

Chapter 93

Our Cyber–Systemic Future

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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.

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 be-

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coming 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 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

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