



What Time Is It?

It's complicated, says anthropologist Kevin Birth '85.

Interview by Karen McCally '02 (PhD)

ASK **KEVIN BIRTH** '85 WHAT TIME IT IS, AND he just may give you a history of the watch.

Birth is a professor of anthropology at Queens College, City University of New York. He's been studying time since he was a graduate student at the University of California at San Diego more than 20 years ago.

While the 24-hour clock and the Gregorian calendar are nearly universal, how people experience time differs substantially across cultures. Some societies are more dependent on timekeeping devices than others—and perhaps none more so than ours.

In his most recent book, *Objects of Time: How Things Shape Temporality* (Palgrave Macmillan), Birth explores the ways in which timekeeping devices such as clocks and calendars are only approximately

▲ **COUNTING THE HOURS?** Birth, a Queens College anthropologist, says it's misguided to measure productivity in terms of clock hours, or “the assumption that one hour is equivalent to any other hour.”

related to the astronomical cycles they purport to reflect. Moreover, he argues, we've allowed them to “think for us,” organizing our lives in ways we might not realize with consequences we don't fully understand.

What is a clock actually measuring?

Your clock is measuring something called the International System second. And that second is defined by an atomic standard. Now you take 86,400 of those seconds and you get something that is roughly like what's called the mean solar day, a solar day being the time it takes for the Earth to rotate 360 degrees on its axis.

So the 24-hour clock does not actually correspond to a 360-degree rotation of the Earth on its axis?

No. The 24-hour day is an approximation, not an exact measurement, of a single rotation of the Earth on its axis. Imagine the Earth spinning in space, and imagine it moving in its orbit at the same time. The orientation toward the sun has shifted slightly from one day to the next. So in fact

only four days a year are even approximately equal to 24 hours.

How does my clock account for the variation?

There is something called the leap second, which occurs about every 18 months. But as we speak, the international regulatory agency in charge of these sorts of policies is considering dropping the leap second, at which point there would be no relationship between clock time and rotational time.

In what ways do we allow our clocks, as you say, to “think for us”?

We've allowed our clocks to dictate the organization of our daily lives, even as we're diurnal mammals whose hormonal cycles are tied to light. We need so much sleep, and we need to sleep at a particular time—basically, night. But we no longer develop our schedules in relationship to daylight. We go to bed based on clock time. And most of us use an alarm to wake up in the morning. So we're getting up at the same time of day regardless of the amount of daylight. And

we're going to bed at the same time of day regardless of the amount of daylight. And what often determines when we're going to bed is not how tired we are, but when our shifts end, which is defined by the clock, or when that television program we want to see ends, which is defined by the clock, or when some evening meeting ends, which is defined by the clock.

How might we think differently about time?

We can think of it in terms of points of time, or timing. The people with whom I worked in rural Trinidad, for example, displayed a lot of sensitivity to the timing of things. Not the duration so much, not the clock time so much, but the right order in which to do things, or the optimum time for doing something. They use clocks—the same clocks we do. But they have this sense that not all activities can be adequately represented by minutes and hours. Certain activities take more time if you do them at the wrong time. And you can't necessarily measure work in terms of a clock hour. You definitely can't measure productivity in terms of a clock hour. Yet we've created a work regimen; we've created an educational regimen; we've created all sorts of things based on this assumption that one hour is equivalent to any other hour.

Doesn't globalization compel even more reliance on the clock?

Yes. But one of the ironies of this age of globalization is that we're increasingly compelled to ignore the fact that we live on a rotating globe. In globalization, we erase the globe. We just deny its existence.

What are some of the most worrisome consequences?

Some of the most famous accidents—like Three Mile Island, Chernobyl, Union Carbide, Exxon Valdez—are all in that period of night when, as daylight mammals, we're worst in our functioning ability.

What can be done?

A lot of us are in positions where we don't have the ability to make choices for ourselves. The boss says this is what we need to do. In order to be competitive, we need to be up at three in the morning for the opening bell of a European stock exchange. For those of us who can, the more we can learn to control our schedules and defend what's good for our minds and bodies, the better off we are. **R**

In the News

AND THE WINNERS ARE . . .

Eastman School alumni **Renée Fleming** '83E (MM) and **Robert (Bob) Ludwig** '66E, '01E (MM) walked away winners at the 55th annual Grammy Awards in Los Angeles in February. Fleming was awarded Best Classical Vocal Solo for *Poèmes*, her album of four French orchestral song cycles, and Ludwig received a Grammy for his role as mastering engineer on *Babel*, by Mumford & Sons, which was named Album of the Year.



Renée Fleming

Bob Ludwig

WHO'S WITH THE WHO?

Hornist **J. Greg (J. G.) Miller** '06E served as the brass section leader on the Who's "Quadrophenia and More Tour" from November 2012 to February as well as during the band's performance at the "12-12-12" benefit concert for the victims of Hurricane Sandy, held at Madison Square Garden last December.

For the past several years, Miller has been an active freelance teacher and performer in the Los Angeles area while working toward his doctor of musical arts degree at the University of Southern California. He's performed on film scores for *Parental Guidance*, *The Amazing Spider-Man*, *Snow White and the Huntsman*, as well as *Oblivion* and *Monsters University*, both to be released later this year.

Most recently, Miller has won a place in the U.S. Army Field Band. He'll begin later this year, after completing a course of basic combat training.

ENERGY SECRETARY CHU RETURNS TO ACADEMIA

Steven Chu '70, who served as secretary of energy during the first term of President Barack Obama, resigned in January in order to return to academia. A Nobel laureate who studied mathematics and physics at Rochester, Chu served on the faculty of the University of California at Berkeley and led the Lawrence Berkeley National Laboratory prior to joining the first Obama administration.

An avid proponent of wind and solar energy, Chu made the pursuit of clean, renewable energy sources the centerpiece of the department's agenda. In a statement, Obama said, "As a Nobel Prize-winning scientist, Steve brought to the Energy Department a unique understanding of both the urgent challenge presented by climate change and the tremendous opportunity that clean energy represents for our economy."



MR. SECRETARY: Appointed at the start of President Barack Obama's first term, Chu served as energy secretary until January, when he announced plans to return to academia.