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NEUROSCIENCE

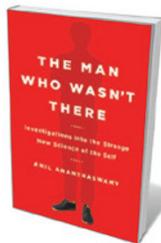
In the blink of an I

Douwe Draaisma is impressed by a study on the science behind ‘maladies of the self’.

It might happen while you are lecturing. All of a sudden, you hear yourself talking: an autopilot version of yourself seems to have taken over. With rising panic, you struggle to get back in, praying that what this autopilot has to say makes sense.

Who — or what — is the ‘yourself’ that does the talking? And who is the ‘I’ that anxiously tries to regain control? Are there temporarily two selves? Or is there still a single self, experienced from the outside? In most cases, the ‘split’ dissolves quickly and you slip back into the driver’s seat. You have experienced a brief spell of depersonalization.

Depersonalization can also be pathological, sometimes linked to epilepsy, and can last for minutes or even hours. To science writer Anil Ananthaswamy, chronic types of



The Man Who Wasn't There: Investigations into the Strange New Science of the Self
ANIL ANANTHASWAMY
Dutton: 2015

dissociation belong to “maladies of the self”, a set of experiences, conditions and syndromes that offer a window on what constitutes a self. For *The Man Who Wasn't There*, Ananthaswamy interviewed patients, psychiatrists and neuroscientists, charting how the self is affected in people with autism spectrum disorder, dementia, epilepsy or schizophrenia, and examining out-of-body experiences, doppelgänger hallucinations and phantom sensations. Much of the book reads like a travelogue, an exploration of the fringes of human experiences with Ananthaswamy a dependable guide, as in his celebrated *The Edge of Physics* (Gerald Duckworth, 2010). However elusive the experiences may seem, he keeps analysis close to the findings of modern neuroscience and psychiatry.

Ananthaswamy hears intimate, sometimes heartbreaking stories about what it means to experience a condition’s symptoms. He has a gift for weaving these through the technicalities of neuroscientific literature. Autobiographies hinging on conditions such as Asperger’s syndrome and schizophrenia are proliferating, but there is little to fill the void between such accounts and the scientific

literature. Linking experiences with experiments, and individuals with numbers, Ananthaswamy bridges that gap convincingly.

Possibly the most harrowing malady of the self is Cotard’s syndrome, in which a person, often with severe depression, believes that he or she has died. Ananthaswamy presents the case of 48-year-old Graham. After a failed attempt to electrocute himself, he became convinced that he was brain dead. Scans showed severe loss of activity in the frontal and parietal regions of the brain — structures supporting the ‘default mode network’, which allows one to remember and maintain the feeling that there is an ‘I’ that acts and experiences. Investigators speculated that antidepressants — or depression — could dampen activity in these brain areas but held that neither hypothesis could explain the extent of the lowered metabolism. Cotard’s syndrome is philosophically unsettling, because it questions the axiomatic certainty of the Cartesian ‘I think, therefore I am’. Yet, Ananthaswamy observes, there must still be an ‘I’ that

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experiences the delusion of being dead.

More common, but equally ghostly, are phantom experiences. After amputation of a limb, some people still feel itching or pain from it, probably due to activity in the now-vacant part of their cortical 'map', the neurological representation that supports their body image. Lesser known is the inverse, body integrity identity disorder, in which a

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person feels that a healthy body part is foreign to them. The disorder may cause severe suffering. Quite a few desperate people have taken it into their own hands to

get rid of the problematic body part, and have bled to death.

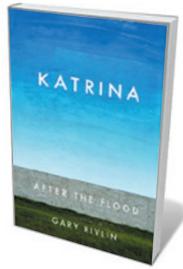
In a moving chapter, Ananthaswamy travels with 'David' to an Asian surgeon who relieves him of a leg that has felt odd since childhood. Afterwards, David finally feels at one with his bodily self. Swiss neuropsychologist Peter Brugger suggests that a limb that feels foreign may be the result of a cortical map that never included it in the first place.

There are many such inversions in *The Man Who Wasn't There*. They make intriguing associations. Could the feeling of a split self in depersonalization be the inverse of the ecstatic feeling of oneness with the world sometimes experienced during an epileptic seizure originating in the temporal lobe? (The brain region that is hyperactive during ecstatic seizures, the anterior insula, is underactive during chronic depersonalization, which seems to point in this direction.) Is the loss of a self supported by personal memories in Alzheimer's disease analogous to the scrambling of the self in schizophrenia? And could the trouble that some people with autism spectrum disorder have in intuiting the mental states of others — which has been called a deficient theory of mind — also cause the less sophisticated introspective skills that they may have?

Ananthaswamy does not end with a list of conclusions about the location, structure or organization of a hypothetical self. One could hardly expect him to: most of the research is in flux, and has been especially so since the introduction of sophisticated imaging techniques. Instead, he gives a sense of the many forces — hormonal, chemical, psychological, social — that modulate the self-as-experienced. One finishes the quest with a sense of paradox that the concept of self, often seen as elusive if not illusory, is so eminently suited to tightening these various narrative threads. ■

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Books in brief



Katrina: After the Flood

Gary Rivlin SIMON & SCHUSTER (2015)

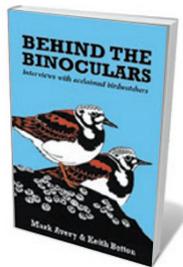
Ten years ago this month, New Orleans lay drowning, its levees breached by the storm surge from Hurricane Katrina. One million people were displaced and, despite federal preparedness exercises, the administration responded sluggishly. Journalist Gary Rivlin sweeps from street to boardroom in this history of the aftermath, studded with figures such as polarizing New Orleans mayor Ray Nagin and seething with egregious political failings that deepened racial inequality during the city's recovery. As Rivlin sharply reminds, overcoming disasters is very much an issue of governance.



The Black Mirror: Looking at Life Through Death

Raymond Tallis YALE UNIVERSITY PRESS (2015)

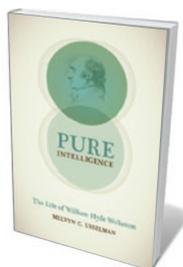
Death may be unimaginable, but former geriatric specialist Raymond Tallis explores it imaginatively nonetheless. Inspired by novelist E. M. Forster's line from *Howards End* (1910), "Death destroys a man; the idea of death saves him", Tallis's meditation on his future corpse is a meshed march of philosophical musings and bald physical detail. As he sifts a lifetime's worth of sensory and emotional memory, Tallis's prose stuns like poetry — from the "crackling, rebellious stretching as paper balls unscrunch" to the self's continuity despite the "distracted, multiple" nature of life. Enchanting.



Behind the Binoculars: Interviews with Acclaimed Birdwatchers

Mark Avery and Keith Betton PELAGIC (2015)

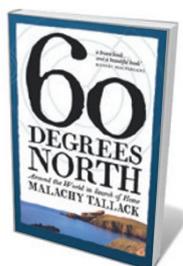
Whether spotting golden eagles in Idaho or long-tailed tits in London, professional birdwatchers are a rare breed — observational dynamos wedded to their craft. Wildlife campaigner Mark Avery and birdwatcher Keith Betton have captured 20 stories (including their own) from British luminaries such as wagtail expert Stephanie Tyler and birder extraordinaire Lee Evans. This is both a serious overview of the field and a flock of delights, from the shot of a youthful Betton with three young song thrushes balancing on his forearm to fond memories of first binoculars, whether Leica Ultravids or Swarovskis.



Pure Intelligence: The Life of William Hyde Wollaston

Melvyn C. Usselman UNIVERSITY OF CHICAGO PRESS (2015)

He was crucial to the development of crystallography, and discovered the amino acid cystine and the elements palladium and rhodium. Yet scientific polymath William Hyde Wollaston (1766–1828) is largely forgotten. This meticulous biography, the life's work of late chemist Melvyn Usselman, reveals a man of indefatigable curiosity and methodological genius. As we see Wollaston crafting analytical instruments for Arctic expeditions, stargazing or showing scientific writer Mary Somerville the uses of a goniometer, we can only concur with Usselman that this was a "man worth knowing".



Sixty Degrees North: Around the World in Search of Home

Malachy Tallack POLYGON (2015)

If you follow Shetland's latitude of 60° N around the world, you will encounter cultures "challenged by climate, by landscape, by remoteness". So writes Shetlander Malachy Tallack in this powerful memoir detailing how, unmoored by his father's death, he traversed that line to explore geographies inner and outer. Whether in Alaska's Kenai peninsula dodging bears or among the Even people in "huge, cold and utterly strange" Siberia, Tallack is forever testing the psychological dynamics of the sense of belonging. **Barbara Kiser**