Aims & Scope

Since the inaugural meeting in 2007, this conference has been guided by a single, unifying goal; to maximize familiarity and opportunity for interaction among the greater California community investigating human behavior from an evolutionary perspective.

This small meeting emphasizes discussion and collegiality, and celebrates our points of convergence and divergence. Collectively, California is home to the largest community of scholars working in this area, and is characterized by a diversity of approaches and areas of expertise.

The program this year includes faculty, postdocs, and graduate students from Cal Poly SLO, Chapman University, CSU Fullerton, Loyola Marymount, UCD, UCLA, and UCSB. We welcome both the familiar and new faces to the 2013 meeting.
Schedule of Events

Friday Evening May 3rd, 2013 (Morro Bay Campground BBQ)
6:00pm-10:00pm
OPENING RECEPTION
Morro Bay State Park

Saturday May 4th, 2013 (Ludwick Community Center)
8:00-9:00am BREAKFAST
9:00-10:00 Welcome & Lightning Powerpoint Session
10:00-10:15 BREAK
10:15-10:55 Michael Latner, Political Science, Cal Poly, “The evolutionary logic of democracy”
11:35-12:15 Montserrat Soler, Anthropology, UCSB, “Leadership, hierarchy and group cohesion in a religious context: preliminary evidence from Brazil”
12:15-1:30 LUNCH
1:30-2:10 Greg Bryant, Communication Studies, UCLA, “What makes a laugh sound real?”
2:10-2:50 Kari Schroeder, Anthropology, UCD, “Crime and punishment: a tale of two neighborhoods”
2:50-3:05 COFFEE BREAK
3:05-3:45 Michelle Kline, Anthropology, UCLA, “Human adaptations for teaching: A new theoretical framework and empirical tests from Fiji”
3:45-4:25 Ben Trumble, Anthropology, UCSB, “Testosterone increases among successful Tsimane Hunters, but not when others are watching”
4:25-6:00 AFTERNOON BREAK
6:00-7:30 POSTER SESSION
7:30 DINNER

Sunday Morning May 5th, 2013 (Ludwick Community Center)
8:00-9:00AM BREAKFAST
9:00-9:05 Voting for new official conference name!
10:25-10:45 COFFEE BREAK
10:45-10:50 Announcement for SSRN from Kristin Rauch
10:50-11:30 Adrian Jaeggi, SAGE Center, UCSB, “Food sharing and reciprocal altruism in humans and other primates: A phylogenetic meta-analysis”
11:30-12:10 Aaron Lukaszewski, Psychology, Loyola Marymount, “Why are physically formidable people afforded higher status in organizational settings? Men’s physical strength as an evolved cue to within-group contribution capacity”
12:10-12:30 WORKSHOP STEERING MEETING

Organizational Team

Local Host Extraordinaire!
Stacey Rucas, Cal Poly
Co-Lead Coordinators
Ryan Baldini, UCD
Anne Pisor, UCSB
Camping Coordinator
Justin Myrick, UCLA
Campus Reps
Justin Lynn, CSUF
Christina Larson, UCLA
Steven Gjerstad, Chapman University
Aaron Lukaszewski, Loyola Marymount

Conference Funding

Thank you for the generous support from our sponsors:

• Cal Poly, Department of Social Sciences
• UCD, Division of Social Sciences
• UCLA, Center for Behavior, Evolution and Culture
• UCSB, Department of Anthropology
• CSUF, Department of Anthropology
CAMPING:

This year we will be camping at Morro Bay State Park (http://www.parks.ca.gov/?page_id=594). The Morro Bay Campground (campsite GOSO) is about a 20 minute drive from the conference site. We have reserved campsites to accommodate 25 people Friday and Saturday night. Parking spots are limited to 11 cars, so please carpool.

Camping will be **free**. If you wish to camp, please let us know on the workshop registration website: http://www.doodle.com/kcsvwugefzaqhhzm

**Directions:** From northbound 101 and SLO, take Highway 1 North to the Los Osos - Baywood Park offramp. Turn left, go about 1 mile, and turn right into the state park. From southbound 101 (approaching from Davis), take offramp 219 for Morro Road/Highway 41 (mid-way through Atascadero). Follow Highway 41 South for 15.8 miles until you reach Main St., Morro Bay. Turn left and follow Main St. for 2.6 miles before turning left into the park entrance. *A map of the campground is on the 5th page of this program.* Look to the top right-hand corner of the map for the road to the group site.

**HOTEL ACCOMMODATIONS:**

Group rates ($69.95 + tax for 2 adults for one king or two queens, + $5 for each additional person, includes breakfast) are available at the Lexington Inn (formerly Days Inn) in San Luis Obispo. The hotel is located 0.9 miles (an 18 minute walk) from the conference. Call (805) 549-9911 to make reservations, and mention the “Annual Human Behavioral Evolution Conference at Cal Poly.”

**Address:** 2050 Garfield St., Garfield and Monterey St., San Luis Obispo, CA, 93401

www.lexingtonhotels.com/property.cfm?idp=22057
This year we will hold the conference at the **Ludwick Community Center** in San Luis Obispo, CA.

**Address:** Ludwick Community, 864 Santa Rosa St. San Luis Obispo, CA 93401

**Directions:**

Northbound 101: Take exit 203A onto Osos St. Immediately turn left on Walnut St. Take first right onto Santa Rosa St. In 0.2 miles, turn left onto Mill St. Parking is immediately on the right.

Southbound 101: Take exit 203A onto Olive St. Turn right to stay on Olive St. Take first right onto Santa Rosa St. In 0.3 miles, turn left onto Mill St. Parking is immediately on the right.

From Campsite: Take State Park Rd/Main St southeast (turning left from the campsite). Take CA-1 /Cabrillo Hwy south toward San Luis Obispo. After 11 miles, continue onto Santa Rosa St. Turn left onto Mill St. Parking is immediately on the right.

From Lexington Inn: Take Garfield St east, then turn right (southwest) onto Monterey St. After 0.6 miles, turn right onto Johnson Ave. Take second left onto Mill St. Parking is on the left, after passing Toro St.
The 7th Annual Workshop on Evolutionary Perspectives of Human Behavior has been made possible by the generous contributions of the following organizations:
Saturday, May 5, 2012

The evolutionary logic of democracy
Michael Latner, Political Science, Cal Poly, 10:15-10:55

Darwinian perspectives have been slow to take hold in the study of comparative politics, yet evolutionary theory provides an interdisciplinary framework for understanding the emergence, persistence and evolution of socio-political organization. In this essay, I specify the institutional components of contemporary political systems following an evolutionary logic, which emphasizes the capacity of extended phenotypic traits to constrain lower-level cultural conflict and create synergies among cooperative agents. Integrating fundamental concerns about vulnerability to parasitism, the regulation of mutation rates and the advantages of niche construction into contemporary political science, places modern political systems, and constitutional democracy in particular, atop the major evolutionary transitions in life.

Behavioral ecology and conservation biology of geladas and other Ethiopian primates
Peter Fashing & Nga Nguyen, Anthropology, CSUF, 10:55-11:35

In this talk, we will provide an overview of our ongoing research on the wild gelada monkey (Theropithecus gelada) population at Guassa, Ethiopia, as well as discuss our research and conservation activities on other nonhuman primates in the Ethiopian highlands. Our talk will focus primarily on several projects we (along with our collaborators and students) have been engaged in over the past several years, including gelada ranging and feeding ecology, birth seasonality, disease ecology, and interactions with another Ethiopian endemic at Guassa – Ethiopian wolves (Canis simensis).

Leadership, hierarchy and group cohesion in a religious context: preliminary evidence from Brazil
Montserrat Soler, Anthropology, UCSB, 11:35-12:15

Social hierarchies are found in many group-living mammals, including nonhuman primates. Although it is often assumed that subsistence-level societies are primarily egalitarian and that this was the case among our ancestors, our sensitivity to cues of social dominance suggests that this is not necessarily the case. Mechanisms related to the recognition and evaluation of status are likely an important part of our psychology, but the study of leadership has not been a central part of discussions concerning the evolution of intragroup cooperation. Here, I will use preliminary evidence from religious communities in Brazil to discuss existing theories about the evolution of leadership and its relationship to cooperation. I will also argue that religious leadership in particular may be especially effective at extracting material and social resources from followers.

What makes a laugh sound real?
Greg Bryant, Communication Studies, UCLA, 1:30-2:10

Laughter is a universally produced vocal signal that functions variably in human social interaction. Theorists have distinguished between spontaneous laughter with evolutionarily conserved features shared between several primate species, and volitional laughter produced by the speech motor system, but little research has explored possible acoustic and perceptual differences. We extracted spontaneous laughs from conversations between friends and volitional laughs elicited by instruction without other provocation. In three perception experiments we found that 1) subjects could distinguish between the laugh types, 2) laughs artificially sped up were judged as more “real,” and 3) when laughs were slowed down significantly, subjects could not judge whether spontaneous laughs originated from a human or nonhuman animal, but could identify volitional laughs as human-produced. Acoustic analyses revealed that the laugh types differed on several pitch (F0) parameters, as well as on a newly developed measure that taps into the dynamics of laughter voicing (rate of inter-voicing interval). Perceptual judgments were systematically related to these acoustic measures. Taken together, these results are consistent with the proposal that spontaneous and volitional laughter are generated by distinct vocal production systems, and that voicing dynamics might play an important role in the co-evolutionary arms race between volitional laugh production and perception.
Crime and punishment: A tale of two neighborhoods
Kari Schroeder, Anthropology, UC Davis, 2:10-2:50

Experimental economic games have been used to demonstrate that cooperative behavior covaries with punitiveness of non-cooperative behavior. The focus has been on large-scale variation; however, sociologists have used different tools to study similar questions at the community level. Structural inequality can result in reduced neighborhood cohesion and social capital. This in turn may lead to increased crime, via a reduced capacity to enforce shared standards of behavior, or norms. The current study unites these complementary approaches. We use an experimental economic game and norms manipulation to assess antisocial behavior, punishment behavior, and the expectation of punishment in two English neighborhoods that vary dramatically with respect to socioeconomic deprivation and crime. We investigate how these behaviors are related to trust, norms of civic cooperation, and crime rates.

At the local scale, antisocial behavior is positively associated with decreased punitiveness of antisocial behavior and the perceived frequency of antisocial behavior. The perception that others are cheating on public goods may be harmful in two ways. It may encourage further antisocial behavior by motivating behavior that cannot be exploited and by altering the expectation that there will be informal sanctions for behaving antisocially.

Human adaptations for teaching: A new theoretical framework and empirical tests from Fiji
Michelle Kline, Anthropology, UCLA, 3:05-3:45

Humans are heavily reliant on cultural adaptation, and have coevolved with culture for millennia. Teaching enhances the fidelity of cultural transmission and should be common in such a culture-dependent species. However, existing data present a puzzle concerning the role of teaching in human evolution. While biologists have documented teaching in a number of non-human animal species, extant ethnographic work suggests that teaching is rare in non-Western human societies. Both sets of findings are hotly debated. I argue that disputes about the nature and prevalence of teaching across human societies can be resolved within an evolutionary framework that distinguishes among a range of teaching behaviors with varying costs and benefits to teachers and learners. This framework predicts that some teaching behaviors should be common across societies, within particular relationships, and for the learning of particular kinds of skills. Here I present this new theoretical framework and confirm a number of its predictions using two data sets from field work with fishing-horticultural villages on Yasawa Island, Fiji.

Testosterone increases among successful Tsimane Hunters, but not when others are watching
Ben Trumble, Anthropology, UCSB, 3:45-4:25

There is considerable controversy in the anthropological literature over the motivation behind male hunting in subsistence societies; do men hunt primarily as a means of family provisioning or is hunting motivated by the reputational and fitness benefits that good hunters receive? This study uses salivary testosterone collected before, during and after hunting focal follows from 31 Tsimane hunters aged 18-82 years to examine this question from a new perspective. Hormone-behavior interaction studies examining male mating effort report acute increases in testosterone during male-male competition, across numerous taxa, especially for winners. Among humans, research tends to focus in reproductively trivial male-male sports competition or contrived laboratory tasks; this study examines whether this pattern of hormone-behavior interactions can be extended to an ecologically valid and reproductively important challenge, examining hunting success and failure among Tsimane forager-horticulturalists. Mixed effects models find increased testosterone at the time of kill (p=0.04) compared to other collection times, controlling for age2, BMI, and time spent hunting, with an average 23.5% increase above baseline testosterone. Hunters returning with meat had 36.1% larger change in testosterone than unsuccessful hunters (p=0.03), controlling for age, age2, BMI, and time spent hunting. Contrary to the reputational model of hunting motivation, kill size, and encountering community members when returning home were not associated with testosterone for successful or unsuccessful hunters. Thus we find that successful hunting results in increased testosterone, with these data supporting a family provisioning model of hunting motivation among forager-horticulturalists.

Photo credit: Matthew Gervais
An egalitarian hierarchy: relational games tap RICH norms of helping and leveling in a Fijian village
Matthew Gervais, Anthropology, UCLA, 9:00-9:40

Experimental economic games have shed significant light on variation in human social behavior. However, most of these games have involved anonymous recipients, limiting their generalizability beyond fleeting interactions. Yet enduring relationships and social networks are arguably the cradle of human uniqueness and remain the cornerstone of human adaptation across societies. Mapping the mechanisms that structure social behavior within human communities will require methods that have the virtues of economic games – including incentivized behavior, and replicability and comparability across sites – but which integrate recipient identities and allow for the study of Recipient Identity-Conditioned Heuristics (RICHs) such as direct and indirect reciprocity, relatedness, and kinship norms. This paper describes three “relational” economic games that integrate recipient identities and other-other tradeoffs, and reports their validation in a study of male social relationships in a Fijian village. The three games, an Allocation Game, a Taking Game, and a Costly Reduction Game, involve monetary decisions made across a photo array of other villagers. Levels of both altruism and spite in these games are higher than those found using anonymous games in neighboring villages. Recipient need is the major driver of giving and refraining from taking, while the wealthiest villagers are the mostly likely to be reduced at a cost. Such need-based giving and leveling is a hallmark of human egalitarianism, evident here even in a former chieftom. These games hold promise for mapping population variation in RICH norms and the mechanisms of cooperation within human communities, significantly advancing the toolkit of evolutionary anthropology.

Evolved psychology of social status conferral
Aaron Lukaszewski, Psychology, Loyola Marymount, 11:20-12:00

Humans primarily achieve social status via the generation of important benefits for the group, rather than through aggressive contests. Nonetheless, people willingly confer high status upon physically formidable group members in non-violent organizational settings, even when such characteristics are uncorrelated with skills that should benefit the collective. The current study advances an adaptationist model that reconciles these seemingly contradictory conclusions, wherein the evolved psychology of social status affordances interprets men’s physical strength as a cue to their in-group contribution capacity, which results in the conferral of status upon stronger people. To test this hypothesis, participants rated target people in photos on (i) multiple aspects of in-group contribution capacity, (ii) likelihood of forcefully pursuing their interests at the expense of the group’s interests, and (iii) likely status within a newly-formed white collar organization. In support of the proposed model, male (but not female) targets’ actual physical strength predicted social status affordances, and this effect was mediated by perceptions of their ability to make specific types of formidability-related contributions to group functioning. Results are discussed in terms of the respective roles of aggressive intimidation vs. competitive benefit generation as routes to status in human social groups.

Food sharing and reciprocal altruism in humans and other primates: A phylogenetic meta-analysis
Adrian Jaeggi, SAGE Center, UCSB, 10:40-11:20

Reciprocal altruism plays an important role in the evolution of cooperation. In particular, reciprocal food sharing allows human foragers to thrive in a risky foraging niche and among primates food may be traded for other commodities. However, skepticism about reciprocal sharing prevails, particularly questioning the necessary conditions of producer control and contingency. Here we test whether giving food is positively correlated with receiving food or other commodities using meta-analyses. In 14 quantitative studies on foragers and 12 on primates with a total of 67 independent study units we found an overall weighted effect size of r=0.18. The effect size was similar for humans and primates, especially when commodities other than food were considered. After controlling for kinship, phylogeny, publication bias and other potential biases the correlations decreased but remained significant. Having thus established a statistical contingency between giving and receiving, we discuss how this may be achieved proximately.

Evolution of anarchy in Aboriginal California
Robert Bettinger, Anthropology, UC Davis, 9:40-10:20

Popularly conceived as “complexly organized,” California sociopolitical organization is more aptly termed “minutely divided,” in the limit into independent family groups, just as in the neighboring but environmentally impoverished Great Basin. Scholars have been recently less interested in this small group tendency than in sociopolitical behaviors reflecting a more forward stance and appetite for power and control. Inequality and sociopolitical complexity are the hallmarks of interest here, tendencies I believe to be overdrawn for much of California. In this very short presentation I explore their antithesis, a sociopolitical downsizing and evolution of what I have come to call “orderly anarchy.”
Chapman University

**Perceptions of the Mating Environment as Predictors of Infidelity**  
*David A. Frederick, Brooke Gentle, and Taylor Oliver*

**BACKGROUND:** The current study advances our understanding of infidelity in several ways. First, in addition to examining commonly accepted definitions of sexual infidelity, such as sexual intercourse and number of affair partners, we also examine the predictors and prevalence of a wide range of behaviors, from kissing to sexting to intercourse. Second, in addition to examining demographics predictors of infidelity, we also examined how perceptions of the local mating environment related to likelihood of committing infidelity, and expanded on Rusbult’s commitment model to better understand who is more likely to commit infidelity. **METHODS:** Participants were over 60,000 men and women who completed an online survey on infidelity located on the official news website of NBC News. **RESULTS:** People were more likely to have committed infidelity if they were less sexually satisfied, less satisfied overall with their relationship, and perceived that infidelity was more common in the population. **CONCLUSIONS:** Men were more likely to have committed infidelity than women, particularly men who believed that infidelity was relatively common in the population overall. The results indicate the importance of separately assessing sexual satisfaction and relationship satisfaction when predicting risk of infidelity, as well as people’s beliefs regarding the prevalence of infidelity in the population.

**Who cheaters cheat with and what’s considered cheating**  
*David A. Frederick and Brooke Gentle*

Infidelity is a behavior that, from an evolutionary perspective, may be reproductively advantageous for the cheater and costly for the person being cheated on. It is therefore functional for humans to be attuned to cheating behavior. Kruger and colleagues (2013) collected information from a college sample on what behaviors were considered cheating and found sex differences in these reports. To examine similar information from a more diverse sample, we collected data from 70,000 participants (Mage = 40.4) and found that of people who cheat 40% cheat with a friend, 35% with a co-worker, 19% with someone they met at a bar/club, 9% with someone they met online, and 6% with a prostitute. Behaviors that people consider cheating included having sexual intercourse with another partner (94%), having oral sex with another partner (94%), visiting a prostitute (87%), romantically kissing someone else (83%), exchanging erotic pictures with strangers over the internet (67%), sending sexually flirtatious e-mails to a co-worker (62%), getting a lap dance (23%), sexually fantasizing about someone he/she knows (16%), and using pornography alone (10%). Differences between men’s and women’s perceptions of what was considered cheating occurred.

**CSU Fullerton**

**Parasitic swellings in wild geladas at Guassa, Ethiopia: Impacts on survivorship**  
*Derek Boyd, Nga Nguyen, and Peter Fashing*

Parasitic infections typically lead to reduced host fitness because energy that hosts expend on parasites is energy they could have devoted towards their own survival and reproduction. *Taenia*, a diverse genus of tapeworms, infect and adversely affect the health of a diverse array of mammals, including domestic livestock and humans. Less well known is that gelada monkeys also regularly suffer from *Taenia* infections which result in large subcutaneous fluctuant cysts (*coenuri*). Because these cysts are undoubtedly energetically demanding and clearly impede physical movement, we sought to determine whether they also impact mortality in a wild population of geladas at Guassa, Ethiopia. We visually monitored all adult and immature geladas in the Guassa study population over a continuous 6-year period (Jan 2007-Dec 2012) for macroscopic evidence of *coenuri* and evaluated the impact of *coenuri* on survivorship. We found that (A) adults were more likely to exhibit *coenuri* than immatures (28% of 146 vs 2% of 164), (B) similar proportions of adult males (29% of 48) and females (28% of 98) possessed *coenuri*, and (C) mortality was higher for adult males and females with *coenuri* than for members of their sex without *coenuri* (♂♂: 36% vs. 15% mortality; ♀♀: 59% vs. 21%). Our results suggest that *coenuri* may be a major source of mortality for adult geladas and that further study of the life cycle of *Taenia* (whose other hosts likely include sympatric wild canids) in this system will have major implications for our understanding of community ecology and conservation at Guassa.
Early to middle Holocene foraging choice: Re-analysis of faunal remains from CA-ORA-64
Brenda Bowser, Kaycey Cole, et al.
CA-ORA-64 (the Irvine Site) is a multi-component archaeological site located on a bluff above the coastal estuary of Newport Bay in southern California. Occupation of the site spans most of the Early Holocene into the early Middle Holocene (9500 B.P. to 4300 B.P.). CRM excavations in the 1990s (Macko 1998) yielded a rich assemblage of faunal remains and diverse artifacts associated with prehistoric trade networks throughout western North America. This poster provides new data on the temporal and cultural affiliations and residential mobility patterns of people at CA-ORA-64, based on obsidian hydration dates and detailed analysis of the faunal assemblage.

Aggression and facial morphology: Violent criminal activity linked to larger width-to-height ratios in criminal mugshots
Jessica Ayers, Gorge Romero, and Aaron T. Goetz
Facial morphology provides a plethora of information necessary for individuals to make judgments about others and engage in different forms of social interactions. Recently, it has been shown that larger facial width-to-height ratios (fWHR) are linked to aggressive behaviors in males. Given this, we attempted to determine if there is a distinguishable difference in fWHR between different types of criminal offenders. It was hypothesized, using forty-six mugshots from a public database, that the fWHR of violent offenders would be larger than the fWHR of non-violent offenders. The differentiation between the offenders was operationalized by violent offenders being charged with aggravated assault (i.e., victim hospitalization due to sustained injuries) and non-violent offenders with charges of possession of a controlled substance or driving with a suspended license. Results indicated that violent offenders did have significantly higher fWHR than non-violent offenders. Discussion focuses on practical implications for fWHR in real-world scenarios.

Men’s proprietary view of their romantic partners
Justin T. Lynn, Kim Steele, and Aaron T. Goetz
Previous research suggests that men maintain a proprietary view of their romantic partners, and they often demonstrate this perspective by attempting to dominate and control their romantic partners. Yet, previous research does not specify what aspects of their romantic partners’ lives men want to control. Instead, it has been implied that men attempt to exert a general control over their romantic partners. Yet, recent research generated by evolutionary theory suggests that men attempt to control only particular aspects of their romantic partner’s freedoms. The main purpose of the current study was to test the hypothesis that men will afford their partners most freedoms, except for those related to their partners’ sexuality. Results of the study suggest that men show increased tolerance for their partners’ participation in activities that are less related to female sexuality and opportunities to engage in EPCs. Tolerance also decreased as the relation of the activities to female sexuality strengthens. Although further research is needed, these results suggest that evolutionary theory can provide a framework for understanding men’s proprietary views.

Inter-annual variability in the ranging ecology of wild gelada monkeys (Theropithecus gelada) at Guassa, Ethiopia, from 2007-2011
Cha Moua, Peter Fashing, and Nga Nguyen
Although they are the only primate species endemic to an alpine grassland ecosystem, we know relatively little about how geladas (Theropithecus gelada) utilize their unusual habitat. Studies of ranging ecology enhance our understanding of how animals, like geladas, respond to ecological variability across space and time, as well as provide data on patterns of habitat use essential to making informed conservation decisions. Using ArcGIS 9.3 and 10, Geospatial Modelling Environment 0.6.1, and Home Range Tools 1.1, we investigated the daily movement patterns and annual home range sizes of a band of ~220 wild gelada monkeys at Guassa, Ethiopia, over a five-year period from Jan-2007 to Dec-2011. We constructed annual home ranges using the fixed kernel method with the smoothed-cross validation (SCV) bandwidth selector. Overall, despite similar numbers of all-day follows each year (mean=157, range=145-168 days), annual home range sizes (95% fixed kernel SCV) increased over the 5-year period (2007: 4.5 km²; 2008: 6.4 km²; 2009: 6.8 km²; 2010: 9.0 km²; 2011: 8.6 km²). Mean annual daily path length (±SE) also exhibited a similar trend (2007: 2,848±57 m; 2008: 3,339±65 m; 2009: 3,272±72 m; 2010: 3,835±80 m; 2011: 4,100±86 m). Given the large inter-annual variability in ranging patterns over the 5-year study period at Guassa, our results indicate the importance of longitudinal monitoring of ranging behavior for wild nonhuman primates.
Sucker punch: The context-sensitivity of violent behavior and expectations for combative conduct
George A. Romero, Michael Pham, and Aaron T. Goetz
The current research tests the hypotheses that individuals implicitly categorize combative contexts (i.e., play fighting, status contests, warfare, and anti-exploitative violence) and use the contextual information of combat to guide their expectations of combative tactics. In Study 1, we documented that combative contexts are readily classified from scenarios with limited but key information about the conflict. We found high rates of classification agreement in a U.S. and non-U.S. sample. Furthermore, we report predictable shifts in participants’ ratings of acceptability for 22 tactics across the contexts; while high-severity tactics were generally acceptable in warfare and anti-exploitative violence, they were considerably restricted in a status contest and intolerable in a play fight. These results suggest the existence of implicit rules placed on the variable contexts of combat. In Study 2, we explored the reputational consequences of violating implicit rules of a status contest in comparison to engaging self-handicapping tactics. Results suggest that violation of these implicit rules has reputational costs (i.e., lower ratings of respect), whereas respect is garnered when self-handicapping tactics are performed. These are the first studies to appreciate a combat psychology: specialized mechanisms for aggression that use contextual cues of violence to guide implicit expectations and behavior.

UC Davis

Modeling the bio-cultural evolution of ritual practice
Karl Frost
The last two decades has seen an explosion of scientific interest in religion and ritual, generating a wide variety of verbal theories of their evolutionary dynamics, but not much in the way of formal evolutionary models. This project aims to fill that gap by translating these verbal models into formal genetic and cultural evolutionary models in order to assess, independent of empirical verification, if the verbal explanations are cogent and if the hypothesized dynamics lead to evolutionarily stable behaviors. It is also hoped that by translating these informal models into more mathematically precise forms, it will expose hidden assumptions or necessary modifications of the theories that may be tested empirically. This project will begin by assessing Michael Tomasello’s theories of the prosocial benefits of rituals containing elements of synchronized as well as popular notions of the prosocial benefits of meditation.

Parental investment strategies in Central California during the Medieval Climatic Anomaly: Stable isotope estimates of weaning and early childhood diet
Alexandra Greenwald
Human behavioral ecology predicts that individuals alter reproductive strategies in response to environmental and social conditions. Individuals are predicted to maximize their number of offspring with a net reduction of investment in each child during periods of environmental and social stress. Conversely, individuals are predicted to invest more resources in fewer offspring during periods of environmental and social stability. We test this hypothesis by estimating two measures of parental investment, weaning age and early childhood dietary quality, using δ15N and δ13C and C:N ratios in dentinal collagen, for 17 individuals from the archaeological site CA-ALA-554, which was occupied during the Medieval Climatic Anomaly. Our results are consistent with the hypothesis that parental investment was lower during this high-stress period of environmental instability.

Too many men: The violence problem?
Kristin Rauch, Ryan Schacht, and Monique Borgerhoff-Mulder
Recent high-profile cases of violence against women, such as the 2012 Delhi gang rape case, have the public, journalists and researchers all seeking explanations. Evolutionary-informed arguments center on male-biased adult sex ratios (ASR) leading to greater violence, mediated by higher intensities of selection (Is) among males when there is a shortage of available female mates. While this reasoning is intuitively appealing, we question its theoretical basis and empirical support. First, we highlight recent reformulations within sexual selection theory that generate predictions (derived from mating market models) contradicting the more males = more violence argument. Second, we tabulate inconsistencies in the existing literature concerning how violence is patterned with respect to ASR, and third, we present comparative summary statistics from 18 human populations showing how a high Is is associated with a female-biased ASR. Our conclusions are consistent with new theoretical models in sexual selection, and counter positions held by the public, journalists and many evolutionary social scientists.
Conflict continuity: reconstructing trade in Colusa County using obsidian XRF
Susan Talcott

Ethnographic accounts suggest historic animosity between the Hill Patwin and River Patwin. If these accounts accurately represent persistent prehistoric conflict, a barrier to trade and mobility between the groups may be evident in the archaeological record. Distribution of Borax Lake obsidian, readily available to the Hill Patwin, could serve as a proxy for economic and social interaction between the linguistic divisions. We present new Obsidian XRF results from several sites in Colusa County including two newly discovered sites in Hill Patwin territory and compare them with previous XRF results from Colusa.

Oxygen isotopes as mobility markers in prehistoric human teeth
Olekzandr Kovalyov

Archaeologists are interested in reconstructing mobility patterns of ancient societies to shed light on how people moved about different landscapes. While past studies have generally focused on mobility at the scale of the population, that is, whether groups of people were generally nomadic or sedentary, this research explores new ground by examining mobility at the level of the individual. Because teeth grow slowly in successive serial sections, we can extract information about where a person was at different points in time. We analyze oxygen and carbon isotope ratios in serial samples of enamel and dentin from a number of prehistoric California sites. Since little archaeological work has been done with oxygen isotopes in dentin, we first explore the feasibility of conducting such studies on that tissue by comparing its values to the more reliable enamel data. We then compare the series from different individuals sampled based on sex, wealth, and geography. We expect that increased environmental variability would result in shifting mobility patterns, such as hunters spending more time further afield, or an earlier age of marriage, which would be reflected by changes in isotope ratios.

An evolutionary model for the emergence of money in simple societies
Gregory Burns

Although the use of general purpose money and intensively monetized economic systems is generally associated with the emergence of state level political organization, some simple societies, such as the Hupa and Yurok of California and the Kapauku of New Guinea, developed highly monetized economies. Money fills many roles, but two specific functions standout for their significance in simple societies - reducing transaction costs and eliminating obligations inherent to reciprocal trade. This poster presents a model for the evolution of money in terms of resource variability and obligation. Resource exchange is considered in a game theory framework through which long term obligations may be either desirable or costly. Ethnographic and archaeological evidence and implications for the model are proposed.

UC Los Angeles

Sizing up the threat: The envisioned physical formidability of terrorists tracks their leaders' failures and successes
Colin Holbrook and Daniel M. T. Fessler

Victory in modern intergroup conflict derives from complex factors, including weaponry, economic resources, tactical outcomes, and leadership. We hypothesize that the mind summarizes such factors into simple metaphorical representations of physical size and strength, concrete dimensions that have determined the outcome of combat throughout both ontogenetic and phylogenetic experience. This model predicts that in the aftermath of tactical victories (e.g., killing an enemy leader), members of defeated groups will be conceptualized as less physically formidable. Conversely, reminders that groups possess effective leadership should lead their members to be envisioned as more physically formidable. Consonant with these predictions, in both an opportunistic study conducted immediately after Osama bin Laden's death was announced (Study 1) and a follow-up experiment conducted approximately a year later (Study 2), Americans for whom the killing was salient estimated a purported Islamic terrorist to be physically smaller / weaker. In Studies 3 and 4, primes of victorious terrorist leadership led to inflated estimates of terrorists’ physical attributes. These findings elucidate how the mind represents contemporary military power, and may help to explain how even largely symbolic victories can influence reasoning about campaigns of coalitional aggression.
UC Santa Barbara

Mediationsal effect of maternal depressive symptoms on the relationship between social support and high risk child health outcomes
Eva A. Padilla

Previous research has indicated that various forms of parental resources (money, attention) affect parental investment in children, contingent on the health risk of the child. In other words, high resource parents with a high risk child invest more in their child than high resource parents with a low risk child. A reverse pattern holds for low resource parents. This study examines social support as another parental resource with a downstream effect on an outcome of successful parental investment: child health. Social support has been shown to ameliorate maternal depression which in turn is predictive of premature infants' cortisol reactivity. Depressive symptoms also serve as signals for assistance which is particularly important for mothers of high risk children. We tested the hypothesis that social support would positively affect child health by reducing maternal depressive symptoms. Our predictions were supported. The relationship between social integration and child health was mediated by maternal depressive symptoms for high risk children, but not for low risk children providing support for the contingent parental investment model.

Field-friendly methods for measuring immune function in behavioral ecology and evolutionary psychology
Angela Garcia and Aaron Blackwell

Pathogens have played an important role in selecting both behavioral and physiological responses in humans, and much recent work in both behavioral ecology and evolutionary psychology examines the role of pathogens and immune function as key life history parameters. However, simple measures of white blood cell count obscure significant interpersonal and cross-cultural variation in white blood cell repertoires. At the same time, measuring immuno-phenotypes in a field setting presents several obstacles. Flow cytometry, a technology for cell counting, sorting, and biomarker detection is a useful tool that allows us to look at indicators of innate and adaptive immunity. However, flow cytometry is usually done on fresh blood and porting a flow cytometer to the field is costly and risky. Instead, here we develop and report on techniques for preserving field samples for later analysis in a university laboratory. The same technique can be used to collect samples in psychological experiments using simple finger pricks, without the pressure to analyze fresh samples immediately.

Patterns of senescence in human physical fitness: VO$_2$max in subsistence and industrialized populations
Anne Pisor, et al.

OBJECTIVES. This study explores whether physical fitness levels and senescent decline are similar in subsistence and industrialized populations, with a focus on the Tsimane of Bolivia and Canadians. Among Tsimane, we test whether high disease load predicts lower levels and faster decline of physical fitness, or whether their high physical activity promotes high levels and slow decline. Alternatively, activity levels and health might counterbalance such that Tsimane fitness levels and decline are similar to those in industrialized populations. METHODS. Maximal oxygen uptake (VO$_2$max) was estimated using a heart-rate method for 701 participants. We compared these estimates to the Canadian Health Measures Survey and results from previous studies in industrialized and subsistence populations. We evaluated whether health indicators and proxies for market integration were associated with VO$_2$max levels and rate of decline for the Tsimane. RESULTS. The Tsimane have significantly higher levels of VO$_2$max than Canadians and significantly slower rates of decline; initial evidence suggests this pattern holds for other subsistence and industrialized populations. Low hemoglobin predicts low VO$_2$max for Tsimane women while helminth infection predicts high VO$_2$max for Tsimane men, though these results might be specific to the VO2max estimation method used. No variables tested interact with age to predict slope of decline. CONCLUSIONS. The Tsimane demonstrate high levels of aerobic fitness and slower rates of decline compared with industrialized populations, but levels and rates of decline similar to other subsistence populations. The higher VO$_2$max of Tsimane is consistent with their high physical activity and few indicators of cardiovascular disease.
Hormonal and morphological predictors of female physical attractiveness
Rachel Grillot
Converging evidence supports the notion that human female physical attractiveness may be an honest index of reproductive capacity. Prior research has demonstrated that breast size and low waist-to-hip ratio are positively associated with estrogen and progesterone. This study sought to replicate the relationship between ovarian hormones and morphological features, and investigate their effects on physical attractiveness in naturally-cycling women. Daily saliva samples were collected across 1-2 menstrual cycles and assayed for estrogen, progesterone, and testosterone. Contrary to previous research, estrogen and progesterone were not significantly correlated with breast size or waist-to-hip ratio, though testosterone did positively correlate with breast size. Body attractiveness was negatively correlated with BMI, but was not significantly associated with either breast size or waist-to-hip ratio independent of BMI. Most importantly, mean estrogen levels did predict body attractiveness ratings after controlling for BMI.

Formidability, fighting, flirting and future discounting: Evidence of a coordinated preference for immediate rewards
Adar Eisenbruch, Rachel L. Grillot and James R. Roney
Organisms face behavioral and physiological tradeoffs between present competition and mating effort vs. improving their prospects for future mating effort and competition. Muscle mass, violent proclivities and pursuing many short sexual relationships each represent an investment in present mating effort and resource acquisition at the expense of future health and opportunities, and therefore should co-occur with greater psychological discounting of future welfare. Indeed, the present study found that a preference for immediate (as opposed to delayed) rewards has a positive correlation with an individual’s number of lifetime sex partners, masculinity, and expected likelihood of getting into a fight.

Early growth predicts earlier reproduction, but earlier reproduction limits adolescent growth: Teen pregnancy and growth in the Bolivian Amazon
Lisa McAllister, Aaron Blackwell, Hillard Kaplan, & Michael Gurven
Age at first reproduction (AFR) varies within and among human populations, suggesting the possibility of alternate life history strategies. Across species, AFR negatively correlates with adult body size. However, it is generally assumed that the termination of growth determines AFR and not vice-versa, with earlier initiation of reproduction leading to earlier cessation of growth. The direction of causation has consequences for the degree to which life histories can be dynamically varied during individual life times. Here we investigate both possibilities among the Tsimane, lowland Bolivian forager-horticulturists. We test 1) whether younger AFR is linked to a faster pre-AFR growth trajectory, and 2) whether initiation of reproduction before growth termination reduces adult height attainment. Women’s mean AFR was 18.3±2.7 (n=1145), with 13% of women reproducing at ≤15 years (n=145). Using longitudinal data, early growth (height residual before age 13) is a significant predictor of earlier AFR (std. B=-0.25, p=0.03), earlier menarche (std. B=-0.24, p<0.01), and greater final adult height (std. B=0.30, p<0.01). However, early AFR also predicts smaller adult height (0.67 cm/year, std. B=0.27, p=0.05). Our results suggest that early AFR is a consequence of rapid early growth, but that reproducing before cessation of growth also limits final growth attainment.