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Stefan Helmreich - *A Book of Waves*, Duke University Press: 2023 (pp. 411) ISBN13: 978-1-4780-2041-7

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Gender waves. Media waves. Medical waves. Stefan Helmreich's *A Book of Waves* (2023) shatters the traditional mould of academic writing. It offers five powerful chapters taking you on a ride through the anthropological and historical currents of wave science. Each chapter is punctuated by sets of three essays, mirroring the rhythm and anticipation of waves that surfers live for.

Helmreich breaks down the boundaries between anthropology, oceanography, and climate science. He blends them into a fresh, interdisciplinary mix redefining what a wave can be. His approach transforms waves from natural phenomena into rich cultural symbols, inviting readers to dive into the tangled relationships between history, science, and society.

Inspired by Mr Palomar (1985), Italo Calvino's tale of reading a wave, Helmreich plunges into how we interpret and understand waves. He paints oceanographers as detectives of the deep who decipher waves like secret codes that offer tales of recent pressure shifts, distant storms, and approaching tempests. They face the challenge of cracking open the patterns of waves to uncover hidden meanings. Flipping Carl Schmitt's (2015) notion of the sea as an empty void, Helmreich argues instead that waves are like texts: messengers, characters, and narratives all rolled into one. He then adds a new layer to the viewing of waves seeing them as gendered entities. He shows the sea as both a gentle muse and a powerful force, describing it as a feminine presence seen throughout Judeo-Christian lore, Enlightenment thinking, and natural science. Ocean waves, he suggests, have long been imbued with feminine qualities, but Helmreich isn't content with old stereotypes. He twists the lens, showing how waves have also symbolised the collective power of women, particularly in U.S. feminism. These wave metaphors, long steeped in gendered symbolism, are now being tested as the lines blur in a world increasingly focused on the "non-human". As these gendered associations begin to unravel, Helmreich asks us to re-examine how we perceive both waves and gender in a world where boundaries are constantly being redrawn.

By travelling with oceanographers and coastal engineers from the Netherlands to the United States, Australia, and Japan, Helmreich uncovers the varying ways scientists engage with waves. One example he cites is the wave simulation centres where digital avatars of waves are life-saving tools that warn of impending natural disasters. These centres give scientists the information on waves' geomorphological and chemical properties. This is crucial for everything from maritime navigation to coastal infrastructure and ecological management. Then there are computational models like WAVEWATCH. These enable scientists to simulate and predict wave behaviour with pinpoint accuracy. By abstracting waves from their temporal and spatial contexts, these models make waves interchangeable, comparable, and understandable on a global scale. These insights influence how we see the ocean, transforming it into a critical piece of environmental infrastructure vital to our planet's future.

Helmreich contends that waves carry ecological, geopolitical, and climatological information, turning the ocean into a sprawling, ever-changing data network essential for global trade, travel, warfare, and humanitarian efforts. By combining scientific insights with cultural reflections, Helmreich transforms waves into more than just natural phenomena. They become symbols that mirror and shape our social histories and futures. He considers mythology, revealing how waves have been portrayed as both nurturing and destructive forces throughout history, reflecting humanity's complex relationship with the sea. And in surf culture, he draws parallels between the physical act of surfing and the cultural narratives that celebrate freedom, exploration, and the power of nature. Helmreich even gives a nod to the iconic 1966 surf documentary *Endless Summer*, using it as a springboard to show how waves are romanticised in popular culture.

Helmreich continues the journey by surveying how waves have been depicted in art and literature as both destroyers and nurturers. He mentions *The Great Wave off Kanagawa*, by Hokusai (1936), an iconic Japanese woodblock print that captures the raw power of the sea. This artwork is a testament as to how waves have been revered and feared. Helmreich fuses these perspectives, showing us that waves are more than just physical forces; they're complex entities with strong natural and cultural significance. He demonstrates that wave science has laid down frameworks that ripple through fields like medicine and social science, offering fresh insights and novel approaches.

In discussing the social sphere, Helmreich offers a concept of waves that has taken on new meaning, especially during COVID-19. He says that pandemic "waves" was a metaphor that was crucial in organising public understanding and shaping health strategies. Helmreich shows how the idea of waves has permeated medicine and inspired cutting-edge approaches like scalar wave therapy. Scalar waves can be referred to as "Tesla waves" or "longitudinal waves" and stand apart from the conventional electromagnetic waves that govern much of modern technology, such as radio or microwaves. They don't follow the typical oscillating patterns. Instead, they exhibit a peculiar behaviour that seems to resonate with biological systems, opening the door to potential therapeutic uses (Pula, 2023). Proponents of this emerging field suggest that scalar waves could interact with our cells, potentially balancing energy, reducing stress, and even managing chronic pain. Although still in the experimental phase, these waves hold the promise of revolutionising the ways in which we think about health and healing.

In acoustic engineering, wave science is being harnessed to tackle some of medicine's biggest problems. For example, Stanford researchers are using acoustic waves to manipulate heart cells, crafting tissue models that could revolutionise drug screening and even serve as heart patches for patients with damaged cardiac tissue. The power of waves has turned science into reality. Helmreich offers waves as dynamic forces that ripple through every aspect of our lives, reshaping our world, our health, and our understanding of life. Yet while Helmreich's book promises an interdisciplinary exploration of waves as both natural wonders and cultural icons, it's not all smooth sailing. The book plunges deep into theory, and readers without a strong background in anthropology might struggle to stay afloat. Helmreich aims to mesh cultural and scientific perspectives, but the scales tip heavily in favour of the scientists, leaving other viewpoints in the wake.

The book's structure is as unpredictable as the ocean itself, with ethnographic chapters crashing into thematic reflections like waves on a rocky shore. From the beginning, readers are swept into a swirling vortex of narrative styles. One moment, you're in the misty woods with a poetic first-person narrator, and the next, you're in the detached fourth person, hearing tales of the mysterious Waterwolf. Then, without warning, Helmreich mixes things up again writing in the second person, urging you to "Think back to the Waterloopbos" (32). It's a narrative journey that's as fragmented as it is global, with Helmreich's personal trek across Holland and beyond offering plenty of fascinating tidbits but not always enough to keep you hooked from start to finish.

While the book is packed with intriguing facts and fresh insights into the nature of waves, the predominantly first-person narrative lacks the polish and cohesion that could have turned a promising concept into a truly gripping read. With a bit of editorial fine-tuning and a clearer narrative course, this could have been an exhilarating snorkel into the literal and metaphorical waves that shape our world. Despite its rough patches, Helmreich still delivers some novel ways to understand the multifaceted nature of waves, leaving readers with plenty to ponder as they ride the intellectual tides he's set in motion.

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About the reviewer

Nicole Lenoir-Jourdan is an award-winning short story writer, journalist, columnist, and editor. Her work has appeared in Australia's most widely read newspapers including The Sydney Morning Herald, Sun-Herald, The Australian, and the Sunday Telegraph. She has been a travel editor for Elle Cuisine Magazine, Australian Table Magazine, and Ocean Magazine. Her academic credentials include a BA (Communications) from WSU, an MA (Creative Writing) from UTS, Master of Teaching from UNSW. She is currently a PhD scholar in Creative Writing under Dr Felicity Castagna and Dr Rachel Morley at WSU. Her exegesis is Green room Gidgets: The complexification of the female surf protagonist in Australian Young Adult fiction. Nicole is a casual academic at Western Sydney University and Macquarie University.

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