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## Russell Ackoff

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How to cite:

Ramage, Magnus and Shipp, Karen (2020). Russell Ackoff. In: Ramage, Magnus and Shipp, Karen eds. *Systems Thinkers (Second Edition)*. London: Springer, pp. 141–149.

For guidance on citations see [FAQs](#).

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Version: Version of Record

Link(s) to article on publisher's website:

[http://dx.doi.org/doi:10.1007/978-1-4471-7475-2\\_14](http://dx.doi.org/doi:10.1007/978-1-4471-7475-2_14)

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# Chapter 14

## Russell Ackoff



Russell Ackoff (usually known as ‘Russ’) was a pioneer of the application of systems approaches to management, both through theoretical developments and through a deep and practical engagement with many different organisations. He was a strong advocate of the need for systems approaches to take full account of the complexity of inter-related problems and not simply to present glib technical solutions.

Ackoff was notable as a theorist, having been responsible for many key innovations in operations research (a field to which he helped to give academic respectability) and systems thinking. He was equally strong in working as a consultant, although he disliked the term (and even more the label of a ‘guru’), preferring to call himself an educator: “A consultant goes in with a solution. He tries to impose it on a situation. An educator tries to train the people responsible for the work to work it out for themselves. We don’t pretend to know the way to get the answer” (Stern 2007). He also made significant innovations in formal university teaching, introducing radical new curricula in both operations research and systems thinking. He was a strong and able communicator, in speech and writing – his articles used many vivid devices, such as anecdotes, aphorisms (e.g. “a bureaucrat is one who has the power to say ‘no’ but none to say ‘yes’” – Ackoff et al. 2010, p. 36) and pithy, well-argued opinions. These were collected into a series of short books, under titles such as *Ackoff’s Fables* and *Systems Thinking for Curious Managers*.

Russell Ackoff was born in 1919 in Philadelphia and died in 2009 near the same city. His grandparents were Russian immigrants but had their children in the United States. He studied at the University of Pennsylvania – an interest in design processes and an uncle who was an architect led him to take his BA in architecture, but during his final undergraduate year he fell under the spell of West Churchman and took his Ph.D. in philosophy with Churchman (and Churchman’s mentor, the pragmatist philosopher E.A. Singer), graduating in 1947. As was allowed by Pennsylvania’s rules, Ackoff’s Ph.D. dissertation was jointly authored by Ackoff and Churchman, and when asked which parts had been written by Ackoff they sim-

ply selected chapters at random. This led to Ackoff passing his Ph.D. but failing to have his teaching fellowship renewed.

As Ackoff was unable to get a position at Pennsylvania, he moved to Wayne State University in Detroit, where he spent 4 years, moving in 1951 to the Case Institute of Technology. At Case he co-founded, with Churchman, its Operations Research (OR) Group, the first in the world, and was a co-author of the first textbook in OR (Churchman et al. 1957). Ackoff directed the OR group after Churchman moved to Berkeley in 1958. He was also president of the OR Society of America in 1956.

In 1964, he returned to Pennsylvania as a professor at its business school (the Wharton School), along with many of the Case OR group; he stayed there until his retirement in 1986. In the mid-1970s, he devised and ran the Social Systems Sciences postgraduate programme at Wharton. On retiring from Wharton, he subsequently headed a consultancy firm, Interact: the Institute of Interactive Management. In 2000 the University of Pennsylvania established the Ackoff Center for Advancement of Systems Approaches in his honour. He has published more than 20 books, both scholarly and popular, and numerous articles. He was friends with some of the most important American management thinkers of the twentieth century, including Peter Drucker and W. Edwards Deming.

Ackoff was a forceful and passionate thinker and practitioner. In describing their close collaboration, Churchman (1990, p. 130) wrote “if the story of my early years with Russ sounds like they were years of battle, then the sound is correct”. On the other hand, as his close colleague at Wharton and Interact, Jamshid Gharajedaghi (foreword to Ackoff et al. 2010, p. v) wrote after his death, “His uniqueness and multidimensionality defies conventional wisdom. He was forceful and yet kind; caring but not compromising; fearsome but dependable. For me, he was the epitome of wholeness, bringing complementary opposites into a harmonious whole. ... He seemed merciless in making you confront your weaknesses, expecting and accepting nothing but the very best.”

He worked with a large number of organisations as a consultant-educator. Two of the most significant took very different forms. First, he worked for more than 30 years as a consultant to the Anheuser-Busch brewing company, which had a strong influence on his thinking and the issues he considered. He conducted research for them in areas as diverse as logistics, marketing, corporate planning, environmental issues, alcoholism and corporate organisation. In this time, the company’s market share of US beer sales grew from 7% to 41%, and “although it is impossible to trace precise causal relationships, it is a straightforward and relatively simple task to show that Ackoff’s contribution to this growth was real and considerable” (Busch 1990, p. 146). His experiences with Anheuser-Busch fed directly into several of Ackoff’s books; they also supported his research projects financially for many years.

He had a very different, but equally important, experience in a project in a deprived black area of Philadelphia, Mantua which began in 1968. Based on community leaders’ slogan of “plan or be planned for”, the project involved the local community in planning for the future development of the neighbourhood, using the resources and skills of the university but clearly driven by the community. This was a highly participative view of research: “we, the researchers, designed a relation

with the ‘subjects’ in which the subjects conducted research on us. It was the community members’ task to find out how to use the University and our Center effectively, and, by so doing, to solve the researchers’ problem of determining how to be useful” (Ackoff 1970, p. 768). Ackoff drew lessons from this project which influenced his later work considerably, in particular the importance of OR taking social responsibility seriously and going beyond a technical perspective, and the need for widespread participation in planning processes. In an article discussing the project he contrasted this experience with planning in large organisations: “the effective ghetto leader has a knowledge of and concern with his environment that few governmental or industrial leaders have ... however limited his effect on the larger environment may be, the ghetto leader uses all his power to push it in a direction that is compatible with his aspirations for his neighbourhood. He believes in active intervention in the larger community and its future because he knows that his neighbourhood cannot thrive unless the larger community thrives” (Ackoff 1970, p. 771). The Mantua project was also to form the inspiration for later British work in ‘community OR’ (Jackson 1990). Ackoff continued to be involved with Mantua and was still attending community meetings there just weeks before his death (Morrison 2009).

Ackoff had a long and interesting relationship with the field of operations research. As already mentioned, Ackoff was involved very closely in the establishment of OR as an academic discipline, in his work with Churchman at Case. His influence on the development of academic OR in Britain was also considerable, with several visits including acting as a “marriage broker” (Jackson 1990, p. 178) between the Tavistock Institute and the Operational Research Society, in the formation of the Institute of Operational Research at the Tavistock. He also became closely connected with both Eric Trist and Fred Emery of the Tavistock Institute – Trist later joined Ackoff at Wharton.

However, Ackoff became increasingly disillusioned with OR as a discipline. He had always been “concerned to widen the scope of the discipline far beyond the tactical problems of industry and commerce” (Kirby 2003, pp. 1131–1132), had made frequent critiques of the narrow technical nature of OR and written about its need for social responsibility (based on experiences such as the Mantua project). His dissatisfaction culminated in a famous pair of papers in which he argued that “Operational Research was once an outrageous idea. It no longer is. Today it is an idea dressed in a sombre dark suit, a bowler on its head, a black umbrella on its arm and an attaché case in its hand” (Ackoff 1979, pp. 198–199). The influence of Ackoff’s views was considerable in the UK, forming a key part of the drive towards a broader, more strategic form of OR known as ‘soft OR’; but in the US he was treated very differently and “his direct influence is now hard to find in the academic OR community ... it is as if he has been written out of the official OR canon” (Kirby and Rosenhead 2005, pp. 133).

His frustration with OR led Ackoff, as it did Churchman, in the direction of systems thinking (particularly general systems theory). He argued that we have left the machine age, with its concept of the universe as a mechanism and its consequent focus on analytical thinking and reductionism; and instead are entering the systems age, with a focus on synthetic (systemic) thinking and expansionism, the idea “that

all objects, events, and experiences of them are parts of larger wholes” (Ackoff 1974, p. 12). A crucial part of Ackoff’s approach to systems thinking was his introduction of the concept of a *mess*: a system of problems recognising the fact that “no problem ever exists in complete isolation; every problem interacts with other problems and is therefore part of a set of interrelated problems” (Ackoff 1974, p. 21). In particular, it is insufficient and indeed counter-productive to break a mess down into its constituent elements, which can even lead to the mess becoming worse. A key example for Ackoff was the different aspects of urban life, such as health, crime, education, transport and racial tensions, which can only be made better if treated collectively (today’s list would be longer and perhaps include environmental issues and religious tensions, but the need for systemic thinking is the same). The concept of a mess is very close to Rittel and Weber’s idea of a ‘wicked problem’, discussed in the chapter on West Churchman, and it is striking that the two ideas were published at almost the same time.

Instead of looking for simple-minded solutions, Ackoff argued that we need an effective process of what he called ‘mess management’. He suggested that the way to handle messes (in both community and organisational settings) is through planning, and specifically a participatory and systemic method he calls *interactive planning* (by contrast with three weaker, less systemic means of planning – inactive, reactive and proactive). This method, and the related concept of interactive management, formed the basis of Ackoff’s work in systems thinking from the 1970s onwards. It derived partly from his experiences in the Mantua project and their slogan “plan or be planned for”, which forms the subtitle of the key book on the process (Ackoff 1981).

Interactive planning works on the principle of ‘idealized redesign’ of a system: “a design of the system with which the designers would replace the existing system now if they were free to do so” (Ackoff 1979, p. 191). Importantly, this redesign must consider the whole system, in all its parts, simultaneously; and it must involve the participation of all key stakeholders. Participation, crucial to the commitment of stakeholders to the change that is devised, is enabled by the democratic nature of this redesign process – it does not require experts. Ackoff (1981) identifies five stages of interactive planning: formulating the mess (understanding the problems and opportunities involved), ends planning (designing the desirable future), means planning (finding ways to reach the desirable future), resource planning (deciding what human, financial and other resources are required and how to obtain them), and design of implementation and control (the details of how to put the changes into place and check that they have actually happened).

He made many other contributions to ideas that had influence well beyond systems thinking. A notable example was his introduction of the idea that a hierarchy of progressive complexity can be seen in the terms data, information, knowledge and wisdom, often referred to as the ‘DIKW hierarchy’ (Rowley 2007) and widely used in knowledge management, but introduced in Ackoff’s presidential address to the International Society for Systems Sciences in 1988 (Ackoff 1989). A further example was his early work on the concept of stakeholders in management, a key part of his work from Ackoff (1974) onwards and a strong influence on Edward

Freeman, who worked at Wharton while developing the ideas that led to his highly influential book *Strategic Management: A Stakeholder Approach* (Freeman 1984) which clearly built on Ackoff's work.

As well as the development of interactive planning/management, Ackoff made important contributions to teaching systems thinking. The Social Systems Science (S<sup>3</sup>) programme at Wharton, which he established in the mid-1970s along with others disillusioned with OR, was designed on the principle that an effective degree programme should not be "made up of an aggregation of independently given and taken courses that leave the difficult task of their synthesis to be performed by the student alone; the principal instruments of education are Learning and Research Cells which are collective efforts at synthesis, not analysis" (Ackoff 1979, p. 197). S<sup>3</sup> was highly successful, with large numbers, and highly effective in teaching systems ideas, although its methods were too unorthodox to make it popular with Ackoff's colleagues at the Wharton School.

Ackoff was widely respected for the range of his innovations, the extent to which he has brought democratic principles to organisational and national planning via systems thinking, and his insistence on going beyond narrow technical solutions. He was a man of passion and vision. Ultimately, as a long-term colleague at Anheuser-Busch put it (Pritzker 1990, p. 152):

Russ has not been the model of the cool, aloof, dispassionate, and 'objective' scientist. Rather he has been intensely involved in the 'messes' and problems with which he has been asked to deal. He has been the model of the committed, partisan investigator.

## Reading from Ackoff's work

Ackoff, R. L. On Passing through 80, *Systemic Practice and Action Research*. Vol. 12, Iss. 4; p. 425–430. With kind permission of Springer Science and Business Media

For me there has never been an amount of money that makes it worth doing something that is not fun. So I'm going to recall the principal sources of the fun that I have experienced.

First, the fun derived from denying the obvious and exploring the consequences of doing so. In most cases, I have found the obvious to be wrong. The obvious, I discovered, is not what needs no proof, but what people do not want to prove. [...]

Here is a very small sample of the obvious things I have had great fun denying.

- *That improving the performance of the parts of a system taken separately will necessarily improve the performance of the whole.* False. In fact, it can destroy an organization, as is apparent in an example I have used ad nauseam: installing a Rolls Royce engine in a Hyundai can make it inoperable. This explains why benchmarking has almost always failed. Denial of this principle of performance improvement led to a series of organizational designs intended to facilitate the

management of interactions: the circular organization, the internal market economy, and the multidimensional organization.

- *That problems are disciplinary in nature.* Effective research is not disciplinary, interdisciplinary, or multidisciplinary; it is transdisciplinary. Systems thinking is holistic; it attempts to derive understanding of parts from the behaviour and properties of wholes rather than derive the behaviour and properties of wholes from those of their parts. Disciplines are taken by science to represent different parts of the reality we experience. In effect, science assumes reality is structured and organized the way universities are. This is a double error. First, disciplines do not constitute different parts of reality; they are different aspects of reality, different points of view. Any part of reality can be viewed from any of these aspects. The whole can be understood only by viewing it from all the perspectives simultaneously. Second, the separation of our different points of view encourages looking for solutions to problems with the same point of view from which the problem was recognized. Paraphrasing Einstein, we cannot deal with problems as effectively as possible by employing the same point of view as was used in recognizing them. When we know how a system works, how its parts are connected and interact to produce the behaviour and properties of the whole, we can almost always find one or more points of view from which better solutions to the problem can be found than can be found from the point of view from which the problem was recognized. For example, we do not try to cure a headache by brain surgery, but by putting a pill in the stomach. We do this because we understand how the body, a biological system, works. When science divides reality up into disciplinary parts and deals with them separately, it reveals a lack of understanding of reality as a whole, as a system. [...]
- *That the best thing that can be done to a problem is to solve it.* False. The best thing that can be done to a problem is to dissolve it, to redesign the entity that has it or its environment so as to eliminate the problem. Such a design incorporates common sense and research and increases our learning more than trial-and-error or scientific research alone can.

My second source of fun has been the revelation that most large social systems are pursuing objectives other than the ones they proclaim and that the ones they pursue are wrong. They try to do the wrong thing righter and this makes what they do wronger. It is much better to do the right thing wrong than the wrong thing right, because when errors are corrected it makes doing the wrong thing wronger, but the right thing righter. A few examples: [...]

- *The educational system is not dedicated to produce learning by students, but teaching by teachers, and teaching is a major obstruction to learning.* Witness the difference between the ease with which we learned our first language without having it taught to us, and the difficulty with which we did not learn a second language in school. Most of what we use as adults we learned once out of school, not in it, and what we learned in school we forget rapidly – fortunately. Most of



it is either wrong or obsolete within a short time. Although we learn little of use by having it taught to us, we can learn a great deal by teaching others. It is always the teacher who learns most in a classroom. Schools are upside down. Students should be teaching, and teachers at all levels should learn no matter how much they resist doing so.

A student once asked me in what year I had last taught a class on a subject that existed when I was a student. A great question. After some thought, I told him 1951. "Boy", he said, "You must be a good learner. What a pity you can't teach as well as you can learn." He had it right.

- *The principal function of most corporations is not to maximize shareholder value, but to maximize the standard of living and quality of work life of those who manage the corporation.* Providing the shareholders with a return on their investments is a requirement, not an objective. As Peter Drucker observed, profit is to a corporation as oxygen is to a human being: necessary for existence, not the reason for it. A corporation that fails to provide an adequate return for their investment to its employees and customers is just as likely to fail as one that does not reward its shareholders adequately.

The most valuable and least replaceable resource is time. Without the time of employees, money can produce nothing. Employees have a much larger investment in most corporations than their shareholders. Corporations should be maximizing stakeholder, not shareholder, value.

My third source of fun derives from producing conceptual order where ambiguity and confusion prevail. Some examples:

- *Identifying and defining the hierarchy of mental content which, in order of increasing value, are data, information, knowledge, understanding, and wisdom.* However, the educational system and most managers allocate time to their acquisition that is inversely proportional to their importance. Few individuals, and fewer organizations, know how to facilitate and accelerate learning – the acquisition of knowledge – let alone understanding and wisdom. It takes a support system do to so.

All learning ultimately derives from mistakes. When we do something right we already know how to do it; the most we get out of it is confirmation. Mistakes are of two types: commission (doing what should not have been done) and omission (not doing what should have been done). Errors of omission are generally much more serious than errors of commission, but errors of commission are the only ones picked up by most accounting systems. Then since mistakes are a no-no in most corporations, and the only mistakes identified and measured are ones involving doing something that should not have been done, the best strategy for managers is to do as little as possible. No wonder it prevails in American organizations.

- *Identifying and defining the three basic types of traditional management: the reactive or reactionary, the inactive or conservative, and the preactive or liberal.*



Then showing that a fourth type, the interactive or radical, denies the assumptions common to the three traditional types and, therefore, constitutes a radical transformation of the concept of management. The interactive manager plans backward from where he wants to be ideally, right now, not forward to where he wants to be in the future, or past.

The interactive manager plans backward because it reduces the number of alternative paths he must consider, and his destination is where he would like to be now ideally, because if he did not know this, how could he possibly know where he will want to be at some other time?

- *Identifying and defining the ways we can control the future: vertical integration, horizontal integration, cooperation, incentives, and responsiveness.* These are seldom used well. Corporations tend to collect activities that they do not have the competence or even the inclination to run well. They also tend more to adversarial relationships with employees, to encourage competition between parts of the corporation and conflict with competitors. As Peter Drucker pointed out, there is more competition within corporations than between them, and it tends to be less ethical. In many cases managers unintentionally create incentives that result in activities diametrically opposed to their best interests – for example, rewarding themselves for short-term performance, ignoring the long term, or paying commission based on the amount of a sale rather than its profitability. This encourages the sale of underpriced, hence usually unprofitable, items. Few organizations are ready, willing, and able to change in response to unanticipated internal or external changes; they lack the responsiveness of a good driver of an automobile, who gets to where he wants to go without forecasts of what he will encounter but the ability to cope with whatever occurs.

My fourth source of fun has been the *disclosure of intellectual con men* – for example, propagators of TQM, benchmarking, downsizing, process reengineering, and scenario planning. Management is incurably susceptible to panacea peddlers. They are rooted in the belief that there are simple, if not simple-minded, solutions to even the most complex of problems. And they do not learn from bad experiences. Managers fail to diagnose the failures of the fads they adopt; they do not understand them. Most panaceas fail because they are applied antisystemically. They need not be, but to do otherwise requires an understanding of systems and the ability to think systemically. The perceived need to learn something new is inversely proportional to the rank of a manager. Those at the top feel obliged to pretend to omniscience and, therefore, refuse to learn anything new even if the cost of doing so is success.

Finally, my fifth source of fun has derived from designing organizations that can avoid the kinds of traps I have described here, for example, the designs of a democratic hierarchy, an internal market economy, a multidimensional organizational structure, and learning and adaptation support systems. But I have derived the most fun working with others on the design of INTERACT, the Social Systems Sciences Graduate Program at The Wharton School, and the Operations Research Graduate Programs at Case and Penn.

I am indebted to all who have made my ‘work’ a continuous source of fun.

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