Psychoactive Substance Use among Aka Foragers

Ed Hagen and Casey Roulette

Tobacco addiction is the number one risk factor for disease burden in high-income countries, where, via cancer, heart disease, lung disease, and stroke, it accounts for an astounding 20% of all mortality. Fortunately, tobacco use is declining in high income countries. Unfortunately, it is growing in low income countries like the Central African Republic (CAR), where we have been conducting research for the last four years. Smoking currently accounts for about 10% of mortality in such countries, and will soon be the leading cause of premature death.

The mainstream explanation for the global popularity of tobacco focuses on the rewarding properties of nicotine. This explanation can be questioned. Nicotine is a potent neurotoxin, about as dangerous as hydrogen cyanide, that triggers numerous toxin defense mechanisms such as nausea and vomiting. It is not clear why such a neurotoxin would be “rewarding,” nor why toxin defense mechanisms fail to prevent nicotine consumption.

In one of the few systematic studies of psychoactive substance use among hunter-gatherers, we have been testing alternative evolutionary models of substance use with data from interviews of hundreds of Aka foragers in the Central African Republic, and assays of thousands of saliva and urine samples.

We are focusing on three models that we feel better explain global patterns of substance use and therefore provide a more effective theoretical foundation for tackling the tobacco epidemic. Our “toxin avoidance” model emphasizes the teratogenic effect of plant neurotoxins, such as nicotine, on the developing nervous system. Children should avoid tobacco and other psychoactive substances so as to avoid disrupting brain development. Women of childbearing age in natural fertility populations should similarly avoid these substances to avoid harming their fetuses.

In support of this model, we have found very little use of tobacco among Aka children or adult women, patterns that are also found cross-nationally. In fact, although about 15% of adult Aka women report using tobacco, our laboratory tests of saliva samples have found that only 5% show any evidence of recent exposure to nicotine. Those 5% are all women who are beyond childbearing age.

Our second model seeks to explain why older adolescent and adult males start using tobacco. Remarkably, virtually all Aka men use tobacco. Among the Aka, as well as most other populations, substance use onsets very rapidly in middle-to-late adolescence. This, of course, is the same period in which males start to seek mates. Substance use might therefore be an honest signal of some dimension of

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The team analyzes saliva samples for cotinine, a nicotine metabolite.

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From the Chair's Desk

It has been another year of significant change for anthropology and the institution. The Department of Anthropology is once again a part of the recently merged College of Arts and Sciences. Some might recall that this was the administrative structure a few decades ago, thus the saying "the past informs the present" continues to hold true. We anticipate increased interdisciplinary research opportunities for our faculty and graduate students in the new college, which is one of the aims of the merger and something we are excited to see develop.

Anthropology is again teaching more classes to undergraduates this year, as the university continues its undergraduate growth plan. One of several benefits of this is that anthropology has significantly increased its ability to fund graduate students in our program, a welcome development in an otherwise lean budgetary climate. Growth will continue on the Pullman campus for the next two years, and should bring the undergraduate student population at Pullman to approximately 20,000 students.

As is apparent throughout these pages, our faculty and graduate students are active and engaged researchers and productive scholars. Our graduate program, with about 80 active students, represents about 10 percent of the graduate students in the College of Arts and Sciences. The faculty that support this continue to change. We welcomed our newest faculty member, Dr. Julia Cassaniti, to Pullman this fall (see story next page), while Professor Karen Lupo moved to Southern Methodist University as professor and chair of the Department of Anthropology at the beginning of this academic year. We appreciate Karen's contributions during her 13 years at WSU, and wish her continued success at SMU. Anthropology also has an open search for an archaeological science position, so we anticipate additional new faculty introductions in the years to come.

We remain interested in expanding funding opportunities for our students—something you can contribute to through the various anthropology scholarships, fellowships, and programs. Your generosity is always appreciated and makes a difference to our graduate students. Please let us know if you have any news or updates, and feel free to contact me at chair@wsu.edu with any questions.

Andrew Duff
Chair, Department of Anthropology

WSU Vancouver Hosts Workshop

Clare Wilkinson-Weber convened a workshop, Taking Stock: Anthropology, Craft, and Artisans in the 21st Century, at the WSU Vancouver campus on July 26-27, 2012. Organized jointly with Alicia DeNicola of Oxford College of Emory University, the workshop was funded by the Wenner Gren Foundation for Anthropology and the College of Liberal Arts, and attended by 14 other anthropologists and social scientists from the United States, Canada, Costa Rica, and the United Kingdom. Participants discussed full length papers submitted in advance on a wide range of topics, including both traditional and digital craft. Contributions included the classification of work among Indian embroiderers, the relationship of craft and memory in Nigeria, and the claims of authorship among ceramics workers in Taiwan and Mexico, as well as the embedding of digital information by U.S. knitters in their products, the strategies of traveling craftspeople in Central America, and the production of artisan chocolate in France. A book based on the workshop is in preparation, to appear in 2013.

Psychoactive Substance Use...

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mate quality. In support of this model, 75% of the Aka women in our study reported that they preferred husbands who smoked. But how would smoking credibly indicate mate value? If children avoid substances to protect their developing nervous system, then perhaps use of substances credibly indicates that this development is complete, or nearly so. Males with mature nervous systems should be better workers and hunters than younger men, and thus better able to provide resources to mates. In partial support of this model, the Aka report that smoking makes men better hunters and workers.

Our final model, and the one we have been investigating most heavily, is based on the observation that nicotine kills intestinal worms. Infestation with worms peaks in adolescence—another reason that smoking might onset then. In support of the idea that tobacco use might be an unconscious form of self-medication, we have found that the heaviest smokers among the Aka have the fewest worms; that treating Aka men for worms reduces their exposure to nicotine, presumably by reducing smoking; that after treatment for worms, the heaviest smokers have the lowest reinfection rates; and that individuals with genetic polymorphisms that slow nicotine metabolism have fewer worms than other Aka, presumably because nicotine stays in their system longer.

We have a long way to go to prove any of these models. Currently, we are analyzing samples for THC to determine if it has the same negative relationship with worm burden as nicotine does (Aka are also heavy cannabis users). Future work will involve more detailed analyses of smoking behavior, toxin sensitivity, mating effort, parenting effort, risk taking, and immunity, as well as investigations of the use of other psychoactive substances such as alcohol and native plants.

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- Departmental Development Fund
  - Undergraduate Scholarships
  - Graduate Student Scholarships
- Graduate Student Travel and Research Fund
- Museum Development Fund
- Janet Friedman Memorial Fund
- Harvey Rice Memorial Fund

For more information, visit our website at libarts.wsu.edu/anthro
The Department Welcomes New Faculty

Julia Cassaniti

My research is on cultural, psychological, and medical perspectives of Buddhist practice in Thailand. I received my doctorate from the University of Chicago Department of Comparative Human Development, where I wrote a dissertation on the Buddhist concept of change (Pali: anicca). Based on long-term fieldwork in a small northern Thai community, I argued in the dissertation for the influence of this Buddhist construct on peoples' emotional and moral processing in the community, and especially on the ways that people think about personal agency as occurring through the karmic consequences of emotional calm and the letting go of affective attachments. After graduating from Chicago I spent a year as a visiting lecturer of psychological anthropology at the University of California, San Diego, and most recently served as a culture and mind postdoctoral scholar at Stanford University.

Here at WSU I am involved in two ongoing research projects. The first is on the phenomenology of spirituality: what it feels like when people have religious experiences. Working with Tanya Luhrmann at Stanford University, we have been asking people in four distinct religious communities to tell us about the sights, sounds, smells, tastes, and touches that make up spiritual encounters, along with eliciting descriptions on a range of classic experiences, including shaking, floating, speaking in tongues, sleep paralysis, and dissociation. The project asks how the feeling of religiosity differs cross-culturally, and what these differences might tell us about social contagion, cultural phenomenology, and anthropological theories of mind.

My latest project builds off both the emotive focus on change in my doctoral dissertation and the findings about the mind coming out of Thailand from the spiritual phenomenology project. This new research focuses on the Buddhist concept of sati, a Pali-language Buddhist concept usually translated as "mindfulness." Mindfulness is considered a cognitive construct in Western psychology, and has been shown to have positive clinically therapeutic effects. In Thailand the construct is similarly connected to positive health, but slightly differently than in Western cultural contexts. In Thailand sati is understood to be connected to power, both "rational" and magical: it suggests that being "mindful" can help one to dispel unhealthy spirits through clarity gained from attending to the present moment. In this project I will be looking more closely into the ways that sati is thought to work in Thailand, its connections to spirituality and psychology, and its contributions to mental and physical health.

In each of these projects I am interested in the ways that cultural constructs become embedded, or "embodied," in individual lives. Here at WSU I'll be training undergraduate and graduate students in these and related issues through courses and collaborative research. At present I am teaching two undergraduate courses in the cultural stream, and in the spring I will be adding in a graduate seminar on culture and mind.

I'm excited to join the department here at WSU and look forward to future conversations and collaborations with students and faculty.

Recent publications

_Cassaniti, Julia_


_Julia Cassaniti with Joel Robbins and Tanya Luhrmann_


_Julia Cassaniti with Tanya Luhrmann_

AGO Notes

Jordan Jarrett

The AGO and its respective committees are currently planning several exciting events and affairs for this academic year and into fall 2013. The organization is making a concerted effort to revive previous practices, namely the Brown Bag events, which provide graduate students with the opportunity to practice presentations before their peers and professors, as well as the AGO Silent Auction. The aim of such events is to allow the AGO to continue serving students in addition to providing the means to raise funds to keep the organization running. These are also functions which have been requested by members of the AGO and are rooted in the AGO tradition.

We are also promoting scholarship by planning to host nearby schools for an anthropological conference at which students can present their work. This conference is currently planned to take place in fall 2013, and we believe it will serve as a great opportunity to network with colleagues, present individual work, and hopefully will also be a tradition to continue in the future.

The AGO in collaboration with the WSU Global Campus is planning a visit for Kevin Bales, co-founder of Free the Slaves, in February. This visit will entail a lecture as well as opportunities to meet and chat with him.

This year the AGO is also looking to continue our outreach efforts with the Nez Perce tribe and plan to continue to help in needed capacities. The organization is excited to develop these relations and hopes to maintain them into the future.

Additional fundraising efforts remain a priority of the AGO in order to renew resources available for events that we hold throughout the year. Several ideas have been put forth as far as potential fundraising efforts. As always, we encourage ideas and participation from our graduate students regarding all of these proposals and as we prepare for these events.

Graduate Student News

Stefani Crabtree

In the summer of 2012 two WSU doctoral students, Kathryn Harris and Stefani Crabtree, and Elissa Bullion, a WSU non-degree student who worked with Dr. Brian Kemp's ancient DNA lab, traveled to Mongolia to assist in the University of Pittsburgh/National Museum of Mongolia's field school.

Led by University of Pittsburgh doctoral candidate Julia Clark and Bayarsaikhan Jamranyan, the head of research at the National Museum of Mongolia, the Targan Nuur Archaeology Project (TNP) examined household patterns during the Bronze Age. Most studies in Mongolia have focused on monumental archaeology—burials, deer-stones, and khirigsuurs. The TNP project sought to use ethnographic patterning of households to understand household patterns in the past. The ambitious project surveyed 57 square kilometers, tested probable sites, fully excavated three sites, and conducted ethnographic interviews of Mongolians living in the area.

Harris, Crabtree, and Bullion were each co-directors of the field school. Harris's expertise in lithics, Bullion's experience in mortuary archaeology, and Crabtree's work in ethnography and mapping helped the project to achieve its goals.

The project was conducted in one of the most remote areas of Mongolia—the least densely populated country in the world. The project was located in the Darkhad Depression in Hovsgol aimag, Mongolia's northernmost province, bordering on Siberia. Participants in the project included students from the United States, Australia, Canada, the Netherlands, and Mongolia.

Roxanna King

I am a master's international candidate with an emphasis in public health. I spent 27 months in Morocco working as a Peace Corps volunteer in the environment sector and conducting research for my master's degree. My research, supervised by Dr. Barry Hewlett, focuses on how rural Moroccans utilize a pluralistic medical system when dealing with illnesses. Medical options used by Moroccans range from self-treatment and traditional healing to biomedicine. This study uses the decision-making theory of Young and Garro (1982, 1994) as a framework for understanding local medical decisions. The goals of this research are to identify and describe the decision-making processes involved in seeking treatment in this pluralistic system and to examine the impact of global political and economic structures on health and illness.

This research also addresses the debate as to whether rural populations underutilize the biomedical system due to maladaptive cultural models of illness or exclusion and restricted access to resources. Analysis of the data provides support for the exclusion and restricted access hypothesis. The study results provide information that will help Moroccan healthcare providers to better target, inform, and treat marginalized populations. I presented the results of this study earlier this year at the 13th Congress of the International Society of Ethnobiology in Montpellier, France.

From left to right in foreground: Elissa Bullion, Stefani Crabtree, and Kathryn Harris in front of an ovo, a traditional Mongolian shrine, with Mongolian volunteers in the background.

Roxanna (left) with a Moroccan family.

AGO members assist the Nez Perce tribe with stream restoration along the Snake River.
Recent Faculty Publications

Andrew Duff


Diane Curewitz

Colin Grier


Grier, Colin 2012 Thinking through Local and Regional Histories: Recent Research at Dionsio Point and in the Outer Gulf Islands. The Midden 44(1):6–9

Barry Hewlett


Bonnie Hewlett


Brian Kemp


Tim Kohler


Bill Lipe


Jeanette Mageo

In review Cross-cultural Challenges to Attachment Theory. Palgrave-Macmillan.

Luke Premo

Faculty Updates

Brian Kemp
This year I was awarded my second major grant from the National Institute of Justice. This grant will allow my research associates, Cara Monroe and Misa Winters, and I to explore methods for capturing specific DNA molecules from pools of both target and non-target molecules. This method is also known as “fishing” for DNA or “enrichment.” The analogy to fishing comes from using “bait” molecules to “hook” onto target molecules. Optimization of this approach will make the analysis of DNA from badly degraded human remains from crime scenes or ancient human remains from archaeological finds more efficient and, thus, produce more reliable evidence.

John Jones
During the past year, I have been fairly busy with some interesting fieldwork. In February, I travelled to Cincinnati to join researchers preparing for a multi-year research project on Paleolithic-age sites in Trinidad. In future years, I will be joining the project in Trinidad and Grenada. In May and June, I conducted fieldwork throughout the southern half of Kenya with doctoral student Ryan Szymanski, recovering a number of lengthy sediment cores. We hope this will provide insights into early pastoralism, agriculture, and population dynamics for Ryan’s dissertation. We also discovered that hippos are nasty bioturbators. Following the Africa adventure, I travelled to Monticello to participate in the University of Virginia’s field school. Here we directed excavations at Site 6, an 18th century enslaved populations’ residence. In August, I travelled to Peru as part of an NSF grant awarded to Harvard University. Here, with master’s student Sarah Williams, we visited nearly all the major Moche sites. Our goal is to refine dating in this area and to illuminate the role that climate and El Nino might have played in driving the changes and collapse of the Moche people. While in Peru, we sampled the early colonial site of Magdalena de Caño Viejo (AD 1578), serving as Sarah’s thesis. This site was where colonial papers were recently found outlining an early transcription of a previously unknown language.

Bonnie Hewlett

This book offers a glimpse into the lives of contemporary African women in their own words. Rendered here are the experiences of farming and foraging women depicted in their homes, fields, and the forest. The women vividly recall memories, childhood games, dances, folk tales, songs, and drawings from throughout their lives and provide insights and anecdotes from their experiences as children, adolescents, mothers, wives, and providers.


This edited volume takes a bio-social approach exploring the daily lives and experiences of adolescents from diverse cultures around the world. In quantitative and qualitative detail, the contributors relate the nature of adolescence to cultural, biological, ecological, demographic, and social variables, providing insights into how these interactions influence patterns of adolescent identity development.

John Bodley
The sixth edition of Bodley’s textbook Anthropology and Contemporary Human Problems was published by AltaMira Press in 2012. The first edition appeared in 1976. Bodley also published an article, “Small Nation Happiness: A Scale and Power Perspective” in the American Anthropologist 114(1) Vital Topics Forum On Happiness. In March he presented an invited lecture on the “Small Nation Solution” for the Anthropological Society at the Metropolitan University of Denver. He is currently working on a new book on the same topic. In September he was in Santiago, Chile, where he served as a member of an international review panel to evaluate proposals for a new Center of Research Excellence on Indigenous Peoples to be funded by FONDECYT, the government’s National Fund for Scientific and Technological Development. Bodley has now moved to a half time appointment on his way to full retirement.

Bill Lipe
In 2012, Professor Emeritus Bill Lipe was appointed to the board of directors of the Archaeological Conservancy, based in Albuquerque. He has a book chapter and an encyclopedia entry in press, and is co-author of an article that is in press with the Journal of Archaeological Science. In addition, he has a chapter in a book published by the Archaeological Society of New Mexico. He was senior author on one presentation at the annual meeting of the Society for American Archaeology, and co-author on a second. He was also senior author on a poster presented at the Pecos Conference in New Mexico. He gave the keynote address at the annual meetings of the Utah and Colorado state archaeological societies, as well as invited lectures for Archaeology Southwest in Tucson and the Verde Valley Archaeology Center in Sedona, Arizona. He also presented colloquia on his research at the Departments of Anthropology at the University of Arizona and Arizona State University.

Cleaning house? Retiring and moving out of your office? Outgrown your project T-shirt collection?

The Museum of Anthropology is looking for objects and records associated with the archaeological collections we curate. We are interested in any objects, samples, field or research notes, and personal memorabilia related to these collections. In part we are hoping that we will recover items we've lost track of or replace incomplete records with copies researchers made for their own work. We are also interested in adding to our collections photographs, scrapbooks, correspondence, and other materials related to individuals' experiences as students and others working in the field and on lab projects. The archaeological and cultural significance of the collections we manage is pretty clear to everyone, but there is also historical significance to these projects that is often overlooked. The early era of cultural resource management is something many of us remember and take for granted. However, as the field changes there is growing interest among scholars in exploring the social and cultural aspects of these unique times. If you have materials you are willing to contribute, please contact Mary Collins at collinsm@wsu.edu or 509-335-4314.
Alumni Updates

Dale Croes
Dale Croes has been awarded the Peace and Friendship Award from the Washington State Historical Society Board of Trustees. An internationally known wet-site archaeologist and faculty member at South Puget Sound Community College, Croes and the Squaxin Island Tribe have created a model for bringing together the science of archaeology and the cultural knowledge of the tribe to inform the interpretation of the artifacts. The award is presented to a person who has advanced public understanding of the cultural diversity of the peoples of Washington State.

Fumi Arakawa
Fumiyasu Arakawa obtained his doctoral degree with an emphasis in archaeology in 2006. Upon completion of his dissertation, he worked at the Crow Canyon Archaeological Center (CCAC) in Cortez, Colorado, as a laboratory researcher for three years. While at CCAC, Fumi had the opportunity to work with children and adults who were interested in the archaeology of the American Southwest. In 2012 he was hired as a tenure-track faculty member focusing on the archaeology of the American Southwest at New Mexico State University. Since then Fumi has been teaching in Las Cruces. His journey in anthropology has differed from most anthropology students as he is originally from Japan and is doing archaeology in the remote American Southwest. He admits to struggling at various times during graduate school (e.g. he almost failed the Anth 537 [statistics] class and the comprehensive exam...) but has never forgotten how much the Department of Anthropology at Washington State supported him during his path toward being a professor. He sincerely thanks the faculty and staff at WSU and truly appreciates all they have done for him (Doumo Arigatou).

Alumni Profile

Rhiannon Held

Rhiannon Held graduated from WSU in 2006 with a master’s degree. She recently published an urban fantasy novel titled Silver. Below, Rhiannon explains how her degree and experience in archaeology contributes to her fiction writing.

When I started grad school, I saw my fiction writing and my career in archaeology as two separate things. I'd started writing seriously in undergrad, and by the time I was applying to grad school I knew I wanted to be published someday. I also knew I would probably need a different career to pay the rent, which was where the archaeology came in. I never imagined that my graduate education would have anything to do with my writing. After all, I wanted to write about urban fantasy creatures like werewolves, not Indiana Jones knock-offs. What did werewolves have to do with archaeology? Quite a lot, as it turned out.

Archaeology started sneaking into my writing without me realizing. I knew the practice meeting deadlines and doing research that grad school had given me had stood me in good stead, but I figured that was the end of it. Then I started building the world for my werewolf novels. Many books treated lycanthropy as a curse, so I decided to do something different. I made my werewolves a species. That way, as werewolf children were born to werewolf parents, they could maintain a cultural identity, passed on over generations.

Being a species would also mean that they'd conform to evolutionary principles. I determined where the species had first arisen, and what kind of adaptations—cultural and physical—it would need to survive. For example, my werewolves can choose when to shift, though sometimes it's a great effort to resist the impulse. That's because those who could resist the shift when threatened by mobs of susceptible humans would be the ones to survive, un-pitchforked, to pass on their genes.

I also realized that werewolf packs had a lot in common with hunter-gatherer bands living at the edge of more sedentary civilizations. Since they didn't want to be discovered by humans, they probably wouldn't write anything down, but would maintain a rich oral tradition. If they chose to live more assimilated into the majority human culture, they'd face choices between the culture they interacted with outside the home and their cultural and religious traditions inside it, among other werewolves.

None of these aspects were the focus of my novel's plot, but I loved being able to slip them into the background. People might not even recognize they were there, but it made the story feel more grounded and "real" to everyone.

In a way, the biggest thing grad school did for me was teach me to make connections rather than just collect facts. I built my werewolf world based on connections I had noticed among different hunter-gatherer societies. This allowed me to make it more grounded and broad than if I'd simply borrowed different cultures' quirks. Cultures have to function, and unless you learn how they function, you run the risk of mixing and matching traits in ways that create cultures that feel strange and dysfunctional, even if they're supposed to be just fantasy.

So despite my initial assumption of separation between my archaeology career and my writing, by the time I finished my novel, I ended up using my training in archaeology in nearly every aspect of the novel's world!
Recent Graduates

2012 Master of Arts Degree
Fast, Natalie: How Great Were Cedar Mesa Great House Communities, AD 1060-1270?
Feeney, Kevin: Revisiting Wasson’s Soma: Exploring the Effects of Preparation on the Chemistry of Amanita Muscaria.
Frederick, Alcione: Cheikh Amadu Bamba and the Cultural Symbolic Soul of Black Muslims with Islam: Reflections on Bamba’s Education of the American Muslidiyya.
Iehl, Ryan: The Co-Relation Between Poaching and Malnutrition in the Kasungu National Park Region, and Why Tourism Is Not a Solution At This Time.

2012 Doctor of Philosophy Degree
Abdul-Karim, Christa: "There is No Development Here": Social Power and the Shaping of a Southern Zamian Community.
Cantin, Kristina: Peak Experiences and Hegemony Resistance: Cultural Models of a Good Life and Group Identity in Carpathian Rus’.
Kotey, Abigail: Ethnomedicine and Children’s Medical Knowledge among the Ga of West Africa.
Luminas, Misty: In the Habit of Being Kinky: Practice and Resistance in a BDSM Community, Texas, USA.
Sherpa, Pasang: Sherpa Perceptions of Climate Change and Institutional Responses in the Everest Region of Nepal.