Satellite Symposium at CCS2018

Conference on Complex Systems,

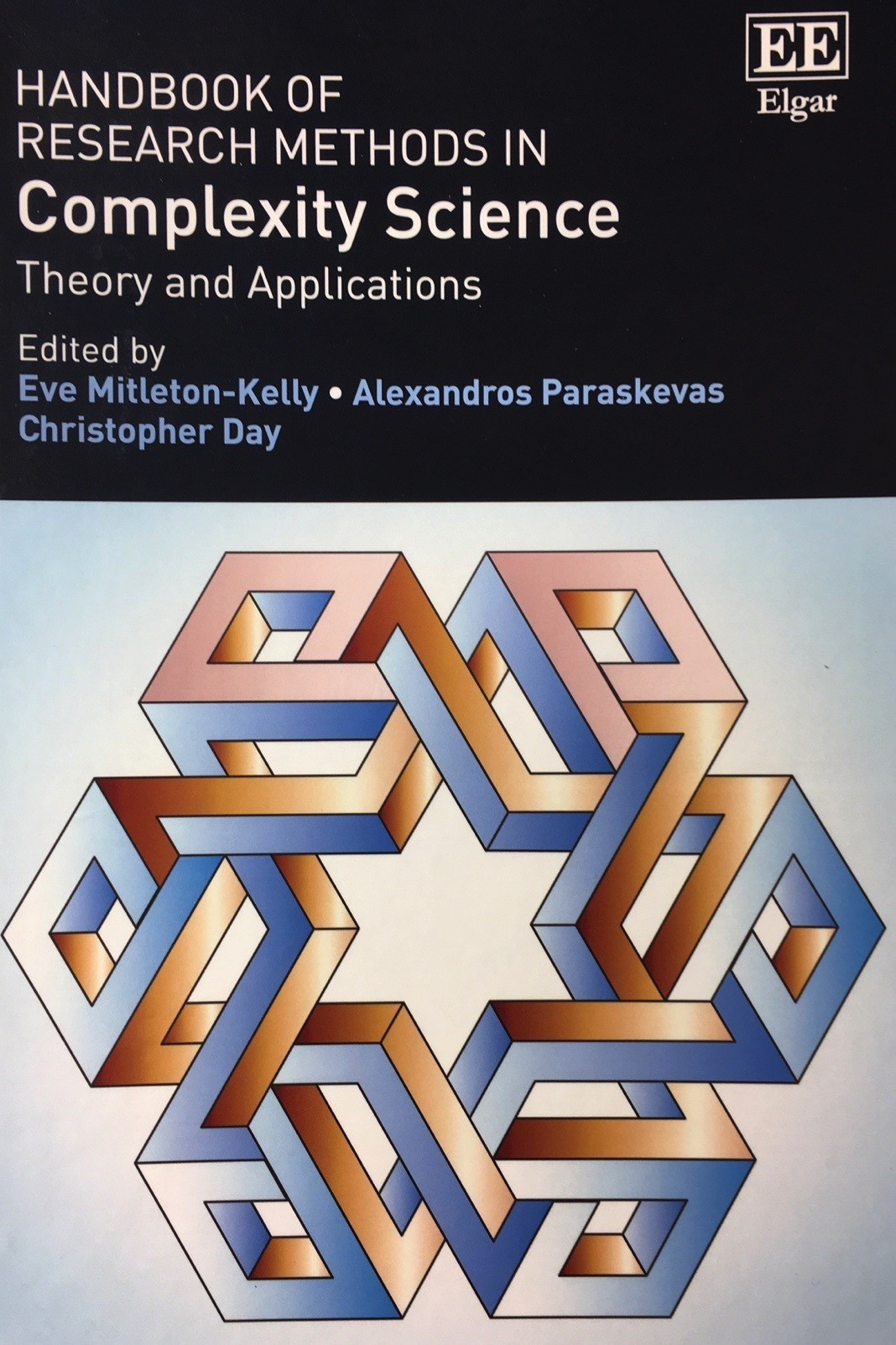
Thessaloniki, Greece

http://ccs2018.web.auth.gr/

# **26 September 2018**

***To Celebrate the Publication***

***of the Handbook***



**Join Our Authors Presenting on Different Research Methods and Their Application**

Followed by

Knowledge Café by**Edna Pasher PhD & Associates** to discuss opportunities for joint R&D projects to address the challenges of *The Hospital of The Future*

**Provisional Schedule**

**09:30-18:00**

**Location: Vellidio Convention Center, Thessaloniki, Greece**

**Format**

5x60 minute talks to include Q&A and a Knowledge Café

9.30-10.30 (Talk 1)

Break: 10.30-11.00

11.00-12.00 (Talk 2)

12.00-13.00 (Talk 3)

Lunch: 13.00-14.00

14.00-15.00 (Talk 4)

15.00-16.00 (Talk 5)

Break: 16.00-16.30

16.30-18.00 (Knowledge Café)

**Prof Y. Shapiro**, Clinical Professor, Department of Psychiatry, University of Alberta, Edmonton Canada

**1. Title:** *A Map of the Mind: Nonlinear Dynamics in Neuroscience and Psychotherapy*

**Prof Babak Pourboulou**, Institute for Resources, Environment & Sustainability, University of British Columbia

**2. Title:** *Complexity, the Bridging Science of Outbreak Response*

**Prof J. Rowan Scott**, Associate Clinical Professor, Department of Psychiatry, University of Alberta, Edmonton, Alberta, Canada.

3. Title: *Descartes, Gödel and Kuhn: Epiphenomenalism defines a Limit on Reductive Logic*

Prof Eve Mitleton-Kelly, London School of Economics and University of Cambridge

4. Title: *Addressing Global Challenges: the EMK Complexity Methodology*

**Dr. Boaz Tadmor MD**, Head of R&D, Rabin Medical Center, Israel

**Dr Moran Hellerman MD,** Physician at the ICU at Rabin Medical Center, Israel

**5. Title:** A Case Study Applying the EMK Methodology to *Identify the Challenges in the Intensive Care Unit* (ICu), Rabin Medical Center. A Workshop took place in March 2018 with the ICu Physicians and Nurses; the impacts and benefits will be discussed. The project was funded by Dr Boaz Tadmor and the Rabin Medical Center.

**6. Knowledge Café**

Designed by **Dr Edna Pasher** and facilitated by **Mor Harir** and **Dr Boaz Tadmor**

**Mor Harir**, Management Consultant at Edna Pasher PhD & Associates, Israel

**Knowledge Café**

***The Hospital of The Future* - Challenges as Opportunities for joint R&D Projects**

**Aim:** To bring together academics and health-care practitioners to share insights regarding the challenges and the potential solutions, which are emerging in current research and projects using complex systems thinking to improve health care.

**Format:** Peer learning; inspirational short examples, followed by a Knowledge Café of round table conversations, followed by idea ‘harvesting’ with the whole group.

**Expected Outcomes**

1. New insights and ideas for innovative and novel projects that will emerge from the interdisciplinary conversations at the workshop.

2. To subsequently prepare proposals for funding by the EU.

3. The creation of an international community, with a passion to practice and study complex systems in medicine and healthcare.

**Brief Abstracts**

***1.***  *A Map of the Mind: Nonlinear Dynamics in Neuroscience and Psychotherapy*

Linear models of psychopathology and its treatment are severely limited in integrating the full range of the patient’s experience and perpetually shifting complexity of the dyadic matrix with their caregiver. Dynamical Systems Therapy (DST) integrates the information-based language of complexity theory, which allows clinicians to create a psychobiological “map of the mind” that effectively eschews brain/mind dichotomy and incorporates both the patient’s first-person experience, the second-person process of the treatment provision, and the third-person language of neuroscience. Recurrent patterns of thinking, feeling, and relating can be mapped and targeted on the individual’s *adaptive* *landscape*. Treatment involves dyadic interaction between the two complex adaptive systems to re-shape pathological *attractor/repellor configurations* and re-establish self-organizing process.

***2. Complexity, the Bridging Science of Outbreak Response***

Due to the increasing incidence of emerging infectious diseases, significant time and resources have been allocated to the development and implementation of pandemic preparedness plans worldwide. Once a pandemic is declared, policymakers must respond quickly to minimize associated morbidity, mortality and disruption at the societal level. The spread of communicable diseases is a dynamical process and, as such, the understanding and control of infectious disease outbreaks and epidemics is pertinent to the temporal evolution of disease propagation within populations. In this talk, we summarize the methodological and practical developments that we have undertaken to address a range of real-life public health challenges towards creating integrated decision-support tools for policymakers.

3. *Descartes, Gödel and Kuhn: Epiphenomenalism defines a Limit on Reductive Logic*

            Reductive logic in science and the study of complexity can be traced back to René Descartes. An analogy with Kurt Gödel's formal incompleteness theorems reveals a limit on reductive logic in the form of *reductive incompleteness,*definable in relation to the modern *reductive epiphenomenalism of consciousness proposition.*The implications of reductive incompleteness include adapting the reductive paradigm with the possibility of imagining an adjacent possible meta-reductive paradigm capable of responding to previously unresolvable reductive scientific problems associated with the study of complexity.  The proposed meta-paradigm describes a form of scientific revolution dissimilar to the forms of transformation predicted by Thomas Kuhn and others.

4. *Addressing Global Challenges: the EMK Complexity Methodology*

Is it possible to effectively address complex problems such as pandemics, deforestation and gender inequality, when there are multiple and often conflicting interests, as well as multiple interacting causalities, within a constantly changing and complex environment?

Based on complexity science the *EMK Complexity Methodology* identifies the *multi-dimensional* (social, cultural, political, physical, technical, financial, etc.) *complex problem space*; the *critical co-evolving clusters* of strongly inter-related issues, causalities and their dimensions; and helps the problem owners to set up an *Enabling Learning Environment* to address the problem as it changes, over time.

The presentation will outline the EMK Complexity Methodology and illustrate its practical application, in apparently intractable organisational, societal, and global problems.

**5. *The ICu Rabin Medical Center Case Study, Applying the EMK Complexity Methodology***

The EMK Methodology was used at a 2-day workshop with nurses and physicians in the Rabin Medical Centre’s Intensive Care Unit (ICu) in March 2018. The primary focus was to identify and address some of the key challenges of the hospital of the future. One of these challenges was the relationship between nurses and physicians. The outcome of the March workshop was to agree a set of actions, to be taken forward by named ‘champions’. The head of R&D and an ICu physician will describe the unfolding development of the experiment and the implementation of the actions to start the process of co-creating an *Enabling Learning Environment.*