

Cranks, academics and practitioners

Emanuel Derman ponders on the difficulties in distinguishing between the three



When I was a graduate student at Columbia University in the 1970s, physics (rather than geonomics or IPOs) was the strange attractor for the aspiring scientists of the world. Bearing witness to this was the large folder of documents near the entrance to the physics department library. We referred to it as the 'crank file'.

The folder contained the unsolicited typewritten letters, manuscripts and appeals that poured steadily into the mailbox of the department's chairman. Eccentric though the documents were, they made fascinating reading. There were eager speculations on the nature of space and time, elaborately detailed and yet half-digested papers refuting relativity or quantum mechanics, equally undigested ones claiming to unify the two fields, and far-fetched meditations that combined physics with more metaphysical topics. I remember one note that tried to deduce the existence of God from the approximate equality of the solid angles subtended by the sun and the moon when observed from the earth – a remarkable circumstance without which there would be no solar eclipses. I recollect another letter that claimed to know how to hide *and then retrieve* the information in a wave by interfering it with a wave of equal and opposite amplitude to produce no wave at all.

None of these papers had much chance of getting past a journal referee. Few of the writers had much hope of getting past a graduate school admissions committee. They may not have wanted to. The letters were mostly a *cri de coeur* from isolated and solitary physicist manqués all over the world.

Most of my classmates laughed at the naivety of the letter writers, but as I skimmed through the crank file I found it hard to feel superior. Instead, peering into the box of manuscripts, I always saw a pale reflection. Out there, beyond academia and industry, were people like us, similarly in thrall to the same sense of mystery

and power that lay behind the attempt to understand and master the universe with only imagination and symbols. They were cranks, those letter writers, speculators in deep out-of-the-money calls that had little chance of early exercise, but they were also genuine amateurs, lovers of the field, holy men interested in wisdom or magic rather than money.

There are amateurs in the financial modelling world too, but they often come in more mercenary flavours, and why not? Because I used to run a group called quantitative strategies at Goldman Sachs for many years, after a while almost any letter from the outside world addressed to the 'quantitative something-or-other' at Goldman found its way to me. Once every few months, I would receive a letter from someone isolated and far away who thought he or she had made some great breakthrough in financial theory. Often, they would explain, it was a breakthrough whose exact details they were unwilling to divulge without a contract promising a share of the future profits its use guaranteed. "How can I work with you or your organisation in order to test this idea and develop it for trading?" they would ask.

In the early 1990s, letters typically promised an analytic solution for the value of an American-style put. More recently, they promise secret parametric formulas for the distribution of stock returns, or for the shape of the volatility smile. And always there is the steady drumbeat of claims to have discovered algorithms that could forecast prices. None of us in quantitative strategies had the free time to help the writers confirm or disprove their ideas; we were busy building databases and trading systems, the more mundane guarantors of profits, or at least of limited losses. Sometimes I invited a letter writer to drop by and give a seminar on his or her idea. Few were willing to do so. In that case, I suggested, because I thought it true, that if they sought fame, fortune or (merely) the love of beautiful vice-presidents of recruiting,

they should expose their ideas to the world by publishing them.

Holy, holey, wholly

Like our counterparts in the natural sciences, we explorers of the unnatural ones dream of mastery too, each in our own style.

Cranks dream of holy water, believing the world can be put under the spell of an incantation. But the living world is hard to mesmerise.

Academics hope to subjugate the market with axioms and theorems, but the market can do anything it likes. Living things can poke holes in any formal system.

Practitioners try wholeness. To survive in a world where the proof is in the pudding, they must pay attention to everything – models, trading systems, even operational errors. Mastering the practitioner universe doesn't necessarily take a remarkable formula or an extra decimal place of computational accuracy. There is no certainty, only compromise. Models must be used before they can be thoroughly 'tested'. But spend too long in this world and you may become a philistine, tempted arrogantly to scorn everything except results.

Holy, holey, wholly. Which approach is best? Sometimes you can't even tell which approach is which. Finance, after nutrition and psychology, may be the field in which it's hardest to distinguish between a really enthusiastic academic or practitioner and a genuine crank (and stat-arb may be the subfield in which it's nearly impossible). Recently I saw an article that found "strong global evidence that stock returns are lower on days around a full moon than... around a new moon." Crankademic? Pranktitioner? The real thing? Can one devise a Turing test to tell the difference? The mind reels, boundaries blur, not a bad thing really. ■

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