



Science (Non-)Fiction

ADVANCES IN MEMORY RESEARCH THAT WOULD MAKE ISAAC ASIMOV SWOON

SCIENTISTS ARE CLOSE to turning the far-out memory tricks of fantasy flicks into reality. Someday, our memories may be selectively erased, enhanced, or recorded in our sleep. —*Sajel K. Shah*

DREAMTIME.COM

THE BREAKTHROUGH

➔ Imagine slapping a few electrodes on your scalp and flipping a switch for **instantly better powers of recall**. Scientists at Temple University did just that—they applied a weak electrical current to healthy people’s brains, amping up neuronal activity in and around the right anterior temporal lobe. With the juice painlessly flowing, people remembered 40 percent more celebrity names than the control group did.

➔ **No more forgetting your dreams:** Scientists presented images to patients who had electrodes in their brains. By noting how neurons responded, researchers mapped abstract concepts onto the brain. “Then, from brain activity alone, we could tell what a person was thinking about,” says study author Itzhak Fried. By monitoring cortical activation in sleepers, scientists could see and record their dreams, Fried theorizes.

➔ **“Forget it happened”** may be a literal possibility. Certain synapse-altering proteins appear in a rat’s brain 24 hours after a fearful moment and wane by the 48-hour mark. By plucking these proteins from neurons, a drug may prevent memory formation. “We record memories by modifying synaptic circuits in the brain,” explains researcher Richard L. Huganir. To retrieve a memory, you reactivate the same circuit. Huganir’s team erased the circuit corresponding to a traumatic event before it jelled.

THE FORERUNNER

Johnny Mnemonic is a “data trafficker” who, thanks to an implant, carries a laptop’s worth of memory in his brain. Super-human recall with technology’s help? Let’s hope it doesn’t usher in the film’s dystopian society.

Inception’s Dominic Cobb crashes people’s dreams and actually extracts info from their reveries. (Wonder what he’d make of that recurring nightmare where you’re naked and unprepared for an algebra quiz.)

In **Men In Black**, alien fighters beam a “neuralizer” into witnesses’ eyes to black out whatever they just saw. Huganir’s quick-acting memory eraser would most likely come in the form of a protein-scrubbing pill.