

Monitor your daily circadian rhythms for better life

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Circadian rhythms are a fundamental daily situation of human behavior. They are cycles within the living organism that take about 24 hours to complete from start to finish and are related to the sleep-wake cycle. Circadian rhythms control many biological processes, including cell division, hormonal release, sleep/wake cycles, body temperature and brain activity. Research has illustrated differences between morning and evening individuals on cognitive efficiency like logical reasoning, spatial estimations, and mathematical performances.

In this study, we build on this internal biological clock concept but focus on the “Synchrony Effect” – investigating the time-of-day (TOD) that different individuals’ reach optimal performance and alertness (reach the peak arousal time during the day). This article reported three studies on the relationships between individuals’ diurnal typologies, TOD, and perception of time and related services evaluation. More specifically, the three studies investigated the influence of different circadian states on the way individuals perform tasks, estimate the duration of those tasks, and evaluate their experience. Our results show a clear synchrony effect on individuals’ behavior with interesting managerial implications. Individual circadian rhythm strongly influences their task performance and time perception. Specifically, people perceive the length of a queue and the subsequent evaluation of the corresponding service as much shorter (underestimate) and expressed higher satisfaction during their peak circadian state. Also, there is a clear synchrony effect between circadian rhythms and retrospective time estimation—during their peak circadian states people tend to underestimate time as opposed to the normal tendency to overestimate events and tasks. We found that during their peak circadian time people tend to complete tasks more accurately and swiftly.

Recently some watches companies, including Swatch, have introduced a circadian alarm watch for individual use. The watch wakes the individual at the right moment of alertness based on monitoring his circadian rhythm, in order to avoid feeling sluggish. For example, the most successful watch in this category is the SLEEPTRACKER® (www.sleeptracker.com), which monitors the individual's sleep through the night and it wakes one at the moment the body would best adjust from moving from sleeping state to being most awake. It is catering, for example, to "business people looking for an extra edge, students with fluctuating schedule, or busy moms who need to wake up easily". It was proven to minimize jet-leg, a physiological condition which is a consequence of alterations to the circadian rhythm. Given that the concept of time is fundamental to our lives the results suggest that the effect of diurnal variations on individuals’ performances is critically dependent on whether the individual is a morning or evening type. We are all advised to remember the words of Thomas Mann (*The magic Mountain*, ch. 7) “Time cools, time clarifies; no mood can be maintained quite unaltered through the course of day”. The prospect that the synchrony effect may influence much of our behavior is compelling and opens novel avenues for future human research.