The Earth’s rising fever, and why it’s bad news for all of us

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IN A previous article, I wrote about link between our burning of fossil fuels and climate change. We humans burn fossil fuels to produce energy. We use this energy mainly to generate electricity and power modern transportation such as cars and airplanes.

This burning of fossil fuels also results in the emission of carbon dioxide, which leads to more asphyxiant gas in the atmosphere. Since carbon dioxide can trap heat in the atmosphere, this leads to a rise in the average temperature of the world, or what is known as global warming.

Indeed, scientists are seeing an increase in both atmospheric carbon dioxide and the average temperature of the Earth over the years. All lines of evidence point us to humans as the culprits of this observed global warming.

How much global warming are we experiencing right now? According to latest measurements, 2016 was 0.94 degrees Celsius warmer than the average of the 20th century. That makes it the warmest year on record, beating 2015 (0.90 degrees), which in turn beat 2014 (0.74 degrees).

In fact, all years since 1977 were warmer than the 20th century average, with the years 2001 through 2016 all being in the top 17 warmest years (1998 is ranked number 7).

The world, as they say, is experiencing a fever, and the fever is only rising. In fact, a fever is a good analogy.

The usually stated normal body temperature ranges from 36.5 to 37.5 degrees Celsius. That depends on many factors, such as a person’s age, exertion, and sex. It even depends on the time of day.

When we sleep, most of us have a body temperature close to 36.3 degrees C. The moment we wake up, it goes to 36.4. By the time we’re fully awake and going about our daily activities, it goes up to 37.5. When we perform strenuous physical activities such as exercise, it goes further up.

Another thing to note about our bodies’ temperature is that it depends on which body part you are measuring. Some body parts are slightly warmer than others. If you put the thermometer in your armpit, the reading would be slightly different than when you put it in your mouth or when you place it on the palm of your hand.

Your normal body temperature is therefore an average over you entire body over time.

The same goes for the temperature of the Earth, except the variations in temperature are greater than for the body.

Some parts of the Earth are quite hot while others are freezing cold. For example, temperature in the Lut Desert, Iran can go as high as 70.7 degrees Celsius during some days, while the temperature in the South Pole can go as low as – 89.2 degrees Celsius during winter. In the Philippines, the hottest temperature was recorded in Tuguegarao City, Cagayan at 42.2 degrees Celsius. Meanwhile, the temperature in Baguio dropped to 7.3 degrees Celsius in the morning of Feb. 15, 2017.

The temperature at a given place on Earth also varies throughout the day and year. For example, temperatures in Manila can range from 22 degrees Celsius during some nights in January to 37 degrees during some days in April. Meanwhile in Davao the temperature usually ranges from 24 degrees Celsius (nighttime January) to 33 degrees Celsius (daytime April).

Just as in measuring our bodies' temperature, we are talking about averages when measuring the temperature of the planet. The average is both over entire Earth and over the course of a year.

If the normal human body temperature is somewhere close to 37 degrees Celsius, the average temperature of the Earth during the 20th century (1900s) is 13.9 degrees Celsius. The Earth's temperature has not, until very recently, strayed far away from this average over the entire existence of human civilization. Scientists think the relative stability of the world's temperature in the last 10,000 years is what allowed human civilization to flourish.

The last few decades have strayed dangerously far from the average of thousands of years. The latest one, 2016, was 0.94 degrees warmer. If such a temperature difference from the average were found on a person, the doctor would say that person's having a fever. It seems that fever is only going to get worse.

As with human fevers, global warming does not mean all parts of the Earth will get hotter by the same amount. What makes a high fever worrying is its disruption of the delicate balance we call health. Similarly, global warming is dangerous because it disrupts the delicate systems that have made Earth favorable for human life and civilization.

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