

# Expressions of Time

By Mark B. McKinley (OH)

The 4th Century theologian St. Augustine asked: "What then is time? If no one asks me, I know. If someone asks me to explain, I know not." Relatedly, another question is: "What time is it"? Answer: "It depends." The answer may seem a wee-bit existential, but it really is the only answer. Read on to see "why."

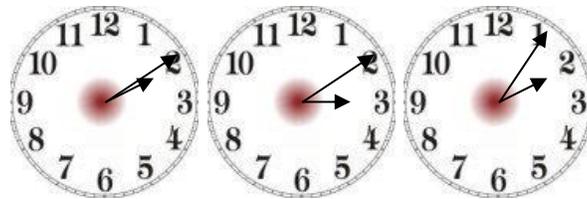
The first efforts at the measurement of time may have been by the Sumerians 5000 years ago in the form of a sundial or maybe it was the Chinese and/or Indian who are thought to have created sundials and/or water clocks as early as 6000 years ago.<sup>1</sup> The reality is, for most people living just prior to the Industrial Age (1862-1900), however, a device for measuring and expressing time precisely was pretty much unnecessary. "What time is it" was not a question posed, since one just took a look at the sky to "see" the correct time. "I will meet you when the sun is there" (pointing to the sky) set the time with sufficient accuracy for appointments. Daylight time was fixed by a glance at the sun. After dark the position of the stars marked the lonely watches of the night to anyone who was familiar with the night sky, but did anyone notice? The difference between, say, 11:00 p.m. and 3:00 a.m. was meaningless to 99% of the people who lived before the invention of the electricity.<sup>2</sup> In fact, about 1650, most clocks had only one hand, so clocks were divided into hours and quarter hours. Indeed, in 1650, if you asked someone the time, not only would they answer with the hour, half-hour, quarter-hour, but the town you were in at the time---there was no standardized time from one place to another.

Consider how Time is expressed with words. In an ethnocentric way, the reader may assume that time is announced pretty much the same the world over---not so! Oh, one may be familiar with the 24-hour clock ("military time") or UTC (Universal Coordinate Time) with the associated 24 time zones, but not all cultures subscribe to this idea of time expression, including the USA. For example, one might be perplexed at first by the way that time is expressed in Swahili (also Ethiopia). Swahili time, like Biblical time begins with sunrise. In the Swahili culture, there are two 12-hour cycles each day like the USA, but the day cycle begins at sunrise (approximately 6:00 a.m.) and ends at sunset. The evening cycle begins at sunset (approximately 6:00 p.m.) and lasts until dawn. So 8 a.m. is expressed in Swahili as "saa mbili asubuhi," or literally "two o'clock in the morning." At noon, it is "saa sita," or "six o'clock."<sup>3</sup>

How do people verbalize the time with regard to the 24-hour clock? "Fifteen o'clock" (3 p.m. in the standard 12-hour time convention) is commonly expressed as "fifteen hundred hours." The "15" represents the 15th hour since the previous midnight, and the term "hundred" represents the "00" indicating "no minutes," or exactly on the hour. One minute after 3 p.m. would be 15:01. This, of course, indicates 15 hours and one minute since the previous midnight. In like manner it is commonly expressed as "fifteen o one" and so on up to "fifteen o nine." Each subsequent minute from this point is then commonly spoken as the appropriate whole number indicated as "fifteen ten," "fifteen eleven," "fifteen twelve," etc. Is it appropriate for one say it is "a quarter past 20" (8:15 p.m. in the 12-hour time convention)? No, such is commonly verbalized as "twenty, fifteen." While the time measurement "a quarter past 20" can easily be deciphered, it is not an accepted expression of time anywhere that this author is aware of. In fact, that statement would overlap two time conventions; that used in 12-hour time and that used in the 24-hour format. The best way to make a comparison to what is being said here might be the phrase "1 foot, 9 centimeters." While the 24-hour clock is not actually metric in nature, it is a good way of showing how these two schools of thought are not meant to intermingle.<sup>4</sup> Question: When it is 23:59:59 is the next time reference 00:00:00 or is it 24:00:00?

Even with the 12-hour clock, there are conventions that one adheres to in reporting the time. If it is 12:30 p.m., is it half-past twelve or is it half-before one o'clock? These speaking conventions are culture and country-bound. Over 40 languages use time concepts different from English. Many languages lack any formal abbreviations for "before noon" and "after noon." Indeed, most Asian, European and many Latin American countries use the 24-hour clock. For the most part the USA and Australia, and a few others adhere to the 12-hour format. The United Kingdom uses the 24-hour clock in written communications, but still mostly uses the 12-hour format in verbal exchanges. Relatedly, digital clocks, watches and computers available outside the United States display the time by default using the 24-hour notation.<sup>5</sup> And lastly, those countries with "am/pm" use five distinct versions viz.: "in the early morning", "in the morning," "in the afternoon," "in the evening" and "in the late night."<sup>6</sup> And, if all of this were not confusing enough, a new way to tell time has emerged, and that is Internet Time. Internet Times is the same the world-over, no time zones, am/pms. Internet Time divides the day into 1000 ".beats." Each .beat is 1 minute and 26.4 seconds." The Internet Time was developed by the Swatch Clock Company.<sup>7</sup> I can't see its virtue given UTC time.

If one were to ask the correct time from another person who was wearing a digital watch, the person would probably reply that it was, for example "seven, fifty five." Yet, if the person queried was wearing an analogue watch, he/she would in all likelihood respond with "It's five minutes before eight." How confusing must this be to a child just learning to tell time. Remember back in time when, as a child, it seemed so difficult to learn to tell the time? Why? There are limitations with both the analogue clock and the digital clock. The limitation of the analogue clock is that one can easily misread the expressed time.



Hands can easily be confused or obscure the time, so that if it is 2:10 both hands overlap, or if 3:10 it may be read as 2:15. Additionally, analogue clocks require the processing of two images simultaneously, a tough job for a "kid." And finally, if it is 5 minutes after 2, a child sees the 1 but must translate that to a 5, as in 5 minutes after two. To get an idea of how difficult this is, try the name/color test. Look below and say the COLOR not the word:

**YELLOW BLUE ORANGE BLACK RED PURPLE**

A digital clock is easier to learn numbers per telling the time because of its displayed readability. There is no abstraction, no perceptual translation, no higher level cognitions required.

It can be argued that no invention so critically demarcates human beingness, from then until now, as the "clock." But what do clocks really express, but time, but how do we know "time." We cannot taste, smell, touch, hear nor see time, yet we know it exist, but how? If we momentarily lost all our senses, we could still know of time, as least that time has passed. In other words, maybe time resides in the memory of remembering what has happened. The present is only now in remembering what happened an eon or only a nanosecond ago. It is interesting to note how we have come to express the past and broken the "flow" of time into meaningful or measurable units. Consider that an event may have happened an eon ago, a millennium ago, generations ago, years

ago, weeks ago, days ago, hours ago, seconds ago and still parts of seconds, e.g., nano (one billionth of a second), attosecond ( one quintillionth of a second) and then the present, which must be sometime ago!

Then again, not even the word “clock” references the same concept of time for all. All time is not expressed in what we normally think of as clock-time. For example, there are biological clocks, genetic clocks, molecular clocks, and radiometric clocks.

All sorts of psychological questions about the expressions of time arise: Is time money and if so, do rich people have more time? Is there a real-time and is this different from virtual-time? Does time really run out...and then one dies? Does time heal all wounds, or just most? When is time-up or time-out? Only time will tell, but who? Can one make up for lost time? How do you kill time, and with what? Do I have too much or too little time on my hands? When is it time to go? Is there a good time versus a bad time? Does time really fly, to where? Do we possess time as when a student who says: “Sorry my paper was late, I didn’t have time to get it done.” How do other animals perceive time? It is said that a goldfish can remember for three seconds and an elephant never forgets? And, isn’t it peculiar how persons often regret the past, but just as often fear the future?

Despite the fact that the primary purpose of clocks has been to express time as a visual display, it is not necessarily the only purpose. From the sound of clangs, bells---A ship's bell clock, strikes up to eight bells, starting at 12:30 with one bell added each half hour up to 4:00 p.m., then the same sequence is repeated---chimes and gongs to musical melodies to cuckoo birdlike sounds, clocks have made "noise" to express the time. And still other clocks expressed the time by smell. Different kinds of incense were used for different hours, e.g., frankincense for one hour and say, myrrh for another hour. And, the first known expression of a warning (alarm) clock was developed by Plato. He used a water clock to spill a tray of brass balls onto a metal tray with a loudness sufficient to awaken his students for morning lessons.<sup>8</sup> From these days of the mechanical clock that made sounds, clockmakers have sought to make timepieces that enhanced the displaying of the time not with just bells, chimes or musical notes, but with the added refinement of expressing time with the spoken word, hence the proliferation of talking clocks.

## References

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- <sup>5</sup> Wikipedia, “The Free Encyclopedia,” from [http://en.wikipedia.org/wiki/24-hour\\_clock](http://en.wikipedia.org/wiki/24-hour_clock) (March 24, 2006).
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- <sup>7</sup> Wikipedia, “The Free Encyclopedia,” from [http://en.wikipedia.org/wiki/24-hour\\_clock](http://en.wikipedia.org/wiki/24-hour_clock) (March 19, 2006).
- <sup>8</sup> FG.J. Whitrow, “Time in History: Views of Time from Prehistory to the Present\_Day” (Oxford: Oxford University Press, 1988), 91.

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### **About the Author**

Mark B. McKinley is a Professor of Psychology at Lorain County Community College in Elyria, Ohio, where he has taught a number of psychology courses for the past 40 years. Dr. McKinley has been involved with both the study of the psychology of time (perception) and a timepiece collector (over 400 talking clocks) for the past 15 years. They range from the "primitive" Hiller, through radio-controlled atomic talking clocks He had an article published in the June, 2004 issue of the NAWCC Bulletin, which has become the impetus for a book on Talking Clocks entitled: TIC, TOCK TALK: The Collected History and Significance of Talking Clocks. McKinley has established the International Society of Talking Clock Collectors (ISTCC). A small part of the ISTCC collection is located at: <http://www.talkingclocks.net>