

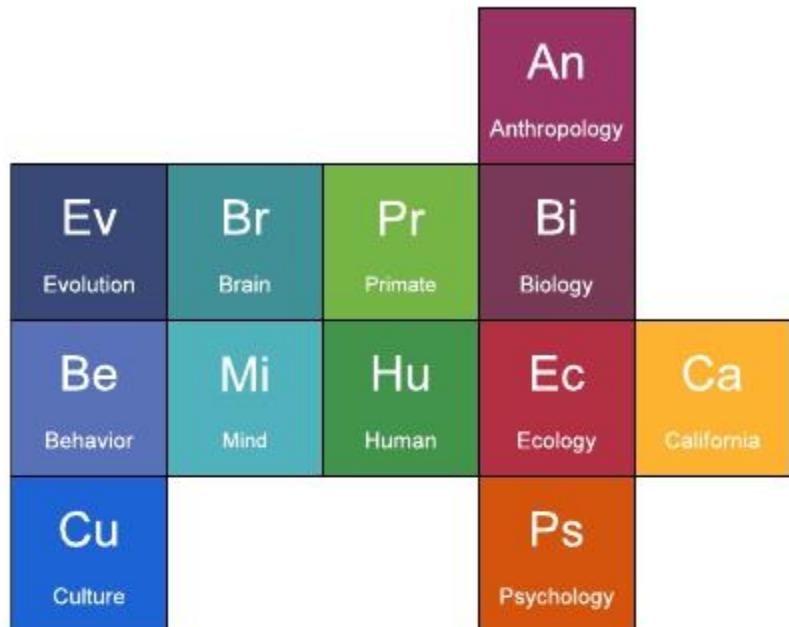
12th Annual

California Workshop

on

Evolutionary Social Science

May 4th-6th, 2018



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

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



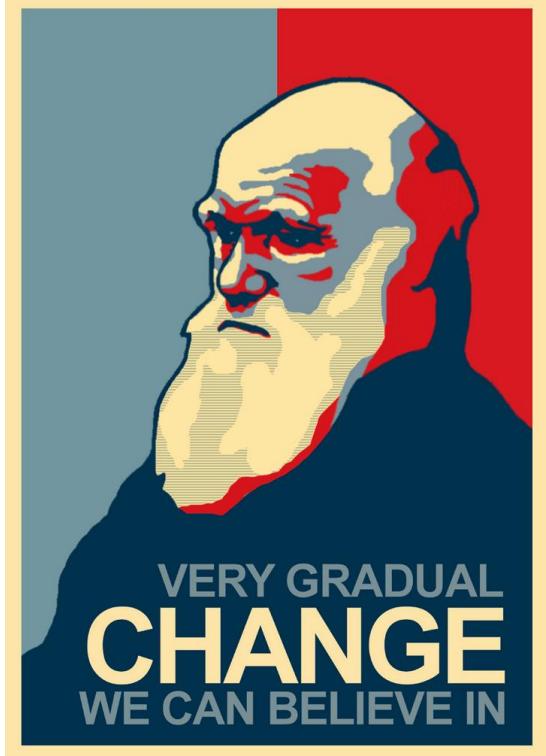
Aims & Scope

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 program this year includes faculty, postdocs, and graduate students from Cal Poly, Chapman, CSUF, CSUN, LSHTM, UCM, LMU, CSU Chico, UCD, UCLA, UCSB, and Stanford.

We welcome both the familiar and new faces to the 2018 meeting!



REGISTRATION AND INFORMATION

1) **Complete Registration here (includes camping reservation):**

<https://goo.gl/forms/kNUoPEbfqxvTQBkT2>

2) **Submit your flash slide!**

Submit* a PowerPoint slide with a photo of yourself, affiliation, and several key words describing your research interests for the flash introduction session to this dropbox folder: <https://www.dropbox.com/request/3dzs9MZBbxcqUHRRKrAW>

For example:



Jondalar Neanderman
Shanidar University
Paleoanthropology, archaeology, speciation

**Returning attendees:* if you submitted a flash last year we will use these unless otherwise notified or updated.

3) **Register to support our workshop.** There are no passengers on this

ship, everyone is crew. Please sign up to help out for a shift or two:

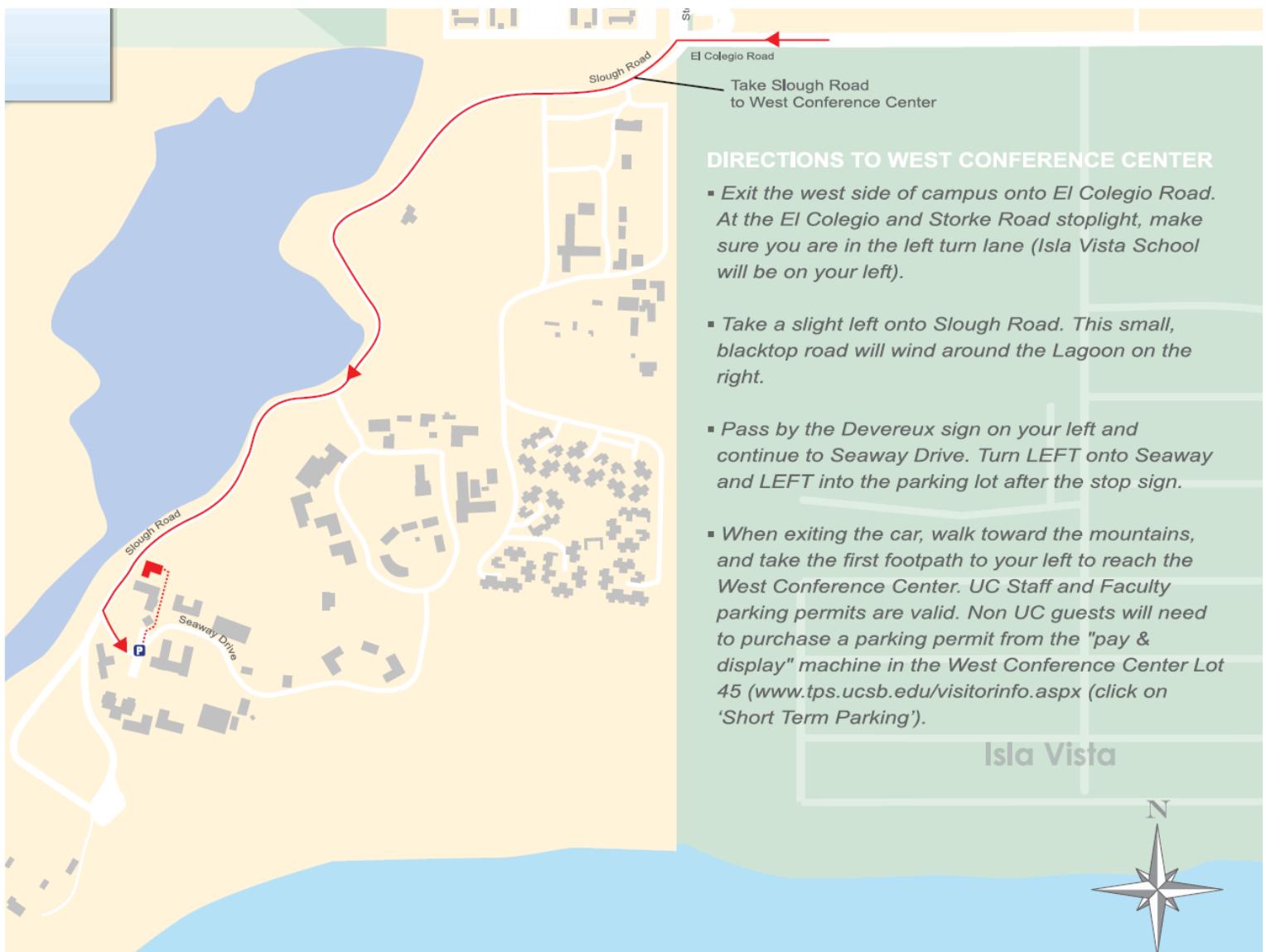
<https://goo.gl/forms/kNUoPEbfqxvTQBkT2>

CONFERENCE LOCATION

All events will be at the **UCSB West Campus Conference Center**. Note, parking permits are required. We will have a number to distribute at the conference, so check with an organizer before purchasing one.

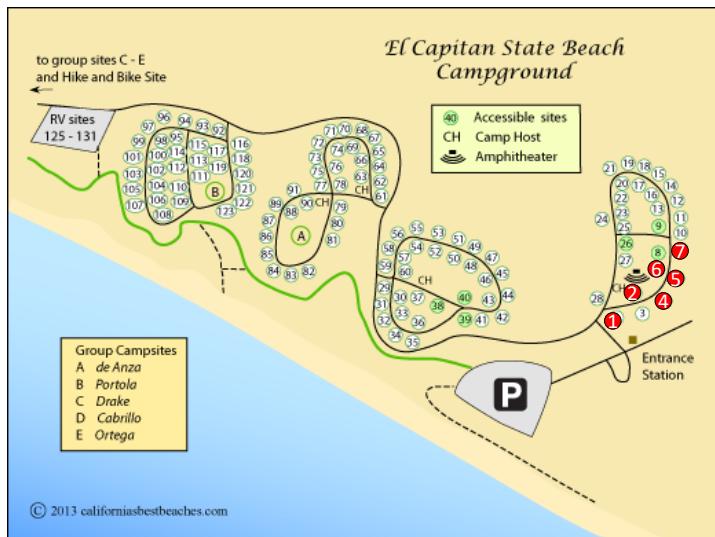
Directions from US 101:

1. Follow US-101 S to Storke Rd in Goleta. Take exit 108 for Glen Annie Rd/Storke Rd.
2. Turn South (right if coming from the North on 101, Left if coming from the South).
3. Follow Storke Rd for 1.2 miles South.
4. Continue straight onto Slough Rd
5. Pass the Devereaux sign on your left and continue to Seaway Drive. Turn LEFT onto Seaway and LEFT into the parking lot after the stop sign.



ACCOMODATIONS & DIRECTIONS

CAMPING:



This year we will be camping at **El Capitan State Beach**, (2 El Capitan State Beach Rd, Goleta, CA 93117: http://www.parks.ca.gov/?page_id=601). Camping is FREE.

El Capitan State Beach is about a 20 minute drive from the conference site. We have reserved six adjacent campsites at **sites 1-2 and 4-7**. (We do not have site 3, so please be respectful of whoever has that site.) Each campsite is limited to 8 people (48 people total) and three vehicles (18 total).

If you wish to camp (again, FREE!), please let us know on the workshop registration website:
<https://goo.gl/forms/kNUoPEbfqxvTQBkT2>

Directions: Take Highway 101 North from Santa Barbara. Heading either North or South on 101, El Capitan State Beach is just off the highway at exit 117.

HOTELS:

Since individual may have different preferences, we have not reserved a specific hotel for the conference. However, here are some recommendations for those who do not wish to camp:

Closest to the conference site:

Courtyard by Marriott Santa Barbara Goleta, 401 Storke Rd, Goleta, CA 93117
Hilton Garden Inn Santa Barbara/Goleta, 6878 Hollister Ave, Goleta, CA 93117

Cheapest nearby are:

Super 8 Santa Barbara/Goleta, 6021 Hollister Ave, Goleta, CA 93117
Motel 6 Santa Barbara - Goleta, 5897 Calle Real, Goleta, CA 93117
Best Western Plus South Coast Inn, 5620 Calle Real, Goleta, CA 93117

CONFERENCE SPONSORS

The 12th Annual C-WESS has been made possible by the generous contributions of the following organizations:



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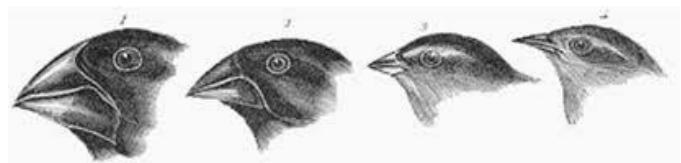
Friday, May 4th, 2018*Public Lecture/Career Talk***Archaeological and Ethnographic Applications of the Ideal Free and Ideal Despotic Distributions, or, the Anthropological Career of an HBE Model***Bruce Winterhalder, UCD / UO, 4:30PM- 6:00PM*

Having documented my earlier life as an anthropologist and hunter-gatherer specialist in autobiographical form at the request of the editors of the journal *Before Farming* (now continued as, *Hunter Gatherer Research*)¹, I shift slightly in this career talk to consider the recent career in anthropology and archaeology of a particular model, the Ideal Free Distribution (IFD). After briefly describing the IFD and its assumptions and predictions, I consider five applications: (1) prehistoric migratory settlement of the Pacific; (2) Holocene occupation of the Northern Channel islands; (3) ethno-ecological studies of pastoralist use of the Logone Floodplain in Cameroon; (4) habitat selection by the Arctic Small Tool Tradition of Alaska; and, (5) political growth and centralization of the Maya polity of Uxbenká (Belize). I argue that this ten-year span of research, roughly 2008 to the present, shows increasingly sophisticated and wide-ranging use of the IFD, a pattern common to use by anthropologists of behavioral ecology models since the 1970s. And, consistent with the theme of my *Before Farming* article, I claim that we are just beginning to tap the promise of evolutionary social science.

Saturday, May 5th, 2018**Life history trade-offs in reproduction and cancer***Amy Boddy, UCSB: 9:45AM-10:20AM*

Life history theory is a powerful approach to study human health and disease. However, there has been little work in applications of life history theory in cancer biology. Here I will discuss how cancer is fundamentally characterized by life history trade-offs, as cancer defense mechanisms are a major component of somatic maintenance. Using a newly curated comparative

oncology dataset across a wide range of mammals, birds and reptiles, we show a negative relationship with cancer rates and body mass or lifespan. Additionally, these organismal life history traits reflect the cellular response to DNA damage assays, providing insights into potential mechanisms of cancer defense. Understanding these trade-offs in the context of organismal evolution may help explain variability we see in cancer susceptibility across human populations. Additionally, our dataset demonstrates mammals get higher rates of cancer than other vertebrates. I will discuss the constraints of internal gestation, the process of placentation and microchimerism during pregnancy, and how these reproductive processes may lead to a trade-off with cancer susceptibility.



Finches From the Galapagos Archipelago

Does parent-offspring conflict drive early marriage? A test of predictions in north-western Tanzania*Susan Schaffnit, UCSB, & David Lawson, UCSB: 10:20AM-10:40AM*

Marriage before age 18 years is common for women throughout low-income countries despite purported negative consequences for wellbeing. In areas where women's parents customarily receive bride wealth and resources are scarce, conflict between parents and daughters may arise in the timing of daughters' marriages: parents may wish their daughters to marry earlier than she would like. If this is the case, we expect that earlier marriage correlate to 1) having more older brothers, 2) higher probability of receiving bride wealth, 3) receiving higher value bride wealth, and 4) lower probability of having chosen their partner. We test these hypotheses using quantitative and qualitative data collected in 2017 in two rural communities in north-western Tanzania where early marriage is common and bride wealth is custom. We find mixed evidence of parent-offspring over timing of marriage: women with

more older siblings – brother or sisters – marry earlier than other women; bride price is not more common in earlier marriages, though the value is higher; and women usually choose their own partners regardless of age at marriage. Despite the potential for parental-offspring conflict over marital timing, we conclude that alternative factors may explain the high prevalence in early marriage in this area of Tanzania.

The Evolution of Covert Signaling

Paul Smaldino, UCM, Tom Flomson, unaffiliated, & Richard McElreath, MPI-EVA: 10:40AM- 11:00AM

Human sociality depends upon the benefits of mutual aid and extensive communication. However, diverse norms and preferences complicate mutual aid, and ambiguity in meaning hinders communication. Here we demonstrate that these two problems can work together to enhance cooperation through the strategic use of deliberately ambiguous signals: covert signaling. Covert signaling is the transmission of information that is accurately received by its intended audience but obscured when perceived by others. Such signals may allow coordination and enhanced cooperation while also avoiding the alienation or hostile reactions of individuals with different preferences. Although the empirical literature has identified potential mechanisms of covert signaling, such as encryption in humor, there is to date no formal theory of its dynamics. We introduce a novel mathematical model to assess when a covert signaling strategy will evolve, as well as how receiver attitudes coevolve with covert signals. Covert signaling plausibly serves an important function in facilitating within-group cooperative assortment by allowing individuals to pair up with similar group members when possible and to get along with dissimilar ones when necessary. This mechanism has broad implications for theories of signaling and cooperation, humor, social identity, political psychology, and the evolution of human cultural complexity.



Decelerating, Correlated, and Skewed: Understanding How the Biophysical Environment Has Shaped Human Preferences

James Holland Jones, Stanford: 11:15AM- 11:50AM

When the rules for rational decision-making were formalized, the fact that human decision-makers are biological entities, subject to natural selection, was ignored. I show how the all-important need to avoid extinction in a world that is at best incompletely known has profound implications for preferences, utility, and rationality. By ignoring the condition of existential uncertainty, the theory of rational choice has developed distorted expectations of how an organism working in its own best interest should behave. When viewed in the light of extinction aversion, it appears that particular regularities of the biophysical environment have had a disproportionate impact in shaping human decision-making faculties. I highlight three such regularities: the biophysical environment is decelerating, correlated, and skewed. Payoffs from the natural world show diminishing marginal benefits, time series of key environmental variables are strongly autocorrelated, and distributions of hazards, payoffs and waiting times are strongly skewed. From the perspective of an extinction-averse decision-maker, this means that big downsides are more bad than big upsides are good, runs of bad luck are likely, and the magnitude of downsides can be distressingly large. Understanding how these features of the biophysical environment affected the evolution of human decision-making faculties helps us to make sense of the seeming irrationality of our species and provides opportunities for shaping better decisions.

An Acorn in the Hand is Worth Two in the Granary: The Effect of Future-Discounting on Food Storage Preferences in Prehistoric California

Carly Whelan, CSU Chico: 11:50AM- 12:10PM

Though they have proven useful for examining many aspects of hunter-gatherer subsistence behavior, foraging models are typically structured to examine short term foraging returns. It is difficult to evaluate food storage decisions with such models, because storage

delays the consumption of resources until long after they are acquired. Future-discounting is a useful concept for explaining behavior in situations with delayed returns, such as prey conservation by hunters, the origins of animal husbandry, and the adoption of agriculture. Storage presents a similar situation, as delayed consumption subjects stored food to loss from decay and pests, decreasing its future value. I present a modified form of the prey choice model with a discount rate and use it to rank species of acorns that were consumed in prehistoric California. The results indicate that long-lasting acorn species should be preferred over those with high post-encounter return rates, particularly in inter-annual storage economies. This finding is supported by ethnographically documented acorn preferences. The model results also have implications for agricultural economies, as they suggest that decay rate should be an important factor influencing selection of resources for cultivation and storage, particularly when foods must be stored for more than one annual cycle.

How the structure of multiplex networks influences patterns of cooperation

Curtis Atkisson, UCD, & Paul Smaldino, UCM: 2:00PM-2:35PM

Multiplex networks are N -dimensional networks in which connections between nodes are defined by N sets of edges—each set defines domain-specific connections. Such structures are ubiquitous in social creatures, but most network-based social science focuses on only one domain (layer) at a time. Recent modeling and empirical work have shown that incorporating interactions between the layers of a multiplex often alters predictions. Previous modeling of the evolution of cooperation on multiplex networks has focused exclusively on random networks. Such networks, while useful for theory development, are unrealistic for socially complex ones like primates. We introduce a somewhat more realistic structure by forcing some domains to be identical in their sets of edges. Our modeling results show that incorporating structure into the formation of multiplex networks facilitates the persistence of cooperation across domains. Data to test these results

were gathered in southwestern Guyana amongst the Makushi, a group rapidly transitioning to a cash economy. Preliminary analysis of these data indicate support for our modeling results. Both the model and the empirical data will be presented, as well as a discussion of multiplex-specific network generating processes. These results illustrate the importance of including structured multiplex networks in both models and empirical analyses.

Experimental and survey measures of fishing behavior, with implications for external validity

Nicole Naar, UCD: 2:35PM- 2:55PM

Given the urgency of collective action challenges and the apparent efficiency of experimental games, it is tempting for researchers to make inferences about behavior and decision-making based on results from experimental games. But does game play reflect behavior in everyday life and in everyday contexts? Here we present the results from a framed multi-phase common-pool resource game played with fishermen from a coastal community in Baja California Sur. Game administration followed two years of interviews, participant observation, and household surveys, providing an in-depth understanding of the broader social-ecological and policy contexts, and allowing for a comparison of observed behavior, self-reported behavior, and experimental game behavior for the same individuals. Furthermore, the observations and survey measures of real-life behavior are strongly linked to the behaviors observed in the experimental game. We found little evidence for associations between closely related game and survey variables for specific fishing behaviors, but the results suggest that game behavior is associated with some more general prosocial behaviors and attitudes, specifically cooperation with other fishermen and conservation values. Based on these results, we question the reliability of using experimental games to make inferences about behavior and decision-making, especially if the goal is to make policy recommendations.

Evolutionary retrospectives on the human life history trajectory: lessons from small-scale societies and chimpanzees

Raziel Davison, UCSB, & Michael Gurven, UCSB: 2:55PM-3:15PM

Evolution of anatomy leaves intermediate fossil forms, but how human life history evolved from an ancestral chimpanzee-like life history remains subject to debate. We characterize the human-chimpanzee life history envelope by comparing the fitness effects of fertility and mortality differences among ten small-scale subsistence societies and seven chimpanzee populations. Most wild chimpanzees are declining due to high mortality; some hunter-gatherers hover near stationarity with longevity balancing low fertility, while other foragers with high fertility are growing rapidly. We find fertility effects an order of magnitude higher than the potential predicted by prospective elasticities, and that fitness contributions of older individuals often exceed their low reproductive values. We also test the buffering hypothesis, which predicts negative correlations between vital rate elasticities and variability due to balancing selection. Although fertility appears buffered, positive correlations between survival elasticities and variability suggest that natural selection may have canalized human mortality more than chimpanzees' and adult mortality than in childhood, where the force of selection is the strongest. While longevity increases the premium on child survival, fertility-recruitment trade-offs may constrain balancing selection on child survival in both humans and chimpanzees; the human evolutionary trajectory is thus driven largely by reductions in adult mortality.

Unpacking the Bateman Gradient

Monique Borgerhoff Mulder (UCD) & Cody C. Ross (MPI-EVA): 3:45PM- 4:20PM

Despite growing recognition of the role of female choice and conflict in contributing to mating system variability, little comparative empirical data are available with which to prompt new conceptual and theoretical developments. In this talk I will first summarize the results of a large comparative study of reproductive skew

across both human and nonhuman mammals (97 and 76 populations respectively), demonstrating that variance in female reproductive success plays a substantial role in driving sex differences in reproductive inequality. Then, drawing on one of these populations – specifically the longitudinal records of marriage from a Central African natural fertility population – I will show that women but not men benefit reproductively from increasing their number of distinct marital partners, holding constant the effective time-frame over which they have been married. I will discuss these findings in terms of the Bateman Gradient, the need to unpack the distinct, sex-specific pathways through which reproductive success can be optimized, and more generally the study of sexual selection across human populations.

An evolutionary theory of PTSD and moral injury: Evidence from the Turkana

Matthew R Zefferman, The Naval Postgraduate School, & Sarah Mathew, ASU: 4:20PM-4:55PM

Are combat stress symptoms genetically-evolved universal responses to traumatic experiences or socially-constructed and unique to western societies? We attempt to answer that question with a study of 213 Turkana pastoral warriors. We find that the Turkana have similar levels of some PTSD symptoms as American combat veterans, but lower levels of others. We argue that this difference is due to institutions that limit "moral injury" in the Turkana. Moral injury is an emerging construct in clinical psychology where individuals suffer from violations of deeply held moral beliefs. We argue that moral injury results from norm psychology that evolved to avoid the harm of social sanctions. We show that sanctioning institutions in the Turkana likely limit moral injury in combat.

Sunday, May 6th, 2018

Pathways to Cognitive Design

Cristina Moya, UCD, Annie Wertz, MPI for Human Development: 9:00AM-9:35AM

Genetic and cultural evolution can contribute to the design of cognitive mechanisms. Despite a shared recognition that both processes are tightly linked, researchers in the evolutionary social sciences tend to specialize in understanding one at the expense of the other. Furthermore, the empirical enterprise of understanding design origins is difficult. We aim to provide concrete illustrations of how to develop broader sets of hypothesis about design origins, and how different kinds of evidence can address these. We use examples from our own work on plant and symbolic group boundary cognition to provide a framework for considering the contributions of both processes to the design of cognitive systems. We hope this recognition of different pathways to design will broaden the hypothesis space in the evolutionary social sciences and encourage methodological pluralism in the investigation of the mind.

Evolution of Conditional and Unconditional Commitment

Tadej Quillien, UCSB : 9:35AM- 9:55AM

Psychologists and evolutionary theorists have long recognized the strategic importance of showing commitment to one's partner in social relationships. However, formal evolutionary models have mostly highlighted the importance of commitment signals in asymmetric situations where one party can exploit the other (e.g. male desertion after mating). By contrast, here I show that even in simple symmetric coordination games, uncertainty about the partner's incentives can easily disrupt cooperative equilibria. This creates a strong selection pressure for agents to send costly signals of commitment to their partner. Using evolutionary game theory and agent-based simulations, I find that costly signaling is stable across a wide range of parameter space, outcompetes cheap talk, and can

invade populations of non-signaling agents. Furthermore, evolution can design two qualitatively different kinds of commitment strategies. Agents adopting a strategy of conditional commitment signal their commitment, and then invest in a relationship only if their partner also signaled. Agents adopting a strategy of unconditional commitment truthfully signal that they will invest in a relationship even in the absence of a signal from their partner. These results suggest that commitment signaling is a multi-faceted phenomenon that has played a strong role in the evolution of social cognition.

Contagious Scratching in Chimpanzees (*Pan troglodytes*)

Brittany Florkiewicz, UCLA, & Erica Cartmill, UCLA: 9:55AM-10:15AM

Contagion is defined as a strong impulse to perform a behavior after witnessing another performing that behavior. Contagious behavior, which includes smiling, laughing, yawning, and scratching, is a common phenomenon in humans. Over the past decade, researchers have suggested that contagious behavior may play an important role in the evolution of important cognitive abilities such as empathy (Provine 2005) and ectoparasite detection (Kupfer and Fessler in press). The goal of this study is to add to the literature by examining whether contagious scratching is present in chimpanzees (*Pan troglodytes*) and the potential explanations for this behavior. Data collection took place in 2017 at the Los Angeles Zoo located in Los Angeles, CA. 30-minute focal follows were performed with 14 individuals ranging in ages 2 to 50 years old. During focal follows, any scratching behavior that was initiated 10 meters or less away from the focal individual was documented. Information such as individual ID, attention, distance, and scratching behavior from initiator was documented for each potential observer. We then compared initiating baseline rates of scratching to rates of scratching that follow after an observer witnesses a scratch using a Poisson regression. We found that the probability of scratching significantly increased in the 5 seconds following another's scratch. The probability of scratching

further increased when chimpanzees were looking at or were close to the initiating scratcher. We conclude that chimpanzees (like humans) display contagion for scratching and that this behavior is influenced by both proximity and visual attention. These findings are consistent with a parasite avoidance explanation. Further study is needed to determine whether social relationships influence the rate of contagious scratching, which would lend support to an empathy-based account.

Kinship, Fractionalization and Corruption

Erik O. Kimbrough, Chapman, Mahsa Akbari, SFU, & Duman Bahrami-Rad, SFU: 10:30AM-10:50AM

By shaping patterns of relatedness and interaction, marriage practices influence the relative returns to norms of nepotism/favoritism versus norms of impartial cooperation. In-marriage (e.g. consanguineous marriage) yields a relatively closed society of related individuals and thereby encourages favoritism and corruption. Out-marriage creates a relatively open society with increased interaction between non-relatives and strangers, thereby encouraging impartiality. We report a robust association between in-marriage practices and corruption across countries and across Italian provinces. A stylized corruption experiment comparing subjects from two countries with divergent marriage patterns provides complementary evidence that the degree of impartiality varies with marriage patterns.

The Evolutionary Psychology of Gun Ownership

Aaron Goetz, CSUF: 10:50 – 11:10AM

Two opposing models could explain gun ownership: a Formidability-Calibration Model, which would predict that formidable men would be more likely to own or intend to own firearms, particularly those designed to kill people, and a Vulnerability-Calibration Model, which would predict that less formidable, more vulnerable men would be more likely to own or intend to own firearms, as a compensatory. I surveyed a large and diverse sample of men (N=604) about their gun ownership. In accordance with the Formidability-Calibration Model, I documented that gun owners are stronger, more quick to become angry, more likely to spontaneously assess other men's formidability, more likely to get into fights, more likely to watch combat sports, and more likely to have received training in fighting. Gun owners, however, are not taller or heavier than those who do not own guns, probably because, in our modern environment, height and weight are no longer reliably diagnostic of formidability. *Intentions* to own guns, particularly handguns, produced similar results. These data suggest that one can predict men's gun ownership, not from their concerns about compensating for vulnerability, but from their formidability.

The roles of emotion and expectations in a model system for studying contagion of prosocial behavior

Adam Maxwell Sparks, UCLA, Daniel M.T. Fessler, UCLA, & Colin Holbrook, UCM

Prosocial contagion describes a process whereby witnessing a prosocial act leads to a subsequent prosocial act, a process of broad scientific and applied interest. A growing psychology literature investigates an emotional experience, elevation, that is thought to cause prosocial contagion. Here we evaluate our recent adaptationist framework for understanding elevation against meta-analyses of data from 14 studies that bear on the relationships between elevation, expectations of others' social behavior, and the contagion of prosocial behavior in response to controlled stimuli. Key results are as follows. (1) These core methods reliably elicit the prosocial contagion phenomenon both online and in the field, and (2) self-report elevation measures are reliably associated with relevant behavioral outcomes. These first two findings fit among a body of similar findings, offering convergent evidence that elevation can cause prosocial contagion. (3) Regarding individual differences, we find that baseline measures of idealism, an attitude indexing expectations that others generally behave cooperatively, reliably predicts variation in emotional response to a specific fictional moral hero story, but this attitude has little predictive value for response to other control stimuli lacking clear prosocial content.

The Effect of Life History Strategy on Sex Differences in Sexual Selection

Alena A. Egner, UCLA & Max M. Krasnow, Harvard University

Parental investment theory predicts that the sex which invests least in offspring, typically males, should be the more intrasexually competitive sex, while the other sex, typically females, should be more intersexually choosy. Although humans show this sex difference as well, we have highly dependent offspring and a complex social structure that allows males to invest significantly in the care and survival of their children. This leads to human females displaying a level of competitiveness with other females, and males being somewhat selective about their mates. However, little is known about which factors contribute to individual differences in competitiveness and choosiness within each sex. What leads some men

to be highly selective or some women to be very competitive? We explored life history strategy as a potential factor that could moderate this sex difference. We found that having a fast life history strategy, regardless of sex, significantly predicts high levels of competitiveness and low levels of choosiness, with the opposite being true for individuals with slow strategies. This implies that life history factors may be even more important than biological sex in influencing human sexual selection behaviors.

Describing others' minds: mental state language in a small-scale society

Andrew Marcus Smith, UCLA, Erica A. Cartmill, UCLA, & H. Clark Barrett, UCLA

Mindreading has been proposed as a uniquely elaborated human universal. However, this claim needs to be interpreted cautiously. Mindreading is not a monolithic whole, but a suite of interrelated abilities. Moreover, there exists an important distinction between the capacity and the tendency to mindread. Earlier researchers have failed to appreciate these distinctions and as such, it is important to clarify what features are genuinely universal. Previous anthropological work has suggested that the tendency to attribute mental states to others, a form of explicit mindreading, can be modulated by culturally variable linguistic norms. However, no quantitative studies have assessed these claims. Working with Shuar (N=36), American English (N=20), and American Spanish (N=20) speakers, we quantified the frequency with which each attributed mental states to characters in an elicited narration task. Each participant watched 6 videos with rich mental state content and were given a minimal verbal prompt to describe what had happened. Responses were then transcribed and coded for mental state terms in each of the following categories – epistemic state, affective state, perception, and desire. Using negative binomial models, we found that Shuar participants produced fewer mental state terms across all categories but desire. Results and implications are discussed.

The Use of Replicative Studies in Understanding the Evolution of Shell Fishhook Production on San Nicolas Island, CA

Benjamin R. Witzel, UCD, Jentin D. Jo, UCD, Noah A. Wilfert, UCD, Caleb K. Chen, UCD, Lauren J. Duckworth, UCD, Patricia J. McNeill, UCD, Sam J. Dunham, UCD, Nicholas Radtkey, UCD, Liu Chang, UCD, Kevin N. Smith, UCD, & Nicolas Zwyns, UCD

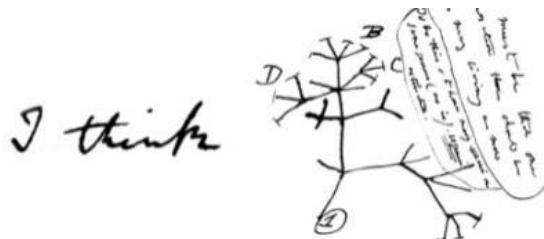
By approximately 2,500 cal BP the single piece fishhook became well established in the southern Channel Islands and gradually expanded to the northern islands and adjacent mainland coast. Despite the abundance of California mussels and red abalone in the faunal record on San Nicolas Island, the artifact assemblages are overwhelmingly dominated by fishhooks produced from red abalone shell. The initial stages of fishhook production involve perforating a shell blank in one of two ways: drilling or pecking, with respect to the geographic location. We hypothesized that the method of perforation used in the initial stage of fishhook production required specific stone tool materials, and that some methods would be unsuccessful when applied to specific marine shell species. The current study provides the first quantitative analysis aimed at addressing why abalone shells were selected over California mussel shells as a resource for fishhook production despite abundance of both species on San Nicolas Island. Additionally, this study provides evidence explaining why archaeological assemblages on the Northern Channel Islands and adjacent mainland coast are dominated by fishhooks made on both species of marine shell. Through a multi-methodological approach emphasizing replicative studies, this research measures production efficiency of perforated shell fishhook blanks, and success or failure of manufacture to establish a strong positive correlation between specific stone resources and localized artifact production.

The Evolution of an Art Genre: How Diversity Dependence Has Shaped Metal Music from 1968-2000

Bernard Koch, UCLA

Cultural evolution is a unifying theory in many social sciences, yet conspicuously absent from Sociology today. In this paper, I argue that we can explain how and why cultural categories (e.g. music genres) change over time

through the analysis of the populations of "cultural things" that constitute them. First, I articulate an evolutionary theory for how cultural categories are transmitted, reproduced, and vary over time within these populations. By examining fan co-listening habits, the spatiotemporal distribution of bands, and band personnel records, I then demonstrate the plausibility of these mechanisms in a population of 30,000 metal bands active between 1968-2000. Finally, I quantify diversification rates in metal and nine of its subgenres using a macroevolutionary model originally designed for paleontological data. My findings suggest that the growth of each genre is shaped by diversity dependence among artists, indicating that there are only so many "sonic niches" to be occupied within the stylistic parameters of a genre. Beyond its contributions to the sociology of art genres, I believe that the theory and methods introduced here could provide insight into the histories of other cultural categories like industries, religions, or types of consumer products.



Ruling the Roost: Sex Ratios, Mating Strategies, and College Campuses

Bianca Figueras, CSUF & Elizabeth Pillsworth, CSUF

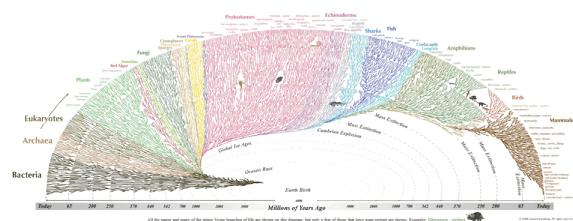
Every year more women than men become college educated, and this is resulting in a heavily skewed sex ratio on college campuses. The disparity is becoming prevalent not only in North America and Europe, but worldwide (Buss, 2016). This skewed sex ratio may constitute a "mating crisis" for young women by reducing the number of potentially available romantic and/or sexual partners in their local environment, in particular because, as previous studies have shown, a majority of women are unwilling to settle for men who are less educated, less intelligent, and less professionally successful than they are (Buss, 1989). The goal of this project is to evaluate the effect of campus sex ratios on men's and women's romantic and sexual strategies. A majority of research on sex ratios has focused on the

sociosexual variability of mating strategies on a national-level context. The proposed research aims to fill this gap in knowledge by looking at localized sex ratio skews on college campuses and the effects on women's mating strategies. This may be important in understanding current patterns in sexual behavior that may pose a public health risk, such as an increase in casual sex among college students.

The Evolution of a Kiss: Kissing As an Honest Signal and Assessment of Commitment

Brianna Ruff, CSUF, Aaron Goetz, CSUF

Exchanging a kiss, although romantic, can also put one at risk to pathogens. In spite of this, roughly half of the world still practices romantic kissing. In this study, we tested the hypothesis that romantic kissing functions as an honest signal and assessment of commitment due to associated health risks. We designed an experimental study, with an online format, taken by individuals that were currently in a romantic relationship. Participants were randomly assigned to one of three conditions with a different prime, which involved thinking of their romantic partner. The first prime was design to cause commitment uncertainty by asking participants to think of their partner cheating on them in different forms using a jealousy instrument. The second, asked participants to list eight negative traits they believed their partner to have. If they perceive that their romantic partner's mate quality has decreased then the need for a commitment signal and reassurance is less needed. Lastly, we had a third control condition. Afterward they were given a questionnaire measuring attitudes about kissing their partner and attitudes about their partner kissing them. We predicted an increase in desire, importance, and liking of kissing and being kissed by their partner in the commitment uncertainty condition. Our second condition, priming negative mate quality, was predicted to cause a decrease of the same factors for kissing and being kissed by their partner. The results we collected broadly supported our hypotheses.



Chemosignals, Pregnancy, and Assisted Childbirth

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This pilot project investigates the role of assisted childbirth in bonding and sociality. We want to see if chemosignals during pregnancy are a mechanism that facilitate assistance and social support for labor and birth. Oxytocin is a nonapeptide that plays a role in birth and social interactions, for these reasons, we look to see if varying levels of this hormone have any effects on both pregnant and non-pregnant women. To test this, pregnant participants take a childbirth education class with a non-pregnant support woman, this is either someone they know or a stranger. Throughout the class, saliva samples are taken at four points to later test for oxytocin levels. They also fill out a questionnaire about their health and social support during their pregnancy. Are self-reports of social support related to oxytocin levels? Will we see hormonal matching or increases in oxytocin throughout the interaction? If so, is this mediated by the relationship between the pairs or the class interaction itself? Data collection is ongoing and pilot results will be discussed.

An evolutionary account of vigilance in grief

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Grief is characterized by a number of cardinal cognitive symptoms, including preoccupation with thoughts of the deceased and vigilance towards indications that the deceased is in the environment. Compared to emotional symptoms, little attention has been paid to the ultimate function of vigilance in grief. Drawing on signal-detection theory, we propose that the ultimate function of vigilance is to facilitate the reunification (where possible) with a viable relationship partner following separation. Preoccupation with thoughts about the missing person creates the cognitive conditions necessary to maintain a low baseline threshold for the detection of the agent – any information associated with the agent is highly salient, and attention is correspondingly readily deployed toward such cues. These patterns are adaptive in cases of an absent but living partner, but maladaptive in cases of the death of a partner. That they occur in the latter likely reflects the intersection of error-management considerations and the kludge-like

configuration of the mind. We showcase results from two previous studies designed to test predictions concerning input conditions and individual differences based on this account, and consider the implications of these findings for mainstream bereavement theories and practices.

The Allure of Altercations: An Evolutionary Explanation

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In general, humans are widely obsessed with contest competition (e.g., sports, fighting). Many proximate reasons for this phenomena have been put forth, but an ultimate explanation remains elusive. Thus, in the current study, it is hypothesized that human interest in contest competition might reflect evolutionary pressures to obtain information about the formidability of oneself and others. To test this hypothesis, I systematically varied the amount of information that could be obtained from a variety of hypothetical fights and assessed the interest of respondents ($N = 117$) in watching each. Results mostly supported the hypothesis, with some notable caveats. The findings of the current study provide a first step in examining and understanding the ultimate reason why humans are generally interested in contest competition.

"Koochie Koochie"; Why do we tickle play?

Eric Schniter, UCLA & CSUF

Over the course of vertebrate evolution, asymmetries in the abilities to inflict costs (formidability) have presented a problem for less formidable targets. However, for those harmed by entering into contest with or yielding to the demands of more formidable others, natural selection would have conferred defense mechanisms designed to circumvent the fitness costs others could impose. Human tickle play appears to have design characteristics that promote self-defense training: tickling encourages prepared learning of both evasion and blocking/shielding behavior in targeted individuals. Although previous research has suggested a link between tickling/ticklishness and combat/self-defense behaviors, respectively, the design features of tickle play mechanisms have not been fully examined.

Is the Vertical-Horizontal Illusion the Product of the Environmental Vertical Illusion?

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The vertical-Horizontal Illusion (VHI) describes the inflated estimate of the length of a vertical line compared to an equal length horizontal line (—). Jackson and Cormack (2007) set forth that the VHI is a byproduct of the environmental vertical illusion (EVI) a mechanism that displays an overestimation of heights compared to distances of the same length horizontally. Participants stood at the top of a 6-floor parking structure that measures 61 feet (18.6 meters) in height and were instructed to estimate the distance from a target at the bottom of the structure by moving a proctor with an identical target, as well as a horizontal target placed at an equidistant 61 feet away. Participants were also instructed to complete a VHI task of drawing a horizontal line they believed that was equal in length measurement to a 3.6 inch (9.1cm) vertical line. We then tested then Jackson and Cormacks byproduct hypothesis by correlating the vertical structure distance estimates with the vertical line estimates. In addition, half of the participants were primed to the EVI and informed that individuals tend to overestimate heights to test that it is sound and invulnerable to explicit awareness.

Sex Differences in Mate Preferences Across 45 Cultures: A Large-Scale Replication

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Buss (1989) examined sex differences in mate preferences across 37 cultures and found that men, more than women, preferred physically attractive, young mates, and women, more than men, preferred older mates with good financial prospects. Subsequent research further explored these universal sex differences across separate data sources (e.g. marriage records), as a function of ecological variables (e.g. pathogen prevalence; gender equality) and in terms of their multivariate effect size. Many of these studies have become the bedrock of human mating research, shaping our understanding of and framing debates surrounding mate preferences and choice. However, most of this research relied on now-older samples and analytic techniques. In light of the "replication crisis," we need to

determine whether the results of these classic studies still hold. Using a new cross-cultural sample and updated analyses, we will present the results of an attempt to replicate classic mate preference findings across 45 cultures.

Characterizing symptoms of psychopathology on fast and slow Life History dimensions

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Psychometric approaches to life history strategy (LHS) variation have accounted for some of the variance in human personality. However, psychopathology has received less attention under a LH framework, with psychiatric disorders often dichotomized as either "fast" or "slow." In contrast, recent theoretical work has argued that clinical labels obscure distinctions between fast- and slow-derived behavioral strategies. Rather than focusing on disorders as a whole, researchers have argued for a symptoms-based approach illuminating previously unknown risk factors and causal links with biology. In parallel, others have raised the question of how motivational and situational variables interact to generate psychopathology-linked behavior. Here we attempt to integrate both lines of research, using LH theory and adopting the DIAMONDS situation taxonomy (e.g., adversity, mating, deception, sociality) as the basis for predictions about context-dependent manifestations of fast- and slow-associated psychopathological symptoms. In this model, for instance, distinctions are made between anxiety-like symptoms that take the form of hypervigilance in fast strategists but excessive precaution in slow strategists. U.S. undergraduates ($N = 385$) provided self-report data on personality, LH, and psychopathological constructs. Specific items that aligned with LH theory and the DIAMONDS situational taxonomy were chosen and factor analyzed. Results support context-dependent LHS-linked pathological personality variation.

Playing the Anti-Evolutionary Psychology Game

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Evolutionary psychologists are repeatedly confronted with uninformed, hackneyed, and predictable

mischaracterizations of their discipline. Perhaps the only academic field that is subject to more science denialism or obfuscation is the discipline of climate science. This paper will list, review and rebut some of the most common criticisms directed at evolutionary psychological science (EP), including claims of "just-so stories," the presumed ideological motivations of researchers, the conflation of proximate and ultimate causality, arguments based on moralistic fallacies, etc. An example of Robert Kurzban's, "The Pop Anti-Evolutionary Psychology Game," is presented that may provide both educational and entertainment utility to those in the field who may be suffering from post-EP criticism rebuttal stress.

Surviving on Scraps: red-tailed monkeys rely on staple foods during times of intense feeding competition

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One of the most pervasive ecological constraints faced by animals is access to food, which shapes the frequency of reproduction and affects individual fitness and population structure and size. To elucidate how climate patterns and food availability shape primate energy balance, we examine the relationship between temperature, rainfall, and plant phenology and urinary c-peptide of insulin collected from 8 groups of free-ranging red-tailed monkeys (*Cercopithecus ascanius*) in Kibale National Park, Uganda. We found that energy balance positively correlated with staple ripe fruits, negatively correlated with ambient temperature and with unripe fruits, and showed no relationship with rainfall. While energy balance decreased with increasing abundance of fruit in the forest, it increases with the presence of staple items in red-tailed monkey diet. When food is abundant, feeding competition may increase more for species with lesser priority of access, such as red-tailed monkeys, highlighting the importance of their ability to access staple foods in the presence of other frugivores with priority of access. These results expand our understanding of drivers of primate foraging patterns and population size and contribute to better species management efforts.

The role of metarepresentation in cultural transmission: Concepts that violate ontological categories remain associated with their source

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Humans have a set of interlocking psychological capacities designed for communication and cultural learning. One hypothesized adaptation underlying these abilities is the capacity to retain communicated information as a metarepresentation, where the content of a message remains encapsulated within the context of its acquisition. It was predicted that minimally counterintuitive concepts, as they violate core ontological expectations, should persist in a metarepresentational state, linked to their source. We tested this claim in a series of memory experiments where college undergraduates ($N = 354$) read short stories, each containing minimally counterintuitive and intuitive concepts, communicated by different informants. When later prompted with those same concepts, participants exhibited enhanced source memory for minimally counterintuitive versus intuitive concepts in a forced choice task. This pattern of results was replicated and extended to other contextual aspects of the communicative episodes (e.g., the time and the place of transmission). Thus, the findings suggest acquired counterintuitive concepts maintain a metarepresentational formatting. We discuss implications of the results for the mental representation of counterintuitive scientific and religious concepts.

Hyena Sanctimommies Have Perfect Lives: competitive mothering in evolutionary perspective

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Women have been shown to compete over a variety of resources in order to increase inclusive fitness, such as mates, friends and food. This research empirically explores the question of whether competitive and cooperative behaviors of mothers may increase projected total fertility. In addition stories of competitive mothering on social media were gathered and analyzed for trends highlighting the strategic ways that mothers compete within their larger social networks. We find that competitive mothering behavior decreases ultimate projected fertility, while cooperative mothering has no effect. Use of social media, measured by Facebook friends, time spent online, and competitive child picture posting has no direct effect on fertility. Competitive moms spend more time online and feel better about viewing social media. Qualitative data indicates that moms use social media to cooperate and offer social support, as well as offering fertile ground for social competition. Moms reported disliking social media due to sanctimonious judgments from others and the implicit peer-pressure that causes them to compete for social status and perfection. Finally, home engineers reported that full-time working moms were jealous of their extra time to spend with children and subsequently pressured them to be more cooperative and helpful with collective activities.