Emanuel Derman knows something about models. He practiced physics after receiving his Ph.D., but moved to Wall Street in 1985. At Goldman Sachs, he co-developed one of the earliest interest rate models, and later headed their quantitative strategies group. Business Week chose his memoir, “My Life as a Quant: Reflections on Physics and Finance,” as one of the top 10 books of 2004.

“Models Behaving Badly” is Derman’s tentative title for his next book. “It’s about the different approaches people use to understand the behavior of the world,” he said. In it, he distinguishes how theories differ from models, and explains how the unwarranted assumptions of models can lead to incorrect conclusions.

“If you very clearly understand your physics and you try to translate that to finance, you can fool yourself,” Derman explained. “You can turn the physics into something that doesn’t really say what you think it says.”

“Then people would do this with all kinds of crazy modeling, and of course it failed,” he said. “It’s a little bit like that for some people. They see something in the models that isn’t really there.”

“Modelling and intuition are two very different things,” Derman said. “Intuition comes after a lot of hard work, and it’s a step on that road.”

“In physics there may one day be a theory of everything. In finance and the social sciences, you’re lucky if there is a usable theory of anything,” Derman said.

“Yet models still have a role to play. I’m a bit of a Platonist,” Derman said. “I think there is some truth out there. I’m trying to distinguish between finding the truth, which is rare, and building models while understanding their inherent limitations.”

“Models are a step on that road,” he concluded.

B.S., University of Cape Town, 1965; M.A., Columbia, 1968; Ph.D., 1973