

# Plenary Speech—Pille Bunnell (Canada)



## The Adaptive Cycle, Complexity and Resilience

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### ABSTRACT

The adaptive cycle describes how systems grow, reach maturity, disintegrate and give rise to the elements that in an appropriate context will appear to self-organize as a new version of the same system, or under other circumstances as a new type of system. Since all systems that humans interact with consist of smaller systems and comprise elements for larger systems, a distributed lumpy pattern of persistence, reconstitution, and change results. Depending on the temporal and spatial perspective of our interaction we perceive and distinguish systems as simple, complicated, complex or chaotic. Our actions depend on our distinctions, and where is a mismatch between our awareness of the density and pattern of interactions that pertain to the system and our participation with it, we are likely to act inappropriately. For example as we design and deploy an education system it is likely to rapidly evolve from simple to complicated; and as humans participate in that system, as well as its subsystems and the larger systems that serve as context for the education system, it becomes complex. Attempts to manage a complex system according to methods that are designed for simple or complicated systems lead to the rigidity trap and the system becomes vulnerable to changes in both context and subsystems. Thus a designed system that entails people acts in a typical adaptive cycle. Upon reflection, human participants who find themselves in a system that is vulnerable to disintegration can act in various roles that give rise to either the reconstitution of a more resilient system or the development of a new one.

Though this abstract is written without an attempt explicate the concepts of Panarchy and Cynefin, from which the above simple description derives, these will be developed in the presentation. Further, as grounded in second order cybernetics and the biology of cognition, the role of the observer in distinguishing both the system as such, and attributes such as complexity and resilience, will be made manifest throughout.

### ABOUT THE SPEAKER

2003 – present Core Faculty, SelfDesign Graduate Institute, Washington State

2003 – present Adjunct Professor, Royal Roads University, British Columbia

2001 – 2004 Sessional Lecturer, Faculty of Education, University of British Columbia

1999 – 2004 Director of Systemic Sustainability, Hope Chest International Ltd

1999 – 2002 President, American Society for Cybernetics

1994 – 1996 Special Assignment, ESSA Technologies Ltd (Development of Multimedia)

1993 – 1994 Director, Environmental Literacy, ESSA Technologies Ltd.

1989 – 1991 Adjunct Associate Professor, Department of Zoology, U. of Florida, Gainesville, Florida.

1985 – 1993 Partner, ESSA Environmental and Social Systems Analysts Ltd. Director, Environmental Literacy Program.

1980 – 1985 Systems Ecologist, ESSA Environmental and Social Systems Analysts Ltd.

1975 – 1980 Research Associate, Institute of Animal Resource Ecology, University of British Columbia.

1974 – 1975 Technical Research Assistant, Faculty of Forestry, University of British Columbia.

1974 Post-doctoral Fellow, International Biological Program.

1973 – 1974 Post-doctoral Fellow, Institute of Animal Resource Ecology, University of British Columbia.

1973 Biological Modeller, International Biological Program, U.S. Tundra Biome.

2012 – present Academic Programs Board, SelfDesign Graduate Institute, Washington

2005 – 2014 Executive Board, Canada Research Chair

2005 – present Editorial Board, Constructivist Foundations

2003 – 2011 Director, Pacific Spirit Park Society

2003 – 2009 Director, College of Co-Exploration

2003 – 2017 Director, Self Design Learning Foundation (formerly Wonder tree Educational Foundation)

2002 – 2011 Executive Board, American Society for Cybernetics

2001 – 2004 Executive Board, Croatian Business Academy

1999 – 2002 Director of Systemic Sustainability, Hope Chest International Ltd

1999 – 2002 President, American Society for Cybernetics

1997 – present Editorial Board, Cybernetics and Human Knowing

1997 – 1999 Director, Hope Chest International Ltd.

1995 – 2000 Director, GaiAeon Society

1991 – 1995 Global Education Advisory Board, Fort Whyte Global Education Centre, Winnipeg, Manitoba.