

PUBP 710 – 010 SPRING 2013  
**POLICY MAKING IN A COMPLEX WORLD**

***\*Updated January 23<sup>rd</sup>, 2013\****

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Contact: (310) 384-5545 (c)  
Class Day: Wed  
Time: 7:20 pm – 10:00 pm  
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**Course Description:**

We will study the global trends of growing economic and social inequalities that result from the globalization of resource use, production and consumption. Unfolding trends, possible discontinuities and future developments will be analyzed using a range of system theories. This will be a multidisciplinary attempt to identify the major factors that will shape the global future and to evaluate their probabilities and impact. We will examine low probability events that could change everything and gradual unfolding trends that will have far reaching influence on the long-term future.

Questions to be addressed in this course:

- How can population growth and resources be brought into balance?
- How can genuine democracy emerge from authoritarian regimes?
- How can policymaking be made more sensitive to global long-term perspectives?
- How can the global convergence of information and communications technologies work for everyone?
- How can market economies be encouraged to help reduce the gap between the rich and the poor?
- How can the threat of new and reemerging diseases and immune micro-organisms be reduced?
- How can shared values and new security strategies reduce ethnic conflicts, terrorism, and the use of weapons of mass destruction?
- How can transnational crime and terrorist networks be stopped from becoming more powerful and sophisticated global enterprises?
- How can growing energy demands be met safely and efficiently?
- How can scientific and technological breakthrough be accelerated to improve the human condition?

- What kinds of network based cooperation are likely to replace the post-hegemonic international order based on liberal world order?
- Why do all companies, large and small, eventually die but cities generally persist?
- Are cities large organisms?
- Why does socio-economic life accelerate?
- Can growth left unchecked eventually lead to collapse?
- Why if most policies fail, do states grow larger?
- Is there any hope of quality in a world where anyone having a Twitter account is an expert?
- How do selfish agents come to form groups that are not internally selfish?

### **Required Books:**

1. Bar-Yam, Yaneer. 2005. *Making Things Work: Solving Complex Problems in a Complex World*. NeCSI Knowledge.
2. Barabasi, Albert-Laszlo. 2003. *Linked: How Everything Is Connected to Everything Else and What It Means*. Plume
3. Root, Hilton L. 2013. *Dynamics Among Nations: The Evolutionary of Legitimacy and Development in Modern States*. MIT Press (forthcoming Fall 2013)
4. Ormerod, Paul. 2012. *Positive Linking*. Faber & Faber.
5. Smil, Vaclav. 2008. *Global Catastrophes and Trends: The Next 50 Years*. MIT Press

### **Recommended Background Sources: (Masters Students)**

Waldrop, M. Mitchell. 1992. *Complexity : the emerging science at the edge of order and chaos*. New York: Simon & Schuster.

Buchanan, Mark. 2007. *The Social Atom: Why the Rich Get Richer, Cheaters Get Caught, and Your Neighbor Usually Looks Like You*. First ed. Bloomsbury USA.

### **Recommended Background Sources: (Ph.D. Students)**

Mitchell, Melanie. 2009. *Complexity: A Guided Tour*. First ed. Oxford University Press, USA.

Simon, Herbert A. 1996. *The Sciences of the Artificial - 3rd Edition*. third ed. The MIT Press.

Rendell, L., R. Boyd, D. Cownden, M. Enquist, K. Eriksson, M. W. Feldman, L. Fogarty, S. Ghirlanda, T. Lillicrap, and K. N. Laland. 2010. "Why Copy Others? Insights from the Social Learning Strategies Tournament." *Science* 328 (5975) (April 9): 208–213. doi:10.1126/science.1184719.

**Reading Materials:** will be available either on e-reserve or through Blackboard.

## **Week 1: January 23**

### *Introductory Meeting*

Johnson, Neil. 2009. *Simply Complexity: A Clear Guide to Complexity Theory*. Reprint. *Oneworld*. (pp. 3 – 18)

Murray Gell-Man, “*What is Complexity?*” *Complexity*, Vol. 1, no. 1, 1995.  
<http://www.santafe.edu/sfi/People/mgm/complexity.doc>

W. Brian Arthur, “*Why do things Become More Complex?*” *Scientific American* (May 1993) p. 144

## **Week 2: January 30**

### *Opening the Doors of Complexity*

Miller, John H., and Scott E. Page. 2007. *Complex Adaptive Systems: An Introduction to Computational Models of Social Life*. Princeton University Press.

Bar-Yam, Yaneer. 2005. *Making Things Work: Solving Complex Problems in a Complex World*. NeCSI Knowledge. (pages 21-86)

## **Week 3: February 6**

### *Development Policy and Complexity*

Barder, Owen. What Is Development? *Global Development: Views from the Center.* *Center for Global Development*. <http://blogs.cgdev.org/globaldevelopment/2012/08/what-is-development.php>

Ramalingam, Ben, Harry Jones, Toussaint Reba, and John Young. “Exploring the Science of Complexity: Ideas and Implications for Development and Humanitarian Efforts.” *Overseas Development Institute (ODI)*. <http://www.odi.org.uk/publications/583-science-complexity>.

Ben Ramalingam’s Blog titled ‘Aid on the Edge of Chaos’ (<http://aidontheedge.info/>)

Bar-Yam, Yaneer. 2005. *Making Things Work: Solving Complex Problems in a Complex World*. NeCSI Knowledge. (pages 199 – 217)

## **Week 4: February 13**

### *Global Political Economy*

Cederman, Lars-Erik. 1997. *Emergent Actors in World Politics: How States and Nations Develop and Dissolve*. Princeton University Press. (One Chapter)

Buzan, Barry and Richard Little (2000), *International Systems in World History: Remodeling the study of international relations*. Oxford University press (Chapter 1)

## **Week 5: February 20**

### *The Economy as a Complex Adaptive System*

Cederman, Lars-Erik. 1997. *Emergent Actors in World Politics: How States and Nations Develop and Dissolve*. Princeton University Press.

Arthur, B., Durlauf, S. and Lane, D. (1997). *The Economy as an Evolving Complex System II*. Addison Wesley, Redwood City Ca. Chapter 1 (E-Reserves)

Blanchard, Olivier J. 2008. *The State of Macro*. Working Paper. National Bureau of Economic Research. <http://www.nber.org/papers/w14259>.

Simon, Herbert A. 1955. "A Behavioral Model of Rational Choice." *The Quarterly Journal of Economics* 69 (1) (February 1): 99–118. doi:10.2307/1884852.

"Economics Focus: Agents of Change." *The Economist*, July 22.  
<http://www.economist.com/node/16636121>.

## **Week 6: February 27**

### *Networks and Complex Adaptive Systems*

Barabasi, Albert-Laszlo. 2003. *Linked: How Everything Is Connected to Everything Else and What It Means*. Plume.

Hausmann, Ricardo, and Cesar Hidalgo. 2011. *The Atlas of Economic Complexity: Mapping Paths to Prosperity*. Harvard Kennedy School.  
<http://www.cid.harvard.edu/documents/complexityatlas.pdf>.

Granovetter, Mark. 1973. "The Strength of Weak Ties." *American Journal of Sociology* 78 (6): 1360–1380.

Granovetter, Mark. 1983. "The Strength of Weak Ties: A Network Theory Revisited." *Sociological Theory* 1: 201–233. doi:10.2307/202051.

Stanford Network Analysis Project (SNAP) Website at: <http://snap.stanford.edu>

## **Week 7: March 6**

### *Complexity, Population and the Environment*

Discussion to be led by: John Plant

Smil, Vaclav. 2010. *Energy Myths and Realities: Bringing Science to the Energy Policy Debate*. First. AEI Press. (Chapter 3)

TBA

**Week 8: March 13**

(Spring Break)

**Week 9: March 20**

*Conflict, War and Global Terrorism*

Kilcullen, David. 2011. *The Accidental Guerrilla: Fighting Small Wars in the Midst of a Big One*. Reprint. Oxford University Press, USA.

Haykel, Bernard. 2011. "The Waning Appeal of Radical Sheik." *The New York Times*, September 9, sec. Books / Sunday Book Review.  
<http://www.nytimes.com/2011/09/11/books/review/the-missing-martyrs-by-charles-kurzman-book-review.html>.

Bar-Yam, Yaneer. 2005. Making Things Work: Solving Complex Problems in a Complex World. NeCSI Knowledge. (pages 95 – 113 & 241-259)

**Week 10: March 27**

*Cities as Complex Systems*

Batty, Michael. 2012. "Building a Science of Cities." *Cities* 29, Supplement 1 (0) (March): S9–S16. doi:10.1016/j.cities.2011.11.008.

Florida, Richard. 2002. "The Rise of the Creative Class." *Washington Monthly* (May).  
<http://www.washingtonmonthly.com/features/2001/0205.florida.html>.

TBA

**Week 11: April 3**

*Healthcare and Education*

Christakis, Nicholas A., and James H. Fowler. 2007. "The Spread of Obesity in a Large Social Network over 32 Years." *New England Journal of Medicine* 357 (4): 370–379.  
doi:10.1056/NEJMsa066082.

Griffiths, and Kieran Sweeney. 2002. *Complexity And Healthcare: An Introduction: An Introduction*. Ed. Kieran Sweeney. 1st ed. Radcliffe Publishing.

Bar-Yam, Yaneer. 2005. Making Things Work: Solving Complex Problems in a Complex World. NeCSI Knowledge. (pages 113 – 199)

**Week 12: April 10**

*Institutions and the State*

North, Douglass C., John Joseph Wallis, and Barry R. Weingast. 2009. *Violence and Social Orders: A Conceptual Framework for Interpreting Recorded Human History*. 1st ed. Cambridge University Press.

Bowles, Samuel, and Suresh Naidu. 2008. "Persistent Institutions." *SFI Working Paper Series* (08-04-015). <http://www.santafe.edu/research/working-papers/abstract/0c6d9f1093f4e21dac3965bb0030d4a9/>.

Organizations recommended reading Corporate Governance & Complexity Theory by Eve Middleton-Kelly

### **Week 13: April 17**

*Modeling Complex Systems: A session on Agent-Based Modeling*

Guest Lecturer: Steve Scott

Schelling, T.C. (1971), 'Dynamic Models of Segregation', *Journal of Mathematical Sociology*, 1(1): 143-186.

### **Week 14: April 24**

*Global Inequality*

Buchanan, Mark. 2007. *The Social Atom: Why the Rich Get Richer, Cheaters Get Caught, and Your Neighbor Usually Looks Like You*. First ed. Bloomsbury USA.

### **Week 15: May 1**

*Catastrophe, Chaos and Uncertainty*

Smil, Vaclav. 2008. *Global Catastrophes and Trends: The Next Fifty Years*. First ed. The MIT Press.

Bar-Yam, Yaneeer. 2005. Making Things Work: Solving Complex Problems in a Complex World. *Necsi Knowledge*. (pages 259 – 274)

### **Grades**

Grades will be determined on:

20% **Class Discussion**

15%: **Exam I**

15%: **Exam II**

50%: **One term paper**

### **Statement on special needs of students**

If you are a student with a disability and you need academic accommodations, please see me and contact the Disability Resource Center (DRC) at 993-2474. All academic accommodations must be arranged through the DRC. **Online Student Journal** New Voices in Public Policy: I will consider nominating the very best papers in this course for publication in New Voices in Public Policy. New Voices is a student- and faculty-reviewed journal that shares SPP's finest student work with the rest of the world.

### **SPP Policy on Plagiarism**

The profession of scholarship and the intellectual life of a university as well as the field of public policy inquiry depend fundamentally on a foundation of trust. Thus any act of plagiarism strikes at the heart of the meaning of the university and the purpose of the School of Public Policy. It constitutes a serious breach of professional ethics and it is unacceptable.

Plagiarism is the use of another's words or ideas presented as one's own. It includes, among other things, the use of specific words, ideas, or frameworks that are the product of another's work. Honesty and thoroughness in citing sources is essential to professional accountability and personal responsibility. Appropriate citation is necessary so that arguments, evidence, and claims can be critically examined.

Plagiarism is wrong because of the injustice it does to the person whose ideas are stolen. But it is also wrong because it constitutes lying to one's professional colleagues. From a prudential perspective, it is shortsighted and self-defeating, and it can ruin a professional career.

The faculty of the School of Public Policy takes plagiarism seriously and has adopted a zero tolerance policy. Any plagiarized assignment will receive an automatic grade of "F." This may lead to failure for the course, resulting in dismissal from the University. This dismissal will be noted on the student's transcript. For foreign students who are on a university-sponsored visa (e.g. F-1, J-1 or J-2), dismissal also results in the revocation of their visa.

To help enforce the SPP policy on plagiarism, all written work submitted in partial fulfillment of course or degree requirements must be available in electronic form so that it can be compared with electronic databases, as well as submitted to commercial services to which the School subscribes. Faculty may at any time submit student's work without prior permission from the student. Individual instructors may require that written work be submitted in electronic as well as printed form. The SPP policy on plagiarism is supplementary to the George Mason University Honor Code; it is not intended to replace it or substitute for it.