Time’s Books

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For millennia, daylight, with the sun overhead sometime around noon, defined basic time-reckoning for humans. But humans live in different places, creating different noons. At least as early as the fourteenth century, it was realized that this conjunction of time and space also created different days. Ian Bartky notes Nicholas Oresme (ca. 1320-1382), bishop of Lisieux, France, who wrote of two travelers, one going west and one going east around the world, both returning at the same time. As the day is reckoned from the point of departure, the first will find that he is a day earlier, and the second a day later. Because the same day could have three different names, said Oresme, one “ought to assign a definite place where a change in the name of the day would be made.”

We now call this place the International Date Line. In this book Bartky traces its history, as well as that of international standard time zones and daylight savings time. In his earlier book, *Selling the True Time*, Bartky concentrated mostly on public timekeeping in the United States, the history of local time signals (often from observatories), and the development of time zones under the impetus of railroad companies needing coordinated schedules. The wider focus on international developments brings in not only astronomers and railroad magnates, but also mariners, politicians, map makers and various scientific bodies. There is a more detailed (and unfortunately less interesting) focus on individuals and the international meetings, conventions, scientific associations and public agencies that, particularly in the period from about 1870 to 1925, led to a gradual acceptance of a prime meridian and international dateline—and thus generally accepted time zones.

With circumnavigation of the globe Oresme’s dating problem became real, particularly in the South Pacific islands. Recorded dates were often a day...
off—a problem for ships determining, recording and communicating their positions. Without ways to determine longitude, latitude sailing was the norm. Different countries, and thus different mapmakers, used different coordinates based upon different prime meridians, often those of a national observatory. There were national jealousies (France in particular preferred the Paris Meridian), and substantial investments in hydrographic charts. As with railroads and time zones, transportation and communication requirements pushed in the direction of uniformity.

Bartky states that most sources regard the International Meridian Conference of 1884 as resolving the uniformity issues of public time, but he argues that this view is inaccurate and that the conference failed. Historically, there had been many advocates for different prime meridians (including “neutral” ones passing through the Bering Strait, the island of Ferro, or the anti-meridian 180 degrees from Greenwich). At the conference, France pushed for a neutral meridian not linked to any major observatory and not cutting through either American or European continents. The conference, however, adopted the Greenwich Meridian, with longitude counted in both directions (plus and minus). But the delegates to the conference had no authority to bind their national governments, and adopted, without much discussion, a resolution that the astronomical day would begin at midnight.

Where two people or social or business entities need to meet or communicate at the same time, there must be social conventions that allow people to determine what that time is. But the time of days and nights, of sun overhead and rising and setting, is deeply entrenched in the human psyche as well as in scientific bodies that reckon time by the sun. For astronomers the astronomical day began at noon, and they saw no reason to change things because of the interests of shippers and merchants. Thus this afterthought resolution from the conference, unnecessary for time unification through a prime meridian and time zones, became a stumbling block as influential astronomers heading national scientific agencies in several countries spearheaded opposition to the conference resolutions.

Not much happened for several years. Then wireless communication (enabling long distance time signals), the sinking of the Titanic in 1912, and the necessity of coordination of troops, ordnance, and communication in World War I conspired to push in the direction of time uniformity. Improvements in wireless technology led to the transmission of high-powered time signals by 1910, with France a leader. Before the Titanic sank, a French ship wired the Titanic about icebergs at its Paris-based longitude. Although the Titanic navigator easily would have been able to adjust to Greenwich longitude,