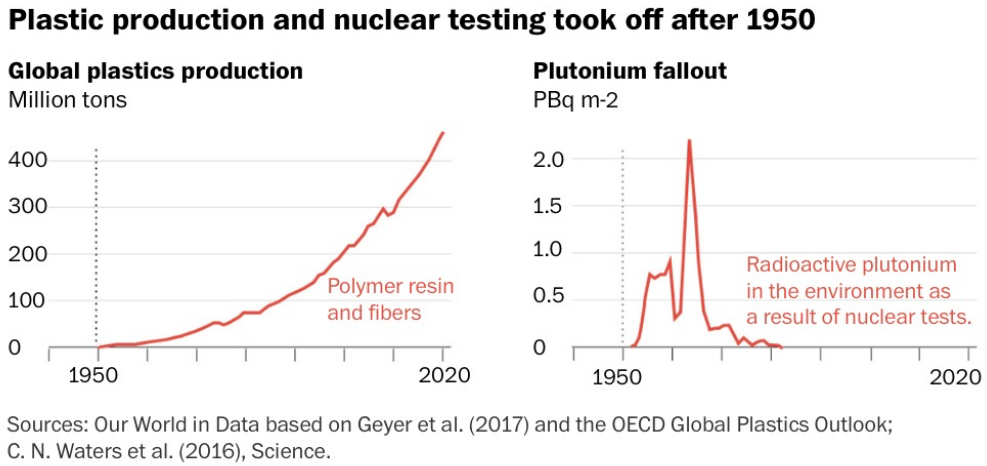
In the 1940s, DuPont had played a part in bringing about the war's end, producing the plutonium required to make the atomic bomb at its Hanford, Wash., facility. Now that the global conflagration had ended thanks to that plutonium, DuPont turned its attention to plastics and the mass production of consumer goods. The company had begun making polyethylene at scale in 1944, which was soon hailed by Fortune as "the fastest growing plastic on the market." By 1951, polypropylene would join its ranks as a new

wonder material that would help bring about the transformation of consumer manufacturing in that decade.

In the spring of 1959, one of the most famous consumer goods in world history emerged at a New York City toy fair. Produced from polyvinyl chloride — colloquially known as PVC — the inaugural Barbie came in blonde and brunette. More than a quarter of a million dolls were sold in the first year.

A boy walks through tons of plastic waste near Badhwar Park in Mumbai, in June. (Bhushan

Almost 65 years later, Barbie remains one of the most recognizable American brands on the planet, with approximately 100 dolls being sold every minute. Polyethylene, polypropylene and polyvinyl chloride remain the three most common variants of synthetic plastics in the world, and are among the primary "techno-fossils" that help distinguish the Anthropocene from prior epochs in Earth's past.



Sources: Our World in Data based on Geyer et al. (2017) and the OECD Global Plastics Outlook; C. N. Waters et al. (2016), Science.

The widespread introductions of plutonium and plastic into the geological record are deeply intertwined. Perhaps the most substantial difference between “Barbie” and “Oppenheimer” lies only in their respective approaches toward their common subject matter — a difference in attitude that ultimately reflects our own. As war rages in Eastern Europe and we find ourselves, again, living in the shadow of the bomb, renewed nuclear anxiety has wrestled with climate anxiety for our collective attention. On one hand, we have the spectacular visibility and exceptionalness of the bomb — its mushroom cloud occupies the fuzzy boundary between the sublime and the satanic. On the other, we have a climate crisis spurred in part by the everydayness of oil-saturated plastic products such as Barbie, goods so omnipresent in our lives that their harms are almost invisible to us — unlike the bomb, they produce delight rather than dread.

In the new “Barbie” film, an older woman imparts a piece of wisdom to Margot Robbie’s titular character: “Humans have only one ending; ideas live forever.” The recent news that scientists have selected a lake in the Canadian wilderness — riddled with traces of pollution, waste and radioactive fallout — as the proposed start to the Anthropocene signals that the immortality of ideas is more than just a pretty thought: It’s a reality in a world where humanity has baked its worst vices into the Earth’s geological record. Despite their apparent differences, both “Barbie” and “Oppenheimer” tell the story of core ideas of the 20th century: accelerating militarism and unbounded consumption, ideas that might well outlive our species in the form of plastic and plutonium’s lingering traces across our fragile planet.

https://www.washingtonpost.com/opinions/2023/07/19/barbie-oppenheimer-movies-anthropocene/