Book Review:
A Tale of Two Sciences: Memoirs of a Dissident Scientist
by Peter A. Sturrock
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by Richard Thieme

"A Tale of Two Sciences: Memoirs of a Dissident Scientist," by Dr. Peter A. Sturrock, is a personal work by the well-known Stanford physicist and astrophysicist, reflecting on the sometimes complementary, sometimes discordant threads of his professional lives: one as a conventional scientist, with a long list of respected publications, and one as an unconventional scientist who explored anomalous phenomena, in particular UFO phenomena.

His conventional scientific career might be a surprise to those who know him only in relationship to UFO studies; it is recounted here in terms that any educated layman can understand – in fact, the simplicity and clarity of his explanations of, say, plasma physics or pulsars, are a testimony to his deep knowledge – one can't explain complex phenomena so clearly otherwise. And for readers who want to go a little deeper, there is a small bit of helpful math in appendices.

His unconventional career, on the other hand, has resulted in the full spectrum of responses which unfortunately are familiar to all researchers in anomalies –embarrassed smiles, curt dismissals, ridicule, the bemused shaking of a lot of heads – all of which tell the researcher that he or she is at best tolerated as an eccentric and at worst dismissed as a nut case.

The two strands of his unconventional career consist of accumulated evidence, the content of his explorations, food for further thought and research, and his personal account of reactions to that work and in turn his reactions to those reactions over a lifetime.

This is a memoir, not a scientific treatise, so it must be evaluated for what it tells us about the man and his internal journey as well as the rewards of a long career in orthodox scientific research. It is well-written, careful in its pronouncements, understated, eminently sane, and occasionally mind-boggling, especially for the uninitiated who previously accepted the dismissal of anomalies like UFOs and ESP uncritically. The book is a significant contribution to the psychology of science and scientists as well and can serve as the wise words of a mentor for younger scientists tempted by the forbidden. Sturrock warns those who would follow in his footsteps to count the cost. Enduring decades of abrasive dismissals by scientists who at their personal worst are unscientific makes this path a long-distance run, not a sprint, that requires stamina, grit, and renewable commitment.

A lifetime of cognitive dissonance is one result of the subject matter Sturrock investigates and frequent rejection of the pursuit itself, much less the fruits of that pursuit. At the core his commitment is the essence of a properly scientific attitude, namely, curiosity, curiosity about the ineluctably real that imprints itself indelibly on one's consciousness. Reading this narrative, one thinks of Francis Bacon's response when criticized by the Church for dissecting cadavers to learn about human anatomy because the Church was afraid that his discoveries might contradict its teachings: "Whatever deserves to exist deserves to be known."

So ultimately there has been for Peter Sturrock not two careers but one and one mode of knowing and wanting to know, the scientific mode applied rigorously and without prejudice. Conventional and unconventional science alike are the front and back of a single discipline requiring that one attends to the data, formulate hypotheses, then test and revise them, leaving the next generation with a slightly better understanding of what seems to exists in a complex universe.

Sturrock is well known in UFO circles as the organizer of the Pocantico Conference in September 1997 which brought together an eclectic group of scientists at the Pocantico Conference Center near Tarrytown, New York to hear presentations on selected cases and some summaries of UFO effects by serious researchers. Financed by Laurence Rockefeller, the conference straddled the forbidden and the familiar and included researchers known to readers of this journal such as Jacques Vallee, Mark Rodigher, and Richard Haines. The medium, a respectable scientific conference, was intended to be the message as well, leading to greater credibility for research into UFO phenomena. The conference concluded with carefully phrased, conservative, thoughtful suggestions that challenged orthodox scientists by proposing additional topics and structures for research.

Sturrock wrote about the conference in detail in "The UFO Enigma: a New Review of the Physical Evidence," published in 1999 by Warner Books. Much of that material is reviewed in this memoir, but because this is a memoir, there is a critical difference: "It is not easy to have a split personality," Sturrock writes in the first sentence of the preface; "this book is – in part – an attempt to remedy that situation." That compelling drive to clarify the data, integrate it into a unified framework, and articulate tentative but provocative conclusions about what it tells us to explore next – this is a subtext of this work. That drive, Sturrock makes clear, is motivated in part by the desire to alleviate the cognitive dissonance of which I spoke; that internal conflict must be addressed by a mature healthy ego, one's life work must be justified and justifiable, to others as well as oneself. That too is a subtext of this work. Sturrock the man as well as the wary scientist shows up and makes his case. By establishing basic criteria – does it exist? therefore is it deserving of being understood? – for work in all arenas, Sturrock challenges again and again the irrational or non-rational rejection of the subject matter in itself by those who claim the scientific method as their *modus opperandi*. He places the burden on scientists who refuse even to look much less pay attention. And that challenge, I am afraid, will be handled by most career scientists as they have handled both Sturrock and the subject matter in the past, by not acknowledging that it exists.

Because Sturrock is willing in this personal account to reveal more of the feeling behind his thinking, he is impelled to conclusions that have not been often articulated in the past. UFO researchers since Hynek have noted the "strangeness" of some reports, aspects of the experience that might sound like science fiction to those unfamiliar with the now-voluminous body of research. At the end of the work, he advances an alternative view of physics that might account for the "strangeness" of some UFO reports, that vehicles or entities seem to be here yet not here at the same time, that observers walk around a luminous object which disappears as if tucked into a nook of spacetime behind a hidden curtain, that experiences of telepathic communication or transfer of knowledge have taken place... and that the compelling testimony of people for sixty years (and likely more) from all over the world, their experiences in agreement in many small details ... this mass of experience and data should not be ignored.

His conclusions suggest in essence that current models of reality derived from physics do not account for what has been observed; therefore oblique trajectories must be drawn and followed to explore possibilities to begin to account for them – and perhaps reap practical rewards for spacetime travel, energy consumption, and medicine.

And because the narrative is from one point of view an apologia, a justification of a lifetime of unorthodox pursuits, and because sanity, like wisdom, is contextual, the author marshals a sequence of historical antecedents of theories that were rejected out of hand when first proposed but that turned out to be of merit. Consensus realities in the past led to the same kind of ridicule and "debunking" that UFO researchers experience today; heterodox ideas gained a foothold among mainstream scientists "one funeral at a time," as Max Planck described progress in science. Sturrock refers to the famous instance of meteorites which could not possibly exist because "rocks do not fall from the sky," and battered child syndrome, the details of which could not be heard when first presented to doctors, and the theory of plate tectonics, and in his primary domain of expertise, theories about neutrinos and pulsars. One thinks too of Raymond Dart and his work on Australopithecus, widely rejected for many years.

Such stories are widely known, and some of the motive power for repeating them comes I suspect from the need to establish a "tradition" of advances in science that occurred after prophets who first articulated them had been scorned and dishonored. So on one level, the text reminds both scientists and laity that good science ought to consider anomalies worthy of investigation, and on a personal or psychological level, the author must make the case that in all of the work he has done, he listens carefully, observes scrupulously, and rigorously investigates before formulating a hypothesis.

Part of making his case is the entire first part of the memoir which reviews Sturrock's educational and vocational history, linked by memories of influential teachers, mentors, and colleagues. That organizing principle is an attribute of memoirs too, the narrative sequence determined by memories of people important to the author's personal and professional life. Those chapters establish that Sturrock was indeed mentored and respected by conventional scientists of some renown, that some of the best people in his

field led him into research in Europe and the United States in astrophysics and physics that resulted in numerous papers and a long distinguished career at Stanford University, one of the most respected academic environments in the world.

Then, having hung that framework like a curtain, Sturrock discusses his "other" career as a dissident scientist. A man, in other words, who was curious and found the universe, as Alice said, even "curiouser and curiouser."

It sounds simple, doesn't it? That the scientific mind is curious? Yet again and again, Sturrock was frustrated by the absence of this core attribute, arguably the cornerstone of intelligence, the willingness to poke one's whiskers out beyond the door of one's snug abode and sniff the air; that frustration comes to the surface in anecdote after anecdote. So many colleagues were tamed and constrained by a culture of caution and hesitancy, a fear of being branded a heretic, a terror, after all, of losing one's benefits.

In addition to UFO phenomena, Sturrock discusses possible instances of the paranormal, spontaneous healing, and reincarnation. But UFO phenomena is in the foreground of his research. In the past he has discussed case histories, summaries of physical and psychological effects, and phenomena which seems to violate known laws of physics. He has always been appropriately cautious in public pronouncements, mindful of mine fields, tiptoeing with care. He has generally avoided mention of personal reactions to his work, such as the near-terror of SETI researchers, for example, who thought he was attending a conference on extraterrestrial life and might advance the UFO point of view to their embarrassment. (My experience interviewing Frank Drake and Jill Tarter echoed Sturrock's. The economic and political requirements of SETI, fighting for several hundred million dollars in endowment funds against a strong political headwind, necessitated, Tarter told me, a strict divorce of their project from "bad science," defined as anything that might taint their efforts. She used her own mistaken identification of the moon as a UFO during an airplane ride as an example of why all UFO reports must be something similar. When I observed that this was not scientific, she did not respond. I recall feeling - as Sturrock often did - taken aback by the lack of a scientific attitude on the part of a well-known scientist.)

In all of his multiple pursuits, it is possible – not certain – that Sturrock's English upbringing influenced some of his attitudes and interests. Based on my experiences while living in England as a young man, I offer these speculations.

First, I learned in England that loud expressions of enthusiasm are often frowned on. I recall that when Sesame Street was introduced to English television audiences, for example, a friend said a much better program was the one in which children sat quietly on the floor while a teacher read a story. When an Englishman felt strongly about something, he was more inclined to say "um" quietly instead of "oh boy gee whiz wow!"

This is relevant because this is a review of a memoir, not a scientific paper. It underscores the habitual understatement which for an Englishman born and bred reveals rather than contradicts intensity of feeling. If an exuberant American extrovert like myself were to write this account, it might say: Please, people! this is DATA! this is observable, frequently reported data! and it challenges the way we believe the universe works! Let's THINK about it, shall we?

But Sturrock is English, and always, his conclusions and proposals are those of a careful scientist. He insists on using Bayes' Theorem as a touchstone for a sane way to proceed in every investigation, he never goes beyond the data itself, and he restricts the presentation of data to documented events.

Here's a second hunch about "things English:" in addition to advances that created modern scientific thinking beginning with the Royal Society, there has been regard in England for the eccentric, the anomalous, the struggle to reconcile the known and the unknown into one big picture. The work of the Society for Psychical Research at the turn of the twentieth century included psychologists like Frederick W. H. Myers, philosophers like William James, politicians like Lord Balfour, physicists like Oliver Lodge, and serious, thoughtful investigation of mediums, spirits, spontaneous manifestations of apparitions at a time of crisis, the survival of bodily death, and the like. My hunch is simply that Sturrock is part of that tradition too. He knew that wise distinguished men did not reject a subject *a priori* but peered into the shadows on the edges of experience. He knew that Conan Doyle and Williams Butler Yates evangelized for the existence of faeries. That framework is part of the heritage of a man who suggests that when we turn around and look at the world, we transit a full 360 degrees before coming home again, knowing that when we do, the self at which we arrive will not be the self which departed on that journey.

A few years ago, I reviewed Jonathan Moreno's "Mind Wars," an investigation by a neuroscientist and bioethicist with good credentials. Moreno investigated research based on biology and neuroscience for warfare and "perception management." Like Sturrock, Moreno advanced conventional credentials again and again, recounting his work with intelligence agencies, for example, so he could insist to a skeptical audience that he was not "a conspiracy theorist" or a nut-case but a legitimate credentialed academic.

Moreno worked with intelligence professionals and wrote openly about national security and secrecy issues. He told me scientists often "clammed up" when he asked about their research, that they dared not say a word for the record. Sturrock does not dwell on that aspect of research into anomalous phenomena but it is there nevertheless. Not only do sociological and cultural molds for conformity mold the clay of scientific research, but precisely because the data is compelling, precisely because it would have attracted attention, and research, and dollars in the past, whatever might have been discussed behind closed doors is beyond our reach. Life in the national security state since World War 2 adds even greater cognitive dissonance to our quest for understanding. It is not only the universe that plays dice with us but, closer to home, it is likely that some in positions of authority do too. No wonder we feel so often we are looking into a fun-house

mirror when we try to connect the dots. The elusiveness of anomalies is further distorted by the fact that we don't and can't know what we don't know ... about who does know more about them.

It is a characteristic of an anomaly that it does not connect with other known facts. It hangs in the air like the grin of a Cheshire cat, tantalizing but out of reach. That characteristic also afflicts the fruits of research into anomalies. The Pocantico Conference, for example, resulted in distinguished scientists contradicting the Condon Report, the last known "official" Government paper on UFOs, and made recommendations, and then ... nothing. The investigation of anomalies became, itself, anomalous. Sturrock also cites GEPAN/SEPRA as one model for investigation of UFO events, so one might expect the work done by the French to be on our radar, but ... it remains anomalous, too. A society which Sturrock helped to found – The Society for Scientific Exploration –an attempt to bridge the two worlds – and its publication, *The Journal of Scientific Exploration*, have also resulted in important work but ... the society, the journal, remain in limbo, a bit off the beaten path, interesting to some, but anomalous. For the moment, those efforts are here and not here at the same time, lacking integration into mainstream thought. They accumulate but remain liminal to the primary concerns of establishment scientists, mainstream media, and 21st century consensus reality.

The promise of this thoughtful, so-interesting memoir is that one more drip in a sequence of drips on the rocks of reality will help to wear away the resistant rock. The fear is that this work too will be dismissed as a quirky look into weird, new-agey experiences, an off-road trip irrelevant to the highways of career science.

The counter-cultural view? If it exists, it is worthy of being understood.

And so is Peter Sturrock.

Richard Thieme is a writer and professional speaker focused on the deeper implications of technology, religion, and science for twenty-first century life. He has spoken for audiences from Berlin to Brisbane on identity, creativity, security, challenges to professional intelligence, and "UFOlogy 101." He has published widely. Translated into German, Chinese, Japanese, Slovene, Dutch, Hebrew, Danish and Indonesian, his articles are taught at numerous universities in Europe, Australia, Canada, and the United States and frequently anthologized. His column, "Islands in the Clickstream," was published in Hong Kong, Bangkok, Singapore, Toronto, Djakarta, Dublin and Capetown and distributed to thousands of subscribers in 60 countries before collection as a book by Syngress Publishing, a division of Elsevier, in 2004. "Mind Games," a collection of nineteen stories of brave new worlds and alternate realities, was published April 1 2010 by Duncan Long Publications.