

SCIENCE / EUROPE

Is it time to change the clocks?

Time zones cause confusion and have been used for political point-scoring – but do we need them? Two scientists think not. Throw out the diary too... We could change the calendar as well.

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For more than 500 years the most popular and influential book after *The Bible* was *The Golden Legend* by Jacobus de Varagine. At the end of the 13th century, Varagine was grappling with how medieval Christians perceived time: he mapped the liturgical calendar and the stories of feast-day saints associated with it. The book was the bestseller of its age. Time, then, has been top of the agenda for a while.

Today a great deal of, well, time is wasted on the topic. After fervent political debate in 2011, for example, Russia adopted permanent summer time only to swing back to permanent winter time in 2014. In 2015, North Korea did something a little odd: on the 70th anniversary of its liberation from Japanese occupation, the authoritarian state announced that it was permanently turning its clocks back half an hour; the country created “Pyongyang time”. This didn’t make much sense; many understandably interpreted it as another example of the nation’s characteristically illogical policymaking. This year, North Korea abandoned Pyongyang time and resynchronised its clocks with South Korea in what was surely the biggest time-related event of 2018.

But Pyongyang time has highlighted another phenomenon: time zones make little sense, no matter where in the world they are adhered to. Russia has 11 of them; China has one. Inexplicably, Nepal is the only country to have a time zone that is set to 45 minutes past the hour. Not to be left behind, this year the EU has expended a great deal of energy this



year debating time. The bloc currently has three time zones, though most of its inhabitants live on Central European Time. That doesn’t suit some, particularly the Finns. They proposed that the EU adopt free choice for time so that every member state could set its clocks as it wished. This would, no doubt, create a temporal Tower of Babel within the EU.

All of this is quite amazing – and a complete and utter waste of time. Indeed time, as measured by atomic clocks (the most accurate instruments), is the same everywhere. Now is surely the point in history where we should face that fact, abolish time zones and daylight savings and adopt atomic time, which is also known as Coordinated Universal Time (UTC).

If we did so, everyone everywhere would know the exact time at every moment. Noon in London would be 12.00 everywhere. On the other side of the world it would be the middle of the night and everyone would be asleep but the clocks by bedsides would read the same as in Greenwich, the district in the UK’s capital from where mean solar time is measured. There would be no more wondering about what time it is in New York or Paris. Our biological clocks would still be set by the position of the sun, as they always have been; we’d sleep according to the hours of daylight, not the display on our clocks. There would certainly be a period of adjustment but, eventually, we’d learn the new relationship between our watches and sunlight. London would have the easiest transition: a

shop there might open at 09.00 and close at 17.00 just as before, while in New York 14.00 would be the new 09.00. Business hours would be adjusted to UTC.

Though it may sound radical, this change would represent nothing new. All aircraft pilots already use UTC (or “Zulu time”, as they call it) for exactly the same reason that we are advocating its broader adoption: to remove ambiguity. Universal time eliminates complexity and confusion in air travel, and helps to improve safety. The transition to UTC would be relatively easy to make; countries have made larger shifts in the past, such as the switch from an imperial to metric measurements.

In addition to UTC, we have another request for Santa Claus: the delivery of a new calendar. But this is not just any calendar – this is the Hanke-Henry Permanent Calendar (HHPC). We have a vested interest, of course (it’s our invention), but it would be a one-time delivery, permanently relieving St Nick and his workshop of elves from the annual burden of producing calendars every year.

The HHPC offers a comprehensive template for revising the contemporary Gregorian calendar. It adheres to the most basic tenet of a fixed calendar: every date would fall on the same day of the week every year. So new year’s day would always be a Monday. The year would be divided into four three-month quarters. The first two months of each quarter would be made up of 30 days; the third would have 31 days. So each quarter contains 91 days resulting in a 364-day year comprising 52 seven-day weeks. This is a vital feature of the HHPC: by preserving the seven-day Sabbath cycle – and so not inserting “extra days” that break up the weekly cycle – it would avoid the major complaints from ecclesiastical quarters that have doomed all other attempts at calendar reform.

There would be a disparity between the necessary length of our calendar (364 days) and that of the astronomical calendar (365.24 days). The HHPC would account for this by tacking an additional week on to every fifth or sixth year. So there would be an extra seven days added to the calendar in, for example, 2020, 2026, 2032, 2037 and so on. This additional week would serve the same purpose as the extra day we count in a leap year in the present system and keep the calendar in line with the seasons. Still following? We hope so.

If the Hanke-Henry Permanent Calendar and Coordinated Universal Time were adopted across the globe, everyone in the world would be on the same day and the same time, day after day and year after year. We would live in a temporal and calendrical bliss. And, most importantly, no one would waste any more time worrying about the time.

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About the writer: Hanke is a professor of applied economics and Henry is an academy professor of physics and astronomy, both at The Johns Hopkins University in Baltimore, Maryland.