Life on the wheel of consciousness

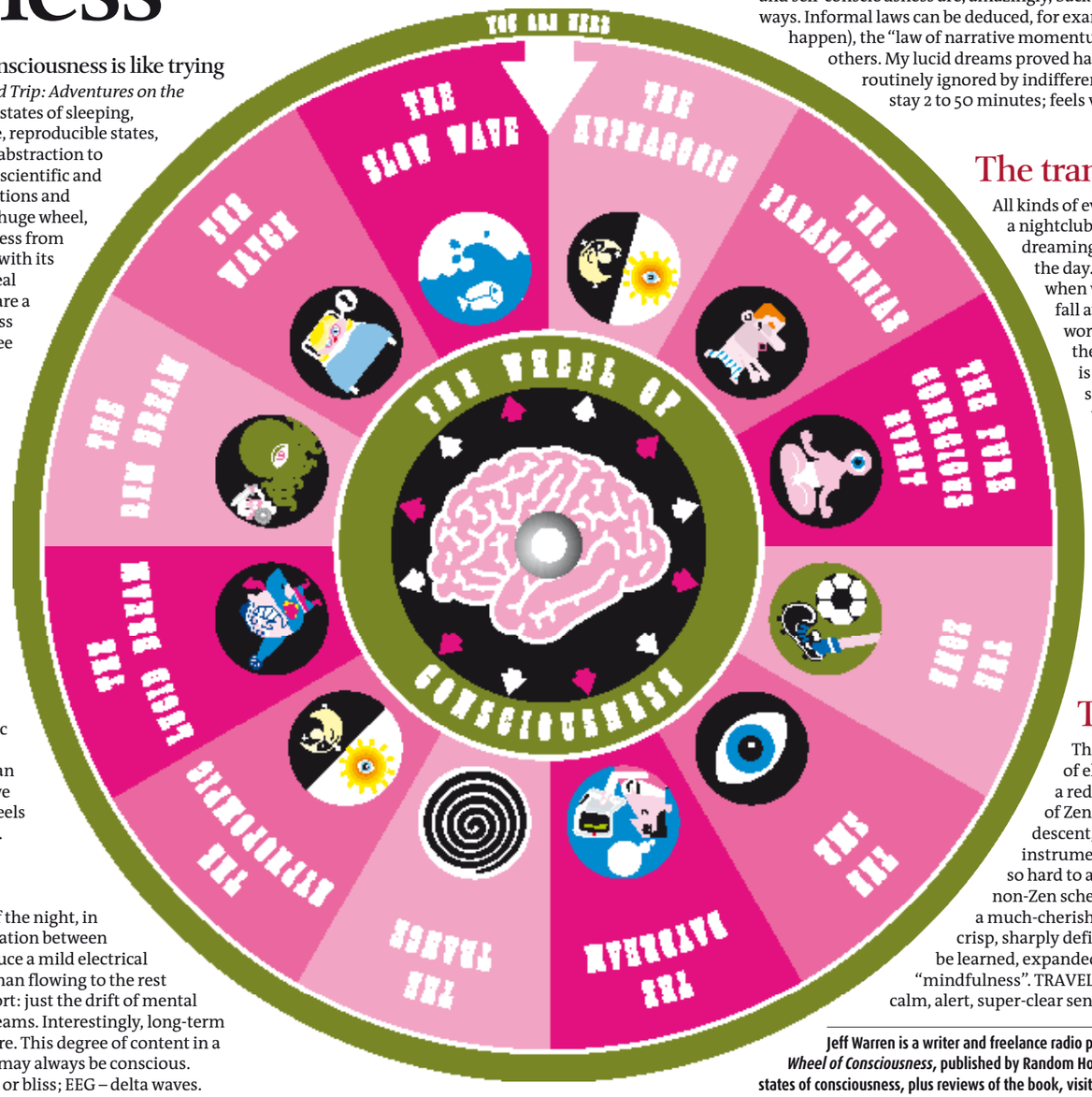
My friend Matt said it best: trying to draw strict borders round consciousness is like trying to stick post-it notes on the ocean. Nothing daunted, I set out in *The Head Trip: Adventures on the Wheel of Consciousness* to catch the brain in the act of constructing the primary states of sleeping, dreaming and waking consciousness. For me getting to grips with these definite, reproducible states, with their common underlying neurology, meant moving away from textbook abstraction to first-person experience. I became a guinea pig for experimentation of all kinds, scientific and otherwise, including sleep lab analysis, lucid-dream workshops, hypnotic inductions and neurofeedback trials. The idea that emerged was of the mind stretched across a huge wheel, which completes a rotation every 24 hours, changing the contour of consciousness from moment to moment. I divided my "wheel of consciousness" into 12 states, each with its unique blend of knowledge and custom. It came to feel so much like making a real journey that my book took on the aspect of a travel guide. The five states below are a taster of how the first-person journey helps unexpected aspects of consciousness become apparent. Take "agency". A certain fatalism about human nature and free will is fashionable, but it doesn't have to be so. Looking closely at consciousness from the inside, you find we can learn to regulate our experience of dreaming and waking in all kinds of surprising, even radical ways. So explore the fun of trying to control a lucid dream, solve a complex problem or achieve a mindful state. What happens to each of us will be different. Enjoy the trip! **Jeff Warren**

The hypnagogic

I've always wanted to know what it feels like at the exact moment I fall asleep. It's seemingly impossible: caught by the momentum of stage 1 sleep, our short-term memories flicker out, and we tumble out of self-consciousness. The hypnagogic state is a strange place. As the sensory gateway rolls shut, I enter a brief period of body distortions, visual imagery and unusual associations. My brain waves flat-line then burst back. Thoughts free-associate wildly: a game with my father, *The Lord of the Rings* movie, hobbits, a naked elf woman, sex, fear of being scratched, the Milky Way, a vessel to explore it in, my childhood fort. Most of us have no sense of the rare opportunity the state offers to cross-pollinate two modes of thought: the waking mind can retrieve sections of exotic dream logic, something artists and scientists have always used for creative problem-solving. The hypnagogic also shows how dream processes gurgle like an underground creek just below the waking surface, and break through in ways we barely appreciate. TRAVEL NOTES: we all pass through; stay 2 to 30+ minutes; feels hallucinogenic, relaxing, associative; EEG – theta waves, spindles, K-complexes.

The slow wave

Slow wave (dreamless sleep) is a fascinating mystery. I enter it in the first half of the night, in stages 3/4 sleep. Large delta waves roll across my cortex; specialised communication between brain regions has broken down. We know this because when researchers introduce a mild electrical pulse into the sleeping cortex, the current pools at the stimulation site rather than flowing to the rest of the brain, as in waking. When I was woken from slow-wave, I had little to report: just the drift of mental flotsam, like a vaguely recalled to-do list. But some people report full-blown dreams. Interestingly, long-term meditators tell of intense bliss, a state in which we are, paradoxically, most aware. This degree of content in a state thought to be content-free suggests something radical: on some level, we may always be conscious. TRAVEL NOTES: we all visit; stay 10 to 40 minutes; (mostly) repetitive thinking, or bliss; EEG – delta waves.



MICK MARSTON/THE HEAD TRIP BY JEFF WARREN

The lucid dream

Everyone knows what normal dreams are like: non-stop absurdist action, where we race around like witless actors in a production we cannot control, weeping, freaking and pleading helplessly with giant kiwi fruit or whatever. Yet there's an important exception: the lucid dream. This extraordinary state of consciousness occurs mostly in the early morning, during periods of high-activation rapid eye movement (REM) sleep. Dreamers "wake up" in the dream and boggle at the amazing vividness of their artificial world. Lucid dreamers walk around their dream, examining texture, interrogating "characters" and running experiments – or just trying to have sex. The waking capacities of intentionality, reason, memory and self-consciousness are, amazingly, back online. Without sensory input, consciousness appears to behave in predictable ways. Informal laws can be deduced, for example, the "law of self-fulfilling expectations" (what you expect to happen will happen), the "law of narrative momentum" (linger too long in one place and the dream world begins to fray) and others. My lucid dreams proved harder to control than I imagined: I crashed helplessly into hedges and was routinely ignored by indifferent dream characters. TRAVEL NOTES: hard to visit, easier in the early mornings; stay 2 to 50 minutes; feels vivid, clear-thinking, exultant; EEG – phasic REM.

The trance

All kinds of everyday waking activities superficially plunge us into a trance – dancing in a nightclub, driving on the highway, reading an engrossing book. As with sleeping and dreaming, waking states are influenced by the rise and fall of alertness throughout the day. The trance is maximised by arousal: it is a species of intense focal attention, when we become so absorbed in a central object or idea that peripheral concerns fall away, and we feel we are moving through the world on autopilot. In other words, the trance may be the waking corollary of the normal REM dream. Yet the trance also contains something special: high suggestibility. This is why it is of interest to hypnotists. I was keen to be hypnotised, but scored low on susceptibility tests devised by researchers at Harvard and Stanford, California universities. In the right hands, however, I found my arm floating up out of my control just like in the textbooks. Some people experience visual and auditory hallucinations, where they see a dog or smell a rose, for example. These hallucinations are an important manifestation of top-down dream processes seeping into the waking world. The trance is also a murky channel for a range of surprising psychosomatic phenomena: with the right prompting, burns, skin disorders and inflammation of every kind seem to appear or disappear inside and outside the body. I think this holds another important lesson: the mind is no epiphenomenon, but has causal powers. TRAVEL NOTES: most people arrive easily, deep trances are more scarce; stay 1 minute to several hours; feels absorbed and focused; EEG – not consistent, sometimes theta waves.

The sensory-motor rhythm

The sensory-motor rhythm (SMR) gets its name from a very specific spindle of electrical activity over the sensory-motor cortex, where it is associated with a reduction in sensory input and motor output. SMR states appear in moments of Zen-like calm alertness: when you throw a tennis ball in the air and wait for its descent, or in that brief period of thought-collecting stillness before playing a musical instrument. Over the course of 40 sessions experimenting with neurofeedback, I tried so hard to attain my own SMR state that I nearly drove myself insane with decidedly non-Zen scheming and obtuseness. For all its fickleness, or perhaps because of it, SMR is a much-cherished state. Time slows down and the moment seems to breathe. There is a crisp, sharply defined quality to both internal thoughts and external stimuli. The state can be learned, expanded, sustained. Other traditions have other names for it: Buddhists call it "mindfulness". TRAVEL NOTES: relatively accessible; stay several seconds to much longer; feels calm, alert, super-clear senses; EEG – low beta (12 to 15 Hz). ●

Jeff Warren is a writer and freelance radio producer for the CBC. This essay and illustration are based on *The Head Trip: Adventures on the Wheel of Consciousness*, published by Random House in the US and Canada, and by Oneworld in the UK. For more information on these and other states of consciousness, plus reviews of the book, visit his website at www.headtrip.ca.