

Sarah Mathew
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Education

- 2011 University of California, Los Angeles
Ph.D. in Anthropology
- 2003 Princeton University
A.B. (with Honors) in Ecology and Evolutionary Biology

Employment

- 2013 – now Assistant Professor, School of Human Evolution and Social Change,
Arizona State University
- 2012 – 2013 Assistant Professor, Department of Anthropology, Stony Brook University
- 2011 – 2012 Postdoctoral Fellow, Center for the Study of Cultural Evolution
Stockholm University

External grants and awards

- 2015 Andrew Carnegie Fellowship from Carnegie Corporation of New York, \$200,000
(funds awarded directly to individual)
- 2014-17 Co-investigator on grant for project titled “Evolutionary Foundations of Human
Uniqueness: Recovering Patterns of Cognition, Cumulative Culture and
Cooperation” (PI: William Kimbel) from John Templeton Foundation (Grant
total: \$4.9 million; project on Turkana cooperation led by S. Mathew: \$612,398)
- 2014-15 Collaborator Investigator on grant titled “The Emergence of Prosocial Religions”
(PI: Ara Norenzayan) from John Templeton Foundation to University of British
Columbia. (project led by S. Mathew: CAD 16,675)

2010	Harry Frank Guggenheim Dissertation Fellowship
2009	NSF Doctoral Dissertation Improvement Grant
2009	Leakey Foundation Dissertation Research Grant
2007	Owen Aldis Award, International Society for Human Ethology
2004 - 07	NSF Graduate Research Fellowship

Publications

Journal Articles (Refereed)

Mathew, S. 2017. How the second-order free rider problem is solved in a small-scale society. *American Economic Review*. Vol 107 (5) 578-81.

Mathew, S. and Perreault, C. 2016. Cultural history, not ecological environment, is the main determinant of human behavior. *Proceedings of the Royal Society, Series B* 283 (1826).

Richerson, P., Baldini, R., Bell, A., Demps, K., Frost, K., Hillis, V., **Mathew, S.**, Newton, E., Narr, N., Newson, L., Ross, C., Smaldino, P., Waring, T., Zefferman, M. 2016. Cultural group selection follows Darwin's classic syllogism for the operation of selection *Behavioral and Brain Sciences* 39, e58

Richerson, P., Baldini, R., Bell, A., Demps, K., Frost, K., Hillis, V., **Mathew, S.**, Newton, E., Narr, N., Newson, L., Ross, C., Smaldino, P., Waring, T., Zefferman, M. Cultural Group Selection Plays an Essential Role in Explaining Human Cooperation. A Sketch of the Evidence. 2016. *Behavioral and Brain Sciences* 39, e30

Mathew, S. and Perreault, C. 2015. Behavioral variation in 172 small-scale societies indicates social learning to be the main mode of human adaptation. *Proceedings of the Royal Society, Series B*. Published online 17 June 2015. DOI: 10.1098/rspb.2015.0061

Boyd, R. and **Mathew, S.** 2015. Third-party monitoring and sanctions aid the evolution of language. *Evolution and Human Behavior*. Published online Jun 23 2015. DOI: 10.1016/j.evolhumbehav.2015.06.002

Zefferman, M. and **Mathew, S.** 2015. An Evolutionary Theory of Large-scale Human Warfare: Group-structured Cultural Selection. *Evolutionary Anthropology: Issues, News and Reviews* 24(2): 50-61.

Mathew, S. and Boyd, R. 2014. The cost of cowardice: third-party punitive sentiments towards free riders in Turkana raids. *Evolution and Human Behavior* 35: 58-64

Perreault, C. and **Mathew, S.** 2012. Dating the origin of language using phonemic diversity. *PLoS ONE* 7(4): e35289.

Mathew, S. and Boyd, R. 2011. Punishment sustains large-scale cooperation in prestate warfare. *Proceedings of the National Academy of Sciences*. 108 (28): 11375 – 11380

Mathew, S. and Boyd, R. 2009. When does optional participation allow the evolution of cooperation? *Proceedings of the Royal Society, Series B*. 276: 1167 – 1174

Book Chapters

Mathew, S., Boyd, R. and van Veelen, M. 2013. Human cooperation among kin and close associates may require enforcement of norms by third parties. In: *Cultural Evolution*, ed. P. J. Richerson and M. Christiansen. *Strüngmann Forum Report 12*, series editor J. Lupp. Cambridge, MA: MIT Press.

Jordan, F. M., C. van Schaik, P. François, H. Gintis, D. B. M. Haun, D. J. Hruschka, M. A. Janssen, J. A. Kitts, L. Lehmann, **S. Mathew**, P. J. Richerson, P. Turchin, and P. Wiessner. 2013. Cultural evolution of the structure of human groups. In: *Cultural Evolution*, ed. P. J. Richerson and M. Christiansen. *Strüngmann Forum Report 12*, series editor J. Lupp. Cambridge, MA: MIT Press.

Comments and Invited Articles

Zefferman M., Baldini R. and **Mathew S.** 2015. Solving the puzzle of human warfare requires an explanation of battle raids and cultural institutions. *Proceedings of the National Academy of Sciences* 112(20): E2557.

Panchanathan, K., **Mathew, S.** and Perreault, C. 2014. Explaining group-level traits requires distinguishing process from product. *Behavioral and Brain Sciences* 37(3): 269-270.

Bowles, S., Boyd, R. **Mathew, S.** and Richerson, P. J. 2012. The punishment that sustains cooperation is often coordinated and costly. *Behavioral and Brain Sciences* 35(1): 20-21

Mathew, S. and Boyd, R. 2011. Reply to Baumard and Lienard: Mechanistic accounts need to specify why reputation systems yield cooperative outcomes on observed scales. *Proceedings of the National Academy of Sciences* 108(39): E754.

Boyd, R. and **Mathew, S.** 2007. A Narrow Road to Cooperation, *Science*, 316: 1858 – 1859.

Encyclopedia Articles

Mathew, S. 2015. The evolution of human cooperation. *International Encyclopedia of the Social and Behavioral Sciences* 2nd edition 11: 259-266.

Book Reviews

Mathew, S. 2015. Are Cultural and Evolutionary Views of Human Warfare Converging? A Review of “War, Peace and Human Nature: The Convergence of Evolutionary and Cultural Views, edited by Douglas P. Fry (Oxford University Press, 2015)”. *Cliodynamics: The Journal of Quantitative History and Cultural Evolution* 6 (1). <https://escholarship.org/uc/item/4125090f>

Blog posts

Mathew, S. “The Paradox of Human Warfare Explained” Social Evolution Forum Blog, The Evolution Institute: <https://evolution-institute.org/social-evolution-forum/> (Jan, 2016)

Invited Talks

- 2017 Center for Behavior, Evolution and Culture. University of California Los Angeles (Oct 2017)
- 2017 University of Missouri, Anthropology Department (May 2017)
- 2017 Descent of Moral Sentiments Symposium, Utrecht University, Netherlands (Key speaker) (February 2017)
- 2016 Interdisciplinary workshop on Africa, Harvard University (Nov 2016)
- 2016 Toulouse Economics and Biology Workshop, Toulouse School of Economics & Institute for Advanced Study in Toulouse, Toulouse, France (May 2016)
- 2016 Center for Philosophy, Arts and Literature (PAL) and the Franklin Humanities Institute (FHI), Duke University (Jan, 2016)
- 2014 Anthropology Colloquium, University of California, Davis, California
- 2014 Collective Intentionality Conference, Indiana University, Bloomington, Indiana
- 2013 International Max Planck Research School on Retaliation, Mediation and Punishment, Winter University 2013. Heppenheim, Germany
- 2012 The Research Group for Evolutionary Theory, Max Planck Institute for Evolutionary Biology, Plön, Germany
- 2012 Workshop on Modeling Social Complexity, National Institute for Mathematical and Biological Synthesis (NIMBioS) & National Evolutionary Synthesis Center (NESCent) Investigative Workshop, Knoxville, Tennessee
- 2011 California Polytechnic University, San Luis Obispo, California

- 2010 Workshop: Evolutionary Perspectives of Human Behavior, San Luis Obispo, California
- 2010 Workshop: Coevolution of Behaviors and Institutions, Santa Fe Institute, New Mexico
- 2009 Leakey Foundation Board Meeting, San Francisco, California

Conference activity

Presentations

- 2017 Is the cultural boundary also the moral boundary? A cross-cultural test of cultural group selection.
Cultural Evolution Society Inaugural Meeting, Jena, Germany
- 2017 Conflict and Cooperation In A Pastoral Society Shows That Selection Among Cultural Groups Enabled The Evolution Of Human Cooperation
American Economic Association. Chicago IL
- 2014 Mechanisms of self-regulation in moral norms and psychology: a study of meta-norms governing punishment in Turkana society
American Anthropological Association Conference, Washington D. C.
- 2010 A causal understanding of warfare, based on the origins of human cooperation: case study of cattle raiding among Turkana pastoralists in East Africa
American Anthropological Association Conference, New Orleans, LA
- 2010 The collective action problem in warfare: data from cattle raiding among Turkana pastoralists
Human Behavior and Evolution Society Conference, Eugene, OR
- 2009 Cooperation and human warfare: case study of cattle raiding among Turkana pastoralists
American Anthropological Association Conference, Philadelphia, PA
- 2008 The empirical details of cooperation are key to its origins: some types of cooperative interactions evolve more easily than others, if participation is optional. [Poster]
American Anthropological Association Conference, San Francisco, CA
- 2008 When does optional participation allow the evolution of cooperation?
European Human Behavior and Evolution Society, Montpellier, France
- 2007 Does optional participation favor large-scale cooperation?

Human Behavior and Evolution Society Conference, Williamsburg, VA

- 2007 Modeling the role of solitary strategies, resource excludability and resource exhaustibility on the evolution of altruistic behavior
South. Calif. Animal Behavior Society Conference, Santa Barbara, CA
- 2006 The effect of excludability in stabilizing cooperation in an n-person public goods game.
Human Behavior and Evolution Society Conference, Philadelphia, PA

Sessions Chaired

- 2014 Empathy, conformity, and (im)moral killing: anthropology at the limits of knowledge. Co-chaired session with Carolyn R. Nordstrom. *American Anthropological Association*. Washington D. C.

Workshop activity

Participant

- 2017 NSF workshop on enhancing robustness and generalizability in the social and behavioral sciences, Washington D. C. (Mar 2017)
- 2014 The origin of violence: from brain to world war, *The Origins Project*, ASU, Tempe, AZ
- 2014 The Evolution of Institutions, *National Institute for Mathematical and Biological Synthesis (NIMBioS)*, Knoxville, TN
- 2012 Ernst Strüngmann Forum on Cultural Evolution, Frankfurt, Germany
- 2012 Modeling Social Complexity, *National Institute for Mathematical and Biological Synthesis (NIMBioS) & National Evolutionary Synthesis Center (NESCent) Investigative Workshop*, Knoxville, TN
- 2012 Cooperation in multi-partner settings: biological markets & social dilemmas, Lorentz Center, Leiden, The Netherlands
- 2010 Coevolution of Behaviors and Institutions, *Santa Fe Institute*, NM
- 2008 Hayek on Liberty, *Institute for Humane Studies*, George Mason University, VA
- 2006 Social Change Workshop on Consciousness, Beliefs and Institutions, *Institute for Humane Studies*, Stanford University, CA

Organizer

2018 Co-organizing a *Center for Evolution and Medicine Venture Fund Workshop* to develop an evolutionary and cross-cultural understanding of combat stress and moral injury (Mar 1-2, 2018).

Courses

ASB 210 Human Sexuality (online).
Spring 2017, Fall 2017

ASM 394 Special Topics: War and Peace—The Evolution of Conflict and Cooperation
Fall 2015, Fall 2016

ASM 342 Evolution and Human Behavior
Spring 2014, Fall 2014, Spring 2016

ASM 590 Reading and Conference Graduate Course
Spring 2014, Spring 2015, Fall 2017

Mentoring

Doctoral student advising

Lea Gleason Advisor (Fall 2017 – now)

Minhua Yan Co-advisor (Fall 2016 – now)

Angela Taravella Committee member (Spring 2017 – now)

Post-doctoral supervision

Matthew Zefferman Study of post-traumatic stress disorder and moral injury among warriors at the Turkana fieldsite (Nov 2015-Aug 2017).

Carla Handley Field study of cooperation among Turkana, Borana, Rendille and Samburu pastoralists in Kenya (Dec 2014-Aug 2017).

Hillary Lenfesty Experimental studies of reciprocity at the Ostrom Lab at ASU (Aug 2015-Aug 2017).

Panelist, Postdoc and grad student career advise session	Fall 2017
Organizer, <i>Evolution of Social Complexity</i> Colloquium Series	Spring 2017
Organizer, <i>Adaptation, Behavior, Culture & Society</i> Journal Club	Spring 2017
SHESC Graduate research awards committee	Fall '16-Spring '17
SHESC Director search committee	Fall 2016
Search committee for target hire opportunity	Spring 2016
Personnel committee	Spring 2015
Diversity task force	Spring& Fall 2015
Professional conduct committee	Fall 2015-2016
Search committee for two evolutionary anthropology positions	Spring 2014
Search committee for Southwest Borderlands hiring initiative	Fall 2014

Public Outreach (selected)

“Is the cultural boundary also the moral boundary?” Project presentation at the *Institute of Human Origins Templeton Research Symposium* at Tempe Center for the Arts (Apr 2017).

Panelist, *Origins Project Great Debates “Transcending Our Origins: Violence, Humanity and the Future”* at ASU Gammage, Tempe (Apr 2014)

Contributing Turkana entry for the *Global Birth Stories: A Public Anthropology Project*, a project to create an online global archive of birth stories showcasing the diversity of birth experiences and customs around the world.

Media Coverage (selected)

“The Evolution of Shaming”, Ed Yong, *The Atlantic*, Feb 2016

“Why Its Brave To Think Like A Coward”, Chris Walsh, *Aeon*, Feb 2015

“Friends, not foes, boost warriors’ success”, Elizabeth Wade, *Science*, Nov 2014

“Transformers”, Colin Barras, *New Scientist*, Oct 2014

“It Is Human Nature to Cooperate With Strangers”, Michael Marshall, *New Scientist*, Jun 2011

“Band Of Brothers At War”, Razib Khan, *Discover*, Jun 2011