How to change the system

In praise of the ideas of Russ Ackoff

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It is hard to imagine a less enticing title for a book than "Introduction to Operations Research". Yet Russ Ackoff, one of the authors of this tome of 1959, who died on October 29th aged 90, did not just help to define a nascent branch of industrial engineering. He wrote 30 other books, becoming one of the most influential management gurus of the 20th century in the process. His ideas about systemic thinking are vitally important today if the world is to come out of the current economic crisis in better shape than it went into it.

Today's crisis is the result of a catastrophic failure, primarily in the financial system but also of our economic and political systems. Mr Ackoff spent most of the past half-century as the premier evangelist of systemic thinking, which he contrasted with the reductionist, atomistic thinking that had long dominated humanity's approach to problem-solving in his view. Time and again, he would point out, decision-makers faced with crises failed to heed Albert Einstein's warning that "*we can't solve problems by using the same kind of thinking we used when we created them*."

Put simply, systems thinking—which Mr Ackoff described in books such as "Redesigning the Future: A Systems Approach to Societal Problems" (1974)—focuses on the performance of a system as a whole. This is in contrast to an approach that breaks systems into parts and focuses on the performance of the individual parts, on the assumption that if each individual part is improved then the sum of the parts will also be better. This assumption often proves wrong in practice, said Mr Ackoff, who had plenty of practical experience as a consultant to more than 250 corporations and 50 government agencies. The only profession that he believed had truly embraced systems thinking is architecture, where the design process starts by asking what sort of building is desired, and then works backwards to focus on what individual parts are required. An architect never starts by saying, "*Here are the parts, what can I build from them*?"

In business, flawed analytical thinking tends to manifest itself, he said, in a focus on growth over development, or bigger over better. Mergers and acquisitions frequently make firms bigger, but often they do not develop them, in the sense of improving their capacity to provide for their own needs and those of their customers. In their personal lives, many people continue to develop long after they stop growing physically. Why not see the development of businesses, and indeed of society as a whole, in a similar way, Mr Ackoff asked?

Modern education systems deserve much of the blame, both for fostering the belief that education ends when a person leaves school and for its emphasis on being right rather than on how to learn from mistakes. This has encouraged caution rather than risk-taking, with individuals preferring to avoid mistakes when possible and hide them if necessary. The world's four greatest statisticians never took a course in statistics, Mr Ackoff would point out, and three of America's greatest architects (Henry Hobson Richardson, Louis Sullivan and Frank Lloyd Wright) never took a formal course in architecture.

Society urgently needs to find better ways of inculcating systems thinking in its decision-makers and public-policy experts in particular, he argued. It also needs to change how it accounts for mistakes. Currently, almost any accounting system you can think of records mistakes of commission, when a deliberate act goes wrong, but keeps no record of mistakes of omission:

things not done that should have been. The result is a conservative, risk-averse culture that holds back the innovation that society needs.

The meltdown of the financial system during 2007-08 was a classic example of the dangers of putting atomised thinking ahead of systems thinking. The conventional wisdom judged the efficiency of markets by the accuracy of individual prices rather than on their robustness in the event of shocks or their vulnerability when liquidity dries up. The performance of individual financial institutions was judged by their profits, their capital cushions and their risk-management systems, which were supposedly becoming ever more sophisticated but failed to detect the approaching systemic collapse.

The challenge now is to design a regulator for the finance industry that actually measures and focuses on systemic risks, rather than on the individual parts of the system. All the current talk of preventing banks from becoming “too big to fail” may reflect old atomistic thinking, when in fact the least obvious parts of a system may be its greatest source of vulnerability. In public health, policymakers are having to grapple with the fact that no individual is too puny to pass on swine flu, which has the potential to paralyse the world economy; policymakers need a similar systemic understanding when they try to reform finance. Pointing to architecture, Mr Ackoff noted that an architect will often choose a part that is not, by itself, the best-performing, because it will do a better job of increasing the performance of the building as a whole. The same thought should apply when judging how to measure the performance of a financial institution—namely, whether it is fit for purpose.

Encouragingly, Mr Ackoff died an optimist. He believed that a change is taking place in how we think that could be as significant as the one that gave birth to the Renaissance. That should be a comforting thought for the world’s flummoxed financial regulators.