

Why Time?

By D.H. Coop

Why do we have time? Time is an arbitrary reference point that sets events going at a consistent rate. In the early period of history, the moon or sun set the time of the seasons for hunting and farming, and time was also used to measure the movement of nature. Then, as societies became more complex, time became more exact for the movement of people.

Here are some examples: Seasons determined hunting and farming; months specified farming, hunting and trade; weeks determined farming and hunting, and also trade. Days designated farming and commerce; hours and minutes specified commerce, farming and industry; and seconds regulated industry and commerce as well as service. Today, service is measured in nanoseconds or is simply instantaneous.



Sundial



hourglass

Hunters' and gatherers' movements from place to place did not depend on exact times. Language reflected the nature of their movement. Early Native Americans referred to everyday movement by location, for example, *We ate at the Big Tree*. Europeans would refer to a particular time of day. As civilization became more complex, the need for a more exact time developed. But this new development was not consistent in all cultures, as can be observed in the development of calendars or when the day officially starts for each of them. In early Mesopotamia, the day started at sunrise, while the Roman day started at midnight and the Hebrew day started at sunset. The concept of weeks or months also had no set pattern. The Greeks had no week, and the Romans had an eight-day week. This made the ideas of *month* and *year* vary from culture to culture.

A Page from the Calendar

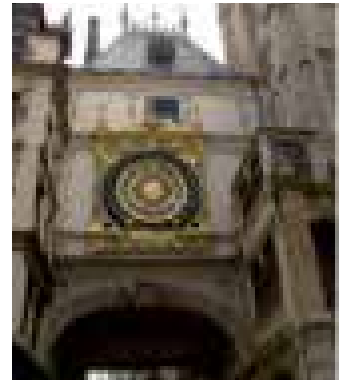
The Egyptians 6,000 years ago used a 12-month calendar with 30-day months, with five days added at the end of each year. Plus, they had a separate religious calendar with 29-and-a-half-day months. Islam used a lunar calendar of 354 days, while the Christians used the Julian calendar based on solar movement with 29- to 31-day months, with an extra day every four years. Then, to correct the inherent problems of the Julian calendar, Pope Gregory introduced the Gregorian calendar; by 1582, most Catholic nations had adopted this calendar. The Protestant nations of Europe began to convert to this new calendar by 1752, followed by other nations of the world over time: Japan in 1873, Egypt in 1875; Russia in 1918, Greece in 1924, Turkey in 1926, and China in 1949.

The Old World commerce required more precise measurements of time. Religion played an important part in the move to a more regulated society-based time. A devout Christian was required to pray seven times a day, and a good Muslim was required to pray five times a day. The call to prayer in Islam is done by human voice, while in the Christian world, the church bells signaled the call to prayer. Church bells became associated with time, so it is not surprising that the



church bells

word *clock* comes from the word *bell* in different languages: Scottish Gaelic (*clag*) Dutch (*klok*), German (*Glocke*) or French (*cloche*). Then around the 14th century, communities began to add mechanical clocks to tell time to assist commerce. Water clocks, sundials and hourglasses became less important with the introduction of the 12-hour face clock. The City of Rouen built a city clock that was the first to strike on the quarter hour. The City of London built Big Ben to announce the time.



Clock at Rouen



Big Ben London

Time Marches On

In the Industrial Age, time became more important. Clockmakers developed the pendulum-and-spring control device that aided the development of measurement time.



mechanical clock



21 jewel pocket Analog face

The 21-jewel pocket watch saw that

trains ran on time in the 19th century, only to be replaced by the wristwatch in the 20th century. Today in the 21st century, the analog clock face is unreadable by many young students since the digital clock face clock is what they have been exposed to.

Time and knowledge go hand and hand with information. As hunters and gatherers, knowledge doubled every 10,000 years; as farmers, every 1,000 years; and as an industrial society, every 15 years. Today, knowledge doubles in some areas every three to six months. But to read all the books in the Library of Congress—if one read for eight hours a day for five days a week, it would take close to 700 years!



digital face clock

Our daily life is filled with information from books, articles, and internet sources, making the management of time ever more important.

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