If Seeing the World Helps Ruin It, Should We Stay Home?

In the age of global warming, traveling — by plane, boat or car — is a fraught choice. And yet the world beckons.

By Andy Newman

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The glaciers are melting, the coral reefs are dying, Miami Beach is slowly going under.

Quick, says a voice in your head, go see them before they disappear! You are evil, says another voice. For you are hastening their destruction.

To a lot of people who like to travel, these are morally bewildering times. Something that seemed like pure escape and adventure has become double-edged, harmful, the epitome of selfish consumption. Going someplace far away, we now know, is the biggest single action a private citizen can take to worsen climate change. One seat on a flight from New York to Los Angeles effectively adds months worth of human-generated carbon emissions to the atmosphere.

And yet we fly more and more.

The number of airline passengers worldwide has more than doubled since 2003, and unlike with some other pollution sources, there's not a ton that can be done right now to make flying significantly greener — electrified jets are

not coming to an airport near you anytime soon.

Still, we wonder: How much is that one vacation really hurting anyone, or anything?

It is hard to think about climate change in relation to our own behavior. We are small, our effects are microscopically incremental and we mean no harm. The effects of climate change are inconceivably enormous and awful — and for the most part still unrealized. You can't see the face of the unnamed future person whose coastal village you will have helped submerge.

But it turns out there are ways to quantify your impact on the planet, at least roughly. In 2016, two climatologists published a paper in the prestigious journal Science showing a direct relationship between carbon emissions and the melting of Arctic sea ice.

32

The square feet of Arctic summer sea ice cover that one passenger's share of emissions melts on a 2,500-mile flight.

Each additional metric ton of carbon dioxide or its equivalent — your share of the emissions on a cross-country flight one-way from New York to Los Angeles — shrinks the summer sea ice cover by 3 square meters, or 32 square feet, the authors, Dirk Notz and Julienne Stroeve, found.

In February, my family of three flew from New York to Miami for what seemed like a pretty modest winter vacation. An online carbon calculator tells me that our seats generated the equivalent of 2.4 metric tons of carbon dioxide.

Throw in another quarter-ton for the 600 miles of driving we squeezed in and a bit for the snorkeling trip and the heated pool at the funky trailer-park Airbnb, and the bill comes to about 90 square feet of Arctic ice, an area about the size of a pickup truck.

When I did that calculation, I pictured myself standing on a pickup-truck-sized sheet of ice as it broke apart and plunged me into frigid waters. A polar bear glared hungrily at me.

Calculating the harm

And what of my vacation's impact on my fellow man? Actually, academics have attempted to calculate that, too. Philosophers, not climatologists. But still.

In 2005, a Dartmouth professor, Walter Sinnott-Armstrong, wrote in a journal article provocatively titled "It's Not *My* Fault: Global Warming and Individual Moral Obligations" that he was under no moral obligation to refrain from taking a gas-guzzling S.U.V. for a Sunday afternoon joy ride if he felt like doing so.

"No storms or floods or droughts or heat waves can be traced to my individual act of driving," he wrote. Conversely, "If I refrain from driving for fun on this one Sunday, there is no individual who will be helped in the least."

Other philosophers questioned his reasoning.

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Professor John Nolt of the University of Tennessee took a stab at measuring the damage done by one average American's lifetime emissions. (The average American generates about 16 metric tons of carbon dioxide-equivalent a year, more than triple the global average.)

Noting that carbon stays in the atmosphere for centuries, at least, and that a United Nations panel found in 2007 that climate change is "likely to adversely affect hundreds of millions of people through increased coastal flooding, reductions in water supplies, increased malnutrition and increased health impacts" in the next 100 years, Professor Nolt did a lot of division and multiplication and arrived at a stark conclusion:

"The average American causes through his/her greenhouse gas emissions the serious suffering and/or deaths of two future people."

Then Avram Hiller of Portland State University used Professor Nolt's approach to derive the impact of Professor Sinnott-Armstrong's hypothetical 25-mile ride.

"At a ratio of one life's causal activities per one life's detrimental effects, it causes the equivalent of a quarter of a day's severe harm," he wrote.

“In other words, going for a Sunday drive has the expected effect of ruining someone’s afternoon.”

Multiply that joy ride by a three-person Florida vacation and you’ve ruined someone’s month. Something to ponder while soaking up UV-drenched rays on a tropical beach.

Ships? Even worse

There are alternatives to flying, of course. Perhaps a cruise? After all, there’s more ocean than there’s been in thousands of years. With the Northwest Passage now mostly ice-free in the summer, new vistas have opened. One cruise company runs polar bear tours to check out “the Arctic’s ‘poster boy.’”

Perhaps not. Bryan Comer, a researcher at the International Council on Clean Transportation, a nonprofit research group, told me that even the most efficient cruise ships emit 3 to 4 times more carbon dioxide per passenger-mile than a jet.

And that’s just greenhouse gas. Last year, an assistant professor at the Johns Hopkins Bloomberg School of Public Health found that the air onboard cruise ships was many times dirtier than the air nearby onshore.

3x to 4x

The amount of carbon dioxide the most efficient cruise ship emits per passenger mile when compared with a jet.

"Some of the particulate counts were comparable to or worse than a bad day in some of the world's most polluted cities like Beijing and Santiago," said Kendra Ulrich of Stand.earth, the advocacy group that commissioned the study.

While most cruise ships run on highly polluting heavy fuel oil, many have begun using "scrubbers" to remove toxic sulfur oxides from their exhaust. But the scrubbers discharge these and other pollutants into the ocean instead, and they've been banned by seven countries and several U.S. states.

A spokeswoman for Cruise Lines International Association, a trade group, said that the scrubbers comply with the new 2020 standards for air and water quality set by the International Maritime Organization, a U.N. agency. The spokeswoman, Megan King, added that it was not fair to compare emissions from ships and jets because a jet is just a transportation vehicle while a cruise ship is a floating resort and amusement park.

There's always driving, which is less carbon intensive than flying, especially if there are multiple passengers. But "less" is relative, and most long trips are out of practical driving range anyway.

Considering carbon offsets

Maybe there is a justification out there somewhere: Personal decisions alone won't stop global warming — that will take policy changes by governments on a worldwide scale. Tourism creates millions of jobs in places starved for economic development. Carbon offsets can effectively cancel out our footprint, can't they?

Carbon offsets do seem to offer the most direct way to assuage traveler's guilt. In theory, they magically expiate your sins. You give a broker some money (not a lot of money either — carbon offsets can be bought for $10 per metric ton). They give it to someone to plant trees, or capture the methane from a

landfill or a cattle operation, or help build a wind farm, or subsidize clean cookstoves for people in the developing world who cook on open fires. All these things help cut greenhouse gas.

But nothing is that simple in practice. Carbon-offset people talk about concerns with things called additionality, leakage and permanence.

Additionality: How do you know the utility would not have built the wind farm but for the money you gave them?

Permanence: How do you know the timber company that planted those trees won't just cut them down in a few years?

Leakage: How do you know the landowner you just paid not to cut down an acre of rain forest won't use the money to buy a different acre and clear that?

While certifying organizations go to great lengths to verify carbon offset projects, verification has limits.

"Whether someone would have planted trees anyway, or taken some other action like building a housing development, is ultimately unknowable and something you have to construct," said Peter Miller, a policy director for the Natural Resources Defense Council and a board member of the Climate Action Reserve, the country's biggest carbon offset registry. "It's an endless debate."

Some carbon offsets are surer bets than others. "With methane capture," Mr. Miller said, "once you capture that methane and you burn it — you're done. It's not in the atmosphere, it's not going in the atmosphere. You've got a credit that's achieved and you've avoided those emissions forever."

Not flying at all would be better, Mr. Miller said, "but the reality is that there's lots of folks that are going to do what they're going to do." For them, offsets are a lot better than nothing.

But some climate experts call offsets a cop-out.

“It’s like paying someone else to diet for you,” said Alice Larkin of the University of Manchester’s Tyndall Centre for Climate Change Research, who has not flown since 2008.

She said that while governments do need to take tough action, they derive their courage to do so from the conduct of citizens. “In my idea, people move first,” she said.

Offsets, she said, encourage a break-even mind-set when what’s needed to avert disaster is to slash fossil-fuel consumption immediately.

Her colleague Kevin Anderson says that when you buy a ticket you’re not buying just a seat on a plane. You’re telling the aviation industry to run more flights, build more jets, expand more airports.

“Offsetting, on all scales, weakens present-day drivers for change and reduces innovation towards a lower-carbon future,” Professor Anderson wrote in 2012. Lately, a grassroots anti-flying movement has been gathering momentum in Europe, particularly Scandinavia.

But the world still beckons

I’d like to be able to tell you that knowing what I’ve learned reporting this piece, I have sworn off long-distance travel.

But actually this summer, we’re going to Greece, with a stopover in Paris. Carbon footprint of plane tickets: 10.6 metric tons, enough to melt a small-apartment-sized piece of the Arctic.

2x

The increase in airline passengers worldwide since 2003.

We committed to going months ago, but I suspect we would make the same choice today. We're going because last year we canceled vacation to come home and watch our dog die. We're going because the New York City public high school application process was an ordeal.

Mostly we're going because of things we saw last time we were there. The tiny beach at the base of the towering cliff. The playground where the little children played past midnight while their parents and grandparents sat chatting. Chubby partridges pecking around the ruined temple of Poseidon.

Before we go, we will buy enough offsets to capture the annual methane emanations of a dozen cows — that's several times what is needed to balance out the carbon effects of our flights. May they help keep a polar bear afloat.

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