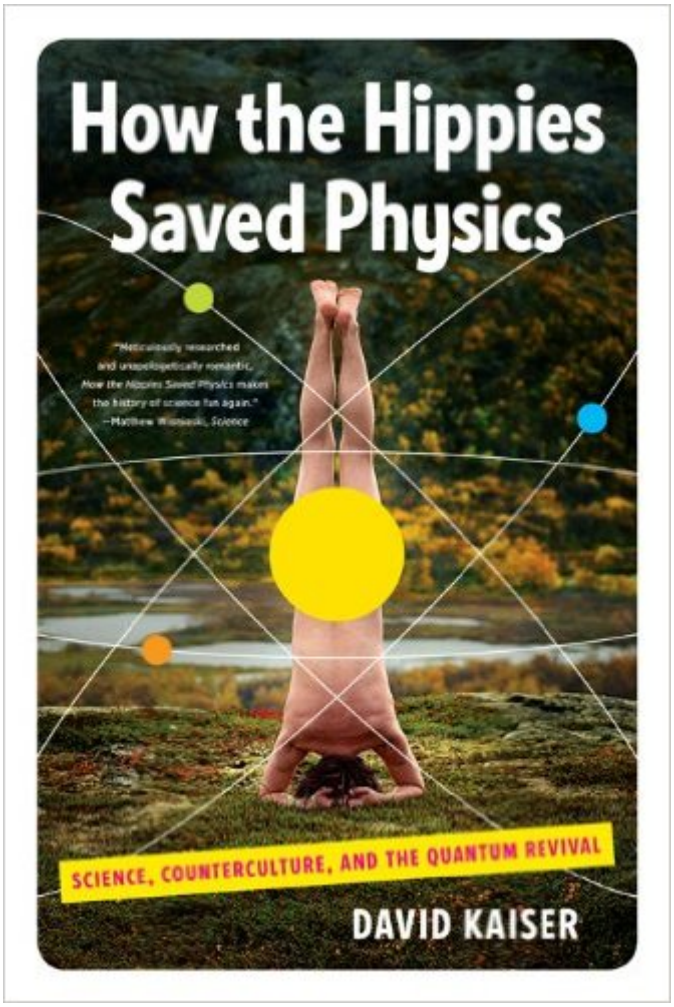
How The Hippies Saved Physics: Science, Counterculture, And The Quantum Revival



Synopsis

â œMeticulously researched and unapologetically romantic, How the Hippies Saved Physics makes the history of science fun again.â •â ”ScienceIn the 1970s, an eccentric group of physicists in Berkeley, California, banded together to explore the wilder side of science. Dubbing themselves the â œFundamental Fysiks Group,â • they pursued an audacious, speculative approach to physics, studying quantum entanglement in terms of Eastern mysticism and psychic mind reading. As David Kaiser reveals, these unlikely heroes spun modern physics in a new direction, forcing mainstream physicists to pay attention to the strange but exciting underpinnings of quantum theory.

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Customer Reviews

Does philosophy have a place in serious science? Many of the founders of modern physics certainly thought so. Einstein, Bohr, Heisenberg and Schrodinger were not just great scientists but they were equally enthusiastic and adept at pondering the philosophical implications of quantum theory. To some extent they were forced to confront such philosophical questions because the world that they were discovering was just so bizarre and otherworldly; particles could be waves and vice versa, cats

(at least in principle) could be alive and dead, particles that were separated even by light years appeared to be able to communicate instantaneously with each other, and our knowledge of the subatomic world turned out to be fundamentally probabilistic.However, as quantum theory matured into a powerful tool for calculation and concrete application, the new generation of physicists in general and American physicists in particular started worrying less about "what it means" and much more about "how to use it". American physicists had always been more pragmatic than their European counterparts and after World War 2, as the center of physics moved from Europe to the United States and as the Cold War necessitated a great application of science to defense, physicists turned completely from the philosophizing type to what was called the "shut up and calculate" kind; as long as quantum mechanics agrees spectacularly with experiment, why worry about what it means? Just learn how to use it. Yet this only swept epistemological questions under the rug.Curiously, there emerged in the 1970s a quirky and small group of physicists in the Bay Area who tried to resurrect the age of philosopher-scientists.

Critics of this book have focused on physics per se, ignoring the social environment in which its theoreticians and experimentalists dwell. As sociologist historians of science have thoroughly presented, physics does not occur in isolation, either from society and its politics or from other scientific and scholarly disciplines. While the author presents some of the physical puzzles and the proponents of various explanations as the meat of the book, he also furthers an underlying theme that other reviewers elected to ignore or demean. This book is not a reductionistic history of recent physics and should not be judged as such. As a Berkeley first-wave academic hippie myself during the era examined [tuned it, turned on, but never dropped out], I was especially interested in whether physicists ’up the hill’ at Lawrence Laboratories were influenced by the counter-culture, with its sundry interdisciplinary probes in holistic fields, consciousness-mind, and alternative perspectives of existence [which soon beget the renaissance in environmentalism and ecological studies (even in medicine); cognitive psychology and neuroscience; self-organization in biology and chemistry; psychoneuroimmunology and the placebo effect; and noetic phenomena of remote-viewing, precognition, and information fields]. New Physics experiments and their resulting philosophical interpretations, popularized by the subjects of this book, would soon indirectly support research in other disciplines.

How the Hippies Saved Physics is a fantastically kooky and zany history of the fringes of physics research in the 1960s and 1970s. The premise is certainly intriguing. Kaiser argues that the Second

World War and the Cold War had relegated physics in America to number crunching and practical applications of theory (mainly in the defense industry) and that all previous notions of fundamental questions all but dried up. The timing couldn't have been less fortunate, as the war followed close on the heels of the heady days of the major physical discoveries that led to the formulation of quantum mechanics as a whole by luminaries such as Einstein, Bohr, Heisenberg and Schrodinger in the 1920s and 1930s. This was a time when great philosophical questions concerning the nature of reality should have been asked, but the academic institutions of American were mainly concerned with churning out PhDs to compete with the Soviets. In short, if you weren't doing something practical in physics like producing better nuclear weapons or radar invisible materials, you weren't doing real physics. According to Kaiser, a select group of Hippy physicists centered in Berkeley called the Fundamental Fysiks Group provided a venue for physicists interested in fundamental questions to keep the burning questions at the heart of physics alive for a future, post-Cold War era.it's an interesting argument, and Kaiser is quite even-handed in the weight he assigns to fringe physicists in important discoveries in spite of the grandiose title. Mainly, these physicists in their study of things like ESP and other elements of parapsychology and the connections between quantum mechanics (particularly the issue of nonlocality) were wrong more often than they were right.

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