EGOCENTRIC TIME

By Mark B. McKinley (OH)

Real time, as we all know, is clock-time, the time that is objectified by breaking the day/night into 24 hours with 60 minutes, and with 60 seconds to a minute. However, in the end, all time is relative. As Einstein pointed out, "Time is relative"….to gravity, nature, people, clocks, etc. Even atomic clocks tick at different rates on earth and in spaceships. The focus of this article is on how time is relative to people. Egocentric time is subjective time that we experience, yet we cannot hear, taste, smell, touch or see time. The experience exists with the support of consciousness or memory.

Real time has been described as a series of events or happenings that we sequentially string together with a past, present, and a projected future. Egocentric time is unique to a person's particular circumstances of being alive. Time passage can be short, as in a sexual encounter, or forever, as in a smoker waiting in a doctor's office for the result of his or her chest x-ray, or even non existent, as "being in the zone." Or better yet, as to quote Zall's Second Law: "How long a minutes is, depends on which side of the bathroom door you're on."

Have you ever noticed that when driving to a vacation destination time passes more quickly than on the return trip? It is the same distance traveled, but the going is filled with things new and different, keeping the mind occupied. The return trip is no longer new and different, so because of less cognitive engagement one is sort of bored and time stretches out. Research confirms this illusion of time by simply having two groups of subjects do two different tasks in a fixed period of real-time. One group of subjects is to count the number of words on pages of a book (boring), while the other group of subjects is given a series of math problems (simple) to solve (more engaging). Each then estimates the time lapse. And, yep, the egocentric time differences are significant. You CAN try this experiment at home!

Egocentric time can cease to exist all together, such as when people who experience the "flow," or are in the "zone." In these instances a person super-focuses on a contextual reality (playing chess) to the exclusion of the extraneous world in the surround. Similarly, meditation seems to produce a like existence in which subjective time ceases or stands still. Indeed, meditation uses the same technique of hyper focusing on a single stimulus (mantra) while ignoring the outside world. "Being at one with things," I think is the phrasing.

Do drugs impact our perception of time? Man has historically and successfully searched for altered states of mind (time), for thousands of years. Probably the most familiar drug that has been researched and that has been shown (and known) to effect a person's perception of time is marijuana. Studies have demonstrated altered time sense, particularly in the realm of under-estimated time durations. Other drugs which have received the scientific eye in relation to egocentric time, include LSD, Peyote, and MDMA (Ecstasy). In each instance, significant time distortion or transcendence occurs.[1] Very likely it must be this transcendence or differently processed sense of time that is the primary attraction of such drugs. These drugs are not called "mind altering" for nothing, and that part of the mind that is altered is, in part, our memory function. As noted prior, if time is perceived as a sequential series of interconnected events, and one can't remember past events, then perceived time has, by definition, been changed.

From a neurological standpoint, researchers have demonstrated that dopamine levels are linked to time perception. Parkinson's disease patients have been shown to have a lower level of

dopamine. When their dopamine levels are increased, objective time perception improves. Indeed, methamphetamine and cocaine increase the levels of dopamine and time perceptions are altered or speeded up.[2] It is this dopamine effect, coupled with memory and the subsequent problems associated with the effective processing of time, that, to some extent, bedevils those persons with Alzheimer's

Dopamine levels decrease with age, beginning with the 20s and continuing through old age.[3] Is this why older people perceive time as passing more quickly? Have you been aware (conscious) that as you get older time seems to go faster versus when you were younger? Aside from the matter of dopamine, there is a different view that supports this belief. Consider that when a child is, say, two years old the second year represents 50 % of that child's entire time alive---an eternity. At 10 years old, the tenth year is but 10 percent of the child's life---time is moving faster in a shorter life-time. Now, when one is 50 years old, the fiftieth year is only 2 % of one's life time---not much time left!

Or, another way of looking at the egocentric passage of age-time is to assume a life expectancy of 80 years. A five-year-old has 75 years yet to go, or 94 % of life to be lived---this is "immortality"! But, at 70 years old, only 14 % of one's life is left---one must hurry up! Or, as Pink Floyd's song "Time" referenced the issue:

> Ticking away the moments that make up a dull day
> You fritter and waste the hours in an offhand way.
> You are young and life is long and there is time to kill today
> And then one day you find ten years have got behind you.
> Every year is getting shorter; never seem to find the time...

Then again, Sidney Harris, columnist for the Chicago *Tribune*, may have put it best when he defined the point of reaching "middle-age," as being that point in time when one sees one's life as years yet to be lived verses years already lived. This is the moment of no longer being immortal. Now life becomes finite. Although no exact date or time of death is certain, now there is the acknowledgement that an end-point and it is getting nearer with each passing day! Perhaps one "solution" to this fairly alarming aspect of egocentric time is that one can live a longer life by living an exceedingly dull, boring life---forever will seem real!

Try this experiment. With a stop watch (or a watch with a sweep second-hand), individually ask 5 "young" people to estimate the passage of one minute. Record their over/under 1 minute estimates. Ask 5 "older" people to estimate the passage of 1 minute and record their over/under estimate. You should find that the younger people's average estimate is under a minute and the older people's average estimate is over a minute. What this means is that as we age we mark time more slowly. Our internal clock winds down, so everything else seems to speed up, and by eighty years of age, the days of one's life are "flying by." What if humans could live to 700 years of age, how fast would time fly by?

Dream-time seems to defy any logical explanation because dreams are for the most part not logical in their content, viz. the dreamer can be in two places at once, or be both alive and dead at the same time. Just as surely the idea of time can exist in a dream, not real time, but egocentric time. While dreaming, the dreamer may experientially dream of taking a 3-day cruise and enjoy the 3-day adventure in great and pleasurable detail, but how much real time passed? In objective time the cruise-dream may have only lasted a minute or two, or more likely, a half an hour (a typical dream length in objective time). Indeed, many dreams eliminate a time dimension making

for a time-less opportunity for developing and instituting solutions to problems of poverty, war, disease, etc.

Yet another person-centered clock is our biological clock. It is set to approximately 24 hours (circadian rhythms) and is largely controlled by the daylight, night-time cycle.
This clock, while regulated by genes and hormones, can produce some interesting consequences. One common consequence of an altering of this clock is jet lag. We fly across country and arrive in California at noon, but it is time to eat breakfast! Night shift workers have a difficult time adjusting to this reversal of cyclical time. Indeed extra pay often accompanies a night shift job. Some persons living in the northern hemisphere where winter days are short and the nights are long experience Seasonal Affective Disorder (SAD). The treatment for this negative change in our timing mechanism is sunlight. It gets our clock back to running on time, and we feel better.

Other egocentric time puzzlers: When is the "right time?" How does one "lose time?" When do we have time to "make time?" Is there a real difference between a "good time" and a "bad time?" When is it "time to go?" Can one "buy time?" If one's "time is up," is there a time when "time is down?" And so, this article ends because I am "out of time."

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[1] Roy Mathew, "Time," maps, V. 12, (Fall, 2001), from http://www.maps.org/news- letters/v11n2/11245mat.html (February 26, 2006).
[2] Edward Willett, "Time Perception," (2004), from http://www.edwardwillett.com/Columns/timeperception.htm (March 1, 2006).
[3] Edward Willett, "Time Perception," (2004), from http://www.edwardwillett.com/Columns/timeperception.htm (March 1, 2006).

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