

BACKGROUND MATERIAL FOR ALKER'S PRESENTATION: LEARNING FROM ARISTOTLE, LAMARCK AND AXELROD

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If I were to be cute, the presentation I shall give might be called "Learning from Axelrod." If I were to be more even more laudatory, I might call it "Learning from Aristotle, Lamarck¹ and Axelrod," and even put as a subtitle something like: "Paradigmatic Consciousness as a step toward a Cross-Civilizational Dialogue." My presentation will be importantly based on my early, modestly successful, efforts at the University of Southern California, in a required "historiography" course, IR212,² to teach non-technically oriented undergraduates aspects of a sophisticated, naturalistic approach to international relations, viz, complex adaptive systems theory according to Gell-Mann³, Holland⁴, Morowitz,⁵ Axelrod, and his colleagues and students at Michigan and the Santa Fe Institute,⁶ as well as a humanistic, sociological and internationalist styles of international historical writing of the sort identified with the writings of R.G. Collingwood, Paul Kennedy, Tsuyoshi Hasegawa, Hayden White and Foucault. It will also

¹ The Lamarckian character of American IR theory is forcefully argued in Jennifer Sterling-Folker, "Lamarckian with a vengeance: human nature and American international relations theory," *Journal of International Relations and Development*, 9,3 (sept 2006): 227-246.

² IR212 is called "Historical Approaches to International Relations." IR majors must take an introductory Introduction to IR Theory, and also one of three "methodological courses," e.g. IR212. Following on Ron Steel, I first taught IR212 in the Spring of 2006, and I shall be teaching it again in the Spring of 2007. Excerpts from the 2007 IR212 Syllabus are included as an Appendix to this version of this document

³ Murray Gell-Mann, The Quark and the Jaguar : Adventures in the simple and the complex New York : W.H. Freeman, 1994.

⁴ John H. Holland, Hidden order : how adaptation builds complexity, Reading, Mass. : Addison-Wesley, 1995; and his Emergence : from chaos to order / John H. Holland. Reading, Mass. : Addison-Wesley, 1998.

⁵ Harold J. Morowitz, Ch. 2 (Ideas of Emergence) and Ch. 3 (The 28 Steps), Ch. 34 (Athens and Jerusalem), Ch. 35 (Science and Religion), pp. 15-38, 185-196, The Emergence of Everything: How the World Became Complex, Oxford Univ. Press, NY, 2002.

⁶ Robert Axelrod, The Evolution of Cooperation, Basic Books/Perseus, New York, 1984, the entire volume; his The Complexity of Cooperation: Agent-Based Models of Competition and Collaboration, Princeton U Press, Princeton, 1997, Ch 1 (Evolving New Strategies), pp. 10-29 and Ch.6 (Building New Political Actors), pp. 121-144 are required course readings in IR212. Some lecture material is also taken from an optional book generalizing Axelrod's approach by one of his best students is: Lars-Erik Cederman, Emergent Actors in World Politics: How States and Nations Develop and Dissolve, Princeton University Press, Princeton, 1997, and from Axelrod and Michael Cohen's approach to the intelligent design of institutions by humans attempting to accelerate processes of artificial "selection": R. Axelrod and M. Cohen, Harnessing Complexity: Organizational Implications of a Scientific Frontier. Free Press, New York, 1999,

include reflections on my recent efforts to engage Pakistani Professors of Political Science and International Relations in the teaching of Aristotle and Axelrod.

In developing my version of this USC course, a major motivation has been to give equal, sympathetic time to conceptions of historical research that were grounded either in the humanities or in the natural sciences, or the sometimes associated foundational conceptions of inquiry as oriented towards understanding, explanation, evaluation or emancipation⁷. This multi-disciplinary conception arises several decades of methodological, epistemological and ontological inquiry into different traditions, research paradigms, research programs, analytical orientations, and theories of comparative and international inquiry. This study has led me to a conception of the sociopolitical sciences as bridging disciplines between the humanities and the natural sciences.⁸ Humanistic literatures on the construction of historical narratives, on tragic or comic plot-like structures, metaphorical, metonymic, synecdochic or ironic figurative language clearly shape historic writing. On the other hand, Darwinian evolution seemed a good, influential source of naturalistic orientations to international relations, even if such studies are often more metaphorically or analogically “evolutionary,” rather than rigorously biological in either an evolutionary-genetic or ecological sense.

Because he was a great biological taxonomist, a political scientist, a philosopher of language and rhetoric, and a brilliant critic of dramatic literature, Aristotle appears several times in the course. Initially he appears in a brief excerpt from my chapter on “Aristotelean Political Methodologies,”⁹ which introduces both a metaphysical/ontological interpretation of the Classical “Great Chain of Being” notion (“from rocks to God”, explicit in Aristotle and Ibn Khaldun, as well as the Bible), as well as the ontological/epistemological/methodological interpretation of the “Chain” as a subsumptive hierarchy of knowing, acting and computing systems offered by system theorists of various sorts.

At different points in the course I argue all or most of the following:

1) that Axelrod’s simulations can be thought of as virtual explorations of Darwin’s famous, ecologically complex notion of a “tangled Bank;” his ecological/evolutionary approach can usefully be thought of as initiating a new, inter-disciplinary “research

⁷ von Wright, Hollis and Smith, Hayden White, Northrop Frye, Paul Ricoeur, Gadamer and Habermas are relevant authors whose writings on these subjects should be familiar to knowledgeable students of the philosophy of the human sciences. Influenced by Collingwood and Radnitzky, I have also emphasized a pervasive, partly metaphysical “knowledge interest” in “cosmology” or “world picture painting.”

⁸ Bookends for this effort might be defined as: H. R. Alker and Roger Hurwitz, Resolving Prisoner’s Dilemmas, American Political Science Association, Washington, D.C., 1980; and H. R. Alker, , Rediscoveries and Reformulations, Cambridge University Press, New York, 1996. See also See my "On Curricular Perestroika: Seven Principles of Methodological Pluralism," in Kristen R. Monroe, ed, Perestroika! The Raucous Rebellion in Political Science., Yale U Press, 2005.

⁹ H. R. Alker, Rediscoveries and Reformulations, especially the discussion of Aristotle, Donald T. Campbell, Kenneth Boulding, Noam Chomsky and Axelrod on “the Great Chain of Being,” pp. 98-101.

paradigm complex”, different from the “game learning,” “rational choice/games and decisions” and “social psychological conflict resolution” research paradigm complexes¹⁰;

2) that the ontological/methodological “Great Chain” continuum from “blind trial and error” problem-solving (“the Blind Watchmaker”) to “divinely intelligent design” has a variety of intermediate versions, including Axelrod’s own rather Lamarckian-historical approach to international learning; such methodologically influential, but still largely metaphysical belief structures are recognized parts of research paradigm complexes;

3) that international history, understood evolutionarily by Henrik Spruyt, George Modelski and William Thompson, as well as Ernst B. and Peter Haas, Karl Deutsch and Thomas Biersteker, is somewhere on this continuum as well, probably more towards the “myopic watch-making” part of this continuum;

4) that evolutionary “progress” in history is a highly contested notion when extended to human international affairs by Immanuel Kant, Karl Marx, liberal and conservative Social Darwinists, Adolf Hitler, or the Haases;

5) that the recognition of these metaphysical/ontological/methodological components of all natural and social scientific “research paradigms” gives us a potentially complementary Via Media in the theological-scientific controversies racking American society (and much of the Islamic world), as well as the different variety of human-historical scientific inquiry (Kuhn vs Lakatos vs Popper vs their bêtes noires on the role of metaphysics in science, “the materialism-idealism controversy” of contemporary IR and Collingwood’s “idealism-positivism” controversy);

6) that Aristotelean ontological thinking, including his famous “constitutive theory” of self-sufficient and self-steering beings and governments, formed by the unification of formal, final, material and efficient causes, is an ontologically enriching approaches to the many issues facing the serious “causal analyst” of political behavior and international relations more generally (cf Deutsch-Parsons, von Neumann’s theory of self-reproducing automata)¹¹ and the booming literature on sociological, political and historical causal analysis;

7) that I have found the recognition of these Classical “roots” of some of our most arcane, and computationally complex, forms of social-historical inquiry an important way to begin the great 21st Century challenge – for those not subscribing to the Huntington-Bush thesis of a “clash of civilizations” – of a cross-civilizational dialogue of civilizations.

Obviously, not all students get all of these points as fully as I have explicitly here articulated them. But I have a kind of teaching style that moves up a ladder. When some of the more basic points seem to be recognized, I go on to the higher, more abstract, and more difficult ones.

¹⁰ The “research paradigm complex” notion synthesizes Kuhnian, Lakatosian and Habermasian conceptions of (natural and social) scientific practices. It was elaborated upon in Alker and Hurwitz, *op. cit.*, with the three pre-Axelrod approaches to Prisoner’s Dilemma research just mentioned. Political scientists will note the Elms’ contrasting, more purely Lakatosian approaches to knowledge cumulation.

¹¹ This astonishing continuity connecting Aristotle to von Neumann and the “Artificial Life” paradigm promoted by the Santa Fe Institute is developed in my “From Political Cybernetics to Global Modeling,” in Richard L. Merritt and Bruce M. Russett, eds., From National Development to Global Community, pp. 353-378. London: George Allen & Unwin, 1981.

It is this kind of pluralistic¹², yet evolutionary/progressive pedagogy that I wish to explore further in my proposed presentation. I shall also report further on the cross-civilizational dialogue part of this thematic as well, as I recently experienced it in Pakistan.

APPENDIX: EXCERPTS FROM ALKER'S USC 2007IR212 SYLLABUS:

Historical Approaches to International Relations

Required Purchases

- 1) Marc Trachtenberg, The Craft of International History: A Guide to Method, Princeton Univ. Press, Princeton, 2006. ISBN 0-691-12569-4. (Hereafter TRACHTENBERG)
- 2) Hayward R. Alker, Rediscoveries and Reformulations: Humanistic Methodologies for International Studies, Cambridge Univ. Press, NY, 1996. ISBN 0521466954 (Hereafter Alker R&R, or just R&R)
- 3) J. Weiner, The Beak of the Finch: A Story of Evolution in our Time, ISBN 0-679-73337-X, Vintage Books, NY, pbk, 1993. (Hereafter: WEINER BOF)
- 4) Robert Axelrod, The Evolution of Cooperation, ISBN 0-465-02121-2, Basic Books/Perseus, NY, pbk 1984 (Hereafter AXELROD EOC)
- 5) Michel Foucault, "Society Must be Defended," ISBN 0-312-42266-0 Picador, NY, pbk, 2003. (Hereafter: FOUCAULT SMBD)
- 6) Tsuyoshi Hasegawa, Racing the Enemy: Stalin, Truman, and the Surrender of Japan, Belknap, Harvard, Cambridge, 2005. ISBN 0-674-01693-9. (Hereafter HASEGAWA)

The course has two 1hour 20 minutes lectures Sessions a week, and a 50 minute Section meeting taught by TAs each week, for the equivalent of 15 weeks.

Sessions Five and Six: A Naturalistic, Micro-social History of a Macro-process -- "Evolution"

1) Charles Darwin, "Recapitulation and Conclusion," Ch. XIV of his On the Origin of Species By Means of Natural Selection, or the Preservation of Favoured Races in the Struggle for Life, Sixth Edition. This text, and the rest of his most famous books are freely downloadable from The Gutenberg Project: www.gutenberg.org. So go there to get this text, and get prepared to check out subsequent references to Darwin's views using this collection!

In Professor Alker's judgment, the best most recently published, edited collection of Darwin's most important writings, including the above, is Edward O. Wilson, ed., From So Simple a Beginning: The Four Great Books of Charles Darwin, W.W.Norton, NY, 2006.

2) WEINER, BOF, pp. 1-210.

TA Session: Discussion of the imaginative and rigorous naturalistic methodologies for studying dynamic causal and constitutive process ideas with which the Grants and their students study "Natural Selection."

TAs will emphasize evolutionary ideas influential in sociohistorical writings, such as "causal" and "functional" relationships, as well as other non-teleological "adaptive changes" giving an apparent "direction" to systems-conserving or systems-evolutionary processes. After reading Wiener's book, you should never want to belittle "bird watching" (again)!

¹² See my "On curricular perestroika," op. cit.

Homework 1b: The Grant's natural historical Methodologies.

Due Beginning of Lecture Session 7.

Session Seven: Is there an evolutionary basis for human morality?

- 1) Paul Chilton, discussion of language, evolution and politics, pp. 16-29 of his Analyzing Political Discourse, Routledge, London and New York, 2004. ELECTRONIC RESERVE
- 2) Jessica C. Flack and Frans B.M. de Wall, "Any Animal Whatever": Darwinian Building Blocks of Morality in Monkeys and Apes," pp. 1-29, in Leonard D. Katz, Evolutionary Origins of Morality: Cross-Disciplinary Perspectives, Imprint Academic, Bowling Green, 2000. (originally Journal of Consciousness Studies, 7,2(2000)) ELECTRONIC RESERVE. Prof. Alker will summarize this book in class, especially pp. ix-xvi and 67-77. Of course, it would be great to read the whole Katz volume, including the chapter by USC's Christopher Boehm on the origin of morality as social control. Optionally too, James Q. Wilson's The Moral Sense, Simon and Schuster, NY, 1997, is an accessible, learned, more conservative than liberal, argument for a biologically evolved "moral sense" in human beings. Marc D. Hauser, Moral Minds, Harper Collins, New York, 2006, is a more technically advanced argument, suggesting the quasi-grammatical, rule-based nature of morality might have an evolutionary basis in accord with the Chomskian ideas in Alker ("Voyages of Rediscovery") and Chilton.

Homework Exercise 2a: Trying to make sense of behavioral sequences without internal meanings

Structurally similar to the Games used in Axelrod's tournaments; the student will be asked to "make historical sense" of some Iterated Prisoner's Dilemma (IPD) move+payoff trajectories

Session Eight: Must Evolution Lead to War? Might Peace Also "Evolve?" Do Not Axelrod's simulational explorations of his version of Darwin's "tangled bank" assume and build on a significant evolution in human linguistic-cognitive-moral capacities as well?

- 1) AXELROD EOC, pp. 3-87, and Appendix A

Homework Exercise 2 b: How Words Help Make Sense of "Historical Trajectories" in

IPD Play. When the "historical data" from the game includes the reflections players jotted down while playing the game, "interpretive, re-enactments" are a lot easier to achieve. The "totally available" historical "archive" of game play has been prepared and dynamically graphed in PD Grapher software to be used by the student.

Sessions Eleven and Twelve: Historical and Theoretical Debates Among Early and Recent Social Darwinians on related issues of war and peace, and state system formation.

- 1) Paul Crook, "Recent Historical Writing on Darwinism," Australian Journal of Politics and History, Vol. 45, No 1(1999):110-118.
- 2) Paul Crook, Darwinism, War and History, Cambridge University Press, NY, 1994, Table of Contents and Chapter 6(The survival of peace biology), pp. 153-175. On ELECTRONIC RESERVE.
- 3) Richard Hofstadter, Social Darwinism in American Thought, Beacon Press, Boston, 1992, Table of Contents and Ch. 9 (Racism and Imperialism), pp. 170-200. An optional book.
- 4) Mike Hawkins, Social Darwinism in European and American Thought, 1860-1945, Cambridge Univ. Press, Cambridge, 1998, Table of Contents and Ch. 11 (Nazism, Fascism and Social Darwinism) in his SDIE&AT, pp. 272-291.
- 5) Hendrik Spruyt, pp 22-29, 62-65 and 153-180 of his The Sovereign State and Its Competitors: An

Analysis of System Change, Princeton University Press, Princeton, 1994.

6) George Modelski, "Evolutionary World Politics: Problems of Scope and Method," pp. 16-29, in W. R. Thompson, ed., Evolutionary Interpretations of World Politics, Routledge, New York, 2001. ELECTRONIC RESERVE. If possible, William R. Thompson, "Evolving Toward an Evolutionary Perspective," pp. 1-15 of this book, will also be on ELECTRONIC RESERVE. For those who have read Buzan and Little's book International Systems in World History in IR210, the Modelski-Thompson research paradigm (complex) this work suggests a different theoretical reformulation.

Session Thirteen: Are Naturalistic Historians also Story-Telling Moralists? And, if so, what stories, and how well are they supported?: Axelrod's Lamarckian liberalism and Paradigmatic Metaphysics of Partly Designed Emergent Complexity

- 1) AXELROD EOC Ch8 (Social Structures of Cooperation) and Ch.9 (The Robustness of Reciprocity), pp. 145-191.
- 2) Axelrod, The Complexity of Cooperation: Agent-Based Models of Competition and Collaboration, Princeton U Press, Princeton, 1997, pp. 10-29 ELECTRONIC RESERVE. Optional, pp. 121-144.
- 3) Lars-Erik Cederman and Christopher Daase, "Endogenizing Corporate Identities: The Next Step in Constructivist IR Theory," European Journal of International Relations, 9,1(2003): 5-35. ELECTRONIC RESERVE or JSTOR.
- 4) Jennifer Sterling-Folker, "Lamarckian with a vengeance: human nature and American international relations theory," Journal of International Relations and Development, 9,3(2006): 227-245. ELECTRONIC RESERVE.

A challenging optional book generalizing Axelrod's approach by one of his best students is: Lars-Erik Cederman, Emergent Actors in World Politics: How States and Nations Develop and Dissolve, Princeton University Press, Princeton, 1997. (A preview of this book is contained in his 1994 article on "Emergent Polarity." And Axelrod has approached the subject of the intelligent design of institutions by the managed acceleration of processes of artificial "selection": R. Axelrod and M. Cohen, Harnessing Complexity: Organizational Implications of a Scientific Frontier. Free Press, New York, 1999, another hopefully tempting optional possibility.

Optionally, one could also explore recent multi-agent simulations of alternative forms of international relationships, as in Katsuma Mitsutsuji and Susumu Yamakage, "A Generic Simulation Model for the Relationship between State-Entities From Sovereign States To Empires and Confederations," Paper given at the 50th Anniversary Meeting of the Japan Association for International Relations, October 2006.

Homework Exercise 3: Axelrod's introduction of a new, Evolutionary IPD Research Paradigm Complex. Plus a careful analysis of the Darwinian and non-Darwinian elements of Spruyt's analysis or the emergence/evolution of novel state forms.

Session Fourteen: Is Wiener also a Story-Telling Moralist and Metaphysician? How about complexity/emergence studies at the Santa Fe Institute? SFI is a promoter of Axelrod's work.

- 1) WEINER BOF Part III (G[eneration] O[f] D[iversity]), only the more philosophical/ metaphysical chapters, i.e. pp. 267-303.
- 2) Harold J. Morowitz, pp. iii-viii, and, pp. 185-196, The Emergence of Everything: How the World Became Complex, Oxford Univ. Press, NY, 2002. ELECTRONIC RESERVE

An optional book taking a very different "metaphysical/cosmological" view of evolution – that Nature is evolving through us and our relationships with our machines – is George B. Dyson, Darwin among the Machines: the evolution of global intelligence, Addison-Wesley, Reading, MA, 1997. [I ADD: Like the

very checkered career of Social Darwinism, the religious and metaphysical aspects of the Darwinian tradition and its contemporary offshoots deserve more discussion. The Morowitz reading is introduced to show an interesting kind of grounded metaphysical/theological speculation within the scientific community concerning possible kinds of “emergence” in the evolutionary development of different life forms. Indeed, one should think hard about the metaphysical, religious and anti-religious attitudes of Alker’s earlier treatment of Aristotle’s “cosmological” political science, Morowitz’s Spinozan theism, Dawkins (who wrote the Preface to the new edition of Axelrod’s EOC and has a current bestseller called *The God Delusion*), and Hauser’s explicitly atheistic *Moral Minds*. These issues become highly relevant to cross-civilizational inquiry, and presuppose a certain naturalistic and historical sophistication in understanding 19th, 20th and 21st Century biological research.]