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Systems Approaches to Making Change: A Practical Guide

Martin Reynolds • Sue Holwell
Editors

Systems Approaches to Making Change: A Practical Guide

Second Edition

 Springer

 The Open
University

Editors

Martin Reynolds
School of Engineering and Innovation
The Open University
Milton Keynes, UK

Sue Holwell
(Retired)
The Open University
Milton Keynes, UK

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Preface to the Second Edition¹

The second edition initiative was prompted by an invitation from the publisher Springer to the authors on the back of favourable reviews, with an accompanied agreement for the publisher to arrange for more widespread availability and readership. Several other opportunities were presented. First, there was an opportunity to improve some presentational and layout issues to help readers better experience the text through both online and paper-based versions. Second, the contributing authors of the five core approaches had space to update their contributions whilst also providing a postscript overview of developments associated with respective approaches.

There are no changes to the essential substance of each systems approach covered in this edition. The underpinning rationale for choosing the five systems approaches (expanded on further in Sect. 1.4 of Chap. 1) based on robustness coupled with versatility remains. Indeed, the rationale has been reinforced within a period of significant changes, including changes in the prominence of systems thinking since the first edition in 2010. These changes can generically be referred to as the flux of events, people and ideas (cf. Vickers, 1970²). The flux is typified by three stories chosen by the editors at the time and retained for bookending this publication. The three stories referred to in Chaps. 1 and 7 in terms of ‘the way of the world’ provide short vignettes of the complex world to which systems thinking approaches are relevant. They capture issues prevalent at a particular time – Easter 2009 – and in particular places: firstly, issues of seeking justice and proper accountability for bereaved families of victims in the Hillsborough football stadium tragedy in the UK; secondly, issues of personal security and plight of refugees amidst people smuggling piracy in the seas of Somalia; and, lastly, the threat of Orangutans as an endangered species in the forests of Indonesia. Whilst the stories are time-

¹Since the first edition, my friend and coeditor, Sue Holwell, has retired. Whilst preferring not to engage with further editorial work, Sue has provided full endorsement and encouragement for this second edition.

²This builds on the influential Systems Thinking Practitioner, Sir Geoffrey Vickers, who originally referred only to the flux of events (happenings) and ideas. I’m grateful to Christine Blackmore for suggesting the inclusion of ‘people’ within the flux.

context-specific exemplars of complex issues, they are clearly interconnected, inter-connecting with each other and with an ongoing flux of contemporary issues.

As I write in 2019, manifestations of each story are evident. Issues of ‘fake news’ and what may be regarded as a growing deficit in public ‘trust’ (not to be confused with less tangible notions of ‘truth’) have become prominent. Global turbulence and conflict associated with trade wars, terrorism and destabilisation have been significantly accentuated in the past 10 years. Finally, issues of sustainability are prevalent. These range from extensive deforestation of Amazonia for economic growth in South America to contentious use of fracking for continued fossil-fuel extraction amongst more industrialised nations predominantly in the northern hemisphere. Other manifestations of the sustainability crisis include ongoing challenges of implementing global sustainable development goals (SDGs) in an integrated manner,³ amidst significant increased civil activism on climate breakdown, particularly amongst young people.

Ten years on since the first publication, the underlying circumstances of the ‘way of the world’ remain. Our world remains complicated (with interdependent variables), complex (compounded by variable human perspectives) and conflictual (with contrasting perspectives based on inevitable partiality and bias). The ongoing ‘way of the world’ challenges are evident at national and global level but also at the level of organisations and communities. The challenges increasingly invite attention from government, business and civic organisations for people with the requisite systems thinking in practice capabilities to help resolve such turmoil. In 2019, the Institute for Apprenticeships in the UK formally recognised an occupational professional role as a Systems Thinking Practitioner (STP), attracting significant government funding support for training of STP apprentices at postgraduate level.⁴ For the first time, practitioners with requisite knowledge, skills and behaviours associated with being an STP can have their capabilities institutionally recognised by employers. Systems thinking in practice (STiP) tools and ideas associated with this edition therefore have greater chance of exercising leverage.

Amidst the ongoing flux of events, people and ideas associated with growing uncertainty and complexity, there are also many ideas which may not evidently be referred to explicitly by the terminology used in this compilation. One such idea is the introduction of the acronym VUCA (volatility, uncertainty, complexity and ambiguity) as a new way of describing the flux. Whilst some ‘new’ ideas and tools may be cynically viewed with providing little more than a contemporary managerial gloss for previous ideas and tools – a ‘reinvention of the wheel’ – most initiatives are genuinely innovative adaptations of ideas and tools that serve particular circum-

³ Particularly relevant to the final 17th SDG – the goal of integrating SDGs through partnership.

⁴ Details of the IfA Standard for STP Apprenticeship can be found on the following website: <https://www.instituteforapprenticeships.org/apprenticeship-standards/systems-thinking-practitioner/>

stances (particular situations of use and particular users) at particular times.⁵ Where such adaptive tools serve the purpose of enhancing systems thinking in practice as outlined in Chap. 1 (understanding interrelationships, engaging with multiple perspectives and reflecting on boundary judgements), there is reason to be hopeful. Within The Open University postgraduate STiP programme, we like to refer to such praxis as bricolage, the continually innovative methodological practices of adapting tools to contexts of use, and users' prior experiences, in order to make purposeful change for improvement.⁶ Since the first edition, nearly 1000 mature-age postgraduate students from the OU have undertaken one or both of the core modules associated with the STiP programme.⁷ Bricolage is an integral part of their study, where opportunities are provided for students as Systems Thinking Practitioners to innovate with the tools suggested in *Systems Approaches* for improving situations of interest relevant to students' own particular areas of (often professional) practice. The outputs of bricolage might be referred to as 'artisanal' products, the manufactured craftwork of STiP. An accompanying reader *Systems Thinkers* (Ramage and Shipp, 2020) provides some inspiring bibliographical accounts of 30 systems thinking practitioners along with sample short extracts from each to give the readers a sense of who is most relevant to their own practice.

Changes in the second edition can be summarised. Its name has slightly changed, from systems approaches to *managing* change to systems approaches to *making* change. The change reflects an ongoing better appreciation of systems thinking as a constructivist endeavour that actively shapes reality through shifting our epistemological furniture, an endeavour beyond the often presumed ontological endeavour associated with equating systems thinking with systems analysis. The change in name reflects a design-turn shift in attention from using 'systems' merely just as an analytical tool towards more purposeful proactive use of the systems idea. The mission here is captured in part by the sentiment of the young Swedish Activist Greta Thunberg 'What we need is Systems Change not Climate Change'. Rather than managing 'systems' in a continuing business-as-usual mode as though such systems are somehow disembodied reified extant entities, what we really need are systems to *make change* for the better. Hopefully, you will find some tools in this book to help you construct such systems.

⁵Some good examples of such innovative practices based on systems thinking can be found with the experimental and dissemination endeavours of the Observatory of Public Sector Innovation (OPSI) sponsored by the OECD.

⁶Bricolage is derived from the description of skills associated with travelling craftsmen in eighteenth-century French rural society, from French anthropologist Claude Lévi-Strauss.

⁷The two core modules each had OU module codes TU811 and TU812 which have since been revised and renamed, respectively, as 'Making strategy with systems thinking in practice' (TB871 previously TU811) and 'Managing change with systems thinking in practice' (TB872 previously TU812). TB871 will continue having both *Systems Approaches* and *Systems Thinkers* as Set book and reader, respectively.

Postscripts provided by the authors supplement any minor changes to the substantive text. The practical guide remains essentially the same, with clear guidance on how tools might be enacted rather than prescribed. With each approach, the enactment of tools is principally subject to you the user, rather than an assumed prescriptive use irrespective of the context. Each postscript outlines general areas where tools of the systems approach have been more widely used, followed by incidences of complementarity with other tools in interventions for making change and lastly incidences of any particular innovations that may have come to authors' attention. The postscript is not exhaustive but rather indicative of developmental matters particularly since 2010.

The first edition has been well-received. For example, Mike Jackson (2019) in the preface to *Critical Systems Thinking and the Management of Complexity* lists a number of books which he claims provide a useful overview of the field of systems thinking as a whole. The list begins:

From the Open University, that long-time bastion of systems thinking, have come Reynolds and Holwell, eds, *Systems Approaches to Managing Change: A Practical Guide* (2010), and Ramage and Shipp, *Systems Thinkers* (2009). They are both very good.

This second edition of *Systems Approaches* is part of a four-book series including *Systems Thinkers* (second edition) (Ramage and Shipp 2020), *Systems Practice: How to Act in a Climate Change World* (second edition) (Ison 2017) and *Social Learning Systems and Communities of Practice* (Blackmore 2010) which together support The Open University postgraduate qualifications in Systems Thinking in Practice. In the more promising years to come in the field of systems thinking in practice, we might all look forward to more systems thinking practitioners working as bricoleurs, using the tools in this publication for continual innovation towards making purposeful change in the way of the world.

Milton Keynes, UK

Martin Reynolds

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- Ramage, M. and Shipp, K. (2020) *Systems thinkers* (2nd ed.). London: Springer.

Preface to the First Edition

We live and work in a highly complex and interconnected world. Small decisions made by individuals may have large effects in a wider context. Actions taken within one organization can have an impact upon many different organizations, on government, on society and on the natural environment. This book has been motivated by a recognition that complex questions are increasingly asked of institutions and individuals in situations of change and uncertainty. The book addresses such questions not by offering ‘new’ tools, but rather by providing five approaches – systems tools – each embodying at least 25 years of experiential use. They not only provide robust methods, but moreover with the benefit of time and experience, the evolution of these approaches in different contexts has exposed new offerings; new enlightenment on how to use these approaches better in the light of experience. The five systems approaches presented in this compilation are presented not as ‘new’ tools to replace ‘old’ tools, but rather as evolving radical ways of thinking that have been nurtured in different contexts to complement and give added value to existing practices. They are specially updated for this publication, with each approach authored by the originators and/or experienced practitioners. This book is about intervention, or more precisely how to improve human intervention to help change situations for the better, to navigate the interrelated dimensions of making more effective strategic decisions in the twenty-first century.

The Open University, UK

Martin Reynolds
Sue Holwell

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The book was produced with the help of The Open University module team for TU811 ‘Thinking Strategically: Systems Tools for Managing Change’, a core module for the postgraduate programme Systems Thinking in Practice (STiP). Special thanks go to three colleagues at The Open University, Robin Asby, John Martin and Marilyn Ridsdale, for their tireless efforts in supporting the editing process. Thanks also to Karen Shipp and Penny Marrington for their insightful contributions and to Pearl Cox for the production of the manuscript.

The second edition rests on all the contributions and support outlined above, as well as on the feedback and encouragement from our many postgraduate students who have journeyed through the STiP programme since 2010. Those journeys have been supported by academic colleagues – particularly Christine Blackmore, Ray Ison and Rupesh Shah – and our extraordinary group of STiP Associate Lecturers at the OU. Special thanks to Martin Holt for collaborating on a short literature review to support this second edition. We are further grateful for the support of Vicky Eves, our Media Developer at the OU, for providing some redrawn figures and special thanks to Gill Gowans and Caz Williams for clearing OU administrative hurdles. Thanks also to Helen Desmond for providing Springer oversight and support.

Grateful acknowledgement is made to all sources for permission to reproduce material in this book. Lastly, particular thanks go again to all the contributing authors in supporting this edition.

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Contributors

Fran Ackermann is a Professor of Strategy and Risk in the School of Management at Curtin University having previously been Head of the Department of Management Science (Strathclyde University) and Dean of Research (Curtin Business School). She is also an Honorary Professor at Manchester University (England) and Visiting Professor at Strathclyde University (Scotland). She has been engaged as a Consultant by many top management teams in a wide range of countries including but not limited to the USA, Canada, France, Australia and Italy – in both public and private sector organisation

Her major research interests are the development and implementation of strategy particularly in areas such as stakeholder management and distinctive competence analysis, supporting multi-organisational negotiation and collaboration within the areas of strategy development and competition, the design and use of group support systems and complex project management particularly in the area of systemic risk modelling and disruption and delay.

She has coauthored 5 books and over 100 journal articles/book chapters in operational research/management science, strategy, group decision and negotiation and project management. She has been awarded the INFORMS GDN Section Award 2016, four best paper prizes at the Academy of Management and best paper prizes at the Australian and New Zealand Academy of Management and at the British Academy of Management. She is a Fellow of the British Academy of Management and a Graduate of the Australian Institute of Company Directors. She has also been awarded ~AUS\$5.1 million in research grants.

Peter Checkland is currently Professor Emeritus of Systems at Lancaster University. After 15 years as a Manager in the synthetic fibre industry, he joined the Postgraduate Department of Systems Engineering at Lancaster University. There, he worked with colleagues, including Dr. Brian Wilson, in what became a 30-year programme of action research in organisations. Initially, this work explored the use of systems engineering in dealing with management issues, rather than the traditional technically defined problems. The early work stimulated a clear direction that ultimately yielded soft systems methodology (SSM) as an approach to tackling the

multi-faceted problems which managers face. In doing this, it also established the now well-recognised distinction between 'hard' and 'soft' systems thinking. SSM is now taught and used around the world. Its development is described in many papers and five books: *Systems Thinking, Systems Practice* (1981); *Soft Systems Methodology in Action* (with Jim Scholes, in 1990); *Information, Systems and Information Systems: Making Sense of the Field* (with Sue Holwell, in 1998); *Soft Systems Methodology: A Thirty-Year Retrospective* (1999); and *Learning for Action: A Short Definitive Account of Soft Systems Methodology and Its Use for Practitioner, Teachers, and Students* (with John Poulter, in 2006).

His work has been recognised in a number of awards: honorary doctorates from City, University of London, the Open University, Erasmus University (The Netherlands), Prague University of Economics and Linnaeus University (Sweden), a Most Distinguished and Outstanding Contributor Award from the British Computer Society, the Gold Medal of the UK Systems Society, the Beale Medal of the OR Society, the I+M (Information and Management) Award of Amsterdam University, the Pioneer Award of the International Council on Systems Engineering and election to the Omega Alpha Association of the Systems Engineering Honor Society.

Colin Eden worked as an Operational Researcher in the engineering industry following his PhD, subsequently becoming Operational Research Manager. This was followed by a period as a Management Consultant specialising in small business problems. He then worked at the University of Bath until becoming Professor of Management Science at Strathclyde Business School in 1987. Until 2006, he was Director of the University of Strathclyde Graduate School of Business.

He is internationally known within the field of management science, management and research method through his research and publications. He has published over 180 articles in general management, management science and project management journals and published 11 books. He has received research grants from the Leverhulme Trust; British Telecom; ICL; the Northern Ireland Office; SSRC; EPSRC; Bombardier, Inc.; EU; and ESRC.

His major research interests are into the processes of making strategy; the relationship between operational decision-making practices and their strategic consequences; the use of group decision support in the analysis and making of strategy; managerial and organisational cognition; 'soft OR' modelling approaches and methodologies, including particular emphasis on the role of cognitive mapping; the process and practice of 'action research'; and the modelling of the behaviour of large project disruptions and delays, including issues of the dynamics of productivity changes, and learning curves.

Sue Holwell has qualifications in accountancy, computing and information systems (IS). Before embarking on an academic career, she worked for the Australian Public Service in Finance, Personnel and IS. The last few years were as the IS Manager, responsible for all aspects of IS in a mixed mainframe, PC technical environment with both commercial and design applications. A mid-career break brought her to the UK and a new career. Since 1988, she has worked on research and consultancy

using soft systems methodology in the NHS and multi-national companies in Europe, completed her PhD in Soft Systems Methodology and IS and coauthored a book of ‘conceptual cleansing’ of the fundamentals of the field of IS. She joined Cranfield University as Senior Lecturer in 1998, teaching on the MSc in the Design of Information Systems and MBA. In April 2002, she joined the Systems Department at The Open University, and retired in 2010. She has published on soft systems methodology and action research.

Patrick Hoverstadt has worked as a Consultant since 1994 with organisations internationally in both the private and public sectors, specialising in using systems approaches for strategy, diagnosis and design of organisation and governance structures and for organisational change. He is a Specialist in working with very large complex organisations including whole sectors. He has developed systemic approaches to several intractable business problems: strategy, strategic risk, large-scale organisational change, measuring management performance and collaborative governance. He has worked in on many restructuring projects, diagnosing structural weaknesses, designing appropriate solutions and practical change plans.

He has written over 30 research papers and articles and contributions to four books on organisation and management, is a Regular Keynote Speaker at conferences, is the Author of *The Fractal Organization: Creating Sustainable Organizations with the Viable System Model* which is the best-selling book on the viable system model published by Wiley in 2008 and is Coauthor of *Patterns of Strategy* published by Routledge in 2017 which describes the first systemic approach designed specifically for developing strategy. He chairs the largest group of systems practitioners in the UK and is a Visiting Research Fellow at Cranfield School of Management.

John Morecroft is Senior Fellow in Management Science and Operations at London Business School where he has taught system dynamics, problem structuring and strategy in MBA, PhD and Executive Education programmes. He served as Associate Dean of the School’s Executive MBA and codesigned EMBA-Global, a dual degree programme with New York’s Columbia Business School. He is a Leading Expert in strategic modelling and system dynamics and has written numerous journal articles. He has coedited three books and published a widely used system dynamics textbook, *Strategic Modelling and Business Dynamics: A Feedback Systems Approach* (Wiley 2015, second edition). He is a Recipient of the Jay Wright Forrester Award of the System Dynamics Society for his work on bounded rationality, decision-making and information feedback in models of the firm. He is a Past President of the Society and one of its Founding Members. His research interests include the dynamics of firm performance and the use of behavioural models and simulation for strategy development. He has led applied research projects for international organisations including Royal Dutch Shell PLC, AT&T, BBC World Service, Cummins Engine Company, Ford of Europe, Harley-Davidson, Ericsson, McKinsey & Company and Mars, Incorporated. Before joining London Business School, he was on the Faculty of MIT’s Sloan School of Management where he

received his PhD. He also holds degrees in Operational Research from Imperial College, London, and in Physics from Bristol University.

John Poulter is a Practitioner of SSM. He first used SSM formally when working with Peter Checkland in the UK's National Health Service in 1993. A Founder Member of the Soft Systems Research Group, he has presented papers and other publications on the use of SSM.

Martin Reynolds is Senior Lecturer at The Open University and Qualifications Director for the postgraduate programme Systems Thinking in Practice (STiP). He is a founding member and Lead Academic Liaison for the Applied Systems Thinking in Practice (ASTiP) group at the OU. His teaching and research focus on issues of (critical) systems thinking and (developmental) evaluation in relation to international development, environmental management, health systems support, public sector management, business administration and educational studies. He has published widely in these fields. Many of his papers – including his own chapters from books where he has acted as Lead Editor – are available free of access on his Open Research Online [list of publications](#).

He provides workshop support and facilitation for professional development in systems practice and for his specialist field of critical systems thinking. He has designed and facilitated professional development workshops for Conferences of the European Evaluation Society (EES) and the American Evaluation Association (AEA). He has worked closely with Systems Thinking Africa (STA), based in Johannesburg, providing numerous co-facilitated workshops with Director Samuel Njenga. In 2011, he was Keynote Speaker at the international conference hosted by the UK Systems Society on 'Systems Learning: Where to Next?'. In 2012, he gave the keynote address to the Hellenic Society for Systemic Studies on 'Systemic Crises? Why Strategic Thinking Needs Critical Systems Practice' and also gave the David Blockley Lecture on 'The Iron Triangle: Systems Thinking and Relations of Power' under invitation from The Systems Centre at Bristol University.

Since 2015, he has been Principle Investigator working with colleagues from ASTiP, STiP alumni including doctoral students and employer representatives on a series of action research initiatives associated with enhancing postgraduate post-study STiP capabilities in the workplace. The work has contributed towards official recognition in 2019 by the UK Institute for Apprenticeships for the occupational role of a Systems Thinking Practitioner (STP).

Werner Ulrich is *Ancien professeur titulaire* in the Faculty of Arts and Humanities of the University of Fribourg, Switzerland, where he was Professor of the Theory and Practice of Social Planning (including evaluation research, poverty research and critical systems thinking). He also held teaching and research appointments at a number of other universities, amongst them the University of Hull (Centre for Systems Studies) and the University of Lincoln (Centre for Systems Research), both in the UK, and has extensive experience as a Chief Evaluator and Policy Analyst in the public health and social welfare sectors. From 2005 to 2010, he was Honorary

Visiting Professor in the Faculty of Technology of The Open University, Milton Keynes, UK (Open Systems Research Group). In 1999, he was an Erskine Science Scholar at the University of Canterbury in Christchurch, New Zealand. From 2001 to 2013, he was Founding Director of the Lugano Summer School of Systems Design at the University of Italian Switzerland, which together with an international faculty offered continuing education in systems thinking and reflective practice for researchers and professionals from different fields of expertise and with different cultural backgrounds, a truly rewarding experience.

Werner's main interest is in the philosophical and methodological issues of applied science and expertise, with special regard for reflective professional practice. A specific contribution consists in his work on 'critical systems heuristics' (CSH) and its methodological core principle of 'boundary critique'. One of his major current interests is in bringing together the methodological ideas of applied science, reflective practice, discourse ethics, pragmatist thought and CSH within a 'philosophy for professionals'. His work on 'critical pragmatism' explores the ways these sources of critical thought can contribute to competent and responsible professional practice and, at the same time, can give a new critical competence to citizens, so as to promote the idea of a living civil society.