He was at the University of Washington for a little more than a year, but this period was a turning point for Piot, preparing him for his next challenge: the emerging AIDS epidemic. It was to absorb the next 30 years of his life.

Now pursuing HIV, Piot returned to Kinshasa. In 1984, he and his collaborators established Project SIDA, which produced most of the early information on AIDS in Africa. The project was led at first by the epidemiologist Jonathan Mann; in 1986, Mann became the first director of the Global Programme on AIDS of the World Health Organization (WHO).

Piot details the personal differences and changing focus that led to the dissolution of the Global Programme and the launch of UNAIDS. Piot served as its first director from 1996 until 2008 — a period that makes up the bulk of the book. A more definitive overview of these years appears in *AIDS at 30* (Potomac, 2012) by Victoria Harden, a historian at the US National Institutes of Health.

Piot resolved that on the research front, UNAIDS would focus on epidemiology. But it also ran many other activities, particularly coordination of the country-level response to AIDS. Piot's main focus was advocacy, community mobilization, political sensitization and fund-raising, and he found success. I am disappointed, however, that as a medical scientist, he does not use his book to discuss the enormous research effort behind the antiretroviral drugs that significantly improved the prognosis of people living with HIV. Nor does he discuss the other biomedical efforts, including vaccines, which I believe will have a key role in stopping the epidemic.

> ***"Despite the efforts of virus hunters, neither Ebola nor HIV is under control."***

Despite the efforts of virus hunters, neither Ebola nor HIV is under control. These viruses continue to strive for the equilibrium suggested by Nicolle. By May 2011, 28 outbreaks of viruses in the Ebola family had occurred in 11 countries, with a total of 2,288 human cases. And by the end of 2010, an estimated 34 million people worldwide were living with HIV.

This book is not the story of two diseases. Rather, it is a fascinating account of the complex behavioural responses that epidemics trigger among their human hosts. ■

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PSYCHOLOGY

Markets in mind

Investment bankers are addicts on a steroid roller coaster, finds **Richard Lea**.

René Descartes may have sparked the Enlightenment when he proposed that thought is the basis for existence, but Cartesian mind–body dualism has fallen out of favour in philosophy. According to neuroscientist John Coates, however, there is one domain in which the idea of a mind driven by pure rationality persists: economics.

In *The Hour Between Dog and Wolf*, Coates tests this to breaking point, with an area of economics where rationality does not rule. Using physiology and neuroscience, and grounded by 12 years working in New York's financial district, Coates paints a vivid picture of stockbrokers as thrill junkies, surfing waves of boom and bust on steroid hormones.

Coates suggests ways to calm those waves, but his prescription doesn't go far enough. He focuses on strategies for controlling the testosterone highs of the "Masters of the Universe" — as Tom Wolfe styled them in *The Bonfire of the Vanities* (Farrar, Straus and Giroux, 1987) — instead of restructuring a financial system that currently "balances precariously on the mental health of these risk takers".

Coates begins with a vibrant portrait of a Wall Street investment bank as the markets prepare for an interest-rate announcement. He conjures up the excitement of the trading floor, a "parabolic reflector" gathering information and registering early signals. Traders pick up on this information through a hunch or gut feeling, and act on it fast.

Alongside some novelistic vignettes — the head of department surveying the floor like a hound on the scent — Coates describes the neurological and physiological changes that bankers experience. For example, when stockbrokers hear a rumour that interest rates will rise, their brains put them into high alert: they "hear the faintest sound, notice the slightest movement". Their metabolisms accelerate, breathing quickens and blood shunts to major muscle groups. Their bodies are flooded with adrenaline and testosterone.

Turning to the dialogue between brain and body, Coates says that physiology is key in decision-making. Decisions imply action, so "our thoughts come freighted with physical implications". Traders, like soldiers, make snap decisions with much at stake, so they must listen to the signals from their bodies.

Coates presents his own research from a London firm. He found a link between traders' morning levels of testosterone and afternoon profits, as well as a substantial increase in cortisol during volatile markets. He saw this chemistry in action on Wall Street: traders on a roll, in clubs and prowling for sex, and the men's toilets exuding a slaughterhouse stench as the market tumbled.

The Hour Between Dog and Wolf: Risk-taking, Gut Feelings and the Biology of Boom and Bust
JOHN COATES
Fourth Estate/Penguin: 2012. 288/352 pp. £20/$27.95

When testosterone levels rise during a bull market, with successes following each other so rapidly that there is no time for hormone levels to return to normal, stockbrokers can fall prey to the "irrational exuberance" that powers a bubble. During a declining 'bear' market, sustained levels of cortisol can fuel the panic before a crash and even, Coates suggests, contribute to hypertension and type 2 diabetes in individuals. A system that evolved to respond to physical threats over seconds or hours — the leopard in the forest, the rival in the group — is unable to cope with threats that evolve over weeks or months.

The drawbacks of Coates's familiarity with the trading floor become plain when he proposes fixes. Perhaps traders will be less stressed if they practise yoga or take up a wind instrument as he suggests, but his broader solutions — such as restraint from middle management, increased gender equality and the sinister idea of sending traders home on the results of a morning blood test — seem inadequate as counters to the powerful physiological influences on decision-making.

Coates's other solutions need some rethinking too. His idea of offering traders rewards on the basis of long-term results should be extended to managers and companies. Instead of adding "audio price feeds" to the trading floor to decrease traders' reaction times, a financial-transaction tax should be introduced to reduce market volatility.

If market swings are as driven by hormones as Coates suggests, it is not enough for politicians to step in when stress in the financial world has become pathological. They must decouple irrational exuberance on Wall Street from misery on the high street. Readers reeling from the effects of the most recent financial Armageddon may feel that the Universe needs some new masters. ■

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