Name:

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Annotations: As you read make notes on the text by doing the following:

* **Circle** any words you do not know- write the definition in the margin
* **Underline** any section which might be pertinent (applicable) to your research paper- write yourself a reminder note in the margins so you do not lose that brilliant thought!
* **Box** sections in which you see a clear connection with the text- write a short explanatory note in the margins

Points:

Annotations: \_\_\_/5

Response: \_\_\_/5

Sleep your way to a better life?

Weizmann study says it may be possible

Your brain is apparently open to messages during down time, according to the results of experiments by Israeli researchers

Times of Israel

BY DAVID SHAMAH August 28, 2012, 12:07 pm

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One of the most popular fantasies in the Western imagination has, for decades, been the dream of “a better life through sleep” — being able to play a recording with appropriate messages motivating you to lose weight, quit smoking, ask for a raise, or learn a new language

The thing is, though, that it may not be a fantasy, said Anat Arzi, who worked with Prof. Noam Sobel of the Weizmann Institute on what may one day be remembered as a breakthrough study demonstrating that yes, you can drop 20 pounds, stop smoking, get a better job, or learn Chinese while you sleep.

The study, published in the Nature Neuroscience journal, showed that sleeping individuals could “learn” to associated smells with tones that were played while they were in various stages of sleep. As the various odors were presented, the researchers played specific tones, associating the two in the minds of subjects.

The subjects’ state of sleep was constantly monitored (waking up during the conditioning – even for a moment – disqualified the results.) As they slept, a tone was played, followed by an odor – either pleasant or unpleasant. Then another tone was played, followed by an odor at the opposite end of the pleasantness scale. Over the course of the night, the associations were partially reinforced, so that the subject was exposed to just the tones as well. The sleeping volunteers reacted to the tones alone as if the associated odor were still present – by either sniffing deeply or taking shallow breaths.

The next day, the subjects, now awake, again heard the tones alone – with no accompanying odor. Although they had no conscious recollection of listening to them during the night, their breathing patterns told a different story. When exposed to tones that had been paired with pleasant odors, they sniffed deeply, while the second tones – those associated with bad smells – provoked short, shallow sniffs.

Sleep-learning experiments are very difficult to conduct, which is why there is so little scientific data about them. The last serious study about sleep-learning (hypnopedia) was conducted over 50 years ago, and since then no credible scientists have taken claims by hypnopedia hucksters seriously. But the Weizmann study indicates that there may be something to sleep-learning after all, although exactly what that “what” is remains to be seen, Arzi told the Times of Israel.

“The results of this study warrant further research, and one thing we are going to be looking for will be the limits of what can and cannot be taught through hypnopedia,” Arzi said. “While our experiment focused on the function of smell, it is possible that sleep-learning could manifest itself in many other ways. However, it is too soon to tell what those areas may be.”

One of the areas that Arzi and the Weizmann team will be taking a hard look at are the behavioral changes that could be accomplished through sleep-learning, whether for weight loss or other purposes. While there are large numbers of people who claim that they were able to change their behavior using programs that play messages while they ostensibly sleep, Arzi said that it is important to remember that we are not always asleep when we go to sleep.

“It is important to remember that we have a lot of waking moments during the night. We usually don’t remember the short periods of wakefulness, where we go back to sleep after a few seconds, but we do remember the longer ones.” Thus, a recording that runs through the night, playing messages for hours at a time, could “seep into” the consciousness of a subject. But that is not the same as hypnopedia, said Arzi.

As to whether it may be possible to really “program” the brain during its down time, Arzi said that much more work is needed.

“Right now, there are only questions, not answers,” she said.

Those answers will be along in due time, however – and not soon enough for the legions of the overweight, the underachievers, and those who can’t seem to kick the smoking habit, who could use a little nighttime help to achieve their goals.

Response: Brave New World warns of the dangers of giving the state control over new and powerful technologies. One illustration of this theme is hypnopaedic conditioning. It is important to recognize the distinction between science and technology. Whereas the State talks about progress and science, what it really means is the bettering of technology, not increased scientific exploration and experimentation. The state uses science as a means to build technology that can create a seamless, happy, superficial world through things such as the “feelies.” Do you believe our society uses science today to move toward a superficial world or toward a world of progress?

To answer the question make a connection between this article and the chapters read thus far in a clear and concise 3-5 sentence answer.

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