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The Effects of the Digital Age on Our Sleep

According to Thomas Edison, “Sleep is a waste of time, a heritage of our cave days” (qtd. in Ransom 4). Edison, an inventor who started the revolution of artificial lighting, implied that light would have a consequential effect on sleep because the integration of artificial lighting gave people an incentive to not go to bed when the sun went down. According to Dr. Charles Czeisler, a professor of sleep medicine at Harvard Medical School, “turning on a light . . . [is like] inadvertently taking a drug that affects how we will sleep” (Ekrieh 176). If this is what is said about light from light bulbs, how deeply does digital technology impact us? The use of digital technology affects sleep through the light it projects and interaction it requires.

A fundamental way that digital technology affects sleep is through the light projected from the screens of digital devices. Studies from Harvard University and the Brigham and Women's Hospital have concluded that “light emitted by [these] devices reset[s] the body's circadian clock, which synchronizes the daily rhythm of sleep to daylight” (“Research” 8). The human brain uses the exposure to light to know when it is time for sleep and will then release certain hormones. Unfortunately, our brains react to the light from digital screens in the same way that they react to sunlight. Dr. Czeisler explains that the light from many digital devices “suppresses the release of the sleep-promoting hormone, melatonin, enhances alertness, and shifts circadian rhythms to a later hour—making it more difficult to fall asleep” (Leane 25). Therefore, the exposure to this light is powerful enough to increase sleep loss.

However, there are different types of light, which include short wavelength and long wavelength, that can be produced from digital screens. Short wavelength, also known as blue light, is what the sun and many technologies' screens emit. Long wavelength, which is orange or red light, comes from fire and "has little to no effect on melatonin production," but short wavelength light decreases "the production of melatonin and [leads one to] stay alert and awake" (Sisson). A study conducted by Flinders University tested "the pre-sleep alertness . . . , sleep . . . , and morning functioning of 16 healthy adolescents." The test subjects interacted with "a bright tablet screen (80 lux), dim screen (1 lux) and a filtered short-wavelength screen (f.lux; 50 lux) for 1 [hour] before" going to sleep (Heath 496). Their testing showed that the subjects' "cognitive accuracy" was the highest in those whose devices were less bright, meaning those who were less exposed to the short wavelength screen light (Heath 500). Exposure to short wavelength blue light causes a delay in and even loss of sleep. Thus, the light produced from digital technologies plays a key role in affecting one's sleep.

The interactive aspect is another fundamental way that digital technology affects sleep. One researcher of sleep medicine describes these digital devices as "engaging and enticing" which "lock[s] us in . . . on some type of interactive activity" until "the next thing you know, it's 2 o'clock in the morning" ("TV"). The advancement of technology has allowed society to go beyond merely observing a screen. It has allowed for hands-on involvement in what happens on the screen. The University of Birmingham studied "associations between sleep duration [through] four technology types (computer use, mobile telephones, TV viewing[,], and video gaming)" (1254). Their research revealed "that video gaming and computer use at bedtime during the week were the strongest predictors of reduced weekday sleep duration." Furthermore, it was found that "addicted video gamers experienced more sleep deprivation" and even

“impaired sleep quality” (1256-1258). This, along with other research, leads to the understanding that these technologies not only make it more difficult for people to fall asleep, but also prevents them from entering into a deeper sleep. This deep sleep and REM sleep are crucial to the body’s recovering from the long day as well as simply allowing people to “feel refreshed and energized after a good night’s sleep” (Schmutte 3061). The ability to interact with technology has hence led to the procrastination of going to bed, the inadequate effectiveness of sleep, and the lack of vitality.

Digital technology’s interactive quality can further affect sleep by deteriorating one’s daily routine. Dr. Czeisler refers to the irregular sleep schedule caused by digital devices as “social jetlag.” He illustrates that staying up “on the weekends . . . till 2:00, 3 o’clock in the morning and then . . . trying to go to bed at 10 o’clock at night on [the] weeknights . . . [is] like traveling back and forth from London back to the East Coast every time you want to try to go to bed on a weeknight . . .” (“TV”). Human bodies like consistency. As a past quote from Dr. Czeisler revealed, it is too easy for the interactiveness of technology to “lock us in” and keep us up hours past our initial bedtime. This generates an erratic, dysfunctional routine, which is hardly a routine at all. One specialist in sleep medicine claims that interacting with these gadgets “in the bedroom makes your mind associate the room with productivity, not relaxation” (Daily 42) and that “your brain [needs] to know that when you’re in bed, that’s a place for sleep and sleep only” (qtd. in Dailey 42). Associating where one sleeps with where one is conjointly productive is conflicting, and this can additionally damage the human body’s day-to-day routine.

Sleep deprivation does not appear to be a significant issue at first. The solution is self-evident and easily attained, but the health problems that lack of sleep can cause are not as seemingly insignificant nor easily solved. Although there are still holes in the understanding of

the objective of sleep for the human body beyond the obvious, there are clear correlations between lack of sleep and health problems. Whenever one claims he or she “didn’t sleep well,” symptoms such as lacking energy as well as stunted “short-term memory and sustained attention” are commonly exhibited (Schmutte 3061). Claire McCarthy, a professor of pediatrics at Harvard Medical School, finds that sleep deprivation in children “increases the risk of obesity, mental health problems, school problems[,] and risk-taking behavior in teens.” McCarthy also explained that “lack of sleep . . . can put children at risk for high blood pressure and heart disease as adults.” As a result of these consequences, the use of technology should not be considered a harmless endeavor.

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