# General systems theory

## The skeleton of science

## Introduction

The second of this issue's two classical papers was written by Kenneth E. Boulding back in 1956 and published in one of the earliest issues of *Management Science* which is currently celebrating its fiftieth anniversary (Hopp, 2004). Congratulations to the team at Management Science.

Boulding is a peer of a number of great systems thinkers that introduced and developed the general systems movement in the early fifties. Such thinkers include Ludwig von Bertalanffy, Talcott Parsons, C. West Churchman, Alfred Emerson, Anatol Rapoport, and many more – it is likely that selected writings from these thinkers will appear in future issues of E:CO.

For those readers not familiar with the general systems movement (from which complexity thinking arguably emerged) Boulding starts his paper with a brief description:

> *"General Systems Theory is a name which has come into use to describe a level of theoretical model-building which lies somewhere between the highly generalized constructions of pure mathematics and the specific theories of the specialized disciplines."*

This description of GST is very important as many complexity theorists still talk of a theory of complexity, or of a theory of management as if all the complexities and ambiguities of our perceived realities could somehow be reduced to a neat little theoretical package much akin to the physicists' quest for a theory of everything, or as Boulding puts it a "general theory of practically everything". In Boulding's mind GST was to be a tool that would enable mankind to effectively move back and forth between the perfectly describable Platonic world of theory and the fuzzy world of practice. Boulding rightly points out that any claims to any sort of theory of everything are misguided as "[s]uch a theory would be almost without content, for we always pay for generality by sacrificing content, and all we can say about practically everything is almost nothing."

Boulding's *General systems theory* is a sort of manifesto for the systems movement, much of which can be seen to be valid for complex systems theory today. A major role for any GST was to facilitate communication between disparate fields of interest, i.e., to provide a common language with which to discuss systemic problems. A lexicon of complexity science is also emerging, containing concepts such as *emergence, self-organization, chaos, bifurcation, exaptation,* etc. (some of which were also contained in the GST lexicon), which also aims to facilitate cross-disciplinary dialogue (though I personally doubt whether such an all-embracing way to express complexity is possible – there are an infinity of ways to talk about complexity and all of them should be allowed, initially at least).

The modern complexity movement is in some ways quite different from the general systems movement (although to many writers the two seem almost synonymous), but there is a lot to be learnt from the journey general systems theory has taken. Complex systems thinkers share a lot of the aims and ambitions of the original general systems movement, such as the need for cross-disciplinary communication and the development of analytical tools and processes to interact with, and intervene in, a modern complex (systemic) world. In this paper Boulding not only describes the need and role of a general systems framework but also offers a skeleton of what that framework might look like. Some readers may be surprised as to how fresh this paper still is.

The original article can be downloaded from here.

## References

1. Hopp, W. J. (2004). "Fifty Years of Management Science," Management Science, 50(1): 1-7.