

# Square tomatoes and ethical algorithms

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In a resounding collision of science and morality, the issue of genetic engineering has left the world reeling as it strives to determine the merits of opposing positions. It seems not so many years ago that an earlier branch of the technology was being applauded for experiments in breeding that gave us seedless grapes, stringless beans and dwarf cauliflowers. Someone toyed with the idea of breeding a square tomato that could be sliced more conveniently for sandwiches.

These innovations were seen as improvements to the quality of life with no threatening overtones; harmless indulgences that gave scientists something to do without attracting any more or less interest than growers of hybrid roses.

But science galloped forward at a pace that left the layman panting, puzzled, in its wake. Better-yielding rice varieties and rust-resistant wheat could be seen to be doing good, putting food into needy mouths, but it was only a small step from there to laboratory work that appeared to stray disturbingly from the natural. Were men in white coats reshaping the links of the food chain? The age of genetic modification dawned on a population with an anxious question: if we are what we eat, what are we if we don't know what we're eating?

Science does its best to reassure the doubters about the noble objectives of genetic engineering but it is hard put to calm the nervousness some people feel about the advent of man-made sheep and pigs, and

the likely application of the technology to their fellow humans. Dominating the debate is the dubious ethical legitimacy of interfering with the chemistry of a species.

Happily, if finance and investment professionals can be regarded as a sub-species, they probably feel they are spared such ethical torment: genetic engineering is hardly likely to invade the precincts of the JASSA readership.

But wait. It is already here. In an article in this issue ("Financial Survival of the Fittest", page 2), Robert Pereira reveals a process of managed evolution in investment technology that is not far distant from what goes on in a DNA laboratory. The genetic algorithm is an ingenious device that automates mathematics to produce an optimal result. It works rather like natural selection, where of all the potential outcomes, the weak are eliminated and the stronger flourish. Applied to investment decision-making, genetic algorithms — theoretically at least — put their practitioners a step ahead of the market.

Is there an ethical issue here? Perhaps, if you look closely enough. It may be possible to give too much decision-making power to the binary switches of a computer, to the detriment of innocent investors. It is not unknown for technology to be accused of betraying the customers: "program trading" carried much of the blame for the 1987 sharemarket catastrophe.

But Robert Pereira is reassuring about the efficacy of genetic algorithms in investment, giving examples of practical applications with successful results, and concluding that they are more robust than other optimisation methods. Nevertheless, the industry's current emphasis on ethical practice is a reminder that technology is welcome as long as it serves the interests of the investor.

The theme of ethics emerges elsewhere in this issue. Garry Topp discusses the rise of "socially responsible investment" in the UK ("SRI: Value from Virtue", page 6) and demonstrates that funds can combine values encompassing ethics and sustainability with superior investment performance. It now ranks as one of the most dynamic sectors of the fund management industry, he says.

We also publish a review of Attracta Lagan's book *Why Ethics Matter* (Reading Room, page 34). Its self-explanatory title is directed at businesses and the content includes guidance on how companies should handle ethical issues. Lagan dismisses the myth that ethics cannot be taught, pointing out that business ethics is a credible discipline in many educational and training institutions.

The Securities Institute has been an unequivocal proponent of ethical values in the industry. It is worth reminding members that we have established an Ethics Advisory Service, in association with the St James Ethics Centre, to offer free and confidential guidance on ethical issues of any kind. 