From Ethno-Sociology to Complexity (2007) Practicum
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To accompany bibliography ***http:****//intersci.ss.uci.edu/~drwhite/pub/Ethno-Sociology.pdf*
Abstracts and supplementary: ***http:****/ /intersci.ss.uci.edu/~drwhite/links2pdf.htm*
These are research-field summaries, databases and software, main results

COMPARATIVE

1968SRAS, 1969SCCS describe the database designs, 2007SCCS summarizes the studies accomplished, explains the etc. Database of codebooks, 2008 variables plus 7 *single factor scales* so far (*political scale, modernization, internal* and *external war, fraternal interest groups, male aggression,* and *female power*) and freeware R Code and data at http://eclectic.ss.uci.edu/~drwhite/courses/ The only correlates of the single factors with with time of observation are negative with external war and positive with internal war (esp pre vs. 20th century)!
1991Conflict shows that internal war occurs in the context of external war!
1982NetworkAutoCor presents the autocorrelation approach to the *interdependence complexity* of observations.
1988 illustrates complex macro-regional adaptations, for polygyny.

Complexity Index	1	Single variables
	2	Bivariate (SVD, Factor Analysis, Scaling)

MATHEMATICAL FOUNDATIONS

1977	2	Work Roles (Sexual Division of Labor, Asymmetric)
1995	3	Avoidance Roles, Social Organization (Asymmetric)
1974	4+	Processual, Optimization, & Structural Analysis; Ethnographic Decomposition

NETWORKS

M1993	4+	Galois lattices
M1983	Many->few	Semigroup Homomorphisms
M2001	NP-complete	Cohesiveness of Blocks in Networks
N2003	Multi-Scalar	Structural Cohesion and Embeddedness: Hierarchical Conception
N2005	Multi-Scalar	Network Dynamics and Field Evolution: Biotech Industry
N2007	dynamics	Networks, Hierarchy and Cohesion
N2004	dynamics	Networks, Fields and Organizations: Micro-dynamics, scale and embeddings
N2004	feedback	Network Analysis, Social Dynamics and Feedback in Social Systems.
N1999	multivariate control	Controlled Simulation of Marriage Systems.
N2006	mult. Interacting params.	A Generative Model for Feedback Networks

KINSHIP NETWORKS

1996 Kinship Networks and Discrete Structure Theory: Applications and Implications. (drw & P. Jorion). ***Social Networks*** 18:267-314. ***http:****//eclectic.ss.uci.edu/~drwhite/pw/White-Jorion1992.pdf*

2005 Multiple Measures of Alyawarra Kinship. (Woodrow W. Denham and drw) ***Field Methods*** 17: 70-101. ***http:****//fmx.sagepub.com/content/vol17/issue1/*

1997 Class, Property and Structural Endogamy: Visualizing Networked Histories. (L. A. Brudner & drw). ***Theory and Society*** 25(2):161-208. ***http:****//repositories.cdlib.org/postprints/3/*

1999 Controlled Simulation of Marriage Systems. ***Journal of Artificial Societies and Social Simulation*** 2(3). ***http:****//jasss.soc.surrey.ac.uk/2/3/5.html*

2005 Chapter1 **Network Analysis and Ethnographic Problems: Process Models of a Turkish Nomad Clan**. drw & Ulla Johansen. Boston: Lexington Press. 2006 Paper ***http:****//www.worldcatlibraries.org/oclc/122927949?tab=details*

2002 Navigability of Strong Ties: Small Worlds, Tie Strength and Network Topology. (drw & M. Houseman). ***Complexity*** 8(1):72-81 ***http:***//eclectic.ss.uci.edu/~drwhite/Complexity/SpecialIssue.htm

1998 Kinship, Property and Stratification in Rural Java: A Network Analysis (drw & Thomas Schweizer) pp. 36-58 in ***Kinship, Networks and Exchange***, eds. Thomas Schweizer and drw. Cambridge University Press.

2004 Ring Cohesion Theory in Marriage and Social Networks. ***Mathématiques et sciences humaines*** 43(#168):5-28 ***http:****//www.ehess.fr/revue-msh/recherche.php?numero=168* ***http:****//eclectic.ss.uci.edu/download/MarriageNetTools.htm*

2004 Matrimonial ring structures (Klaus Hamberger, Michael Houseman, Isabelle Daillant, Douglas R. White and Laurent Barry). ***Mathématiques et sciences humaines*** 43(#168):83-121.

1998 Taking Sides: Marriage Networks and Dravidian Kinship in Lowland South America (M. & drw) ***Transformations of Kinship***, pp. 214-243 in eds. Maurice Godelier, Thomas Trautmann and F.Tjon Sie Fat, Smithsonian Institution Press.

1998 Network Mediation of Exchange Structures: Ambilateral Sidedness and Property Flows in Pul Eliya (M. Houseman & drw). pp. 59-89 in ***Kinship, Networks and Exchange***, eds. Thomas Schweizer and drw. Cambridge University Press. ***http:***//www.worldcatlibraries.org/oclc/36103977&referer=brief_results
http://www.worldcatlibraries.org/oclc/36103977&referer=brief_results

WORLD ECONOMY/NETWORKS

M1992 Structure and Dynamics of the Global Economy: Network Analysis of International Trade 1965-1980. (D. Smith & drw) ***Social Forces*** 70:857-894. ***http:****//eclectic.ss.uci.edu/~drwhite/WorldTrade/Cray.pdf*

M2007 Role Models for Complex Networks, Jörg Reichart, drw. Passed Editorial Review at *PNAS*. ***http:****//eclectic.ss.uci.edu/~drwhite/pub/RW_6Page_JournalFormat.pdf*

N1994 Centrality Measures for Oriented Graphs. (drw & S. Borgatti) ***Social Networks*** 16:335- 346. ***http:****//eclectic.ss.uci.edu/~drwhite/pub/FlowCentrality1991.pdf*

DYNAMICAL COMPLEXITY: HISTORICAL, ETHNOGRAPHIC, AND URBAN

I am interested in a layer-embedded networks (LEN) approach to emergence and complexity. Unlike discovery of simple interactive principles that generate complex emergent behavior (e.g., agent-based modeling, self-organized criticality), networks of interaction in the multi-layer approach occur between elements with internal processing and time-delayed responses, such as humans with biosocial and cogni-cultural reactivities. In several of these studies, response times are at generational time-scales. LEN models allow multiple levels of embedding, with some interactions occurring at faster time scales and others that affect them occurring at successively slower scales. The principles here may be simple, but how these levels interact requires A very delicate and new understanding of layering and feedback.

1971 Natchez Class and Rank Reconsidered. (Difference equations, royal genealogies, prosopography of an Indigenous American nobility, and solution to the historical-demographic Natchez Paradox) (drw, G. P. Murdock, R. Scaglion) ***Ethnology*** 10:369- 388. ***http****://eclectic.ss.uci.edu/~drwhite/pub/NatchezPeople.pdf*

2005 ***Network Analysis and Ethnographic Problems: Process Models of a Turkish Nomad Clan***. Paperback'06. drw & Ulla Johansen. Boston: Lexington Press/AltaMira. ***http:****//www.worldcatlibraries.org/oclc/122927949?tab=details*

2007 Oscillatory dynamics of city-size distributions in world historical systems. (drw, L. Tambayong, and N. Kejžar). *In*, G. Modelski, T. Devezas and W. Thompson, eds. ***Globalization as Evolutionary Process: Modeling, Simulating, and Forecasting Global Change***. London: Routledge. ***http:****//eclectic.ss.uci.edu/~drwhite/pub/*WhiteKejzarTambaVienna_Q.pdf

2007 City system vulnerability and resilience: oscillatory dynamics of urban hierarchies. (drw and Laurent Tambayong). For submission to ***Nature***.

2007 Networks, Hierarchies, and Cohesion. (Draft) Final version to appear in, David Lane, Geoff West, Sander van der Leeuw, and Denise Pumain, eds., **A New Perspective on Innovation and Social Change**. Dordrecht: Springer Methodos Series.

George Marshall (1947) spoke of the
enormous complexity facing the postwar
era that made it "exceedingly difficult for the man

in the street to reach a clear appraisal of the situation."
Bill Gates, echoing Marshall in a Harvard address (2007)
sixty years later, "thought about how a host of technological"
advances have helped erase those complexities." "The internet
for instance, allows the best minds in an area to work together on
common problems in ways they couldn't do before" (WSJ 6-8-07).

Gates, however, has it wrong. Selection of the best minds in an area to work with common technology to solve problems has not made complexity more comprehensible, and the problems created are often worse than those solved. What Gates does not understand is that it is diverse minds working at different scales and different speeds on different platforms that need to be understood and nurtured, through understanding and nurturing of LEC, which is not a reduction of complexity to simplicity but a much more profound and realistic appraisal of the human situation in all its manifest conditions and historicities.

-- Doug White

2007 Under Contract. Dynamics of Human Behavior, 15-20pp. ***Encyclopedia of Complexity and Systems Science***. Heidelberg: Springer DE.