



How plausibility-based scenario practices are grappling with complexity to appreciate and address 21st century challenges



Angela Wilkinson ^{a,*}, Roland Kupers ^{b,c}, Diana Mangalagiu ^{d,e}

^a Futures Programme, Smith School of Enterprise and the Environment, Oxford University, Hayes House, 75 George Street, Oxford OX1 2BQ, UK

^b THINK, Haarlemmerweg 8a, 1014 BE Amsterdam, The Netherlands

^c Smith School of Enterprise and the Environment, Oxford University, UK

^d Reims Management School, Reims, France

^e Smith School of Enterprise and the Environment, Oxford University, Hayes House, 75 George Street, Oxford OX1 2BQ, UK

ARTICLE INFO

Article history:

Received 19 December 2011

Received in revised form 28 September 2012

Accepted 1 October 2012

Available online 27 December 2012

Keywords:

Complexity

Scenarios

Plausibility

Evolutionary futures

ABSTRACT

Scenarios are best described as a highly innovative, pragmatic field of practice grappling with theoretical grounding. Complexity science, in contrast, is a theoretically grounded, highly conceptual field searching for more effective and extensive application in practice. This paper explores how these largely separate fields might be better related in enabling groups and organizations cope with uncertainty. It focuses on non-probabilistic scenarios and the so-called Intuitive logics school of scenarios, with its emphasis on plausible, alternative futures because of its increasing dominance. The benefits of incorporating key insights from complexity science into scenario practices seems an obvious 'must have' in engaging complex, messy and puzzling situations and guiding action in the 21st century. Similarly, the persistent and recent significantly increased interest in scenarios offers insights relevant to extending complexity ideas beyond academe and inquiry, into broader spheres of corporate strategy, public policy-making and change management. Plausibility-based scenarios are being deployed to grapple with complexity for a variety of different purposes, including strategic renewal, anticipating systemic risks and enabling the large scale, transitions implied in meeting the challenge of global, sustainable development. This paper suggests that intuitive logics scenarios offer an 'on-ramp' to complexity, encouraging attention to the systemic framing of systems, situations and problems and enabling complexity concepts to penetrate beyond the domains of scholarship. It notes that complexity thinking challenges one-off scenario building practices, especially when the scenarios are developed using the deductive building method. As plausibility-based scenario practices continue to evolve they encounter practical challenges of *linking* to other processes, *relating* to other futures methods, *broadening* beyond the organizational scale, *engaging* heterogeneous agents and in enabling *deeper reframing*, exposing deeply held beliefs about progress and assumptions about change management in complex systems. This paper concludes with implications for practice and future scholarship associated with each challenge.

© 2012 Elsevier Inc. All rights reserved.

1. Introduction

Policy and decision-making would be simpler if cause and effect in natural and human systems could be clearly understood. Small changes would have small effects; large

changes would have large effects; what worked in the past would work in the future. The success of scenario practices in enabling constructive engagement with uncertainty is evident in their persistent use in public policy and corporate strategy for over 50 years. Complexity science is a more recent development and introduces new concepts, such as emergence and self-organization, to deal with uncertainty.

In this paper, we explore how these largely separate fields of practice and theory are co-evolving and how key concepts and tools relate. We are aware that investigating the connections

* Corresponding author.

E-mail addresses: angela.wilkinson@smithschool.ox.ac.uk (A. Wilkinson), roland.kupers@smithschool.ox.ac.uk (R. Kupers), diana.mangalagiu@smithschool.ox.ac.uk (D. Mangalagiu).

between these two fields presents the danger of breadth at the expense of depth. We take on this challenge and argue that better understanding and blending between these practice-led and theory-led fields is beneficial to both.

The paper is structured as follows: in [Section 1](#), we introduce non-probabilistic scenario work and explain our focus on the so-called intuitive logics school of scenarios, before succinctly introducing complexity. In [Section 2](#), we review relevant literature and suggest connections between plausible scenario work and complexity science can be made on an ontological, epistemological and methodological basis. In [Section 3](#), we introduce a new typology to recognize the diversity of purposes and settings in plausibility-based, scenario practices. We used this framework to select four cases to show how scenario work is continuing to evolve as it grapples with complexity. In [Section 4](#), we discuss our findings and we draw our conclusions and recommendations for scholarship and practice.

1.1. Interconnectivity and irreducible uncertainty

The tighter interconnections of natural, social and economic systems lead to increased uncertainty and greater complexity. The growing list of today's significant concerns, whether focused on fixing the financial crisis or progressing socio-ecological sustainability highlights the urgency to look forward and manage large scale, system transformations [\[1\]](#) and challenges the conventional western economic wisdom of continuous, linear or exponential growth. Failure to engage with irreducible uncertainty is more widely appreciated and attempts to tame uncertainty can make matters worse [\[2\]](#).

Appreciation of a complex, less predictable world has been met by calls for new approaches to how we understand, organize and enable progress through the creation and application of policy. Suggestions include 'future responsive social learning' [\[3\]](#) in order to cope with challenges and changes variously described as wicked problems [\[4\]](#), social messes [\[5\]](#) and turbulent changes [\[6\]](#).

1.2. Scenarios as a response to a more complex and uncertain world

Scenarios were introduced over 50 years ago as a means to overcome the limits of linear, reductionist and deterministic thinking that underpinned the then dominant practices of forecast-based planning. Scenario builders reject the notion of wholly predictable futures and instead seek to construct alternative futures which explore not only the paths to each, but do so in a way that emphasizes the need to attend to disruptive change as normal. Scenarios work is conducted in different sectors – public, private, civil and academia – and for a wide range of purposes, such as learning [\[7\]](#), strategy [\[8\]](#), or conflict avoidance [\[9\]](#).

Scenario practices have evolved from a "hypothetical sequencing of events constructed with the purpose of focusing attention on causal structures and decision points" [\[10\]](#) to attendance to the dynamic interactions that create disruptive and turbulent change as organizations co-evolve with their wider contexts [\[11\]](#). At the same time, continuous innovation and diversity of scenario practices result in methodological confusions and misunderstandings [\[12\]](#). To avoid contributing

to further confusion we first define and then justify our interest in one particular tradition of practice.

Bradfield et al. [\[13\]](#) highlight three different scenario 'schools'. In this paper we focus on what those authors refer to as *Intuitive Logics*, with its emphasis on *plausible* alternative futures, in contrast with the normative *French School* and the probabilistic *USA School*. Our choice to focus on the intuitive logics school is justified by evidence of its growing dominance in non-probabilistic scenario work [\[14\]](#).

Schoemaker [\[15\]](#) describes how plausibility-based scenarios are useful approaches in situations characterized by increasing uncertainty and complexity. He notes the effectiveness of scenarios as a psychological basis for addressing biases due to cognitive limits and overcoming 'group think' resulting from consensus building processes in social organizations.

In the intuitive logics tradition, the future is a fiction. Scenarios are 'open stories' [\[16\]](#) and stories and storytelling are deployed as a means to engage intuition, expose deeply held assumptions and forge new and shared interpretative frames. The assumption is that the emerging future cannot be forecasted but can be imagined and "lived in" and offers a different perspective to learning about the present than history alone provides. In effect, plausibility-based scenarios offer reframing devices rather than forecasting tools [\[17,18\]](#). Scenarios are not populated with facts but with perceptions, assumptions and expectations.

Quality of a good scenario is not determined by its predictive accuracy but by its impact which can be evaluated in different ways – cognitive shift, enhancing judgment, leading to more and better strategic options and/or motivating change [\[19\]](#).

Despite the extensive and continued use of intuitive logics scenarios in the public and private sectors, the diversity of methods can lead to a wholesale dismissal of these practices by empiricist traditions of inquiry and evidence-based decision making cultures [\[20,21\]](#). At the same time organizations, such as Shell, which have sustained the practice of plausibility-based, intuitive logics scenarios for over 50 years, appreciate the added value in terms of enabling decision makers to engage with uncertainty, enabling systemic insights and contributing to the adaptive capacity of the firm [\[21\]](#).

1.3. The promise of complexity

Complexity or the 'science of complex systems' has raised expectations about new abilities to address problems in fields as varied as biology, traffic regulation, stock markets and urban warfare [\[22\]](#). Computer-based experiments to reproduce complex system dynamics from a set of relatively simple rules at the system' components level became a powerful method for studying systems that were not resolvable analytically [\[23\]](#). Increasingly, complexity is an accepted but still emerging discipline, with most universities fielding research programs. Still, the field has struggled to make an impact on public policy.

While there are no universally accepted definitions of complex systems, they are best grasped by listing characteristic elements: a large number of heterogeneous agents, which influence each other's inner state and have a high sensitivity to initial conditions. This leads to non-deterministic and unpredictable system behavior, driven by feedback loops between individual agents, as well as at various levels in the system [\[24\]](#).

متن کامل مقاله

دریافت فوری ←

ISIArticles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات