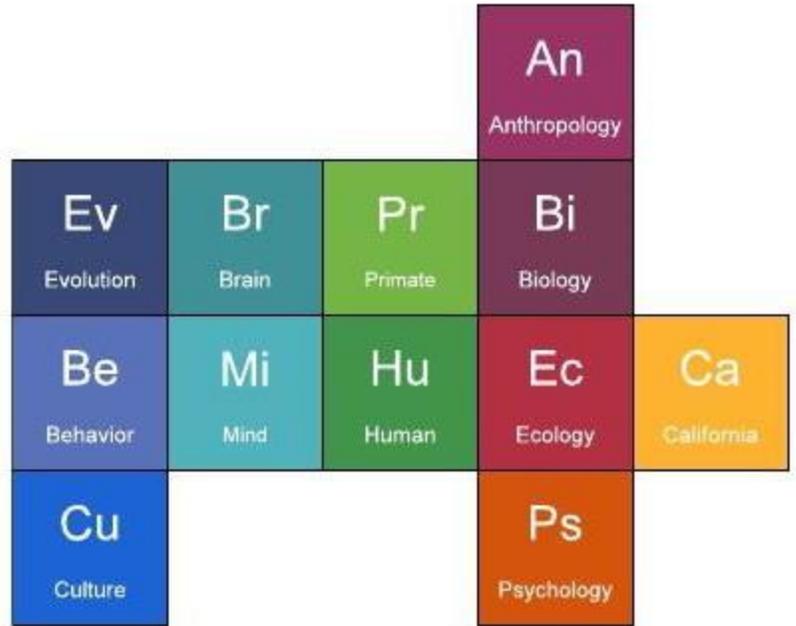


*13th Annual*  
**California Workshop**  
*on*  
**Evolutionary**  
**Social Science**  
*April 26-28, 2019*



- *Program at a Glance*
- *Organizational Team*
- *Conference Sponsors*

- *Registration*
- *Camping*
- *Abstracts*

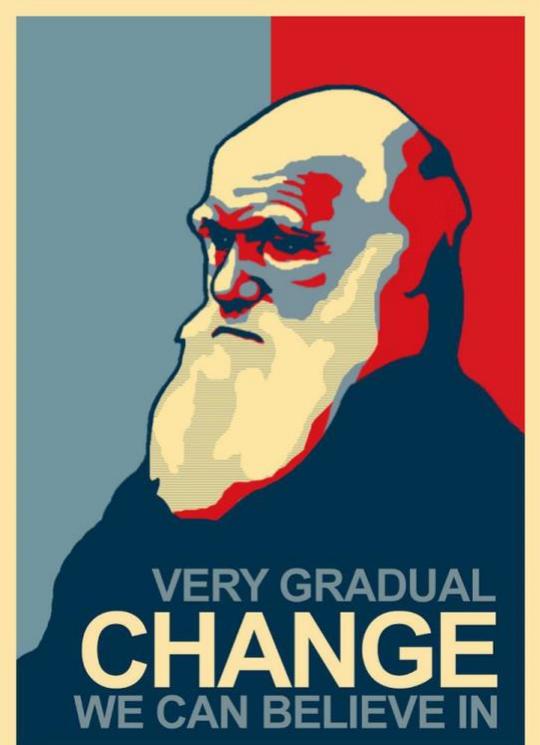


## Aims & Scope

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 2019 program includes talks by faculty, postdocs, and students from Arizona State U, CSU San Bernardino, Chapman University, UC Davis, UCLA, and the University of Idaho.



We welcome both the familiar and new faces to the 2019 meeting!

# PROGRAM AT A GLANCE

Friday, April 26, 2019

**Chino Hills Community Center**

**2-4pm** Campsite check-in at Chino Hills State Park, Rolling M Ranch Campground

**5-6pm** Meet, Greet, and Eat at Chino Hills Community Center

**6-7:30pm** Keynote, Joan Silk, ASU

*Derived universal norm psychology underlies cross-cultural variation in prosocial behavior*

**7:30-9pm** Social Hour

Saturday, April 27, 2019

**Chino Hills Community Center**

**8:30-9am** Breakfast

**9-9:30am** Lightning round

**9:30-9:45am** Coffee

**9:45-11am** Talks Session I:

9:45-10:05am Katemarie Boccone, UCD

*How do new religious ritual sites spread and persist?*

10:05-10:25am Michael Barlev, ASU

*Toward more "mindful" cultural phylogenetics: An experimental study of transmitted culture*

10:25-11:00am Cristina Moya, UCD

*Do humans reason about social group identities as if they were fixed?*

**11am-11:15pm** Break

**11:15am-12:45pm** Small Group Discussions

**12:45-2pm** Lunch

**2-3:20pm** Talks Session II:

2-2:20pm Nicole Naar, UCD

*Where you're from vs. who you know: Predicting the environmental impact of immigrant fisherfolk*

2:20-2:40pm Kotrina Kajokaite, UCLA

*You scratch my back and I'll scratch yours: grooming reciprocity in capuchin monkeys*

2:40-3pm Raziel Davison, UCSB

*Estimating post-reproductive fitness contributions*

3-3:20pm Cari Goetz, CSUSB

*Not just weird, STRANGELY WEIRD: Evolutionary mismatch in mating research*

**3:20-3:45pm** Break

**3:45-5pm** Talks Session III

3:45-4:05pm Minhua Yan, ASU

*Continuous norms shift constantly under external forces*

4:05-4:40pm Russel Jackson, University of Idaho

*Illusions, mortality, and Evolved Navigation Theory*

4:40-5pm Andrew Smith, UCLA

*Measuring mental state talk across languages*

**5-6pm** Break and Poster Session Set-up

**6-9pm** Dinner and Poster Session

Sunday, April 28, 2019

**Chino Hills SP Discovery Center**

**8:30-10am** Breakfast and Poster Redux

**10-11:15am** Talks Session IV

10-10:35am Erik Kimbrough, Chapman University

*Optimization and social learning in static and dynamic environments*

10:35-11:10am John Thrasher, Chapman University

*Two of a kind: Are norms of honor a species of morality?*

11:10-11:30am Adam Sparks, UCLA

*Elevation, an emotion for prosocial contagion, is regulated by expectations of the cooperativeness of others*

**11:30-11:45am** Break

**11:45-1pm** Steering meeting

## WORKSHOP ORGANIZERS

### *Local Host*

**Elizabeth Pillsworth**, CSUF

*Co-Lead Coordinators*

**Kotrina Kajokaite**, UCLA

**Frank Reyes**, CSUF

*Meals and Venue Planning*

**Aaron Goetz**, CSUF

**Cari Goetz**, CSUSB

**Aaron Lukaszewski**, CSUF

**Brigitta Nguyen**, CSUF

**John Patton**, CSUF

### *Campus Reps*

**Sarah Alami**, UCSB

**Michael Barlev**, ASU

**Cari Goetz**, CSUSB

**Nicole Naar**, UCD

**Angie Polito**, CSUF

**Stacey Rucas**, CalPoly

**Theodore Samore**, UCLA

**Eric Schniter**, Chapman

**Paul Smaldino**, UCM

**Matt Zefferman**, NPS

### Conference Funding

*Thank you for the generous support from our sponsors:*

- Human Behavior and Evolution Society (HBES.com)
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- CSUF Assoc. for Research in Evolutionary Anthropology (AREA)
  - CSUF H&SS InterClub Council
- Chapman University, Economic Science Institute
- UCLA, Center for Behavior, Evolution and Culture
  - Cal Poly, Department of Social Sciences
  - UCSB, Department of Anthropology
  - UCD, Institute of Social Science

## WORKSHOP SPONSORS

The 13th Annual C-WESS has been made possible by the generous contributions of the following organizations:

Human Behavior & Evolution Society

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Department of  
Anthropology



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Institute

# CONFERENCE LOCATION

## Location

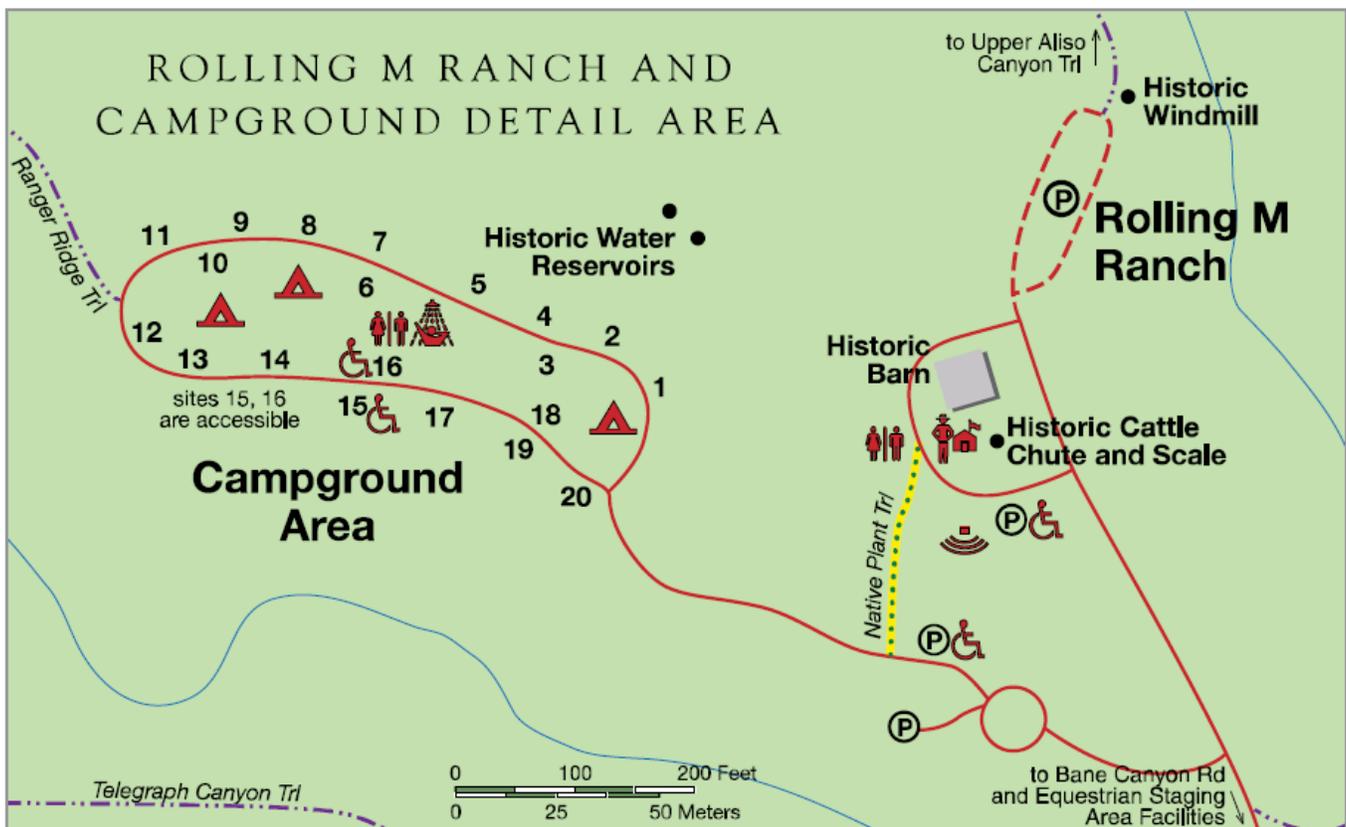
CWESS 2019 will be held in Chino Hills, CA, near this year's hosting institution, CSU Fullerton. All workshop events will take place in one of the following locations:

- Chino Hills Community Center ([Directions](#))
- Chino Hills State Park Discovery Center ([Directions](#))
- Chino Hills Rolling M Campground ([Directions](#))

## Camping

Camping will be provided free of charge for CWESS participants at the Rolling M Campground in the Chino Hills State Park. It is about a 10 minute drive from the Chino Hills Community Center to the entrance of the Park, and about 20 minutes through the park to the campground ([Directions from the campgrounds to the Community Center](#)). We have reserved 10 individual campsites (sites 5-14), each of which can accommodate two or three tents ([Map of the campgrounds](#)).

Note that each there are a maximum of **two cars** allowed per campsite. Street parking is available outside the park entrance



### **Hotels**

For those who do not wish to camp, below is a list of hotels near the conference sites. Please note that hotel charges cannot be reimbursed by CWESS.

*Hotels closest to the Community Center:*

- Ayres Hotel Chino Hills, 4785 Chino Hills Pkwy, Chino Hills, CA 91709
- Hampton Inn & Suites Chino Hills, 3150 Chino Ave, Chino Hills, CA, 91709
- Motel 6 Los Angeles-Pomona, 2470 S Garey Ave, Pomona, CA 91766

*Cheapest nearby:*

- Best Western Pine Tree Motel, 12018 Central Avenue, Chino, CA, 91710
- Motel 6 Chino, 12266 Central Avenue, Chino, CA, 91710
- Mountain Inn, 2289 South Mountain Avenue, Ontario, CA, 91762

For a detailed list of nearby accommodations, please click [here](#).

### **Transportation and Student Reimbursement**

We expect to be able to provide partial or full reimbursement of travel expenses for students who carpool to the meeting. Reimbursements will be provided to the drivers of cars based on mileage traveled. Preference will be given to those who come with full cars and provide transportation for other students. Carpooling also maximizes the reimbursements we can provide, since they will be divided among fewer individuals.

## Speaker Abstracts

Friday, April 26<sup>th</sup>, 2019

*Career Talk*

### **Derived universal norm psychology underlies cross-cultural variation in prosocial behavior**

*Joan Silk, ASU: 6:00PM–7:30PM*

Human prosociality differs from that of other animal species in several two important ways. First, we are able to orchestrate group-level cooperation with large numbers of unrelated individuals. Second, there is striking variation in the forms and extent of cooperative behavior across societies. These features suggest that cooperation is partly shaped by cultural norms and institutions which motivate prosocial behavior. Social norms are central to numerous theoretical models of human social evolution and development, and there is already some evidence that norms underlie societal variation in prosociality. I will talk about (a) the phylogenetic origins of human prosocial preferences, (b) the ontogenetic development of prosocial behavior, and (c) how cross-cultural variation in prosocial behavior arises.

Saturday, April 27<sup>th</sup>, 2019

### **How do new religious ritual sites spread and persist?**

*Katamarie Boccone, UCD: 9:45AM–10:05AM*

This study explores the transmission of beliefs about a new religious ritual site in the Peruvian altiplano. This study explores the cultural transmission mechanisms that allow such unverifiable supernatural beliefs to spread and persist in the region. I will use 3 years worth of survey data from visitors at the site to test various mechanisms of cultural change. First, I examine the extent to which the site is succeeding in attracting

people. I will analyze whether people perceive the site to be growing and from how long it takes to travel to the site. I will check these self-reports against the approximate crowd size based on photos. Second, I will test whether the site is succeeding economically by measuring whether the following responses are changing through time; the likelihood that people make offerings, whether they think an offering is necessary, and whether they buy gifts. Third, I will examine whether the strength of people's beliefs is changing by examining whether people were increasingly likely to recruit others, want others to spread the message, and to consider this site to be at least as holy as another more established ritual site in the region, Copacabana. Finally, I will qualitatively assess the extent to which people participate because others in their social networks have faith that the ritual site works, and compare it to indicators that they actually believe in the ritual site's efficacy. I will use interview data regarding self-report belief certainty, their belief in the founding myth of the site, their making offerings, and their knowing others who reported having their wishes granted at the site.

### **Toward more “mindful” cultural phylogenetics: An experimental study of transmitted culture**

*Michael Barlev, ASU: 10:05AM–10:25AM*

Phylogenetic methods from evolutionary biology are increasingly applied to the study of cultural change, such as to make inferences about the history of transmission of cultural phenomena. However, these methods are often applied “mindlessly” – without consideration of how evolved psychology scaffolds and constrains social transmission. The ecologies of transmitted representations are individual minds, and representations often transform very rapidly

within these ecologies, making questionable the validity of phylogenetic methods like ancestral state reconstruction. We introduce experimental methods to cultural phylogenetics. Here, we used experimentally constructed transmission chains of pictorial representations to demonstrate that phylogenetic methods repeatedly fail to correctly infer the ancestor representation from “surviving” representations. We show that this is because ancestral representations rapidly transform when they do not fall in a stable region of the mental landscape, as predicted by the theory of cultural attractors but not by cultural evolutionary theories. We further show that considering the selection pressures that shaped the human mind can generate predictions about which regions of the mental landscape might be stable. The transmission of cultural representations is scaffolded and constrained by our evolved, reliably developing mental landscape, and understanding this landscape is prerequisite for a complete science of cultural change.

### **Do humans reason about social group identities as if they were fixed?**

*Cristina Moya, UCD: 10:25AM–11:00AM*

In some societies people expect children will inherit social group identities from their birth parents, even in their absence. This belief in intergenerationally inherited and fixed identities is puzzling given the importance of socialization for membership in most cultural groups. We meta-analysed results from over 3000 decisions made by children and adults from different societies in switched-at-birth vignette studies. In these, participants must decide the group identity of a hypothetical child who is born to parents from one group, but raised by parents from a different group. We compare these to studies where people were asked about the species identities of animals in a similar scenario. We find that across development beliefs about species identity beliefs homogenize towards notions

of identity being stable, whereas social identity beliefs diversify and tend to move towards beliefs that identities are not fixed at birth. This diversity of beliefs is patterned, with groups marked by status differences being associated with more fixed notions about identity. Importantly, phenotypic differences are not particularly likely to trigger essentialist inferences in children or adults. These patterns suggest that the cognitive mechanisms used for reasoning about human cultural groups are qualitatively different than those used for reasoning about species.

### **Where you're from vs. who you know: Predicting the environmental impact of immigrant fisherfolk**

*Nicole Naar, UCD: 2:00PM–2:20PM*

Predictions from cooperation theory and empirical case studies suggest that heterogeneity warrants further scrutiny as a variable influencing common-pool resource management (CPRM). Parallel research on immigration, one source of heterogeneity, indicates that environmental impacts depend on immigrant attributes, social ties, and socio-ecological context. This study investigates one potential mechanism whereby heterogeneity might affect CPRM outcomes by focusing on the social networks of recent immigrants and long-term residents of a Mexican fishing community. Using survey and social network data from community households, we analyze how immigration and social ties influence ecologically salient dimensions of heterogeneity, including ecological knowledge, conservation attitudes, and fishing practices. Compared to coarse distinctions based on community of origin, social ties and socioeconomic variables are better predictors of variation in these dimensions, with likely consequences for CPRM and the environment.

## **You scratch my back and I'll scratch yours: grooming reciprocity in capuchin monkeys**

*Kotrina Kajokaite, UCLA: 2:20PM–2:40PM*

Primates are a particularly social taxon. Not surprisingly, the study of primate social relationships and social structure, spearheaded by R. Hinde and others in the 1970's, still dominates the primatological literature. In Hinde's analytical framework, rates of dyadic interactions are used to operationalize dyadic relationships. However, the link between the interaction and relationship is not always a direct one. Often the process that generates the observed exchanges of behaviors is composed not only of special dyadic relationships, but also the individual actor's general behavioral propensities. In this talk, I will present 17 years of grooming data of white-faced capuchin monkeys, collected in 11 social groups at Lomas Barbudal Biological reserve. I used Social Relations Model (Kenny 1994) to estimate the relative importance of individuals in their roles as givers of grooming, receivers of grooming, and unique dyadic rates of engaging in grooming as sources of variation in the number of observed grooming exchanges between individuals. The results suggest that capuchin monkeys vary greatly in how much each engages in grooming others. However, individual variation in being groomed is relatively low, which suggests that grooming is relatively evenly distributed across all partners. After accounting for individual propensities to engage in grooming, the dyadic reciprocity in grooming is very high.

## **Estimating post-reproductive fitness contributions**

*Raziel Davison, UCSB: 2:40PM–3:00PM*

Predictions from cooperation theory and empirical case studies suggest that heterogeneity warrants further scrutiny as a variable influencing common-pool resource management (CPRM). Parallel research on

immigration, one source of heterogeneity, indicates that environmental impacts depend on immigrant attributes, social ties, and socio-ecological context. This study investigates one potential mechanism whereby heterogeneity might affect CPRM outcomes by focusing on the social networks of recent immigrants and long-term residents of a Mexican fishing community. Using survey and social network data from community households, we analyze how immigration and social ties influence ecologically salient dimensions of heterogeneity, including ecological knowledge, conservation attitudes, and fishing practices. Compared to coarse distinctions based on community of origin, social ties and socioeconomic variables are better predictors of variation in these dimensions, with likely consequences for CPRM and the environment.

## **Not just weird, STRANGELY WEIRD: Evolutionary mismatch in mating research**

*Cari Goetz, CSUSB: 3:00PM–3:20PM*

Evolutionary scholars have become familiar with concept of WEIRD samples and populations, that is, those coming from Western, Educated, Industrialized, Rich, and Democratic societies. We propose that within mating research we often rely not only on WEIRD people, but on STRANGELY WEIRD people to generate knowledge about human mating cognition and behavior. In addition to the oft-cited WEIRD characteristics, the literature on human mating tends to rely on samples characterized by Social media, Temporary relationships, Relocatable individuals, Autonomous mate choice, Nulliparity, Group fluidity, Educational settings, Lots of options, and Young people. Each of these characteristics represents a substantial divergence from the ancestral conditions under which human mating psychology was shaped by natural selection. Populations were small, the available pool of potential

mates even smaller, the maintenance of social bonds across multiple domains was critical for survival, early pregnancy likely preceded, and was instrumental in, creating and maintaining pairbonds, mate choice was heavily influenced by third-party preferences, and twenty-year-olds were experienced parents. Our aim is not to identify all potential mismatch effects in mating research, nor to challenge or disqualify existing data. Rather, we identify the characteristics of modern environments that are most likely to specifically impact mating strategies, preferences, and decisions, and argue that these characteristics influence the conclusions we can draw from the current literature on human mating. In this talk, I will 1) quantify the degree to which mating literature from an evolutionary perspective relies on STRANGELY WEIRD samples; 2) compare the STRANGELY WEIRD aspects of existing study samples with what we know about ancestral environments 3) provide an empirical example that highlights the ways in which the unexamined characteristics of our typical research samples have influenced the theoretical framing of one area of the mating literature- women's mate preferences; and 4) make specific recommendations regarding both the interpretation of existing data and ways to strengthen future research by explicitly addressing the features of the mating environments in which evolutionary social scientists conduct their research.

### **Continuous Norms Shift Constantly under External Forces**

*Minhua Yan, ASU: 3:45PM–4:05PM*

Social norms are unwritten behavioral codes. They are critical for both individual daily life and human evolutionary history. Previous research focused on norms that have discrete categorical variants and concluded that social norms are self-maintaining| once established in a group-- they persist due to social

pressure for conformity, even when external forces (e.g, natural selection and migration) are driving the population toward a different norm. These norms shift rapidly through a tipping process only if the changed external conditions push the system past a critical threshold. However, empirically, there are norms like how much to tip your waiter that never stabilize but instead shift continuously. Here we present a model of continuous norm shift dynamics under external forces, specifically selection and migration. We prove that continuous norms have different properties than discrete norms. For norms that vary continuously, external conditions determine the equilibrium state of the population. The internal social pressure for conformity cannot maintain a norm as a stable state against natural selection and/or migration. Instead, the continuous norm shifts from generation to generation until reaching the new equilibrium determined by external forces alone. We also discuss what other social pressure can maintain group differences in the same natural environment, and how a researcher should determine whether a norm will behave like a continuous one or a discrete one when faced with shifting forces.

### **Illusions, mortality, and Evolved Navigation Theory**

*Russel Jackson, Uldaho: 4:05PM- 4:40PM*

The founding of experimental psychology included investigations of illusions, which remain one of the most well studied topics in the field. However, it was not until the recent advent of Evolved Navigation Theory (ENT) that we discovered the largest illusions in everyday vision. Whereas the magnitude of most distance illusions is less than 15%, ENT has led to the discovery of illusory distances that exceed 80%. Likewise, whereas most illusions occur only rarely and in response to contrived stimuli, ENT illusions occur ubiquitously throughout our everyday lives in response to common environmental

features. Even more important, these illusions are hidden predictors of a major source of selection in human populations worldwide. The power of ENT derives from the strength of evolution by natural selection as a guiding framework. This presentation will outline the predictive utility of ENT across several empirical data sets and identify its applications for an integrated evolutionary behavioral science.

### **Measuring mental state talk across languages**

*Andrew Smith, UCLA: 4:40PM–5:00PM*

Mindreading has been suggested to be a human universal. Given the strategic importance of mindreading in social interactions, there are reasons to suspect that natural selection has shaped this to be a reliably developing ability. However, even with substantial shared underlying competence, there may be variation in how theory of mind is actually deployed across individuals and cultures. One potential area of variation lies in how people talk about the mind: linguistic anthropologists have suggested that there is cultural variation in explicit talk about the mind, and developmental psychology research shows large differences in performance between verbal and non-verbal mindreading tasks. To assess variation in spontaneous talk about the mind across cultures, an elicited narration task was designed wherein Achuar speakers from Amazonian Ecuador and English speakers from the United States were asked to describe a set of video stimuli of human social interactions. These stimuli were designed to be minimally culture-laden, interpretable without audio, and of similar cross-cultural interest in virtue of their fitness-relevant content. Initial analyses of similarities and differences in talk about the mind across these languages are presented, focusing in particular on frequencies and types of mental state terms across different types of social interaction.

Sunday, April 28<sup>th</sup>, 2019

### **Optimization and social learning in static and dynamic environments**

*Erik Kimbrough, Chapman University  
10:00AM–10:35AM*

Optimization is at the core of economic theory. Economists typically approach optimization problems by assuming individual rationality is applied by atomistic and socially indifferent decision-makers to find solutions. However, recent evidence from across the social sciences suggests that optimization routines may be profitably studied as social and cultural phenomena. Organizations confront many such problems, and there is reason to believe that solutions (embodied in the everyday practices of firms, departments, etc) emerge and change in more-or-less Darwinian ways. Solutions to a complex optimization problem might be proposed by individuals and then subjected to competition, winnowing out the less effective solutions. A relatively successful solution might then be copied by (or taught to) others, spreading through the population. When the environment changes, firms may continue to apply tried-and-true routines, despite the possibility that an alternative routine would be more effective under the new conditions. With examples like these in mind, we apply the toolkit of cultural evolution to the study of optimization problems. We design experiments to study individual and social learning in a setting that embeds the Knapsack Problem in a production function widely studied by economists. We examine behavior in static and dynamic environments of varying complexity. We examine how well the rational model applies as we vary the complexity of the problem, and we explore if (and when) the ability to learn from others improves performance. Finally, we design treatments that introduce a subtle environmental change that completely alters

the optimal solution to the problem, and we ask how the ability to adapt to the changing environment compares across individual and social learning environments.

### **Two of a Kind: Are Norms of Honor a Species of Morality?**

*John Thrasher, Chapman University*  
10:35AM–11:10AM

Should the norms of honor cultures be classified as a variety of morality? In this paper, we address this question by considering various empirical bases on which norms can be taxonomically organized. This question is of interest both as an exercise in philosophy of social science, and for its potential implications in moral and social debates. Using recent data from anthropology and evolutionary game theory, we argue that the most productive classification emphasizes the strategic role that moral norms play in generating assurance and stabilizing cooperation. This account entails that honor norms are indeed a variety of moral norm, but also has the resources to explain why they typically occur in a relatively unified, phenotypically distinctive cluster.

### **Elevation, an emotion for prosocial contagion, is regulated by expectations of the cooperativeness of others**

*Adam Sparks, UCLA: 11:10AM–11:30AM*

A unique emotion, \*elevation\*, is thought to underlie prosocial contagion, the process whereby witnessing a prosocial act leads to acting prosocially. Individuals differ in their propensity to experience elevation, and thus their proneness to prosocial contagion. We introduce an adaptationist account wherein elevation marks immediate circumstances in which prosociality is advantageous, with this evaluation of circumstances hinging in part on prior expectations of others' prosociality. In 15 studies, we add to evidence that elevation can reliably be elicited and confirm

the novel prediction that an idealistic attitude, which indexes others' expected degree of prosociality, moderates the relationship between exposure to prosocial cues and experiencing elevation. Our findings potentially inform both basic theorizing in the affective sciences and translational efforts to engineer a more harmonious world.

### **Captivated by violence: Does fitness-relevant cues drive our interest in fights?**

*Cristian M. Acevedo, CSUF, Patrick K. Durkee, UTexas, Austin, Aaron T. Goetz, CSUF*

Humans are intrigued by contest competition (e.g., fighting, sports). For example, when a fist fight breaks out, it monopolizes our attention. Various explanations have been proposed but none rigorously tested. For example, it has been hypothesized that humans are captivated by violence due to morbid curiosity or because we want experience conflict vicariously. We hypothesized that (i) our evolved mechanisms for negotiating status hierarchies and acquiring fitness-relevant information drive our interest in fights, (ii) one's formidability will moderate their interest in fights, and (iii) fighting scenarios will be more interesting than other physical contests that do not involve fighting, due to the increase in fitness-relevant information in the former. To test these hypotheses, we systematically varied the amount of fitness-relevant information between several hypothetical fights. Two scenarios were presented together and participants were forced choose which they believe people would find more interesting. Results provide support for the first and third predictions.

### **Niche use and resulting movement syndromes of four frugivorous rainforest mammals.**

*Shauhin Alavi, UCD, Roland Kays, NCMNS & NCSU & STRI, Ben Hirsch, JCU, Damien Caillaud, UCD, Rafael Mares, UCD, Kevin McLean, UCD, Rasmus Worsøe Havmøller, UCD, & Margaret Crofoot, UCD & STRI*

The ecological niche concept is useful to show how sympatric species specialize in their use of shared resources, enabling the evolution of diverse animal guilds. Here we use animal tracking data to describe the fine-scale niche differences of four sympatric frugivorous mammals and compare their emergent movement behavior. We used step selection functions to quantify how forest features effect movement between fruiting trees. Species differences in habitat use reflected locomotory specialization, with surprising interindividual variation. We used first passage time, the timescale of autocorrelation, and the root mean squared speed to characterize movement behaviors as a) clusters of GPS points as likely feeding sites, b) meandering movement as area restricted searching, and c) directed movement. We used these classifications and other daily movement metrics to quantify behavioral strategies used to exploit resources. We identified three daily movement syndromes: one characteristic of spider monkeys (*Ateles geoffroyi*), one reflecting kinkajous (*Potos flavus*), and one representing capuchins (*Cebus capucinus*) and coatis (*Nasua narica*). There was interspecific overlap across all syndromes, however some daily metrics showed surprisingly little variation. Our results show how species differences in movement result in different habitat use and the emergence of daily movement syndromes as strategies for frugivory.

### **A Man Among Mussel: Stable Isotope Insights on a Man Buried within a Bed of Mussel Shells**

*Roshanne S. Bakhtiary, UC, Davis, Jennifer Chen, UC Davis, Jelmer Eerkens, UC Davis, Eric Bartelink, CSU Chico, and Alan Leventhal, SJSU*

A pre-contact burial dated to the Middle Period (~ 2,000 cal. B.P.) was uncovered during monitoring in Santa Clara County in 2017. This individual, identified as a young male, was interred within a substantial bed of *Mytilus* sp. shells. At the request of the Muwekma Ohlone, stable isotopic analysis was performed on the human bone and dentinal collagen to gain insight on the diet of this prehistoric individual. Stable isotopic analysis was also performed on the mussel shells to estimate his possible season of death. Taken together, we present here an isotopic view on the life and curious death of the man buried among mussel.

### **Individual predictors of participation in inter-group encounters among urban-dwelling rhesus macaques (*Macaca mulatta*)**

*Bidisha Chakraborty, UC Davis, Stefano S. K. Kaburu, University of Wolverhampton, Pascal Marty, UC Davis, Krishna Balasubramaniam, UC Davis, Brianne Beisner, UC Davis, Lalit Mohan, Himachal Pradesh Forest Department, Sandeep K. Rattan, Himachal Pradesh Forest Department, Brenda McCowan, UC Davis*

Intergroup encounters (IGE) are defined as aggressive interactions occurring between individuals of different groups and can range from peaceful displacements to intense aggression. Socioecological models have hypothesized that understanding the nature of IGEs can provide important information on social organization and social relationships among group-living animals. However, most of the work, to date, has largely focused on how group size affects IGEs, while the role played by individual differences during these encounters is still poorly known. In this study, we investigated some of the individual predictors of participation in IGE in urban rhesus macaques living in Northern India. We collected data from July 2016 to February

2018 on three rhesus macaque groups, recording a total of 226 IGEs. We found that males ( $\beta = 1.6$ ,  $p < 0.001$ ) and lower ranking macaques ( $\beta = -0.9$ ,  $p = 0.007$ ) participated more in IGE. Our findings confirm that inter-individual differences tend to influence participation in IGEs in urban rhesus macaques. In light of how participation in IGEs maybe linked to intragroup affiliation interactions, we speculate on the implications of our findings for our understanding of rhesus macaque social structure.

### **Life insurance risk rating as a valid measure of human mortality risk and life history strategy**

*Kristine J. Chua, UCLA, Aaron W. Lukaszewski, CSUF & Joseph H. Manson, UCLA*

Applications of Life History Theory (LHT) to explaining within-species variation posit that various physiological and psychological parameters are calibrated in response to an individual's mortality risk across development. Research, however, is limited by the lack of valid methods to measure mortality risk. To this end, we developed a measure for testing the predictive effects of mortality risk on physical and behavioral variation by extracting mortality risk information from individuals' life insurance policies. MTurk workers (N = 247) with life insurance policies provided self-report data on psychological and behavioral indicators. Results revealed that the mortality risk rating assigned to individuals by life insurers was correlated with psychological LH indicators: Individuals with low mortality risk differed by more than half a standard deviation from their high mortality risk counterparts on measures of present-vs. future orientation, mating orientations, and number of previous sexual partners. Our preliminary findings suggest that life insurance policy risk ratings may be a valid measure of mortality risk,

which can be used to predict human life history strategy.

### **Hormones and Social Support in Pregnancy**

*Citlally Contreras, CSUF & Elizabeth Pillsworth, CSUF*

Childbirth poses an exceptionally high mortality risk for human females compared to non-human primates. Assisted childbirth is, therefore, a ubiquitous feature of human populations, with assistance most often provided by other women. We propose that this feature likely played a critical role in shaping human sociality and may have been mediated by women's ability to detect and respond to the hormonal status of other women. To test this hypothesis, we designed a pilot study in which we measured oxytocin response in pregnant and non-pregnant women. Participants were nine pregnant women, six paired with a close female friend and three paired with a female stranger. Participants provided information about their reproductive histories, social networks, their relationships with their study partner, and their current pregnancy, and participated in a childbirth education class practicing birth positions and support. Oxytocin was measured in saliva, obtained from all participants at four times during the study. Results suggest that while both pregnant and non-pregnant women exhibited an increase in oxytocin levels, the greatest increase was observed among pregnant women participating with a close friend. These results will be discussed in conjunction with a survey study assessing the role of close female relationships on pregnancy, health, and experience.

### **Mate availability and disgust**

*Courtney L. Crosby, The University of Texas, Patrick K. Durkee, The University of Texas, & David M. Buss, The University of Texas*

Mate choice is affected by many variables. These variables are hypothesized to act as

inputs into mechanisms associated with disgust that compute the overall expected sexual value of a potential mate, resulting in the decision to approach or avoid the potential mate of interest (Lieberman & Patrick, 2018). One of these variables is the size of the mating pool. A relative dearth of available mates is hypothesized to increase the expected sexual value of potential mates and motivate approach behavior. Conversely, in a more densely populated mating pool, calculations of expected sexual value are hypothesized to be lower, motivating a more selective tendency to approach potential mates and activating higher levels of sexual disgust. This poster will propose a study to investigate whether and how perceptions of mate availability alter the expected sexual value and level of disgust experienced towards potential mates.

### **Collective decision-making, social organization, and group foraging in capuchin and spider monkeys**

*Grace H. Davis, UC Davis, & Margaret C. Crofoot, UC Davis*

How do groups of individuals decide where to go and what to do? Collective decisions like these are a primary challenge of group-living, and how social species reach consensus is central to understanding the evolution of complex societies like our own. How collective foraging decisions are reached, and which group members have influence, likely depends on groups' social organization. This study investigates how social organization impacts decision making in two group-foraging primates: white-faced capuchins (*Cebus capucinus*) and spider monkeys (*Ateles geoffroyi*) living on Barro Colorado Island, Panama. These primates differ in the cohesiveness of their groups and the strength of their dominance relationships. Using the focal tree method on group feedings on *Dipteryx oleifera* trees, we generate individual foraging gain curves for

group members that predict optimal leaving times from the focal tree using the marginal value theorem. Preliminary results indicate that in fixed-membership groups like capuchins, influential dominant individuals disproportionately influence decisions. In fission-fusion groups like spider monkeys, group members share decisions and mitigate decision costs by subgrouping when conflicts of interest arise. Together, this captures important elements of group decision-making in social primates: when to go and who decides.

### **Pride, Shame, and Personality: An initial investigation of differential mechanism parameterization as the root of personality**

*Patrick Durkee, UT Austin, Aaron Lukaszewski, CSUF, & David Buss, UT Austin*

The roots of personality are poorly understood. We propose that focusing on individual differences in the parameterization and functioning of the myriad evolved mechanisms contained within the mind may contribute to understanding personality. For example, the mind contains a suite of adaptations that are each designed to track a specific set of evolutionarily-relevant inputs (e.g., conspecific formidability, status, social devaluation); small individual variations in the functioning or parameterization of these systems should result in variability in patterns of thoughts, feelings, and behaviors, which ultimately manifest as differences in personality. Here, we present an initial examination into associations between personality and the functioning of the pride and shame systems. We had groups of 50 participants forecast either the pride or shame they would feel in response to various status-affecting personal characteristics. Using mixed models, we extracted individuals' intercepts and slopes, which respectively correspond to individuals'

average emotional response and how well their emotional response tracks prospective status changes. We then explored associations between these system parameters and the HEXACO personality dimensions, finding reliable and adaptively patterned associations. Discussion focuses on the utility of this approach for understanding personality and individual differences from an evolutionary perspective.

### **Cross-Cultural Intuitions on Ownership**

*Ulises Espinoza, UCLA, H. Clark Barrett, UCLA*

Property and ownership claims and the array of ways in which they are operationalized comprise a large portion of our cognitive attention; on a day to day basis there is a need to know what to buy, sell, share, borrow, dispute over, and render away. Contemporary work in psychology suggests that intuitions of ownership emerge early in childhood, independently of acculturation; first possession claims to items by children as early as 9 months old. There remains much that is not yet known about the psychology of ownership and how it plays out in particular cultural settings. To evaluate how different possible domains considered to be owned are morally assessed, Achar speakers from Amazonian Ecuador and English speakers from the United States were given a set of vignettes designed to assess how judgments of ownership depend on the type of resource in question, and how it came to be acquired. These vignettes were designed to be minimally culturally laden and of similar cross-cultural interest. Initial analyses of how domains of ownership are morally assessed are presented, emphasis being placed on rights, duties, and obligations of the (potential) owners across different domains of ownership

## Learning human institutional preferences

*Seth Frey, UCD*

What do qualities people look for in a society? How do we trade off fairness with efficiency with predictability, and so on? This is important not only as an entry-point into understanding human social values, but in the modeling of bottom-up influences on institution change processes. We represent institutional preferences as preferences between randomly drawn pairs of games that differ by one feature. We use this data to learn models of preferences, which we use to compute trajectories through game space, and to calculate attractors. We find that fair outcomes are over-represented in the preferred games relative to how much participants actually value fairness, a finding that falls apart quickly above two players.

## Health and disease in a declining population of blue monkeys (*Cercopithecus mitis*) in Kibale National Park, Uganda

*Hannah Frogge, UCSB, Jenna Utter, UCSB, Michelle Brown, UCSB, Reeve Jones, UNM*

Gastrointestinal parasites can impact host fitness by increasing morbidity and mortality. In particular, energy that would otherwise be diverted to growth, maintenance, or reproduction is instead allocated to mounting an immune response. We investigate the possible role of disease to explain the recurring population declines in blue monkeys (*Cercopithecus mitis*) in Kibale National Park, Uganda. We predicted that parasite burden would be 1) negatively correlated with energy state and balance, and 2) positively correlated with resting behavior. We used microscopy to measure parasite burden in 47 fecal samples from individuals in four blue monkey groups at two sites in the park. We found 1) a positive correlation between *Coccidia*, *Hyostrongylus*, *E. nana*, and *Trichuris trichiura* and energy balance, while eight other species have no

significant correlation and 2) monkeys did not respond to parasite load with an increase in energy conserving behaviors (e.g. resting). These results are surprising, but food availability, type of food (leaves or fruit), weather patterns, and human interaction could explain why we do not see a correlation between parasite load and energy conserving behaviors.

## The Fertility Hypothesis: Examining the Relationships between WHR, WSR, BMI, Estrogen Levels, and Attractiveness Ratings

*Amanda Golden Eddy, CSUF, Jessie J. Peissig, CSUF*

Evolutionary psychologists hypothesize specific body phenotypes (waist-to-hip ratio [WHR], waist-to-stature ratio [WSR], and body mass index [BMI]) are considered attractive because they reliably predict high fertility (Lassek & Gaulin, 2018); however these hypotheses are largely unsubstantiated (Jones, et al., 2018). In the current study, participants provided saliva samples, which were analyzed by SALIMETRICS. Participants' body characteristics (e.g. waist, hip, height, and weight) were measured to calculate their WHRs, WSRs, and BMIs. Photos of their bodies were presented to a separate set of participants, who were randomly assigned to rate the photos using either an attractiveness or health Likert-like scale from 1-7, with 1 being very unattractive and 7 being very attractive. Although non-significant, the correlation between attractiveness ratings and estradiol concentrations is moderate ( $r = .30, p > .292$ ), suggesting that with more participants this may reach significance. Moreover, WSR ( $r = -.59, p < .027$ ), and BMI ( $r = -.62, p < .019$ ) showed a significant negative correlation to attractiveness ratings, however WHR was not significantly correlated to attractiveness ratings ( $r = -.43,$

$p > .127$ ), suggesting that WSR and BMI may be better correlates of attractiveness than WHR.

### **Home is Where the Nature is: A Content Analysis of Neighborhoods and Apartment Names**

*Rebecka Hahnel, CSUF, Heidi Duarte, CSUF, Aaron Goetz, CSUF, & Kyle Peeters*

Natural selection has resulted in human's evolved preferences and motivations to seek out landscapes that provide lush resources while avoiding life-threatening risks (Orians & Heerwagen, 1992). These evolved landscape preferences (ELP) may influence several aspects of modern-day society—including how we manipulate our urban environment. In our preregistered study, we explored the relationship between ELPs and the naming conventions of new constructions—specifically apartment buildings. We hypothesized that there would be more nature words in apartment complex names than non-nature words. A content analysis of 2,981 names of apartment buildings was conducted utilizing a program that makes use of Google Maps to gather names from each of the 48 contiguous states of the United States of America. Each apartment building name was rated as having nature words (e.g., valley, river), nature-analogous words (e.g., summer, ranch), or non-nature words (e.g., 4th street). A random 10 percent were extracted and ranked by multiple raters. Results supported our hypothesis that there are statistically more nature words than non-nature words in the names of apartment buildings. Our ELPs may affect how developers name our homesteads—further exploiting our biophilia.

### **Shape up or get out: The threat of social exclusion as a behavior modification tool**

*Caleb R. Haynes, ASU, Jessica D. Ayers, ASU, & Steven L. Neuberg, ASU*

Group living provides numerous benefits but also potentially imposes costs, including free riding, cheating, and other behaviors that disrupt group functioning. How do groups manage individuals who impose such costs? Social psychological research has tended to focus on social exclusion—kicking these individuals out of our groups. But group members are valuable, so immediately removing them is costly. Research from an evolutionary perspective has tended to focus on punishment—especially removing economic resources from these individuals. But directly punishing or even scolding has costs as well—punished members may become defensive or reciprocate punishment. To manage the potential costs of actual punishment and exclusion, group members may more typically threaten exclusion in subtle, indirect ways in an attempt to induce behavior reform and thereby gain future benefits without assuming the initial costs of punishment or exclusion. Preliminary qualitative evidence ( $N=311$ ) suggests that a) people use indirect behaviors to threaten exclusion and b) people—especially women—are able to detect these threats of exclusion. Ongoing studies assess the behaviors people use to threaten disruptive group members, and the extent to which these behaviors are identified as such by targets and thereby lead them to alter their behaviors to become more prosocial.

### **Seasonal variation in group cohesion of Grauer's gorillas**

*Neetha Iyer, UCD, Urbain Ngobobo, DFGFI, Radar Nishuli, ICCN, Amy M. Porter, DFGFI, Oscar M. Byamungu, ICCN, Damien Caillaud, UCD*

A hallmark of primate social structure is the complexity and flexibility of behavioral strategies that mediate how individuals interact in the context of conspecifics. Several hypotheses have been proposed to

evaluate the ecological causes of this variability. These models evaluate the variation of group structure, size, and composition by addressing the dichotomy between intergroup competition/kin selection, intragroup competition/predation, and dispersal/foraging efficiency. We attempt to address the issue of intragroup variation in social behavior by examining a primate species that is traditionally considered to forage cohesively as a group. We hypothesized that the inter-individual distances during foraging vary seasonally in response to the spatial distribution and quality of food resources being exploited. We used focal and scan sampling methods to collect behavioral and dietary data on a habituated group of Grauer's gorillas (*Gorilla beringei graueri*) in Kahuzi-Biéga National Park over a period of 18 months between 2015-2016. Our analyses indicate that there is temporal variation in social network structure even in the relatively cohesive gorilla social unit. The variation in group cohesion is evaluated in relation to food availability. These results have important implications on the flexibility of social animals to respond to changes in habitat types patterns.

### **A bite of the past - Dental paleoproxies for diet and ecology in extant chimpanzees (*Pan troglodytes*) across Africa**

*Vicky M. Oelze, UCSC, Gaelle Bocksberger, MPI-EVA, Ellen-Schulz-Kornas, MPWC*

Stable isotopes ratios and microwear patterns measured in fossil teeth can inform on which habitat types were utilized by early hominins. However modern primate reference datasets from different habitat types are rare or absent and never include both isotope and microtexture data. We here present dental carbon ( $\delta^{13}\text{C}$ ) and oxygen ( $\delta^{18}\text{O}$ ) stable isotope alongside surface microtexture data from molars of 24 wild chimpanzees (*Pan troglodytes*) from

seven distinct ecosystems across their present day range. We pair these two dental datasets with extensive data on habitat structure and climate collected at each site. While chimpanzee enamel  $\delta^{13}\text{C}$  values and two selected microtexture parameters correlate with several environmental factors such as tree basal area, habitat heterogeneity, the number of dry months per year and habitat openness, the pattern in  $\delta^{18}\text{O}$  is less clear and probably biased due to the lack of precise  $\delta^{18}\text{O}$  data for meteoric precipitation data for Africa. Our results inform future paleodietary research on fossil great apes and African hominins and improve our understanding on how dental proxies relate to various environmental factors.

### **Functional coordination of personality strategies with physical strength and attractiveness: A meta-analytic investigation at the HEXACO facet-level**

*Nina N. Rodriguez, CSUF & Aaron W. Lukaszewski, CSUF*

Previous research has supported adaptationist hypotheses pertaining to the functional coordination of personality strategies with phenotypic determinants of bargaining power, such as physical strength and attractiveness. However, prior studies have focused primarily on explaining variation in broadband trait factors (e.g., Extraversion, Emotionality/Neuroticism) that encompass covariation among multiple narrow phenotypic dimensions, i.e. facets. In the current study, therefore, we employ three data sets with detailed anthropometric measures (total  $N = 749$ ) to meta-analyze correlations of physical strength and attractiveness with the HEXACO personality facets. In general, these analyses reveal specific, functionally meaningful, patterns of phenotypic coordination, and thereby elucidate which facets drive previously documented associations at the factor level.

For example, physical strength exhibited much stronger negative associations with the Fearfulness facet than it did with any of the other Emotionality facets. Similarly, strength and attractiveness were more strongly correlated with Social Boldness and Liveliness than with other Extraversion facets. These and other meta-analytic findings (i) bolster the hypothesis that specific personality strategies are calibrated to phenotypic components of bargaining power, and more generally (ii) suggest that granular measures of personality (such as facets) afford more functional insight than scores on broadband trait factors.

**“Break Up With Your Girlfriend, I’m Bored”:  
What predicts likeability of intersexually  
competitive songs?**

*Rucas, S.L., Cook, E.R., Andrews, A., Craig, A., Concejo, M., Dieckmann, M., Haaker, M., Horta-Castaneda, R., Isaacson, K., Kraatz, J., Papile, F. and Parry, B.*

Gad Saad said, “Nothing in pop culture makes sense except in the light of evolution.” Human behavior is shaped by evolutionary forces, and thus so is culture since it is produced and consumed by people. Ideas and cultural products are influenced by the local ecology as well as the personality and behavioral traits of those who make and consume them. In this study, we surveyed 151 women to see if their intrasexual competitiveness, sociosexual orientation and the safety and richness of their neighborhoods and home life would predict how much they liked a set of songs with overt intersexually competitive lyrical content. Results indicate that women with a stronger orientation toward short-term mating, who live in a poorer or more stressful neighborhood or who have more discord inside their homes, and those more inclined toward competitiveness with other women showed a higher likeability for songs with stronger intrasexually competitive content in their lyrics.

**Pregame to the Endgame: How evolutionary  
themes pervade over sixty years of chart-  
topping songs**

*Rucas, S.L., Cook, E.R., Parry, B., Papile, F., Kraatz, J., Isaacson, K., Horta-Castaneda, R., Haaker, M., Dieckmann, M., Concejo, M., Craig, A., and Andrews, A.*

Evolutionary theory predicts that culture reflects human behavior, which itself operates under the shaping forces of natural, sexual and intrasexual selection. In this way, cultural ideas, values, products and preferences should conform to predictions made by evolutionary ecological theory. Previous work discovered that popular songs deliver a potent cocktail of reproductive messages. This project investigates how reproductive content in the top 25 songs by year changes across time as a function of sex-ratios and the relative number of men to women singers starting in the year 1950 and ending in 2018. Results indicate that reproductive messages have increased over the last two decades with an average of 2.69 messages per song, and they are more common when single men are added to the mating pool relative to single women and as women’s relative income increases. Lust phase of love messages relative to madly in love messages are higher when there are more male singers than female singers in a given year. The average references to long-term mating, appearance enhancement or boasting, and self-empowerment significantly increase when women make up a higher proportion of singers. When men are added to the mating pool, songs are more likely to have content messages of physical aggression, domination, commitment fidelity, resource costly signals and references to genitals and other body parts. When extra women are added to the mating pool, songs have more messages about inappropriate mating ages, long-term courtship and are more likely to be instrumental with no lyrics. These data indicate that people produce and consume

songs that reflect evolved mating preferences and current mating market struggles.

### **Trust in Robots**

*Eric Schniter, Chapman & CSUF, Timothy Shields, Chapman, Daniel Sznycer, U of Montreal*

Human-robot trust-based interactions are increasingly common in the marketplace, workplace, on the road, and in the home. However, a looming concern is that people may not trust robots as they do humans and may react to them with different emotions. We investigate trust in robots that participants have been explained are programmed to act like humans (by drawing on data from human behavior). While trust in fellow humans has been studied well, little is known about how people will demonstrate trust in and react emotionally to interactions with explainable automated agents. Here we compare trust-based investment and emotions from across three nearly identical economic games: human-human trust games, human-robot trust games, and human-robot trust games where robot decision also affects another human. Study participants invested similarly in humans and robots, a finding unexpected by other-regarding social preference models which predict more trust-based investment in fellow humans than in robots. By contrast, social emotions (but not non-social emotions) differed across human and robot trust games in lawful fashion. Emotional reactions depended on how one's trust game decision interacted with the partnered agent's decision, and whether another person was affected economically and emotionally.

### **Morality and the Modular Mind**

*Leon Schwab, CSUF, Aaron Lukaszewski, CSUF, Daniel Sznycer, Uni. Of Montreal*

The underlying cognitive mechanisms that regulate how people formulate moralistic judgements of others' behaviors and traits are poorly understood. This study tests the novel prediction, based on a hypothesized function of self-interested propaganda, that the extent to which a given trait is perceived as virtuous is positively influenced by one's own standing on that trait. Data were gathered from 237 participants who completed an online survey. Participants rated the same list of traits for (i) their self-perceived standing on those traits, and (ii) their judgment of those traits as being virtuous. Some notable correlations between self-perceived trait possession and virtue ratings of those traits are Patriotism ( $r = 0.56, p < .01$ ), Religiosity ( $r = 0.56, p < .01$ ), Attractiveness ( $r = 0.5, p < .01$ ), and Strength ( $r = 0.49, p < .01$ ). Although preliminary, these initial findings suggest that our expressed virtue judgments of specific traits may function, in part, as self-interested propaganda, by influencing the social value assigned by local others to the traits we happen to possess.

### **Using Experimental Archaeology to Understand Manufacturing Strategies, Efficiency, and Lithic Use Wear Associated with Tule Canoe Production**

*Kevin N. Smith, UC Davis, Martijn Kuypers, CSUS, Bryce R. Beasley, UC Davis, Caleb K. Chen, UC Davis, & Nicolas Zwyns, UC Davis*

Tule (*Schoenoplectus acutus*) was used throughout California and the Great Basin for a number of purposes. Tules bear edible rhizomes and seeds, as well as main stalks that were woven into sleeping mats, roof-thatching, bags, baskets, waterfowl decoys, and even watercraft. Tule boats ranged from single-person boats to vessels capable of moving 25 people with trade goods according to some accounts. This poster outlines the replication of a tule canoe using all stone tools for the first time in over a

century. Special attention was given to harvesting times, cordage production, final assembly, and lithic use-wear patterns.

### **Evaluation of fecal parasite analysis methods and implications of long-term sample storage**

*Jenna Utter, UCSB, Hannah Frogge, UCSB, Dr. Michelle Brown, UCSB, & Reeve Jones, CSULB*

Methods of fecal parasite analysis are highly variable for wild non-human primate populations, both in terms of reagents used and the analytical procedures employed. In addition, it is unclear how long-term storage might affect these analytical findings.

Parasite burden can be genetically or microscopically analyzed with variation in results based on method selected. Direct smear can effectively yield presence of helminths and protozoa, while flotation separates helminth eggs and protozoan cysts from debris. Sedimentation discerns trematode species from helminths and protozoa. When used in confluence, all three commonly used microscopic methods can provide a comprehensive profile of overall parasite load. We investigated the effects of analytical method and storage time in formalin on the prevalence and detection rates of parasite species in blue monkey (*Cercopithecus mitis*) fecal samples. We analyzed samples using direct smear and sedimentation at two time points, three years apart. We found that 1) analyzing samples with both methods yielded a slightly higher parasite species richness and overall parasite burden and 2) long-term sample storage in formalin did not affect parasite load between time points of analysis. Based on these findings, we suggest a standardized approach for analysis and long-term storage of primate fecal samples.