

Thomas Abel

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Current Position

Associate Professor, Tzu Chi University, Hualien, Taiwan

Peer Reviewed Publications

Forthcoming “Pools of Money: ‘Information Cycles’ for the Production and Maintenance of Financial Information.” *Journal of Cleaner Production*

2015 “[Cultural Transmission in Cycles: The Production and Maintenance of Cumulative Culture.](#)” *Journal of Cognition and Culture*, 15:443–492

2015 “[Convergence and Divergence in the Production of Energy Transformation Hierarchies.](#)” *Ecological Modelling* 315:4–11

2014 “[Evaluating Local Human-Ecological Impacts of Whale Watching Ecotourism in Taiwan.](#)” *Taiwan Journal of Indigenous Studies*, 7(4):63-88.

2014 “[Culture in Cycles: Considering H.T. Odum's 'Information Cycle'.](#)” *International Journal of General Systems*. 43(1):44-74.

2013 “[Conversation in Cycles: The Dynamics of Culture Sharing](#)”. In *Proceedings of the 7th Biennial Energy Research Conference*, Pp. 1-22, Gainesville, FL,

2013 “[Energy and the social hierarchy of households \(and buildings\).](#)” In *Architecture and Energy*. W.W. Braham and D. Willis, eds. Pp. 49-63. Routledge.

2013 “[Emergy evaluation of DNA and culture in ‘information cycles’](#)” *Ecological Modelling* 251 (2013) 85–98

2011 “[Culture in Information Cycles: An Emergy Evaluation of Discourse](#)”. In *Proceedings of the 6th Biennial Energy Research Conference*, Pp. 9-27, Gainesville, FL,

2011 "[The 'Locations' of People and Households within the Culture-Nature Hierarchy of Hualien County, Taiwan.](#)" In *Proceedings of the 6th Biennial Emergy Research Conference*, Pp. 461-482, Gainesville, FL, 2011

2010 [Human Transformities in a Global Hierarchy: Emergy and Scale in the Production of People and Culture.](#) *Ecological Modelling* 221:2112-2117.

2007 "[Pulsing and Cultural Evolution in China](#)" *Proceedings from the 4th Biennial Emergy Research Conference*, January 12-21, 2006, Center for Environmental Policy, Gainesville, FL

2007 "[Emergy, Sociocultural Hierarchy, and Cultural Evolution](#)" *Proceedings from the 4th Biennial Emergy Research Conference*, January 12-21, 2006, Center for Environmental Policy, Gainesville, FL

2007 "[World-Systems as Complex Human Ecosystems.](#)" In *The World System and the Earth System: Global Socioenvironmental Change and Sustainability since the Neolithic.* A. Hornborg and C. Crumley, eds. Pp. 56-73. Walnut Creek, CA: Left Coast Press.

2004 "[Systems Diagrams for Visualizing Macroeconomics.](#)" *Ecological Modeling* 178(2):189-194.

Abel, Thomas and John R. Stepp

2003 "A New Ecosystems Ecology for Anthropology." *Conservation Ecology* 7(3):12. [online] URL: <http://www.consecol.org/vol7/iss3/art12>

2003 "Understanding Complex Human Ecosystems: The Case of Ecotourism on Bonaire." *Conservation Ecology* 7(3):10. [online] URL: <http://www.consecol.org/vol7/iss3/art10>.

2003 "[Social Structure and Ecotourism Development on Bonaire](#)". *Proceedings from the 2nd Biennial Emergy Research Conference*, September 20-22, 2001, Center for Environmental Policy, Gainesville, FL

2000 *Ecosystems, Sociocultural Systems, and Ecological Economics for Understanding Development: The Case of Ecotourism on the Island of Bonaire, Netherlands Antilles.* Ph.D. Dissertation, University of Florida. [online] URL: <http://etd.fcla.edu/etd/uf/2000/ane0595/Abel.pdf>.

1998 "Complex Adaptive Systems, Evolutionism, and Ecology within Anthropology: Interdisciplinary Research for Understanding Cultural and Ecological Dynamics", *Georgia Journal of Ecological Anthropology* (2):6-29. [online] URL: <http://www.fiu.edu/~jea/abel.pdf>.

1990 "[Parallel Distributed Processing Cognitive Models in Anthropology](#)." Masters Paper,
University of Florida.

Funding

2003-4, National Science Foundation International Postdoctoral Fellowship, “Evaluating Sustainable Tourism Development on Taiwan”, with Shu-Li Huang, National Taipei University.

2005-7, National Science Council, Taiwan, “The Sustainable Development of Cetacean Resources and Regional Socio-economic Regeneration in Taiwan”, interdisciplinary project of 8 researchers, Dr. Chou Lien-Siang, PI.

2008-9, National Science Council, Taiwan, “Testing Principles of Energy Hierarchy: Hualien Social Structure as Energy Self-Organization.”

2009-11, National Science Council, Taiwan, “The ‘Information Cycle’ in Culture, Media, and Education.”

Education

Ph.D. in Cultural Anthropology, University of Florida, Gainesville, FL

M.S. in Computer Science, Florida Institute of Technology, Melbourne, FL

B.A. in Cultural Anthropology, University of Florida, Gainesville, FL

Teaching Experience

Graduate

Cultural Anthropology Theory (Tzu Chi University)

Culture and Evolution (Tzu Chi University)

Ecological Anthropology (Tzu Chi University)

Language and Culture (Tzu Chi University)

Ecological Economics (Tzu Chi University)

Undergraduate

Humans and Environment (Tzu Chi University)

Environmental Education (Tzu Chi University)

Cognitive Anthropology (Tzu Chi University)

Selected Readings of Classic Ethnography (Tzu Chi University)

Language Development (Tzu Chi University)

Teaching Assistant

Language and Culture (University of Florida)

Biological Anthropology (University of Florida)

Anthropological Linguistics (, University of Florida)

Cultural Anthropology (University of Florida)

Human Sexuality (University of Florida)

Professional Presentations

2013 “Cultural Transmission in Cycles: The Production and Maintenance of Cumulative Culture”. *Poster presented at the 25th Annual HBES Conference*. Miami Beach, FL. July 17–20, 2013.

2012 “Household Hierarchies and Changing Times”. *Invited presentation at the Conference for Architecture and Energy: Performance and Style*. University of Pennsylvania, School of Design, Jan 27, 2012. [Video of presentation available here](#).

2012 “Conversation in Cycles: The Dynamics of Culture Sharing”. *Paper presented at the 7th Biennial Energy Research Conference*, January 12-14, 2012, Center for Environmental Policy, Gainesville, FL

2011 “Cultural Evolution in a Nested Hierarchy of Information Cycles: The Case of Conversation”. *Poster presented at the 23rd Annual HBES Conference*. Montpellier, France. June 29–July 3, 2011.

2010 “The Evolution of Cultural Information in ‘Information Cycles’”. *Poster presented at the 22nd Annual HBES Conference*. University of Oregon, Eugene. June 16–20, 2010.

2010 “The ‘Locations’ of Households within the Culture-Nature Hierarchy of Hualien County, Taiwan”. *Paper presented at the 6th Biennial Energy Research Conference*, January 14-16, 2010, Center for Environmental Policy, Gainesville, FL

2009 “Culture in Information Cycles: Energy, Information, and System Self-Organization of H.T. Odum Revisited”, *Paper presented at the 5th Annual Meeting of Society for Anthropological Sciences (SASci)*, Las Vegas, NV, Feb 18-21, 2009.

2008 “Testing Principles of Spatial Hierarchy: What Households Research Has to Say”. *Paper presented at the 5th Biennial Energy Research Conference*, Jan. 30-Feb.2, 2008, Center for Environmental Policy, Gainesville, FL

2008 “A Systems Modeling Software Environment for Teaching and Research”. *Poster presented at the 5th Biennial Energy Research Conference*, Jan. 30-Feb.2, 2008, Center for Environmental Policy, Gainesville, FL

2008 “The New Synthesis Hardens: Is there Another Path to a Science of the Social?”, *Paper presented at the 4th Annual Meeting of Society for Anthropological Sciences (SASci)*, New Orleans, LA, Feb 20-23, 2008.

2008 “Getting Here from There: Tribute to Robert Carneiro”, *Paper presented at the 4th Annual Meeting of Society for Anthropological Sciences (SASci)*, New Orleans, LA, Feb 20-23, 2008.

2007 “Social Impacts of Whale-Watching.” *Paper presented at the 12th Symposium/Workshop on Cetacean Ecology and Conservation – Threats and Strategies: Reflections of the Year of the Dolphin*. Providence University, Taichung, Taiwan. Oct 10-11, 2007

- 2006 "Pulsing and Cultural Evolution in China" *Paper presented at the 4th Biennial Energy Research Conference, Center for Environmental Policy, Gainesville, Florida, January 12-21, 2006*
- 2005 "Taiwan and China Historical Ecology: Modeling Historical Change with Systems Modeling" *Paper presented at the Conference for Evaluation of Land Utilization and Sustainable Development of Rivers with Ecological Energy, Taipei, December 5-6, 2005*
- 2004 "Information in Complex Human Ecosystems" *Paper presented at the 89th Annual Meeting of the Ecological Society of America, Portland, Oregon, August 1-6, 2004*
- 2003 "World Systems as Complex Human Ecosystems." *Paper presented at the Conference on World System History and Global Environmental Change. Human Ecology Division, Lund University, Sweden, September 19-22, 2003*
- 2002 "Cultural Evolution Is Not an Evolutionary Dead End: Complex Systems and Multi-Scaled Self-Organization." *Paper presented at the 101st Annual Meetings of the American Anthropological Association, New Orleans, Nov. 19-23, 2002*
- 2001 "Ecosystems and Complex Systems in Anthropology." *Session Co-Organizer at the 100th Annual Meeting, American Anthropological Association, Washington D.C., Nov. 28-Dec. 2, 2001*
- 2001 "Evaluating Economic Development in Complex Human-Ecosystems: The Case of Ecotourism on Bonaire." *Paper presented at the 100th Annual Meetings of the American Anthropological Association, Washington D.C., Nov. 28-Dec. 2, 2001*
- 2001 "Social Structure and Ecotourism Development on Bonaire." *Paper presented at the 2nd Biennial Energy Research Conference, September 20-22, 2001, Center for Environmental Policy, Gainesville, FL.*
- 2001 "The Nature of Development: Using Ecological Economics to Evaluate the Impacts of Ecotourism on Bonaire, N.A." *Paper presented at the 26th Annual Conference of the Caribbean Studies Association, May 27-June 2, 2001, Sint Maarten, N.A.*
- 2000 "Ecological Economics and Development Impacts on Bonaire, N.A." *Paper presented at the 99th Annual Meeting, American Anthropological Association, San Francisco, CA, November 15-19, 2000.*
- 1998 "Within Limits: Two Simulations of Culture Change". *Paper presented at the 97th Annual Meeting, American Anthropological Association, Philadelphia, PA, Dec. 2-6, 1998.*
- 1996 "Dynamics in Ecological and Social Systems." *Invited Paper presented at the 95th Annual Meeting, American Anthropological Association, San Francisco, CA, Nov 20-24, 1996.*
- 1996 "Ecotourism, Ecological Economics, and Culture Change: The Effects of Tourism Development on Bonaire, Netherlands Antilles." *Paper presented at the Annual Meetings, The Society for Applied Anthropology, Baltimore, MD, March 27-31, 1996.*
- 1995 "Applying Systems Ecology to Understanding Social and Economic Changes with Tourism Development on Bonaire." *Paper presented at The 20th Annual Conference of*

the Caribbean Studies Association, Willemstad, Curacao, Netherlands Antilles, May 23-26, 1995.

1988 "Nuer Expansion: Materialist Considerations.". *Paper presented at the 87th Annual Meeting, American Anthropological Association, Phoenix, AZ, November 16-20, 1988.*

Research Interests

Ph.D.

- **Evolution and anthropology:** cultural evolution, human biological evolution, and the expanded evolutionary synthesis
- **Ecological anthropology:** complex systems, ecosystems, societal structure, natural resources demographics, technology, and political ecology
- **Ecological Economics:** Environmental accounting of development options and impacts, energy analysis
- **Anthropology of tourism:** ecotourism development, dependency, and symbolism in tourism
- **Energy modeling of complex systems:** energy and material limits, self-organization, hierarchy, complexification, growth and contraction
- **World Systems Theory:** dependency, self-organization, resource flows, inequality and hierarchy analysis
- **Cultural Models and Cognitive Anthropology**
- **Human ecology, formal economics and optimal foraging theory**
- **Historical Ecology of China and Taiwan**
- **Caribbean history, the history of the Netherlands Antilles**
- **Dutch historical ecology:** the emergence of the Dutch state, the ecology of Holland, and Dutch colonialism

M.A.

- **Learning theory:** neural network models of learning and cognition, and the relationship of learning to adaptation in cultural evolution
- **Artificial intelligence:** language, learning, and decision making models in computer science
- **Natural language processing:** computer models of language learning, comprehension, and knowledge representation, and the evolution of language
- **Cognitive anthropology:** cultural models
- **Anthropological linguistics:** language and culture, structural linguistics, and metaphor
- **Human origins of language and primate evolution**
- **Primate behavior**

M.S.

- Artificial Intelligence, Knowledge Representation, Expert Systems
- Natural Language Processing, Compiler Theory

Professional Computing Experience

Senior Computer Programmer/Analyst, University of Florida, Research and Graduate Programs, 1996-2002

Duties: Systems Design and Analysis, Database Design, MS SQL, Access Projects, Visual Basic

Software Design/Analyst, University of Florida, Graduate School, 1991-94, 1995-96

Computer Programmer, McDonnell-Douglas, Titusville, Florida, 1989, summer

Computer Programmer, Lockheed, Kennedy Space Center, Florida, 1983-1985

Software Quality Engineer, Rockwell International, Kennedy Space Center, Florida, 1981-1983

Languages Spoken

Papiamentu (moderate speaking, reading, writing)

Dutch (fair speaking and reading skills)

Chinese (intermediate)

German (undergraduate)

Ph.D. Committee

William Keegan (Anthropology)

James Stansbury (Anthropology)

H.T. Odum (Environmental Engineering)

Mark Brown (Environmental Engineering)

Professional Associations

American Anthropological Association, member

Anthropology and Environment Section

Evolutionary Anthropology Section

Society for Anthropological Sciences

Human Behavior and Evolution Society, member