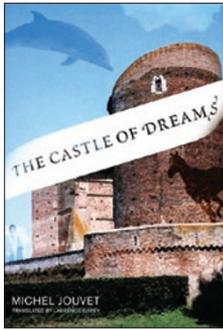


Working on a Dream



The Castle of Dreams

by Michel Jouviet, translated by
Laurence Garey

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Reviewed by Manfred Hallschmid
& Jan Born

Sleep is of the brain, by the brain and for the brain, Allan Hobson once wrote, but what about the origins and functions of dreams? When the narrator of this factoidal novel by French physiologist and sleep research pioneer Michel Jouviet buys an antique trunk, he is excited to find in it a stack of worn handwritings. In these journals, eighteenth century surgeon, libertine and, as luck would have it, dream researcher Hugues la Scève recounts his quest to unravel the mystery of dreams. Starting with an introspective collection of around 1,500 of his own dreams, he proceeds to the observation of dream sleep in animals and human subjects, mostly women, discovering rapid eye movement (REM) sleep *avant la lettre*, experimenting with electric, chemical and pharmacological approaches and finally setting sail for a journey to a far-away kingdom where the dolphins dream (or, rather, do not).

In this predecessor to his scientific essay, *The Paradox of Sleep: The Story of Dreaming*, Michel Jouviet transposes much of his own knowledge into a historical setting. In the 1950s, Jouviet, along with several other researchers, such as Nathaniel Kleitman's group, was among the first to relate REM sleep to the occurrence of dreams, coining this brain state between sleep and wakefulness 'paradoxical sleep'. REM sleep, which is clearly discernable from deep sleep and wakefulness, lasts up to 100 min per night in adults and is associated with general paralysis and, as naturalist la Scève is fascinated to observe, increased blood flow to the brain as well as penile and clitoral erections in humans. As the book's hero does not succeed in pinpointing the purpose of dreaming, he comes to a speculative conclusion also heralded by Michel Jouviet himself, that the roots of dreams are almost impossible to analyze neuron by neuron because in a holistic sense dreams serve to map out, to maintain and to preserve the individual's unique 'psychological heredity'. This, Jouviet proposes, is accomplished by the iterative programming and activation of brain circuits during dreaming.

The immediate scientific relevance of the skilled English translation of Jouviet's text is somewhat constrained by the fact that the original version is now almost 20 years old and apparently has not been updated for this edition. Thus, recent findings and conceptual advancements in sleep research are not yet covered by la Scève's visionary excursions. However,

the semi-fictional approach of the book allows for a closer, although by all means subjective, look at the very nature of scientific progress. La Scève's inspiration is driven by steady curiosity as well as by chance and is fuelled by observations or some good advice from old friends and scientific colleagues. This pattern might not surprise readers with a scientific background, but it nicely illustrates a basic *modus operandi* whether research takes place in a candle-lit boudoir or in a state-of-the-art sleep laboratory. For the sake of burlesque intermission, a werewolf drops by from time to time while the nobleman's mysterious foreign assistant tackles the laboratory setup. In what must be a satirical allusion to the Freudian underpinnings of common dream myths, la Scève's story sometimes turns into a phallogocentric fairytale in which nature's secrets and womanhood alike are eager to submit to the naturalist's inexhaustible zeal.

The book's speculative and fictional approach, which would not withstand scientific objections and criticism, is nonetheless a confession that current science does not offer a satisfactory explanation for the occurrence of dreams. Can philosophy lead us to fill this gap? Jouviet lets his protagonist wander between classical Cartesian dualism, where the dreaming mind can influence bodily processes that constitute REM sleep, and modern forms of identity theory, according to which mental processes are mapped onto and correlated with defined brain states, but do not interact with them. In fact, la Scève may create some confusion in the neuroscientific readership when occasionally equating dreaming with REM sleep. Moreover, the hero does not consider the challenging question of whether dream reports in any way reflect experiences during ongoing REM sleep or rather are confabulations of the waking brain confronted with residual sleep activity persisting during the process of awakening. Some deeper reflections on modern day views might have spoiled the historical backdrop, but would perhaps have enhanced the effect of la Scève's theorizing on current research. Be that as it may, the notion that REM sleep is a self-organizing process of the brain that preserves an individual's psychological integrity against society's demand for adaptation is a fundamental and long-standing idea. It has been adopted, with some variations of the theme, by many dream interpreters, including Freud, and will probably influence future dream research originating from the developing field of social neuroscience.

Readers who judge la Scève's story as a novel about the business of science might not find the Frenchman's notes as intriguing as say the tragicomic fate of Nabokov's lecturer Pnin or Thomas Pynchon's ambiguous labyrinths, as the plot's plain blueprint, retelling research as a period piece, leads to some artistic restrictions. Adhering to this slightly predictable scheme, Jouviet depicts the larval stages of some important tools of sleep research, including lesion studies in animals and a crude form of electroencephalography assessment. Thus, basic concepts of neuroscience are presented in a playful fashion and, at the end of the book, the aristocrat's discoveries are briefly put into today's context. In sum, the more recent *Paradox of Sleep* might be the more informative and comprehensive guide to dream research and to Michel Jouviet's outstanding contributions to the science of sleep. Nevertheless, sharing la Scève's meandering thoughts that happily embrace speculation and intuition may well inspire researchers in this field to aim high in developing more essential ideas of the nature of dreams. They should indeed plan on spending some nights in *The Castle of Dreams*. ■

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