

# Our Cyber-Systemic Future

Raul Espejo, World Organisation of Systems and Cybernetics, Lincoln, UK & Syncho Research, Lincoln, UK

## ABSTRACT

How can systems and cybernetics address the issues arising from an increasingly complex world, that often is beyond our traditional response capabilities? The author argues that to address such complexity we require imaginative propositions and innovative behaviours to see and address the inherently systemic nature of our world, which too often is fragmented by policies driven by non-systemic models. Socially, we live in a world experiencing systemic deficit; our policy responses are often fragmented, but even if they are not, socially designed responses fail to recognise environmental constraints and produce innovative allocations of requisite resources to make them happen. The author argues that conversational spaces, such as those offered by the World Organisation of Systems and Cybernetics [WOSC], and other cybersystemic associations, should help dealing with fragmentation and resources allocation; he sees these conversations as necessary contributions to redress our systemic deficit. Systemic thinking should help in visualising social situations as wholes, thus reducing the chances of dysfunctional fragmentation and cybernetics should help us understanding processes of dynamic stability in the interactions among and between people, institutions, and organizations. Systemic thinking should give us methodological tools; cybernetics should give us communication tools to manage the complexity of situations from the local to the global. The paper discusses complexity management strategies, emphasising the need to deal operationally with this complexity rather than cognitively; operational complexity is orders of magnitude larger than cognitive complexity. The paper ends up with an illustration of these complexity management strategies in higher education.

## KEYWORDS

Communications, Complexity, Cybernetics, Systemic Deficit, Systems

## SYSTEMS AND CYBERNETICS IN SOCIETY

In the world of internet, the trend appears to be towards a stronger appreciation of *human interaction systems* (Espejo and Reyes 2011), that is, of a wide variety of interacting elements, operating as networks, with their own decision capacity. It is apparent that fragmentation is costly to people and organisation. Key challenges like health provision, social services, education, and many more are becoming increasingly more difficult to provide as people live longer and become more aware of their rights; interactions to get more with less are necessary. Exclusive societies, focused on relatively small groups at the expense of the most are increasingly experienced as unfair. Despite today's huge social problems, the trend is towards more inclusive societies; the wellbeing of the majorities is adding pressure to the way we organise our affairs. Social networks, and communications, are increasing people's awareness of their rights and possibilities in society. In democratic societies, these trends are making visible their social and economic inequality; at the same time, in the globalised world, these trends are adding to people's experience of injustice, exclusion and segregation. These forms of dissatisfaction are symptoms of a world that is organised and managed in a non-systemic fashion. Managing the world systemically requires, at the very least, a fair globalisation and dealing with respect and sensitivity with those suffering the consequences of technological development. Not to

DOI: 10.4018/IJSS.2017010103

take seriously these challenges is likely to create serious problems to humanity. Failure to integrate the disadvantaged into the main stream of democratic societies is likely to increase tensions and challenge their viability. The promises of the welfare society are becoming increasingly unaffordable and challenge its credibility. Exclusion and not inclusion appear to be the rule. There are increasing discrepancies between societal values and what these societies can deliver. Advanced democratic societies are finding that their economies are slowing down, that financing their self-induced consumption is mortgaging future generations and that inequalities in the distribution of wealth and income are adding to social instability (Streeck 2016). It is apparent that the current economic and social models are inadequate and that societies should integrate their economic, social and ecological endeavours much more in an earth of limited resources. The point is that, achieving these increasing levels of positive economic, social, and ecological synergy, require systemic organisation and management. At the global level, particularly those people living in less fortunate societies are often forced to accept a lower degree of individual autonomy and the de facto rule by the few, increasing their sense of alienation and injustice. The world order needs forms to integrate the disadvantaged at the local and global levels. Arguments towards “us first” are not sustainable. Failures like abject poverty, wars, increasing numbers of political and economic migrants are all challenging our abilities for systemic organisation and management. To deal with these challenges, there is no option, but “designing” more innovative forms of bootstrapping the development of the less fortunate and increasing solidarity: all these are systemic challenges. These are challenges that professionals of all kinds are constantly confronting. As these professionals de facto solve problems, one way or another, even if unaware, they are producing systemic solutions; where so far have found only fragmentation and domination, they are increasingly seeing the need for connectivity and autonomy. Additionally, one way or the other, despite many failures, they are contributing with emergent cybernetic solutions. Cybernetics contributes with an increasing understanding of communications and control in “man and machine” (Wiener 1961). Trial and error dominates these hard-fought solutions; these are slow learning processes that often produce frustration. Cybernetics is making contributions in communication and control, first at the level of machines (e.g. robots), but also increasingly is making contributions at the level of people and society. First order cybernetics, the cybernetics of the observed systems, is now strengthened by second order cybernetics, the cybernetics of the observing system (Foerster 1981). Unfortunately, the integration of these developments into the more traditionally fragmented disciplines is proving slow and far from adequate. A systemic approach, to improve control and communications in a holistic society, should help building a “cybersystemic” future, as a catalyst for social and individual learning. This cybersystemic future is emerging from several developments of significant academic value. Systems thinking is offering an important epistemological contribution; what does it mean to know, understand, design and act in our human activities as systems? (Checkland 1981; Checkland 2000). For its part, cybernetic thinking is helping to understand social connectivity and complexity and helping to work out increasingly effective learning mechanisms. Indeed, both systems and cybernetics are helping to diagnose, model, design, and improve social processes (Beer 1979; Beer 1981; Beer 1985; Beer 1993). However, despite all these developments at a societal level we are experiencing a systemic deficit. A discussion of this systemic deficit is the concern of the rest of this contribution.

## **SCIENCE FOR AND WITH SOCIETY: CONTRIBUTION OF SYSTEMS AND CYBERNETICS**

In a world that is inherently systemic, the challenge is developing cybersystemic competencies. Indeed, demand for holism is increasingly happening in the multiple disciplines that dominate science and society today (Pentland 2014). For those of us who see that this systemic deficit is threatening humanity the challenge is offering constructive propositions. Among others, this is the purpose of the World Organisation of Systems and Cybernetics- WOSC- ([www.wosc.co](http://www.wosc.co)), which in parallel with several

8 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage: [www.igi-global.com/article/our-cyber-systemic-future/185669](http://www.igi-global.com/article/our-cyber-systemic-future/185669)

## Related Content

---

### The Critical Impact of Cyber Threats on Digital Economy

Syed Adnan Afaq, Saman Uzmaand Gausiya Yasmeen (2023). *Advances in Cyberology and the Advent of the Next-Gen Information Revolution* (pp. 86-108). [www.irma-international.org/chapter/the-critical-impact-of-cyber-threats-on-digital-economy/325547](http://www.irma-international.org/chapter/the-critical-impact-of-cyber-threats-on-digital-economy/325547)

### National Culture and E-Government Readiness

Zlatko J. Kovacic (2009). *International Journal of Information Communication Technologies and Human Development* (pp. 77-93). [www.irma-international.org/article/national-culture-government-readiness/3996](http://www.irma-international.org/article/national-culture-government-readiness/3996)

### E-HRM's Impact on an Environmental Scanning Process: How Can Technology Support the Selection of Information?

Manel Guechtouli (2012). *Human Interaction with Technology for Working, Communicating, and Learning: Advancements* (pp. 120-133). [www.irma-international.org/chapter/hrm-impact-environmental-scanning-process/61485](http://www.irma-international.org/chapter/hrm-impact-environmental-scanning-process/61485)

### An 'Ekistics' for Information and Communication Technologies

William Mclver (2011). *Information and Communication Technologies, Society and Human Beings: Theory and Framework (Festschrift in honor of Gunilla Bradley)* (pp. 47-58). [www.irma-international.org/chapter/ekistics-information-communication-technologies/45280](http://www.irma-international.org/chapter/ekistics-information-communication-technologies/45280)

### Store Format Influence on Customer Perception of the Store Environment

Susana Henriques Marquesand Maria Santos (2012). *International Journal of Applied Behavioral Economics* (pp. 9-21). [www.irma-international.org/article/store-format-influence-customer-perception/71051](http://www.irma-international.org/article/store-format-influence-customer-perception/71051)