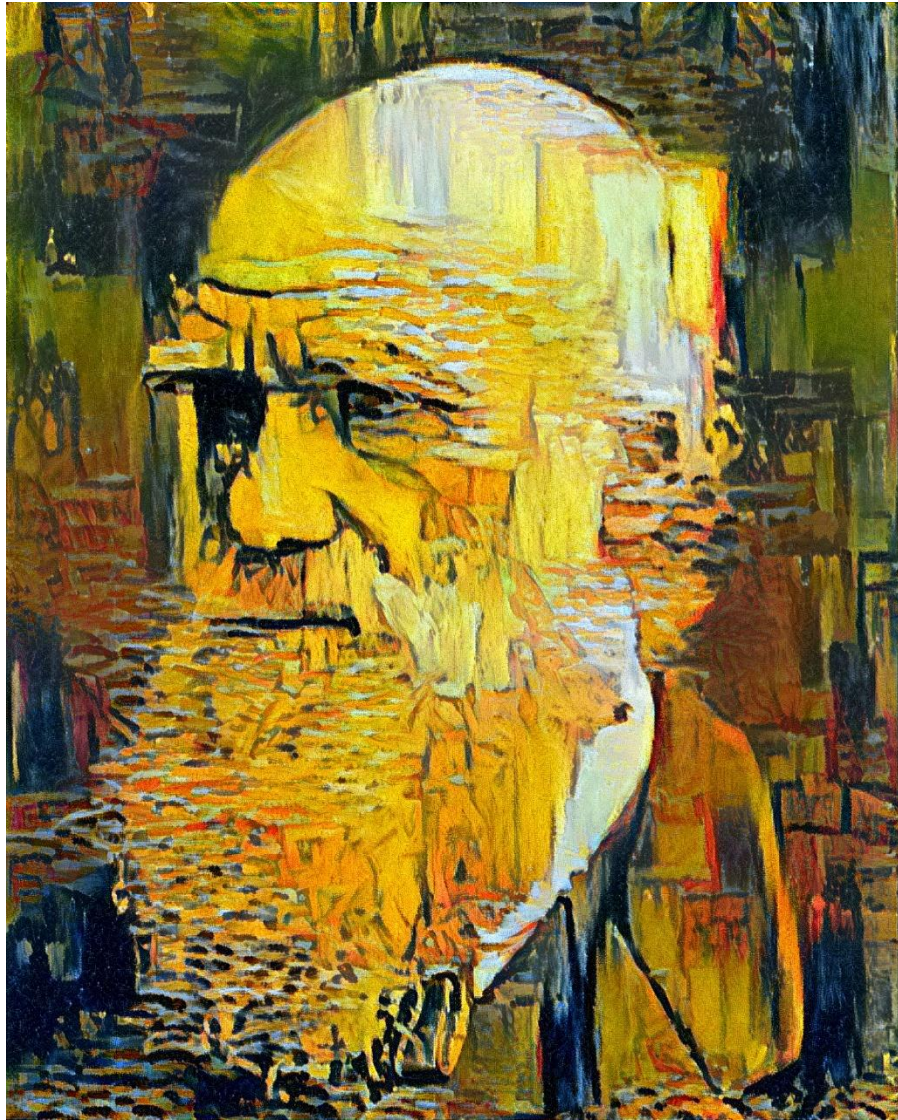


HUMAN BEHAVIOR AND EVOLUTION SOCIETY
30th Annual Meeting
July 4th – July 7th, 2018



Welcome to HBES 2018

We, the organizing committee, are thrilled to be hosting the 30th annual meeting of the Human Behavior and Evolution Society in Amsterdam. The Netherlands is a fitting place for this meeting. The first microscopes were developed by Antonie van Leeuwenhoek in the 17th century, just an hour's drive south of the conference venue. Some of the first work in evolutionary genetics was conducted by Hugo de Vries 100 years ago at the University of Amsterdam. The Nobel Prize winning ethologist Niko Tinbergen was raised in The Hague and educated in Leiden. Tinbergen's student Jan van Hooff conducted pioneering work on primate behavior at Utrecht University, and Van Hooff's student, Frans de Waal, is this year's keynote speaker. And, as De Waal and Van Hooff were using evolutionary perspectives to better understand primates, Bram Buunk paved the way for evolutionary psychology at the University of Groningen in the 1980's, with research programs focusing on mate choice and jealousy. We, your organizers, have active evolutionary psychology research programs at the University of Amsterdam and Vrije Universiteit Amsterdam, and our Dutch colleagues have similar programs at Leiden University, Radboud University, and the University of Groningen, among other institutes. Hence, many Dutch scientists are pleased to see this meeting being held in a nation that has been so strongly influenced by – and has influenced – some of the core scientific approaches of HBES.

We hope that your enthusiasm toward HBES in Amsterdam matches ours. We further hope that you will enjoy this year's excellent slate of plenaries and individual talks, which showcase the international and intellectual diversity traditionally prized by our society. Many presentations also highlight advances in open science and methods – new approaches that will keep our science strong in the coming decades.

Next to our lineup of speakers, we also have a great set of scientific and social activities planned. We'll start with an **opening-night reception** at the conference venue on Wednesday evening. Here, you're invited to have a drink and sample some of Amsterdam's finest *hapjes* – traditional Dutch bar snacks that seem to have been designed to pair well with a light, cold beer. On Thursday, over lunch time, students are invited to attend the **Graduate Student and Prospective Graduate Student Lunch**, where they can get career advice from longtime members of the HBES community. Thursday will also offer the **Women of HBES** event, where female scientists can meet, network, and obtain support from other female HBES members. Following Women of HBES, 175 scholars will showcase their work during the **poster session**, which will also act as a social event, with drinks served.

Friday and Saturday evenings will offer two additional social events. On Friday evening, the **canal cruise** will allow you to see Amsterdam's historical city center from the water. And, following Frans de Waal's Saturday evening keynote address, the **conference banquet** will give you a three course meal in Amsterdam's Grand Hotel Krasnapolsky. The banquet is situated directly across from Dam Square, and it will provide a perfect launching point for a Saturday evening out in Amsterdam.

Of course, please let us and our many student volunteers know if you have any questions about the conference or about Amsterdam. We're happy and eager to help.

Josh Tybur, Annemie Ploeger, Michal Kandrik, and Mark van Vugt
HBES 2018 Host Committee

Acknowledgements

Host Committee: Josh Tybur, Annemie Ploeger, Michal Kandrik, Mark van Vugt

Program Committee: Aaron Blackwell, Willem Frankenhuis, Mariska Kret, Cristina Moya, Gert Stulp, Annie Wertz, Josh Tybur

Poster Award Committee: To be announced at the award ceremony

New Investigator Award Committee: To be announced at the award ceremony

Post-Doctoral Research Award Committee: To be announced at the award ceremony

Graduate Student Lunch Organizer: Nicole Barbaro

Methods Workshop: Dan Conroy-Beam

Pre-conference Organizers: Jaime Palmer-Hague and Amanda Hahn

WoHBES (Women of HBES) Organizers: Gretchen Perry and Katie Starkweather

Institutional Support: Suzan Besuijen, Anna Brinkman

HBES Logo Design: Allen Grabo

Assistance with Program: Çağla Çınar, Simon Columbus, Annika Karinen, Catherine Molho, Gonzalo Palomo Velez, Paola Perone, Meander Verbeek

Graduate (and Prospective Graduate) Student Lunch Mentors: Athena Aktipis, Lisa DeBruine, Ben Jones, Jaimie Krems, Doug Kenrick, David Lewis, Aaron Lukaszewski, Karthnik Panchanathan, Lars Penke, Gretchen Perry, Tess Robertson, Rebecca Sear, Keelah Williams

Session and Registration Desk Volunteers: Olmo van den Akker, Dan Asfar, Ard Barends, Çağla Çınar, Evy van Berlo, Simon Columbus, Tingting Ji, Annika Karinen, Brett Kosterman, Alex Lux, Catherine Molho, Stijn Peperkoorn, Paola Perone, Laura Schneider

HBES Support: Elizabeth Cashdan, Lisa DeBruine, Doug Kenrick, Robert Kurzban, Catherine Salmon, Todd Shackelford

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HBES Officers

Acting/Past President	Elizabeth Cashdan
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Council Member at Large (2019)	Steve Gaulin
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Council Member at Large (2021)	Bernhard Fink
Council Member at Large (2021)	Maryanne Fisher
Council Member at Large (2023)	Pat Barclay
Council Member at Large (2023)	David Puts

HBES Meetings

Publication Committee Meeting, Wednesday July 4 th	08:30 – 11:00	A2.13
Executive Council Meeting, Wednesday July 4 th	11:00 – 13:45	A2.14
Business Meeting, Friday July 6 th	13:10 – 14:30	A2.08

Registration

Daily from 8:30 am – 5:00 pm in Building A

WiFi

You have two options for WiFi. First, you can access eduroam, if you are registered with that service. Second, you can log into the UvA Open WiFi network, which does not require registration or a password.

Poster Set-Up

The Poster Session, which will take place on Thursday, July 5th from 19:00 to 21:00, will be held in two locations: (1) in Building A, and (2) in De Brug. Posters can be set up starting at 12:00 on Thursday and need to be removed the following morning. If you are presenting a poster, please stand near your poster during the poster session. Drinks will be provided during the poster session.

Oral Presentation Sessions

All oral presentations will be 15 minutes in length with an additional 5 minutes allocated for questions and a transition to the next speaker. If you are presenting, please arrive to your session 10 minutes early. A local volunteer, who will be serving as session chair (and, hence, will be timing your talk), will help you set up your presentation. Please note that each room is equipped with a PC and a projector. The projectors have VGA and HDMI connections that will allow you to set up your own laptop, if you are unwilling to use the provided PC. That said, **we urge you to use the PC in the room** – most technical difficulties arise when presenters insist on using their own laptop for their presentation.

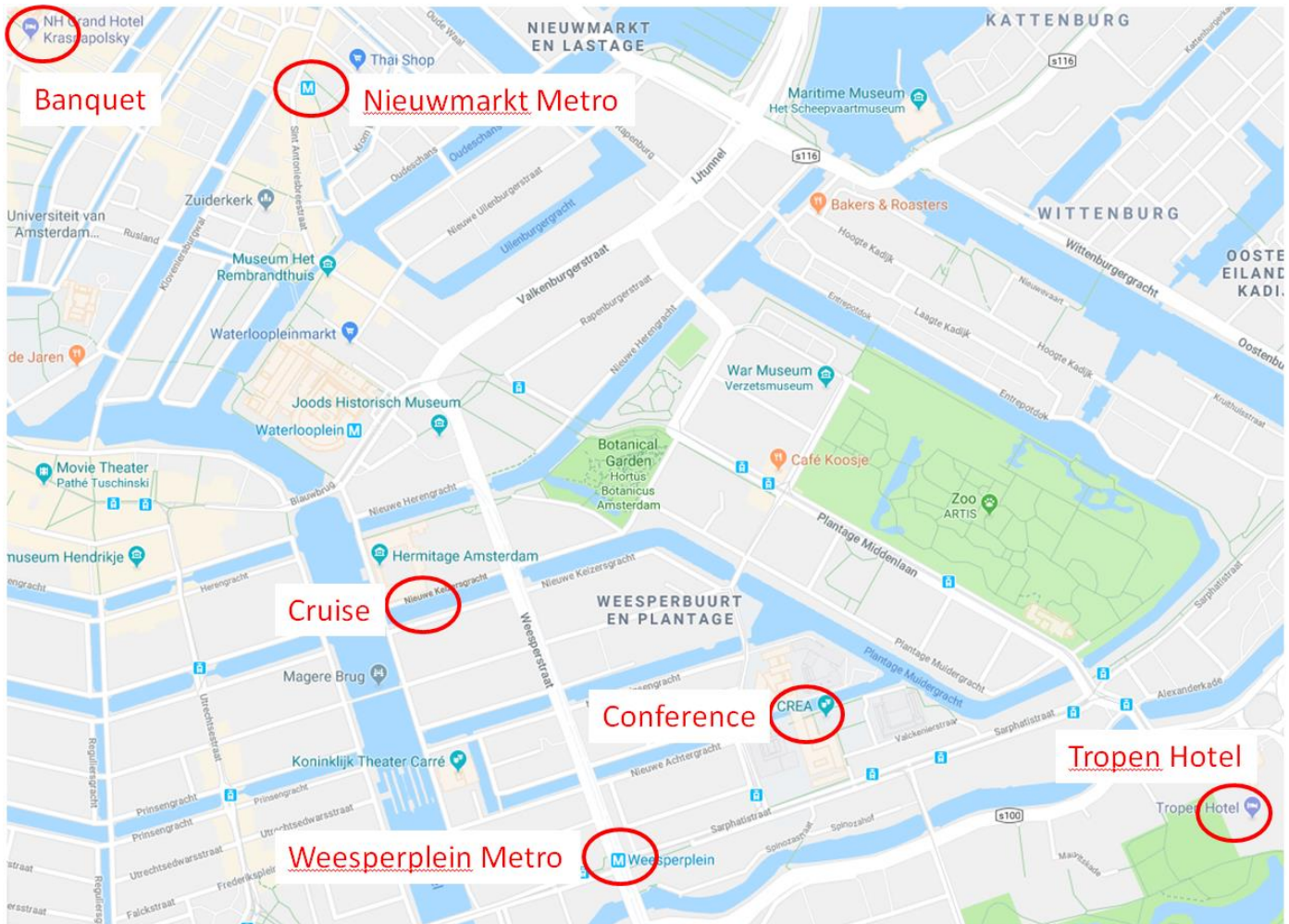
Important Locations

Conference Address: University of Amsterdam (Nieuwe Achtergracht 166, Building A)

Cruise Location: Outside of the Hermitage Museum (Nieuwe Keizersgracht 1)

Closest Metro Stop to Conference: Weesperplein Metro Station

Banquet location: Hotel Krasnapolsky (Dam 9)

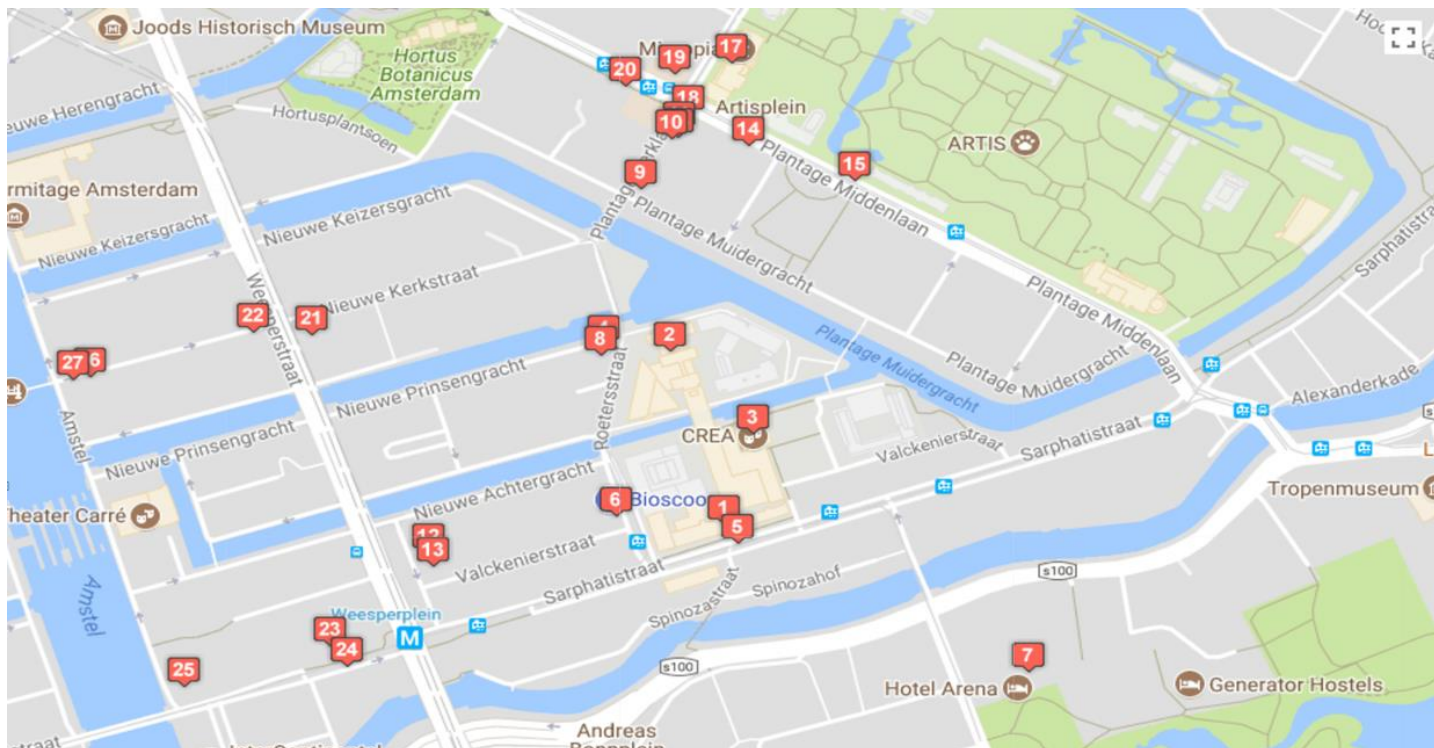


Google maps estimates a seven minute walk from the Weesperplein metro station to the conference venue, and a 13 minute walk from the Tropen Hotel to the conference venue. The walk from the conference venue to the cruise pickup will take about 15 minutes.

To get to the banquet venue, you can either walk (about 25 minutes), or you can take any metro from the Weesperplein metro station toward Central Station and get off at the Nieuwmarkt stop. It is a six minute walk from there. Taking the metro will save you five to ten minutes in travel time relative to walking the entire way. And, of course, you can call an Uber or taxi if you prefer.

Lunch Venues

You have a few options for lunches. First, you can walk to a restaurant/café. All locations highlighted on the map below are a two to six minute walk from the conference venue. Second, you can get a packaged sandwich or salad from the Albert Heijn grocery store. Third, on Wednesday through Friday, you can visit the Building H food court at the university. Note that this cafeteria does not take cash, though it will accept Mastercard and Visa cards with a chip.

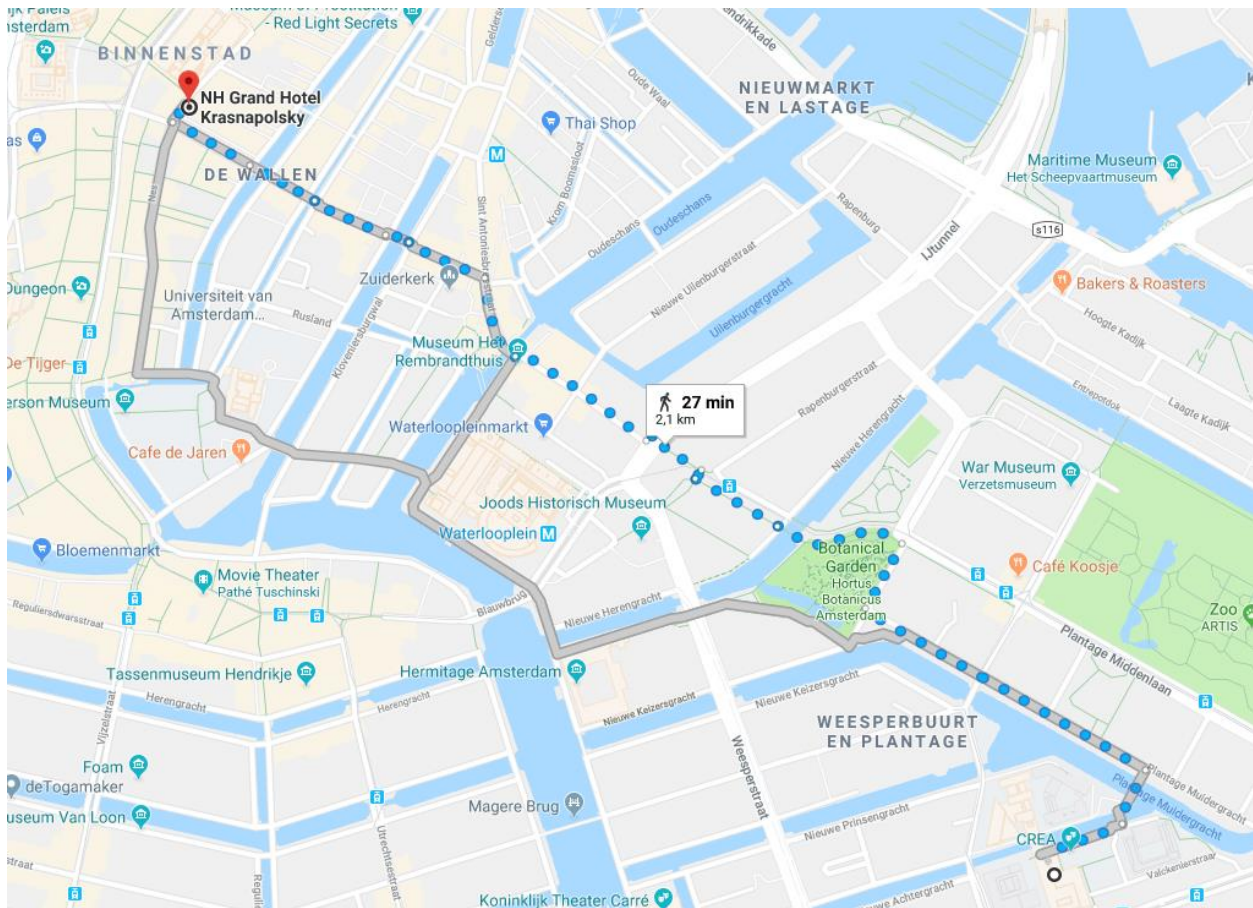


Number	Name of restaurant/café (lunch)	Price range (in euros)
1	Albert Heijn (supermarket) Sarphatistraat 141K	1-4
2	Building H (food court UvA) Roetersstraat 11	5-10
3	CREA (sandwiches and soup) Nieuwe Achtergracht 170	3-6
4	Bagels and Beans Roetersstraat 2A	4-9
5	Mama Makan (Indonesian) Spinozastraat 61	8-15
6	Café de Roeter Roetersstraat 192	5-11
7	Arena s-Gravensandstraat 55	6-19
8	T Eten en Drinken Roetersstraat 4	4-10

Number	Name of restaurant/café (lunch)	Price range (in euros)
9	De Pizzabakkers Plantage Kerklaan 2	6-12
10	Palorma (pizza) Plantage Kerklaan 28	17
11	Pizzeria & Steakhouse La Roma Plantage Kerklaan 32	5-15
12	Cantarell (fries and snacks) Weesperplein 13	2-9
13	Café Noir Weesperplein 19	3-10
14	The Birdhouse Plantage Middenlaan 46	8-24
15	Coffee and Bites Plantage Middenlaan 44	7
16	Box Sociaal Plantage Middenlaan 30A	5-15
17	De Plantage Plantage Kerklaan 36	5-10
18	Happy Corner (Chinese) Plantage Middenlaan 30	6-16
19	Café Koosje Plantage Middenlaan 37	4-8
20	Café Eik en Linde Plantage Middenlaan 22A	4-8
21	Eerlijk Weesperstraat 101A	5-11
22	Water & Brood Nieuwe Kerkstraat 84	8-14
23	Bakhuys Sarphatistraat 61	4-8
24	Bretzel Sarphatistraat 42	3-8
25	Bar Lempicka Sarphatistraat 23	5-20
26	Ponte Magro Nieuwe Kerkstraat 4	5-14
27	Café De Magere Brug Amstel 81	5-17

Banquet

The banquet will be held at Hotel Krasnapolsky (Dam 9, 1012 JS Amsterdam), which is a 25 minute walk from the conference location:



You can also take any metro from the Weesperplein metro station toward Central Station and get off at the Nieuwmarkt stop. The banquet venue is a six minute walk from there. Taking the metro will save you five to ten minutes in travel time relative to walking the entire way. And, of course, you can call an Uber or taxi if you prefer.

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Plenary and Keynote Speakers



Thom Scott-Phillips

Senior Research Scientist
Department of Cognitive Science,
Central European University, Budapest

Expression unleashed

Wednesday, July 4th 14:15

Human communication is highly distinctive. Unlike other species, we communicate about any imaginable topic and across a wide range of different media. This expressive range facilitates the spread of ideas and practices on a grand scale, paving the way for social and technological innovation, and it likely had a number of major selective consequences for key aspects of human cognition.

In this presentation I will synthesise work I have done over the past decade, a central aim of which has been to describe this expressive richness in a way that accurately reflects its natural joints: biological, cognitive, and cultural. I will argue that human social ecologies, with their mix of collaboration and cooperation, facilitate the evolution of cognitive mechanisms for the expression and recognition of intentions; and that the natural character of languages is that they are structured sets of culturally evolved tools the proper functions of which are to exploit some of the expressive opportunities made possible by this novel means of communication. In other words, languages make sophisticated use of the open-ended potential of human communication, but they are not what makes it open-ended in the first place. Other distinctive means of human expression, such as art, exploit this open-endedness in different ways still.



Nancy Segal

Professor
Department of Psychology,
California State University, Fullerton

Twins, Virtual Twins and Other Curious Couples: The Science Behind the Fascination

Wednesday, July 4th 17:10

Kinship is a significant variable in numerous evolutionary biological theories, situated at the core of many reproductively consequential social interactions. Research comparing resemblance between monozygotic (MZ) and dizygotic (DZ) twin pairs is illuminating in this respect, offering unique insights into the origins of, and individual differences in, human behavioral and physical characteristics. There are approximately ten variants of the classic twin method (e.g., twin-family design; reared-apart twins) that can also address this same class of questions. Furthermore, there exist some novel twin sets, “twin-like” sibling pairs and other curious couples generated by adoption, assisted reproductive technologies and other means (e.g., virtual twins and unrelated look-alikes). These interesting pairs lend themselves well to exploring a range of questions from the perspectives of evolutionary psychology, behavioral genetics and human ethology. Such approaches will be illustrated with twin-based studies of cooperation, competition, altruism, tacit coordination, bereavement, social attraction and parenting. The functional significance of multiple birth babies is also of interest, given that twins are often born prematurely, posing health risks to mothers and infants; extant research in this area will be reviewed. Topics benefitting further from twin and adoption research methods, e.g., family relations and physical attractiveness, will be suggested.



Henkjan Honing

Professor

Faculty of Humanities & Faculty of Science,
University of Amsterdam

On the biological basis of musicality

Talk canceled

In recent years, music and musicality have been the focus of an increasing amount of research effort. This has led to a growing role and visibility of the contribution of (bio)musicology to the field of neuroscience and the cognitive sciences at large. While it has been widely acknowledged that there are commonalities between speech, language, and musicality, several researchers explain this by considering musicality as an epiphenomenon of language. However, an alternative hypothesis is that musicality is an innate and widely shared capacity for music that can be seen as a natural, spontaneously developing set of traits based on and constrained by our cognitive abilities and their underlying biology (Honing, 2018). In this lecture I will argue that a comparative study of musicality in humans and well-known animal models (monkeys, birds, pinnipeds) will further our insights on 1) which features of musicality are exclusive to humans and which are shared between humans and nonhuman animals, 2) contribute to an understanding of musical phenotypes, and 3) further constrain existing evolutionary theories of music and musicality.



E. Toby Kiers

Professor
Vrije Universiteit, Amsterdam

Resolving host-microbe conflict

Thursday, July 5th 16:10

Human societies around the world are regulated by sets of over-lapping rules: fiscal, judicial, etc. Practices, such as coercing, regulating, and policing, prevent cheating and exploitation, and allow for large-scale cooperation that drives modern societies. Such control is necessary because cooperation is fragile: an association that starts out being mutually beneficial can evolve into one that is parasitic. This is also true in symbiotic relationships in nature, in which different species form intimate partnerships that allow them to trade services and resources. How do hosts maintain cooperation with the most beneficial microbes over the course of evolution? Adaptations that allow individuals to discriminate among partners based on actual symbiotic performance help promote the persistence of cooperation, and allow organisms to negotiate conditions of trade. My lab develops tools to visualize, track and quantify symbiotic trade over space and time. Ultimately, we are interested in predicting how and when cooperation is favored to evolve.



Ruth Mace

Professor
Department of Anthropology,
University College London

Matriliny in China:

Using the toolkit from behavioural ecology to study cultural evolution

Friday, July 6th 9:00

Here I will outline how Tinbergen established four questions, 'Four whys', to help frame our thinking about understanding the evolutionary basis of behaviour. I will argue that this framework is still relevant today and is useful in our study of human cultural behaviour. I illustrate the approach with examples of modelling, proximate mechanisms, studies of evolutionary dynamics, and phylogenetic comparative methods, to answer at least some of the four whys, to ask why some groups in China are matrilineal. We examine, among other things, the role of relatedness, proximity and witchcraft beliefs in establishing social relationships in these communities. Comparisons between households in one community, and between groups of Sino-Tibetans all shed light on the behavioural ecology of these matrilineal systems.



Pat Hawley

Professor
College of Education,
Texas Tech University, Lubbock

Academic conferences as competitive ecologies; Gender differences in perceptions of ambient cues and conference climate, their meanings, and consequences

Friday, July 6th 17:20

Resource control theory (1999) been used to explain patterns of aggression, prosociality, and social attention in groups across the lifespan. As such, it is an evolutionary developmental theory of power. It has been an organizing framework for diverse topics such as mental and physical health, morality, social competence, bullying, and sexual fantasy. The success of strategies that emerge vary contextually, depending on the support of the environment. Mixed strategists (aggression balanced with prosociality; “bistrategics” or Machiavellians) appear to be the most effective across the lifespan; they are superior competitors and garner a good deal of social status, despite their high levels of aggression and duplicity (vis a vis the norms of the group). Though mixed strategists bear personal costs, those failing to compete well are the most developmentally at risk. The present talk will provide a brief jaunt through resource control theory and some of its key findings, and move to the conference ecology and men’s and women’s perceptions of climate as it relates to indices of power (sexism) and competition.



Dan Fessler

Professor
Department of Anthropology,
University of California, Los Angeles

Sometimes you're right, sometimes you're wrong, and sometimes you're ignored, Or: How I learned to stop worrying and love the replication crisis

Saturday, July 7th 9:00

Evolutionary theory provides a rich source of hypotheses concerning mind, body, and behavior. Leveraging this perspective, over the past two decades, I have published on a wide range of subjects. In this talk I will appraise selections from this corpus, asking how these ideas and findings have fared over time, and discussing how my own approach to the process of research has changed. Topics addressed include: the watching eyes effect; compensatory prophylaxis; infant mouthing behavior; sexual dimorphism in foot size; periovulatory attitudinal and behavioral changes; cognitive representations of formidability; disgust and pathogen and parasite defense; risk-taking behavior; the effects of war on cooperation; attitudes toward fire; bereavement and cues of death; contagious prosociality; and credulity, negativity bias, and political orientation. (And yes, this will be an unorthodox plenary talk – bring snacks, and buckle up.)



Frans de Waal

C. H. Candler Professor of Psychology, Emory University
Director, Living Links Center at the Yerkes National Primate Research Center
Distinguished Professor, University of Utrecht

The Myth of Human Cooperation as a “Huge Anomaly”

Saturday, July 7th 18:15

In the 1970s and 80s, humans were as selfish and non-altruistic as the rest of the animal kingdom. Nature was dog-eat-dog. Since the turn of the millennium, however, there has been an attempt to set humans apart. We have been declared the only true altruists, and the only genuinely cooperative species. We do not just exhibit regular reciprocity, but strong reciprocity. Behavioral economists have called human cooperation a “huge anomaly” in the natural world. We are the only ones to care about the welfare of others, and the only ones with joint intentionality. But if all of this were true, how come our best theories about the evolution of cooperation and altruism all stem from animal behavior? Every biologist knows that cooperation is ubiquitous in the natural world. Even cooperation between strangers has been demonstrated in other primates. I will argue that the whole movement to elevate human cooperation above the rest is built on sand. We find human-animal continuity in every domain, from empathy, cooperation, partner choice, and the role of oxytocin to reciprocal exchange and the sense of fairness. I will review manifestations of these phenomena in anthropoid apes, monkeys, elephants, rodents and other mammals.

Schedule Overview

Schedule

Wednesday July 4th, 2018

9:00 – 12:00	Social Neuroscience Preconference A1.02				
Publication Committee Meeting 8:30 – 11:00 A2.13			Executive Committee Meeting 11:00 – 13:45 A2.14		
14:00 – 14:15	HBES Begins: Welcome and opening remarks (A0.01 – Livestream in A1.02)				
14:15 – 15:15	Thom Scott-Phillips: Expression unleashed (A0.01 – Livestream in A1.02)				
15:15 – 15:30	Transition				
Wednesday Session 1	Hormonal influences on women's mating strategies	Stories	Parent-offspring conflict and cooperation	Mate retention and fidelity	Behavioral immune system
Room	A0.01	A1.02	A1.03	A2.07	A2.11
15:30 – 15:50	Life-history trade-offs across the ovulatory cycle: Cycle shifts predict women's food intake and sexual desire <i>Julie C. Driebe et al.</i>	Oral storytelling as evidence of teaching in forager societies <i>Michelle Scalise Sugiyama</i>	The evolution of barriers to exploitation <i>Jonathan Goodman</i>	Don't blame the children: Factors determining marital satisfaction across cultures <i>Carol Weisfeld et al.</i>	Visual attention biases in viewing scenes of violence <i>Coltan Scrivner et al.</i>
15:50 – 16:10	No evidence for ovulatory cycle shifts in women's mate preferences for male body masculinity, voice masculinity and behavioral displays in a large, pre-registered study <i>Julia Jünger et al.</i>	Testing Dunnell's waste explanation for monument building with an agent-based model <i>Brea McCauley et al.</i>	Morning sickness as a proximate mechanism for allocating resources to the fetus and placenta: A life history theory analysis <i>David Coall et al.</i>	The primacy of trust within romantic relationships: Evidence from conjoint analysis of HEXACO-derived personality profiles. <i>Justin Magilski, Lisa Welling</i>	Implicit bias against threatening faces: The role of emotion, hormones, and group membership <i>Tingting Ji et al.</i>
16:10 – 16:30	Women's emotional and sexual attraction to men across the menstrual cycle <i>Rei Shimoda et al.</i>	On the evolution of European modern art: A biological method for the quantitative characterization of the transition and its underlying social dynamics <i>Jorge Castillo-Sepúlveda et al.</i>	The costs and benefits of 'child marriage': Marriage, wellbeing, and fitness in rural Tanzania <i>David Lawson et al.</i>	Individual differences in mate-retention behavior: Do more attractive persons make fewer efforts to retain their partners? <i>Robert Burriss et al.</i>	Pathogen threat and vigilance to norm violations: An EEG examination <i>Cristina Salvador et al.</i>
16:30 – 16:50	No compelling evidence that hormonal status regulates women's face preferences, sociosexuality, or sexual disgust <i>Benedict Jones et al.</i>	The color game: Cultural evolution research with a gaming app <i>Olivier Morin et al.</i>	Grandmaternal childcare in Europe: The effects of relationship status and matrilineal bias <i>Gretchen Perry, Martin Daly</i>	Sex, lies & Y-chromosomes: The secret love lives of our genealogical ancestors <i>Maarten Larmuseau et al.</i>	Sensitivity to deviance and to dissimilarity: Basic cognitive processes under activation of the behavioral immune system <i>Ravit Nussinson et al.</i>
16:50 – 17:10	Coffee Break				
17:10 – 18:10	Nancy Segal: Twins, virtual twins and other curious couples: The science behind the fascination (A0.01 – Livestream in A1.02)				
18:15 – 20:30	Welcome Reception				

Thursday, July 5th

9:00 – 10:00	Plenary Canceled				
10:00 – 10:20	Coffee Break				
Thursday Session 2	Risk taking	Social learning and emotional expression	Sizing up the competition	Human nature, literature, and art	Novel methods
Room	A0.01	A1.02	A1.03	A2.09	A2.11
10:20 – 10:40	Applied evolutionary theory in accident analysis <i>Russell Jackson et al.</i>	Social learning rules for acquiring information about plants in human infants <i>Annie Wertz</i>	Pitch lowering enhances men’s perceived aggressive intent (but not physical dominance) independent of their physical strength <i>Jinguang Zhang et al.</i>	The evolutionary vision of H. G. Wells <i>Emelie Jonsson</i>	Machine learning demonstrates that ecology is at least as important as culture in predicting societal complexity. <i>Thomas V. Pollet, Mathijs van Dijk</i>
10:40 – 11:00	Do sex differences in spatial ability, mobility, and harm avoidance persist outside the West? <i>Helen Elizabeth Davis, Elizabeth Cashdan</i>	The ontogeny of orangutan social learning <i>Caroline Schuppli, Carel van Schaik</i>	Voice pitch is not a cue to competitiveness <i>Tina Kocic et al.</i>	Literature’s contribution to scientific knowledge: How some European novelists developed a new Darwinian view of human nature. <i>Dario Maestripieri</i>	Synthesizing biological, cognitive, and social explanations for human behavior using complex systems: A case study on children’s sex-typed toy preferences <i>Jac Davis, Melissa Hines</i>
11:00 – 11:20	Adaptive bases of distributive justice: Rawlsian maximin rule operates as a common cognitive anchor in allocation and risky decisions <i>Tatsuya Kameda et al.</i>	Bringing knowledge to the table: The development of food neophobia and food learning in young children <i>Camille Rioux et al.</i>	Factors affecting perception of fighting ability in MMA fighters using 360° facial photographs <i>Jitka Fialová et al.</i>	Imaginative culture <i>Joseph Carroll</i>	Compression effects in Reddit Place: The structuring of variation in a large-scale online art collaboration <i>Thomas F. Müller, James Winters</i>
11:20 – 11:40	Relative state creates individual differences in risk-taking across domains <i>Pat Barclay et al.</i>	Do we find compositionality in emotional expressions of chimpanzees? <i>Linda Oña et al.</i>	Cross-cultural evidence for apparent racial outgroup advantage: Congruence between perceived facial aggressiveness and fighting success <i>Vít Třebický et al.</i>	Human nature and the theatre of male-male competition <i>Catherine Salmon</i>	Spatial dependency in local resource distributions <i>Andreas Wilke et al.</i>
11:40 – 11:50	Transition				

Thursday Session 3	Cue use and kinship	Social interdependence	Conflict within and between the sexes	Scent signaling	Cultural evolution
Room	A0.01	A1.02	A1.03	A2.09	A2.11
11:50 – 12:10	The evolution of sensitive periods in a model of incremental development <i>Karthik Panchanathan, Willem Frankenhuis</i>	Falling fertility creates a trust gap: Changing social network structure in demographic transition <i>Tamas David-Barrett</i>	Hormonal factors impacting women's intrasexual competition <i>Amanda Hahn et al.</i>	Social scents within romantic relationships: How the scent of a romantic partner impacts stress and sleep <i>Marlise Hofer et al.</i>	Morality and the cultural evolution of reasons <i>Stefaan Blancke</i>
12:10 – 12:30	The role of childhood co-residence and maternal perinatal association in half sibling relationships <i>Mirkka Danielsbacka, Antti O. Tanskanen</i>	Evolution of conditional and unconditional commitment <i>Tadeg Quillien</i>	Mating competition and cooperation: Restricted mating strategies are associated with prosocial preferences and personality <i>Amanda Rotella, Pat Barclay</i>	Chemosensory contagion of anxiety in humans <i>Bettina Pause</i>	Descriptive modelling of utterance transformations in chains: short-term linguistic evolution in a large-scale online experiment <i>Sébastien Lerique, Camille Roth</i>
12:30 – 12:50	Having other-sex siblings predicts moral attitudes to sibling incest, but not parent-child incest <i>Lisa DeBruine, Benedict Jones</i>	Happy to help? A systematic review and meta-analysis of the effects of performing acts of kindness on the well-being of the actor <i>Oliver Scott Curry et al.</i>	On the genetic nature of the association between attachment anxiety and intimate partner violence perpetration and victimization <i>Nicole Barbaro et al.</i>	Interspecies transfer of emotion via chemosignals <i>Gün Semin et al.</i>	Metarepresentation as an adaptation for epistemic vigilance: Enhanced source memory for minimally counterintuitive concepts <i>Spencer Mermelstein et al.</i>
12:50 – 13:10	Intuitive kinship: Infants use cues of birth and feeding to infer relatedness and guide expectations of kin-directed behavior <i>Debra Lieberman et al.</i>	A map of interdependence in daily life <i>Simon Columbus et al.</i>	Individual differences in intrasexual competitiveness: A review and recent evidence for the effects of age and gender <i>Abraham Buunk</i>	Stress and odors <i>Anna Blomkvist et al.</i>	Rumour propagation and the eco-evolutionary dynamics of social information use <i>Alexandre Suire, Minus van Baalen</i>
13:10 – 14:30	Lunch / Graduate Student and Prospective Graduate Student Lunch (A2.09, A2.11, A1.03)				
Thursday Session 4	Development in harsh conditions	The evolution of vocal production and perception	Inclusive fitness	Networks and food sharing	Religious beliefs
Room	A0.01	A1.02	A1.03	A2.09	A2.11
14:30 – 14:50	Cognitive adaptations to harsh environments <i>Willem Frankenhuis et al.</i>	How do babies laugh? <i>Disa Sauter et al.</i>	How to test Hamilton's rule empirically <i>Matthijs van Veelen</i>	It's more than just tapas: The effects of sharing food on levels of trust and cooperation. <i>Charlotte De Backer et al.</i>	Moralizing high gods are a consequence, not a cause, of social organization <i>James Carney, Tamas David-Barrett</i>
14:50 – 15:10	A life history perspective on stress, coping, and disruptive life events <i>Dimitri Van der Linden et al.</i>	Spontaneous and volitional emotional vocalizations: An evolutionary perspective <i>Andrey Anikin</i>	Reconceptualizing kinship in terms of fitness interdependence <i>Lee Cronk et al.</i>	Daily food sharing in nonindustrial societies: Effects of subsistence ecology, socioecology, and phylogeny <i>Erik Ringen, Adrian Jaeggi</i>	Does social organisation co-evolve with witchcraft beliefs? <i>Sarah Peacey, Ruth Mace</i>
15:10 – 15:30	Cross-country relationships between life expectancy, intertemporal choice and age at first birth <i>Adam Bulley, Gillian Pepper</i>	Identity perception from spontaneous and volitional laughter <i>Carolyn McGettigan, Nadine Lavan</i>	Do parents favour sons? A study of sex-biased parental investment in rural Tanzania <i>Anushé Hassan et al.</i>	Influence of culture on sharing behaviour among "selfish" Ik former hunter-gatherers <i>Cathryn Townsend et al.</i>	Different gods for different minds: How belief reflects different models of mind <i>Rita Anne McNamara</i>

15:30 – 15:50	Discriminating ecologies: a life history approach to stigma and health <i>Steven Neuberg</i>	Infants perceive affiliation in colouughter at five months <i>Greg Bryant</i> <i>Athena Vouloumanos</i>	Rural economy diversification and its effects on child growth in Timor-Leste <i>Phoebe Spencer et al.</i>	The network dynamics of cooperation and social status in a small-scale society <i>Chris von Rueden,</i> <i>Daniel Redhead</i>	Do as I do, not as I say: Context biases in transmission of religious beliefs <i>Aiyana Willard</i>
15:50 – 16:10	Coffee Break				
16:10 – 17:10	Toby Kiers: Resolving host-microbe conflict (A0.01 – Livestream in A1.02)				
17:30 – 19:00	Women of HBES – CREA Café				
19:00 – 21:00	Poster Session				

Friday, July 6th

9:00 – 10:00	Ruth Mace: Matriliney in China: Using the toolkit from behavioural ecology to study cultural evolution (A0.01 – Livestream in A1.02)				
10:00 – 10:20	Coffee Break				
Friday Session 5	Human mating revisited	Leadership	The evolution of perception	Genetics	Perception of voices
Room	A0.01	A1.02	A1.03	A2.08	A2.11
10:20 – 10:40	Sexual Strategies Theory 2.0 <i>David Buss,</i> <i>David Schmitt</i>	Cross-cultural perceptions of facial prosociality, attractiveness, health, and dominance <i>Daniel Freund et al.</i>	You decide, I judge: Rich inferences from ostensibly irrelevant behavior <i>Max Krasnow</i>	Human mating and relationship genetics in the Postgenomic era <i>Shimon Saphire-Bernstein</i>	Beyond the halo effect in vocal attractiveness <i>David R. Feinberg et al.</i>
10:40 – 11:00	Predictive validity of partner preferences: Evidence from a large-scale prospective study <i>Tanja M. Gerlach et al.</i>	The impact of social rank on saliva cortisol and testosterone in relation to prosocial behavior in humans <i>Bernard Wallner et al.</i>	Visual attention to multiple individuals is driven by age and attractiveness <i>Rick O’Gorman,</i> <i>Tom Foulsham</i>	The evolutionary genetics of homosexuality <i>Brendan Zietsch et al.</i>	Does he sound cooperative? Acoustic correlates of cooperativeness <i>Arnaud Tognetti et al.</i>
11:00 – 11:20	Sex differences in mating-related age preferences: From unbelievable to undeniable to a screen near you <i>Douglas Kenrick,</i> <i>Jaimie Arona Krems</i>	Humans detect valid facial cues of leadership in chimpanzees <i>Alexander Bor et al.</i>	The evolution of graphic complexity <i>Helena Miton et al.</i>	Schizophrenia risk and reproductive success: A Mendelian randomization study. <i>Rebecca Lawn et al.</i>	Preferences for vocal masculinity among breastfeeding and nulliparous women in the Philippines <i>Michelle Escasa-Dorne et al.</i>
11:20 – 11:40	Sex differences in mate preferences across 44 cultures: A large-scale replication <i>Kathryn Walter,</i> <i>Daniel Conroy-Beam</i>	Power corrupts some (but not all) leaders: A situational affordances hypothesis <i>Ard Barends et al.</i>	Coevolutionary psychology and the embodied social brain <i>D. Vaughn Becker</i>	Japanese milk consumption: Asymptomatic lactose intolerance following a recent cultural diffusion <i>Bret Beheim,</i> <i>Masanori Takezawa</i>	Singing voice attractiveness is related to facial attractiveness in women <i>Marie M. Armstrong et al.</i>
11:40 – 11:50	Transition				

11:50 – 12:50	New Investigator Competition Talks (A0.01)				
13:10 – 14:30	Lunch Break / HBES Business Meeting (A2.08)				
14:30 – 15:30	Postdoc Competition Talks (A0.01)				
15:30 – 15:50	Coffee Break				
Friday Session 6	Health	Maternal Fitness	Social consequences of sexual strategies	Frontiers in friendship research	Leadership and followership
Room	A0.01	A1.02	A1.03	A2.08	A2.11
15:50 – 16:10	Quantifying life history trade-offs across the life span <i>Aaron Blackwell</i>	Family vs friends vs health professionals: Antenatal support and breastfeeding outcomes in the UK <i>Emily H. Emmott et al.</i>	Can cues of sexual competition affect attitudes towards promiscuity and the price of sex? <i>Rob Brooks et al.</i>	Interest in extra-community friends is a product of both resource needs and existing relationships in the Bolivian Amazon <i>Anne Pisor</i>	Dominance and prestige: Debates, misunderstandings, and new evidence <i>Joey T. Cheng et al.</i>
16:10 – 16:30	Sociality and the microbiome: How human social interactions influence the evolution of microbial fitness effects on hosts <i>Athena Aktipis</i>	Twinning reduces maternal fitness <i>Ian Rickard</i>	Do religious people perform more mate retention behaviors? <i>Adam Tratner et al.</i>	What threatens our friendships? Cause(s) of friendship jealousy <i>Jaimie Arona Krems et al.</i>	On the dynamics of social hierarchy: A longitudinal investigation of the rise and fall of prestige, dominance, and social rank <i>Daniel Redhead et al.</i>
16:30 – 16:50	Efficiency of mitochondrial functioning as the fundamental biological mechanism of general intelligence (g) <i>David Geary</i>	Parent-offspring conflict in adolescence and young adulthood: Findings from a Micronesian population <i>Kristen Syme, Edward Hagen</i>	Religious people are trusted because they are viewed as slow life-history strategists <i>Jordan Moon et al.</i>	Friendship signals: The cues preferred in same-sex friendships <i>Keelah Williams et al.</i>	Adaptive followership psychology and political ideology: assessing competing explanations for conservatives' preferences for dominant leaders <i>Lasse Laustsen et al.</i>
16:50 – 17:10	Omega-3 fatty acids: Why they're anti-inflammatory and why it matters <i>Steven Gangestad et al.</i>	Practice for parturition: A novel hypothesis for the adaptive significance of female sexuality and orgasm <i>Natalie Dinsdale, Bernard Crespi</i>	Disgust sensitivity relates to attitudes toward gay men and lesbian women (and other sexual groups) across 31 nations <i>Florian van Leeuwen</i>	Morality, alliances, and the side-taking hypothesis <i>Alex Shaw et al.</i>	Infants ascribe unique responsibilities to leaders <i>Maayan Stavans, Renée Baillargeon</i>
17:10 – 17:20	Transition – Refill on coffee & snacks				
17:20 – 18:20	Pat Hawley: Academic conferences as competitive ecologies (A0.01 – Livestream in A1.02)				
19:00 – 22:30	Canal Cruises (Nieuwe Keizersgracht 1 – departing at 19:00 and 21:00)				

Saturday, July 7th

9:00 – 10:00	Dan Fessler: How I learned to stop worrying and love the replication crisis (A0.01 – Livestream in A1.02)				
10:00 – 10:20	Coffee Break				
Saturday Session 7	Energetics	The ontogeny of naive sociology	Behavioral immune system	To compete or cooperate?	Reproduction
Room	A0.01	A1.02	A1.03	A2.07	A2.11
10:20 – 10:40	Oxidative stress and facultative adjustment of energy allocation <i>Nicholas Grebe et al.</i>	The origins of social stratification: Human adults' and infants' representations of derived social dominance <i>Olivier Mascaro</i>	Sounds of sickness: Can people identify infectious disease using auditory cues? <i>Joshua Ackerman et al.</i>	The cancellation effect at the group level <i>Aslihan Akdeniz, Matthijs van Veelen</i>	Sharing the load: Do co-resident children influence intra-household allocation of work and schooling in North-Western Tanzania? <i>Sophie Hedges et al.</i>
10:40 – 11:00	Lassitude: An emotion for adjustment to energetic stress <i>Joshua Schrock et al.</i>	Giving as a cue of equality-matching relations: Evidence from infants' encoding of bookkeeping-relevant information <i>Denis Tatone</i>	People who lack social connection are more disgusted by pathogen cues <i>Theresa Robertson, Andrew Delton</i>	The importance of learning in public goods experiment: A comparative analysis of 130 studies <i>Maxwell Burton-Chellew et al.</i>	Effects of individual extrinsic mortality experience on out of wedlock fertility in 18th and 19th centuries Krummhörn, Germany <i>Katharina Pink et al.</i>
11:00 – 11:20	A life history perspective on maternal emotional investment in children during infancy <i>Sarah Myers, Sarah Johns</i>	Three-month-old human infants use vocal cues of body size <i>David Pietraszewski et al.</i>	Infectious disease has many faces: Are they all the same? <i>Nicholas Michalak, Joshua Ackerman</i>	Emergence of cooperative division of labor in dyadic foraging under risk <i>Kiri Kuroda, Tatsuya Kameda</i>	Integration and reproduction in a refugee population: Integration increases social status while in-group bonding increases fitness outcomes of Finnish evacuees in World War II <i>Robert Lynch et al.</i>
11:20 – 11:40	Single men feel competitive and hungry for high-calorie food after exposure to sexualized female models <i>Sylvie Borau, Jean-François Bonnefon</i>	Preschoolers use the gratefulness of newcomers as a cue for their future altruism <i>Lotte Thomsen et al.</i>	Pupil dilation as a measure of disgust <i>Kate McCulloch et al.</i>	Competition for priority and the natural selection of bad science <i>Leonid Tiokhin et al.</i>	Matrilateral bias in grandmaternal care: Urban-rural differences and changes over time <i>Martin Daly, Gretchen Perry</i>
11:40 – 11:50	Transition				
Saturday Session 8	False beliefs	Mate preferences	Trust and cooperation	Evolution, psychology, and health	Rituals
Room	A0.01	A1.02	A1.03	A2.07	A2.11
11:50 – 12:10	An evolutionary perspective on paranoid thinking <i>Nichola Raihani, Vaughan Bell</i>	Willingness to protect is a special domain of investment for women, but not men: A meta-analysis of sexually dimorphic effects of resource domains in mate and friend choice <i>Sakura Arai et al.</i>	Cooperation, corruption, competition, and the evolution of evil eye <i>Michael Muthukrishna</i>	Beggars can't be choosers: Disgust sensitivity varies as a function of control over pathogen exposure <i>Hannah Bradshaw et al.</i>	The cultural evolution of shamanism <i>Manvir Singh</i>

12:10 – 12:30	Cognitive and motivational obstacles to the spread of counter-intuitive beliefs <i>Hugo Mercier et al.</i>	Good things come to those who “weight”: Comparison of trait integration methods <i>Jordann L. Brandner et al.</i>	Generosity on the steppes: Allocation games among Mongolian nomadic pastoralists <i>Thomas Conte</i>	Inflammation predicts decision-making characterized by impulsivity, present focus, and an inability to delay gratification <i>Jeff Gassen et al.</i>	The puzzle of large scale costly ritual: How the costs of a few can bind the many <i>Ronald Fischer et al.</i>
12:30 – 12:50	Coalitional psychology and the spread of fake news <i>Michael Bang Petersen, Mathias Osmundsen</i>	Investigating mate preferences through a data-driven analysis of online personal descriptions <i>Anthony J. Lee et al.</i>	Parochial trust and cooperation across 17 societies <i>Angelo Romano et al.</i>	Are healthy dates sexier mates? Exploring the relationship between men’s health and their mate value <i>Summer Mengelkoch et al.</i>	Gene-culture coevolution of bonding rituals <i>Karl Frost</i>
12:50 – 13:10	Orwell meets Darwin: Collective stupidity and the evolutionary politics of information <i>John Tooby</i>	How to do it? Controlled experiments might sacrifice ecological validity <i>Elisabeth Oberzaucher</i>	Sex differences in trust and trustworthiness: A meta-analysis of the trust game and the gift-exchange game <i>Olmo van den Akker et al.</i>	Environmental unpredictability in childhood predicts eating in the absence of hunger <i>Randi Proffitt Leyva et al.</i>	How brave is she? “Affordance testing” to actively assess others’ potential opportunities and threats <i>Cari Pick, Steve Neuberg</i>
13:10 – 14:30	Lunch Break / Methods and Stats Workshop (A1.02)				
Saturday Session 9	Testing theories of human cooperation	War and violence	Attractiveness and mating	Conflict in mating and parenting	Strategic minds
Room	A0.01	A1.02	A1.03	A2.07	A2.11
14:30 – 14:50	Baker’s Town: A novel game to test theories and models of cooperation <i>Jolene Tan</i>	Obscuring warfare and violence among hunter-gatherers <i>Raymond Hames</i>	Why women wear high heels: Evolution, lumbar curvature, and attractiveness <i>David Lewis et al.</i>	Parent-offspring conflict over mate choice: Cross-cultural evidence from the HRAF <i>Steven J.C. Gaulin et al.</i>	Double standards of the political mind: Empirical support for the alliance theory <i>David Pinosof</i>
14:50 – 15:10	Why hate the good guy? Antisocial punishment of high cooperators is higher when people compete to be chosen <i>Aleta Pleasant, Pat Barclay</i>	Why war is a man’s game <i>Alberto Micheletti et al.</i>	Attractive bodies: Are sexually dimorphic features important in a face-to-face context? <i>Morgan Sidari et al.</i>	Does arranged marriage disrupt evolved mate-choice algorithms? A test from the Chitwan Valley of Nepal. <i>Elizabeth Agey, Steven J.C. Gaulin</i>	Children’s and apes’ capacity to imagine and prepare for alternative future possibilities <i>Jonathan Redshaw, Thomas Suddendorf</i>
15:10 – 15:30	Prestige, dominance, and social learning among leaders in an egalitarian society <i>Zachary Garfield, Edward Hagen</i>	Economic inequality and violence in London neighbourhoods <i>Jaye McLaughlin, Nicholas Pound</i>	Male sexual dimorphism As a predictor of mating/reproductive success: A meta-analysis <i>Linda H. Lidborg et al.</i>	Parent-offspring conflict over marital timing among Sukuma Agropastoralists in Northwestern Tanzania <i>Susan Schaffnit et al.</i>	Better social reasoning through mistrust and mindreading: Conditional inferences are correlated with theory of mind ability and lower interpersonal trust <i>Gary L. Brase, Jordann L. Brandner</i>

15:30 – 15:50	Reciprocity outperforms conformity to promote cooperation <i>Daniel Balliet, Angelo Romano</i>	Lifetime reproductive success of women volunteers in a Second World War paramilitary organization <i>John Loehr et al.</i>	The role of vocal parameters in perception of male dominance and attractiveness <i>Christoph Schild et al.</i>	Can evolutionary theory explain patterns of male-to-female intimate partner violence across 13 sub-Saharan African countries? Testing the evidence for paternity certainty and reproductive conflict <i>Janet A. Howard, Mhairi A. Gibson</i>	Welfare tradeoff psychology is present in early childhood <i>Rhea Howard et al.</i>
15:50 – 16:10	Coffee Break				
Saturday Session 10	Social evaluation: Universal logic and evolutionary consequences	Coalitional conflict	Punishment and outrage	Comparative studies of cooperation	Mate preferences and tactics
Room	A0.01	A1.02	A1.03	A2.07	A2.11
16:10 – 16:30	How humans assess and allocate status <i>Patrick Durkee et al.</i>	How to divide to conquer: Spoils division rules shape aggression between natural groups <i>Hannes Rusch et al.</i>	Understanding cooperativeness in humans <i>Victoria V. Rostovtseva et al.</i>	The evolutionary origin of social bonding through shared experiences: Adults, infants and great apes connect with others through joint attention. <i>Wouter Wolf, Michael Tomasello</i>	I know what I like...or do I? Illusory preference in mate choice <i>Edward Morrison et al.</i>
16:30 – 16:50	Cross-cultural regularities in the cognitive architecture of pride <i>Daniel Sznycer</i>	Political results: Outcomes of sporting events affect political attitudes and biases <i>Nicholas Kerry et al.</i>	The effect of counter-punishment on the efficiency of cooperation in public goods game <i>Joon Hwang</i>	Time choices: The 'sexy ape' spends far more time in play than in sex <i>Isabel Behncke et al.</i>	Longitudinal analysis of men's intrasexual competitiveness, state anxiety, salivary testosterone, and salivary cortisol <i>Jaimie S. Torrance et al.</i>
16:50 – 17:10	Global self-evaluations track locally valued traits across cultures <i>Aaron Lukaszewski et al.</i>	Synchronization and coordination differentially affect perceived group formidability and social bondedness <i>Jacques Launay</i>	Second- and third-party punishment are characterized by different emotions and different aggressive tactics <i>Catherine Molho et al.</i>	How do chimpanzees overcome conflicts of interest to coordinate their actions and solve the Volunteer's Dilemma? <i>Shona Duguid et al.</i>	Cross sectional and longitudinal evidence that body mass and waist-hip ratio ideals are subject to cultural influence in a non-WEIRD sample. <i>Lynda Boothroyd</i>
17:10 – 17:30	Assortative mating and the evolution of human trait covariation <i>Daniel Conroy-Beam</i>	Memory (mis)matches: Accurate and biased recall of terror-suspects <i>Miriam Lindner</i>	Man up and take it: Greater concern for female than male suffering <i>Tania Reynolds et al.</i>	Why be nice to strangers: The case of bonobos and the first impression hypothesis <i>Jingzhi Tan et al.</i>	Kin support for female genital cutting in rural Ethiopia <i>Mhairi Gibson et al.</i>
17:30 – 17:40	Transition				
17:40 – 18:10	Awards and Announcements (A0.01)				
18:10 – 19:15	Keynote (A0.01 – Livestream in A1.02)				
19:45 – 23:00	Banquet (Hotel Krasnapolsky, Dam 9)				

Poster Presentations

1. **Does morality lead to trust and cooperation?** Cristina Acedo-Carmona, Antoni Gomila
2. **High Rank as a Double-Edged Sword: Cost-Benefit Tradeoffs of Social Status.** Cristian Acevedo, Frank Reyes, Aaron Lukaszewski
3. **Choose your words wisely: Evolutionary perspectives on personality assessments based on language use in online dating.** Dorothea C. Adler, Maximilian T. P. von Andrian-Werburg, Frank Schwab, Sascha Schwarz, Alicia L. Schäfer, Leonie S. Albrecht, Sarah H. Häring, Benjamin P. Lange
4. **Can listeners assess health from men's voices?** Graham Albert, Zeynep Şenveli, Steven Arnocky, Carolyn Hodges-Simeon
5. **Do transgender people respond according to their biological sex or their gender identity when confronted with romantic rivals?** Ines Aristegui, Alejandro Castro Solano, Abraham P. Buunk
6. **Explaining Individual Differences in Sexual Morality Within an American Sample.** Kelly Asao, David Buss
7. **Are there rules in friendship?** Jessica D. Ayers, Jaimie Arona Krems, Athena Aktipis
8. **Women With Competitive Partner Cooperative With Other Fertile Woman Under Male-threat Context.** Sojung Baek, Dayk Jang
9. **Dark Triad Personality, Impulsivity and Sexual Coercion: A study of Chilean men.** Carmen Gloria Baeza, Ana María Fernandez
10. **Submissive now does not mean submissive later: Children's inferences about power.** Anam Barakzai, Hannah Kim, Alex Shaw
11. **'Green beard' relatedness, not indirect reciprocity, explains why individuals help those who help others.** Gilbert Roberts
12. **Jealousy in the lab: the effect of a third party investment in the romantic partner.** María Teresa Barbato, Ana María Fernández, Carlos Rodríguez-Sickert
13. **Adaptations to risk in different life history strategies: The specific functions of anxiety and worry.** Heitor Barcellos Ferreira Fernandes, Claudio Hutz, Leif Edward Ottesen Kennair, Daniel Kruger, A.J. Figueredo, Elin Aamelfot, Regine Bakken, Mateo Peñaherrera Aguirre
14. **Vocal modulation and its relation to mating success.** Melissa Barkat-Defradas, Michel Raymond, Alexandre Suire
15. **Physical formidability and participation in political violence: Survey evidence from Belarus, South Africa, and Venezuela.** Henrikas Bartusevicius
16. **Electronic helping behavior: Do men help only beautiful women in Social Networks?** Lisa Baßfeld, Sascha Schwarz
17. **What makes men and women jealous? Stereotypical beliefs vs evolved adaptations.** Mons Bendixen, Leif Edward Ottesen Kennair
18. **Fearing violence elicits attractiveness to thinner men in Colombian women.** Martha Lucia Borrás Guevara, Carlota Batres, David I. Perrett
19. **Psychopathy induces favorable impressions from potential mates: Testing a function hypothesis.** Kristopher Brazil, Adelle Forth

20. **Fictional outgroups in a VR environment as trigger for the self-protection system.** Michael Brill, Florian Nerz, Frank Schwab
21. **Empathy and intolerance for people with disabilities: gender and personal differences among Russian students.** Valentina Burkova, Marina Butovskaya, Yulia Fedenok
22. **Do aggressive males have more children in traditional pastoral society: the Maasai of Tanzania.** Marina Butovskaya, Dmitriy Karelin, Audax Mabulla
23. **The impact of sound teeth and a fresh breath on interpersonal relationships.** Yvonne Buunk-Werkhoven, Abraham Buunk
24. **Multidimensionality of food neophobia: Variation across meats and plants.** Çağla Çınar, Joshua M. Tybur, Annika K. Karinen
25. **No evidence that facial attractiveness, femininity, averageness, or coloration are valid health cues in young adult women.** Ziyi Cai, Amanda Hahn, Weiqing Zhang, Iris Holzleitner, Anthony Lee, Lisa DeBruine, Benedict Jones
26. **Kinship, Mateship and Facial Similarity.** Rachel Cassar, Iris Holzleitner, Lisa DeBruine
27. **Human Violence and Hierarchies: the theory of inequality in the access to Wealth and Sexuality.** Radoje Cerovi
28. **How One Copes Under Uncertainty Depends on Childhood Experiences: A Life History Theory Approach.** Young-Jae Cha
29. **Exploring humans' perception of randomness with two spatial distribution statistics.** Noah Chicoine, Andreas Wilke
30. **Genetic and Environmental Contributions to Age at Menarche: Interactive Effects of Father Absence and the LIN28B Gene.** Hyun-Jin Cho, Gabriel Schlomer
31. **Characterizing symptoms of psychopathology on fast and slow Life History dimensions.** Kristine Joy Chua, Joseph H. Manson, Molly Fox, Aaron Lukaszewski
32. **Less Attractive Individuals Choose More Flattering Online Dating Profiles but Do Not Exhibit Greater Choosiness.** Samantha Cohen, Peter Todd
33. **Patterns of weather-forecast use are consistent with evolutionary explanations of sex differences.** Graduates of the Project Practicum Human Behavior, Sonja Windhager, Katrin Schaefer
34. **Domains of Sexual Disgust.** Courtney Crosby, David Buss
35. **Sex, demographics, 'n' mate value. Psychometric characteristics and demographic correlates of the Mate Value Scale.** Zsófia Csajbók, Jan Havlíček, Zsolt Demetrovics, Mihály Berkics
36. **Political Fears: How the fundamental motives of disease avoidance and self protection affect conservative views of out-groups.** Laura Dane, Navdeep Khabra
37. **Measuring the effectiveness of benefit-provisioning and cost-inflicting mate retention tactics in married couples.** Tara DeLecce, Glenn Weisfeld, Carol Weisfeld, Juliiang Shen
38. **Childhood adversity and abuse: An overlooked moderator of ovulatory cycle shifts for "good genes" preferences?** Tran Dinh, Steven Gangestad
39. **Adaptive Benefits of Limited Working Memory Capacity in Dynamic Environments.** Mahi Luthra, Peter Todd
40. **Getting in touch – Social status predicts physical interaction in classrooms.** Stephanie Josephine Eder, Elisabeth Oberzaucher

41. **Ethnicity, folk-theories, and psychological essentialism among Wichí communities of Northern Argentina.** Alejandro Erut
42. **Incongruent autobiographical information about individuals' trustworthiness affects their recognition: Empirical investigation of an adaptive memory for social exchanges.** Daniel Farrelly, Fatima Felisberti
43. **Birth order does not affect ability to detect kin.** Vanessa Fasolt, Iris J. Holzeitner, Kieran J. O'Shea, Anthony J. Lee, Benedict C. Jones, Lisa M. DeBruine
44. **Are non-verbal facial cues of altruism cross-culturally readable?** Charlotte Faurie, Noriko Yamagata-Nakashima, Arnaud Tognetti, Ryo Oda
45. **Dishonest Behavior in Brazilian Context.** Claudia Feitosa-Santana, Tiago Bortolini, Juliane Kristine De Lima, Lucas Alves Lima, Geovanni Vitor Oliveira-Santos, Jorge Moll, Edson Amaro Junior
46. **Barriers to Applied Evolution Research.** William Felton, Kate Ringer, Eve Buck, Romana Hyde, Kirsie Lundholm, Oscar Salinas, Russell Jackson
47. **Relationship jealousy in women using various hormonal contraceptives.** Hannah Fergusson, Benjamin Skillman, Julia Kandus, Amanda Hahn
48. **Mating appeal of the Sex and the City characters in a Spanish sample.** Ana Maria Fernandez, Cristina Acedo-Carmona, Ania Grant, Maryanne Fisher, Oriana Figueroa, Patricia MacEachern-Fee
49. **I am violent because I don't feel sexy.** Ana Maria Fernandez, Jose Muñoz-Reyes, Oriana Figueroa, Paula Pavez, Maryanne Fisher
50. **Religion, Wealth and Inequality in the USA.** Kathryn Ford, Michael Price, Jacques Launay, Tara Marshall
51. **A strange situation: Introducing the concept of "adaptation asynchrony" using disorganised attachment to describe adaptations unfolding under conditions of environmental mismatch.** Paz Fortier, Kristopher Brazil, Louis Schmidt
52. **Using Interleukin-6 to Predict Life History Variation.** Michael Frederick, Ingrid Tulloch
53. **International Comparisons of Behavioral Immune System among Japan, Malaysia, and the Philippines.** Yasuyuki Fukukawa, Kai Hiraishi, Ryo Oda, Tan-Soon Aun, Sarvarubini Nainee, Maria-Guadalupe Salanga, John-Jamir-Benzon Aruta
54. **Digit ratios, masculinization markers and conspicuous spend in a Colombian sample.** Oscar Galindo
55. **Fairness is what you can get away with.** David Gordon, Mikael Puurtinen
56. **Spatial adaptations for cognitive search: A literature search.** Belle Hall, Taylor Dawley, Andreas Wilke
57. **No evidence for correlations between handgrip strength and sexually dimorphic acoustic properties of voices.** Chengyang Han, Hongyi Wang, Vanessa Fasolt, Amanda Hahn, Iris Holzleitner, Junpeng Lao, Lisa DeBruine, David Feinberg, Benedict Jones
58. **Ambiguous Eye Contact Increases Perceptions of Threat in Real World Settings.** Christian Hart
59. **Vocal cues as signaling behavior in early childhood.** Carlos Hernández-Blasi, David F. Bjorklund, Sonia Agut, Francisco Lozano, Miguel Ángel Martínez
60. **Women's perception of men's overperception of women's sexual-intent and what she says she really wants.** Kai Hiraishi, Yurina Kawahata, Kaiho Nomura, Hidenori Shigematsu

61. **Ease your Partner's Jealousy by Cheating Again: Jealousy Decreases as Partner Number Increases.** Benjamin Gelbart, Cari M. Pick, Asha Ganesan, Adam Cohen
62. **Which 3D shape cues drive perceptions of facial similarity?** Iris Holzleitner, Kieran O'Shea, Vanessa Fasolt, Benedict Jones, Lisa DeBruine
63. **Friends with potential benefits: Exploring the relationships between individual differences and backup mates.** Sydney A. J. Huxman, Jordann L. Brandner, Gary L. Brase
64. **Second-Order Reputation in a Linked Game.** Misato Inaba, Nobuyuki Takahashi
65. **The Effects of Facial Skin Smoothness and Blemishes on Trait Impressions.** Bastian Jaeger, Fieke M. A. Wagemans, Anthony M. Evans, Ilja van Beest
66. **Gains to cooperation drive the evolution of egalitarianism.** Adrian Jaeggi, Paul Hooper, Hillard Kaplan
67. **Using Emotional Intelligence and Musical Training to Predict Emotion-Detection in Music: A Cross-Cultural Study.** Olivia Jewell, Amanda Baroni, Jacqueline DiSanto
68. **Postnatal depression is associated with detrimental life-long and multi-generational impacts on relationship quality.** Sarah E. Johns, Sarah Myers
69. **Bright lights, big city: The Dark Triad traits and geographical preferences.** PK Jonason
70. **Can children's growth be used to determine when suites of subsistence practices are "adaptive strategies"?** Debra Judge, Phoebe Spencer
71. **Testing a Life History Model of Psychopathology.** Bianca Kahl, Phil Kavanagh, David Gleaves
72. **Functional brain connectivity of homo economicus: A multi-modal imaging study using the Human Connectome Project pipeline.** Kei Kanari, Atsushi Miyazaki, Toru Ishihara, Hiroki Tanaka, Kuniyuki Nishina, Takayuki Fujii, Muneyoshi Takahashi, Tetsuya Matusda, Toshio Yamagishi
73. **Using thermography to measure stress responses.** Julia Kandus, Yacoub Innabi, Ben Skillman, Carmen LeFevre, David Perrett, Amanda Hahn
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96. **The influence of gender conformity on preferences for sexual dimorphism in male and female faces.** Jenna Lunge, Lisa Welling
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99. **Females prefer less complex music and males prefer more complex music: Support that music may function as a signal of fitness in sexual selection.** Guy Madison
100. **Fleeting beauty – Decision making in men is altered by ejaculation.** Berry Maletzky, Sabine Tebbich, Elisabeth Oberzaucher

- 101. Life History Strategy and the Dark Triad: Are Some Facets of Narcissism Indicators of a Slow LHS?**
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- 103. Looking at trees - Leaf shapes and preferences.** Kathrin Masuch, Pia Marlena Böhm, Johanna Köllner, Stefania Zingale, Elisabeth Oberzaucher
- 104. Religiosity and sexual and cooperation based moral transgressions - a test of the Reproductive Morality Model.** Tiffany Matej Hrkalovic, Igor Miklousic
- 105. Population Density and Life History Strategy in Japan.** Masafumi Matsuda, Tessei Kobayashi
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- 110. Compartir el Pan: A Social Evolutionary Perspective of the Abriendos Caminos Intervention.** Shannin Moody, Kimberly Greder, Brianna Routh, Wen Wang, Elizabeth Shirtcliff, Marian Kohut, Margarita Teran-Garcia
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- 115. Two types of ingroup cooperation, group-based and reciprocity-based psychological mechanisms.** Yumi Nakagawa, Kunihiro Yokota, Daisuke Nakanishi
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- 118. Oxytocin receptor gene regulates resting-state functional connectivity of attitudinal trust.** Kuniyuki Nishina, Tamagawa University, JSPS Research Fellow Miho, Inoue-Murayama Hidehiko, Takahashi Masamichi, Sakagami Tetsuya, Matsuda Toshio, Yamagishi Haruto, Takagishi
- 119. Do manipulated mood affect altruist detection?** Ryo Oda, Tomomi Tainaka, Noriko Yamagata-Nakashima, Kai Hiraishi
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- 122. Do same-sex siblings share similar vocal characteristics? An investigation of vocal traits among kin.** Kieran J. O'Shea, Rebecca Lai, Chengyang Han, David R. Feinberg, Benedict C. Jones, Lisa M. DeBruine

- 123. Positive association between facial and vocal femininity/masculinity in women but not in men.** Kamila Pereira, Marco Varella, Karel Kleisner, Ondřej Pavlovič, Jaroslava Valentova
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- 128. 2D-3D Kin Recognition in Human Faces.** Tommaso Querci, Iris Holzleitner, Lisa DeBruine
- 129. Ovulatory cycle and female preferences for foreign men.** Dora Raos, Josip Skejo, Damjan Franjević, Igor Miklousic
- 130. Beyond BMI using CGI: The Development of a 3-Factor array of Computer-Generated Body Stimuli and Use in Mate Preference Research.** Simon D. Reeve, Lisa L. M. Welling, Justin K. Mogilski
- 131. Selfies for Science: Recommendations for using participant-taken facial photographs in research.** Thomas Richardson, Christian Klingenberg, Tucker Gilman
- 132. Extending Life History Theory to Intra-Individual Variation.** George Richardson, Mark H. C. Lai
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- 139. Physical resemblance between romantic partners and family members.** Tamsin Saxton, Catherine Steel, Katie Rowley, Amy Newman, Thom Baguley, Thomas Pollet, Lisa DeBruine
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- 142. Mate choice through classified ads over the lifespan.** Clemens Schwender
- 143. Sex Differences in Perceptions of Sexual Harassment.** Anna Sedlacek, Joy Wyckoff, David Buss
- 144. Exploring Variation in The Types of Romantic Relationships.** Ayten Yeşim Semchenko, Gülsevım Eysel, Zsófia Csajbók, Jan Havlíček
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152. **Skin texture and colour predict perceived health in Asian faces.** Ian Stephen, Bernard Tiddeman, Kok Wei Tan
153. **Gender and love style are linked to emotional versus sexual jealousy.** Andrea Lorena Stravogiannis, Jaroslava Valentova, Hermano Tavares
154. **Honest signals of psychosocial stress in voice.** Anna Szala, Katarzyna Pisanski, Aleksander Kobylarek, Luba Jakubowska, Kamil Błaszczński, Amelia Walter, Magda Kasprzyk, Krystyna Łysenko, Irmina Sukiennik, Judyta Nowak, Katarzyna Piątek, Tomasz Frąckowiak, Piotr Sorokowski
155. **Attractiveness of a friend and a romantic partner moderate the sexual interest in opposite-sex friend.** Aleksandra Szymkow
156. **Social value orientation regulates the function of the right DLPFC on pro-social behavior.** Haruto Takagishi, Atsushi Miyazaki, Toru Ishihara, Hiroki Tanaka, Kei Kanari, Kuniyuki Nishina, Takayuki Fujii, Muneyoshi Takahashi, Toshio Yamagishi
157. **Positive Fortune-telling Enhances Men's Financial Risk Taking.** Xiaoyue Tan, Jan-Willem Van Prooijen, Paul Van Lange
158. **Creativity Does Not Just Signal Intelligence.** John Taylor
159. **Tidiness of Mind: The Evolutionary Embodied Cognitive Consequences of Disgust.** John Terrizzi, Jr., Robert Goodman
160. **Consensual but undesired sex: sexual arousal patterns in a sample of students from a sexually liberal, gender-equal culture.** Trine Tørseth, Leif Edward Ottesen Kennair, Mons Bendixen
161. **The Anatomy of Outrage.** Dylan Tweed, Max Krasnow
162. **Sociosexuality and gender in real-life friendship groups.** Max van Duijn, Michael Laakasuo, Tamas David-Barrett, Anna Rotkirch
163. **Mate Value Discrepancies and Relationship Satisfaction in Heterosexual and Non-Heterosexual Romantic Relationships.** Matthew Vazquez, Aaron Cisneros, Cari Goetz
164. **Tough love? An evolutionary perspective on female nonmainstream pornography preferences.** Maximilian T. P. von Andrian-Werburg, Frank Schwab
165. **Altruistic behavior in a context of sexual selection: Do we help attractively - dressed women and handsome men more than others?** Iva Vukojević, Iva Sović
166. **The role of social information in infants' behavioral responses to plant threats.** Aleksandra Włodarczyk, Camille Rioux, Annie Wertz

167. **Beyond the mere presence of others: context and women's perceptions of female faces.** Danielle Wagstaff
168. **Who am I? How childhood unpredictability impacts self-concept consistency.** Iris Wang, Joshua Ackerman
169. **The influence of competition outcome on face preferences in men and women.** Lisa L. M. Welling, Jonathon P. Saulter, Andrea G. Smith, Sabrina Gretkierewicz
170. **Seeing what is not there: detecting false positives in art historical analyses of paintings.** Raquel Wilner
171. **Stereotyping of facial morphs calibrated by body fat in three age groups.** Sonja Windhager, Fred L. Bookstein, Katrin Schaefer
172. **Gossip as a tactic of intrasexual competition.** Joy Wyckoff, Kelly Asao, David Buss
173. **A preregistered, data-driven test for cross-cultural differences in face-shape preferences.** Lingshan Zhang, Iris Holzleitner, Anthony Lee, Hongyi Wang, Chengyang Han, Lisa DeBruine, Benedict Jones
174. **No evidence that facial width-to-height ratio (fWHR) is associated with women's sexual desire.** Weiqing Zhang, Amanda Hahn, Ziyi Cai, Anthony Lee, Iris Holzleitner, Lisa DeBruine, Benedict Jones
175. **Morphological cues of animacy: Sagittal plane symmetry supersedes face and whole-target visibility in predicting the speed of superordinate level classification.** Madeleine Zoeller, Erin Horowitz, Tamsin German, Leda Cosmides

Oral Presentation Abstracts

Wednesday July 4th, 2018
Session 1 (15:30 – 16:50)

Hormonal influences on women's mating strategies: New developments and directions
(A0.01)

Life-history trade-offs across the ovulatory cycle: Cycle shifts predict women's food intake and sexual desire

Julie C. Driebe, Ruben C. Arslan, Julia Jünger, Tanja M. Gerlach, Lars Penke

Fessler (2003) stated “during the fertile period, females have better things to do than eat.” This statement refers to life-history theory which suggests that every individual has a limited budget of effort and resources, therefore, facing trade-offs in what kind of activities energy will be allocated in. Life history theory is mainly focused on trade-offs across an individual's lifespan. However, recent research also suggests changes across the female ovulatory cycle. Women should receive reproductive advantages when investing in mating effort during their fertile phases, potentially at the cost of lower somatic investment. The reversed pattern should be more beneficial during women's luteal phases. Taking into account recent criticism of research on ovulatory cycle shifts, we investigated women's life-history trade-offs across their ovulatory cycles in a large, pre-registered diary study. A total of 1,106 women participated in an online study across 70 days (over 47,000 days in total). Using multi-level models, we compare ovulatory cycle shifts from 655 women with a natural cycle to 451 women taking hormonal contraceptives. Evidence is in line with previous research suggesting a lower self-reported food intake during women's fertile phases, accompanied by an increased sexual desire. Other ovulatory cycle shifts in effort allocation were not supported and are discussed.

No evidence for ovulatory cycle shifts in women's mate preferences for male body masculinity, voice masculinity and behavioral displays in a large, pre-registered study

Julia Jünger, Tanja M. Gerlach, Lars Penke

The existence of ovulatory cycle shifts in women's mate preferences has been discussed controversially. Former evidence showed that naturally cycling women in their fertile window, compared to their luteal phase, evaluate specific physical and behavioral cues in men as more attractive for short-term relationships. However, recent research has cast doubt on these findings. We addressed this debate in a large, pre-registered within-subject study including salivary hormone measures and luteinizing hormone tests. One-hundred-fifty-seven female participants rated natural men's bodies, voices and behaviors on sexual and long-term attractiveness. Multilevel intraindividual comparisons across two ovulatory cycles revealed significant cycle shifts: When fertile, women's ratings of men's stimuli increased for sexual as well as for long-term attractiveness. Contrary to other findings in the literature, none of men's characteristics interacted with these cycle shifts. Effects were only found for partnered women, not for singles. Taken together, our results do not support women's mate preference shifts, as assumed by the good genes ovulatory shift hypothesis. Hormonal mechanisms and implications for estrus theories will be discussed.

Women's emotional and sexual attraction to men across the menstrual cycle

Rei Shimoda, Anne Campbell, Robert A. Barton

There is ongoing debate about how and why the menstrual cycle affects women's attraction to men. According to the dual sexuality hypothesis, women form pair-bond relationships with men who provide care but also obtain genetic benefits by biasing mating effort towards men with high-fitness genes during the fertile phase. By contrast, the commitment hypothesis proposes that attachment bonds with primary partners function to strengthen pair-bond relationships by enhancing in-pair attraction at the fertile phase, rather than extrapair attraction. We tested these hypotheses by measuring women's daily sexual and emotional attraction towards men over the whole menstrual cycle. There was a mid-cycle rise in extrapair sexual desire. Women gave and received more care from partners during the menstrual than the mid-cycle phases. Partner's sexual attractiveness and mutual commitment did not moderate these findings. The results do not support either the dual sexuality or commitment hypotheses, and imply that female self-reported sexual desire is not strictly dependent on cyclic hormonal changes. Our results are more consistent with a recently proposed 'spandrel' hypothesis, positing cycle phase effects as a nonfunctional by-product of raised estradiol. Additionally, we found that, with the date of ovulation estimated by luteinizing hormone tests, 29% of ovulations were misclassified by the backward counting method, which urges caution in interpreting results based on counting methods.

No compelling evidence that hormonal status regulates women's face preferences, sociosexuality, or sexual disgust

Benedict Jones, Amanda Hahn, Michal Kandrik, Hongyi Wang, Anthony Lee, Iris Holzleitner, Lisa DeBruine

Women in hormonal states associated with high fertility are hypothesized to show increased preferences for uncommitted sexual relationships with men displaying putative fitness cues (e.g., masculine or symmetric characteristics). However, methodological issues with research on this topic have led some researchers to suggest these effects may not be robust. To investigate this issue, we conducted a large-scale (N=584) longitudinal study to investigate whether women's face preferences, desire for uncommitted sexual relationships, and sexual disgust tracked changes in steroid hormone levels. We then used linear mixed models to test for within-subject effects of estradiol, progesterone and their interaction (Model 1), estradiol, progesterone, and estradiol-to-progesterone ratio (Model 2), and testosterone and cortisol (Model 3) on responses. These analyses showed no evidence that women's face preferences, desire for uncommitted sexual relationships, or sexual disgust tracked changes in hormone levels. By contrast, women's general sexual desire appeared to track changes in both progesterone and estradiol. Our results do not support the influential hypothesis that women's desire for uncommitted sexual relationships with men displaying putative fitness cues track within-subject changes in hormone levels. Instead, our results suggest changes in hormonal status may simply regulate women's general sexual desire.

Wednesday July 4th, 2018
Session 1 (15:30 – 16:50)

Stories
(A1.02)

Oral Storytelling as Evidence of Teaching in Forager Societies

Michelle Scalise Sugiyama

Teaching is reportedly rare in forager societies, raising the question of whether it is a species-typical trait in humans. This question hinges on definition: past studies have been criticized for conceptualizing teaching in terms of Western pedagogical practices. In contrast, this study proceeds from the premise that teaching involves the ostensive manifestation of generalizable knowledge—i.e., the teacher must signal intent to share information, indicate the intended recipient, and transmit information applicable beyond the present context (Csibra & Gergely 2006). Human communication appears to include mechanisms dedicated to ostensive signaling (e.g., eye contact, pointing, contingency, prosodic variation). On this view, the communication of generalizable information in conjunction with the use of ostensive signals constitutes evidence of teaching. This study presents evidence that oral storytelling meets these criteria. The forager folklore record was searched for descriptions of traditional narrative performance, which were analyzed for references to the (a) use of ostensive communication and (b) presence of generalizable narrative content. Descriptions were found for 22 cultures across 5 continents and diverse ecological zones and language families: all cultures evinced the use of ostensive communication and transmission of generalizable knowledge in oral storytelling. Results suggest that oral storytelling may be a widespread form of teaching in our species.

Testing Dunnell's waste explanation for monument building with an agent-based model

Brea McCauley, Chris Carleton, André Costopoulos, Mark Collard

The construction of shrines, tombs, and other monuments is one of the most puzzling of human behaviors from an evolutionary perspective. Building monuments is costly in terms of time and energy, and yet it is difficult to see how it contributes to survival and reproduction. In the late 1980s Dunnell argued that monument building and other apparently wasteful behaviors are in fact adaptive in environments that are characterized by severe and/or unpredictable perturbations. They are adaptive, according to Dunnell, because groups that undertake them will have lower birth rates than groups that do not and will therefore be less likely to experience food shortages in bad years. In addition, wasteful behaviors are adaptive because they represent a reservoir of time and energy that can be devoted to subsistence and/or reproduction in times of difficulty. Here, we report the results of a study in which we tested the waste hypothesis with an agent-based model in which the severity and predictability of environmental threats and the agents' propensity to waste time and energy were varied systematically. Our results indicate that the situation is not as straightforward as Dunnell imagined.

On the evolution of European modern art: A biological method for the quantitative characterization of the transition and its underlying social dynamics

Jorge Castillo-Sepúlveda, Carlos Rodriguez-Sickert, Isabel Behncke-Izquierdo, Tamas David-Barrett, Ignacio Toledo-Román, James Carney

We quantitatively characterize the transition in motives and content of modern European painting art during 1848 and 1938 using structural topic modelling on 151 artists biographies and image content analysis on 457 paintings produced by these artists. Consistent with the account of art historians of this period, we identify a transition around first two decades of twentieth century, involving a reduction of mimetic forms that led up to more abstract concepts in art. Using transitions in biological systems as modelling framework, we test the hypothesis that the transition is preceded by an increase in both individual and collective variation. For this purpose, we calculated: i) the Hirschman-Simpson-Herfindahl heterogeneity index to capture individual exploration; and, ii) the inverse Simpson diversity index to estimate a measure of collective exploration along the same period. The results are consistent with the hypothesis: a peak in individual and collective exploration is observed when the transition took place. Our results inform the discussion about transitions in culture of a given community together with the underlying changes in the social organization of the members of such community.

The Color Game: Cultural evolution research with a gaming app

Olivier Morin, James Winters, Thomas Müller, Tiffany Morisseau, Simon Greenhill

Calls for a "smartphone psychology" or a "computational cognitive revolution" regularly invite cognitive and behavioral scientists to make use of the new tools offered by smartphone apps. Yet although behavioral ecologists and cultural evolutionists are used to improving their experiments' power with crowdsourcing services such as mTurk, we do not usually make full use of the scientific potential of smartphone games. Compared to a standard online experiment, a gaming app lets participants interact freely with a vast number of participants, as many times as they wish. The gain is not merely one of statistical power. Cultural evolutionists can use gaming apps to avoid experimenter demand effects; to build realistic transmission chains that avoid the unavoidable losses of information that occurs in linear chains; to study the effects of partner choice as well as partner control in social interactions. We illustrate these methodological opportunities by presenting the Color Game app for Android and iOS smartphones (released April 2018). Built around a referential communication game where players must communicate a target color using black and white symbols, the game allows large numbers of players to interact freely and build shared visual languages. By assigning players randomly to evolving sub-populations, the app can simulate the population dynamics underlying language divergences, providing an experimental test for language phylogenies.

Wednesday July 4th, 2018
Session 1 (15:30 – 16:50)

Parent-offspring conflict and cooperation
(A1.03)

The evolution of barriers to exploitation

Jonathan Goodman

This paper aims to show how barrier theory, which describes how cancer develops through the abrogation of immunosuppressive mechanisms, is applicable to non-biological systems, including animal populations and human societies. Barriers may be understood as naturally evolved or artificially implemented mechanisms for mitigating or eliminating the risk of exploitation. Selection will therefore favor those entities capable of abrogating these barriers: infectious organisms, for example, evolve to abrogate a host's immune system. I propose a model of barrier theory suggesting that, for any system, barriers to exploitation and the degree of exploitation are inversely and logarithmically related. The mode of exploitation may, furthermore, be unpredicted, which cannot be accounted for in a standard signaling game model. Modes of exploitation differ depending on the system: invasive organisms may overcome the barriers of evolved mechanisms of immunosuppression, animals may successfully signal a need they do not have, and people may subvert the laws and customs of society to their own advantage. Lastly, I describe how the consequences barrier theory may be empirically tested and how, if correct, this theory may explain how strategic creativity evolved in human populations.

Morning sickness as a proximate mechanism for allocating resources to the fetus and placenta: A life history theory analysis

David Coall, Julie Sartori, James Chisholm, Adrian Charles

An increased placental weight relative to birth weight is consistently associated with an increased risk of adult diseases such as hypertension. However, universal proximate mechanisms that reduce the nutrient supply to the fetus remain elusive. Morning sickness is the most common condition of pregnancy affecting up to 90% of women. In an Australian sample of 663 first time mothers, we use a life history framework to explore severe morning sickness as a regulator of resource flow to the fetus. In more risky and uncertain environments, it may be adaptive to accelerate reproductive timing and produce more offspring, investing fewer resources in each. Morning sickness may be a proximate mechanism that reduces birth weight with placental weight increasing in response to the reduced fetal supply. Consistent with this perspective, morning sickness was associated with a higher placental weight (mean diff = 39 grams, $p=0.006$) and placental weight to fetal weight ratio (mean diff = .011, $p<0.0005$), but not birth weight. In regression models, a range of factors across the lifespan predicted morning sickness and placental weight. These included higher maternal birth weight, increased childhood stress (0-15 years), younger maternal age, higher BMI, more symptoms of depression and medication use during pregnancy. Therefore, as part of a reproductive strategy, the early environment may influence morning sickness and thus the resource flow to the fetus through the maternal phenotype.

The Costs and Benefits of 'Child Marriage': Marriage, Wellbeing and Fitness in Rural Tanzania

David Lawson, Susan Schaffnit, Anushé Hassan, Mark Urassa

International interest in 'child marriage' (<18yrs) has recently escalated, culminating in 2015 with the first global development goal to abolish the practice. Humanitarian concern is grounded in assumptions that child marriage fundamentally contradicts female autonomy and reduces wellbeing. Yet evidence to support these assumed costs is surprising lacking, and the wellbeing and/or adaptive fitness benefits of early marital age that could account for its high frequency are rarely considered. We present a mixed- methods study of the behavioral ecology of child marriage among Tanzanian Sukuma (n=1,000 women, 35% marry <18yrs). Focus groups indicate that many view early marriage as good option for women and most women report autonomy in marriage decisions. Relationships between marital age and women's wellbeing are equivocal: early marriage is not related to empowerment in household decisions or physical health; marriage <15yrs, which is rare in this area, is associated with poor mental health, but marriage 15-17yrs is not; and earlier marriage is related to low educational attainment, though low education likely affects marriage rather than vice-versa. Women who married 15-17yrs have higher age-specific fertility than both women married at younger and older ages, suggesting fitness is optimized by marriage in late adolescence. Together these results question the widely-assumed harms of child marriage which in some contexts may serve both female wellbeing and fitness interests.

Grandmaternal childcare in Europe: the effects of relationship status and matrilineal bias

Gretchen Perry, Martin Daly

Alloparental care by grandmothers is an important part of cooperative breeding in humans. Current theories predict a matrilineal bias (preferential care of daughters' children) in maternal grandmothers' caregiving, and that in more difficult caregiving environments (such as single versus partnered caregivers) maternal grandmothers would be especially committed alloparents. In this empirical paper we analyzed the frequency, intensity, and laterality of grandmaternal care, based on Wave 6 of the Survey of Health, Aging and Retirement in Europe conducted in 2015, which included samples from 17 countries (n = 11,982 women with grandchildren under age 13, for whom they could have provided childcare). Single grandmothers were substantially more likely to provide frequent grandmaternal childcare than those who were living with the child's grandfather (Odds Ratio = 1.51). Women residing with the children's grandfathers were significantly more likely to provide frequent care than those living with a step-grandfather (OR = 1.25). There was a significant matrilineal bias in all the above partnership groups. These contrasts persisted when geographical proximity, household income, and age of grandmother were controlled. The data support the predictions of matrilineal bias in grandmaternal childcare and that maternal grandmothers would be more resilient in caregiving when they lack a partner, especially a partner related to the child, for support.

Wednesday July 4th, 2018

Session 1 (15:30 – 16:50)

Mate retention and fidelity
(A2.07)

Don't blame the children: Factors determining marital satisfaction across cultures

Carol Weisfeld, Glenn Weisfeld, Annamaria Silveri, Elizabeth Hill

Sociological studies of marriage identify children as a source of conflict leading to separation and divorce; in contrast, an evolutionary, functional view would see children as a desired outcome of marriage. Twenge et al. (2003), in a meta-analysis, found that the presence and number of children negatively impact marriage satisfaction, although the effect size was small. Their analysis contained few studies from collectivist cultures, and none of the measures assessing marital satisfaction had been proven to be invariant across cultures and genders. In our own cross-cultural research on marriage, we utilized the Marriage and Relationship Questionnaire, which demonstrates cultural and gender invariance. In a meta-analysis including collectivist cultures, we found that the presence of children accounted for a small, but significant, negative impact of children on marital satisfaction ($d = -.11$, $r = -.06$). If children explain less than 10 per cent of the variance in marital satisfaction, what accounts for the remaining 90 per cent? Using the MARQ datasets from Great Britain, the U.S.A., Turkey, Russia and China, Silveri (2018) completed factor analyses and regression analyses identifying factors (compatibility, resources and physical attractiveness) that explained from 56% to 65% of the variance in marital satisfaction, with some sex differences and cultural differences of great interest. Marriage studies are enhanced by insights from evolutionary theory.

The primacy of trust within romantic relationships: Evidence from conjoint analysis of HEXACO-derived personality profiles.

Justin Mogilski, Lisa Welling

Research on mate preference has mostly focused on traits that indicate a romantic partner's personal worth (e.g., their physical attractiveness, resource potential) rather than their tendency to leverage shared in-pair resources for mutual vs. zero-sum benefit (i.e., their trustworthiness). Furthermore, no one has assessed the contribution of trustworthiness to perceptions of mate value relative to other desirable personality dimensions. To resolve this gap in the literature, we examined the desirability of a partner's trustworthiness (i.e., their unwillingness to exploit others for personal gain) relative to five other personality indicators of mate quality during initial partner selection. Participants ($n = 806$) ranked multivariate partner profiles constructed from the HEXACO model of personality (i.e., honesty-humility, agreeableness, extraversion, conscientiousness, emotional stability, and openness to experience). Using conjoint analysis, we found that honesty-humility influenced participants' ranking decisions substantially more than each other characteristic (all Cohen's d s > 1.11). This was true for both long- (i.e., committed) and short-term (i.e., purely sexual) partner evaluations, though honesty-humility was relatively more important for long- vs. short-term contexts. There were no sex differences. We outline future directions for studying how and why perceived partner trustworthiness impacts the decision to initiate, maintain, or dissolve a romantic relationship.

Individual Differences in Mate-Retention Behavior: Do More Attractive Persons Make Fewer Efforts to Retain Their Partners?

Robert Burriss, Rebekka Weidmann, Lisa Welling, David Puts

We investigated whether romantic partners' attractiveness is related to the frequency with which they perform mate-retention behaviors. We draw on data from a sample of ~120 male:female romantic couples from north-east USA, each of whom completed the Mate-Retention Inventory Short-Form (MRI-SF) in two versions: one in which they reported the frequency of their own mate-retention behaviors, and another in which they reported on the behavior of their partner. We also photographed each partner and had these photographs rated for attractiveness. Actor-Partner Interdependence Models indicate that women who are rated less attractive are reported by their male partners to perform more intrasexual mate-retention behaviors (behaviors targeted at limiting mate-poaching attempts by female rivals). We also find a similar, although marginally significant, effect in men. However, we do not replicate previous findings that persons with more attractive partners perform more mate-retention behaviors. We will also present the results of an ongoing longitudinal study of >1000 romantic couples from the German-speaking European countries, the members of which rated self- and partner-attractiveness and completed the MRI-SF.

Sex, lies & Y-chromosomes: the secret love lives of our genealogical ancestors

Maarten Larmuseau, Pieter Van den berg, Francesc Calafell, Sofie Claerhout, Leen Gruyters, Michiel Vandenbosch, Kelly Nivelte, Koen Matthijs, Ronny Decorte, Tom Wenseleers

In many pair-bonding species, fathers may be cuckolded into raising children that genetically are not their own. In human populations, however, the incidence and driving factors of such "extra-pair paternity" (EPP) remain contentious. Here we use a large-scale genetic genealogy approach based on Ychromosomal genotyping to reconstruct spatio-temporal patterns of human EPP rates. Using patrilineal genealogies from the Low Countries spanning a period of over 500 years and Ychromosomal genotyping of living descendants, our analysis reveals that although EPP rates were low on average, they were 4-fold higher and reached 5% among the lower socioeconomic classes in the larger cities of the late 19th century. In addition, EPP rates were found to be higher if the legal fathers could exert less social control by working away from home. Together, these results suggest that human extra-pair paternity varied in relation to its potential benefits, opportunity and prevailing levels of social control.

Wednesday July 4th, 2018
Session 1 (15:30 – 16:50)

Behavioral immune system
(A2.11)

Visual Attention Biases in Viewing Scenes of Violence

Coltan Scrivner, Frank Ibarra, Dario Maestriperi

From a functional evolutionary perspective, people should exhibit aversion to disgusting stimuli but attraction violent stimuli; the former might signify a pathogen threat while the latter represents an important social learning opportunity. To test this, we recruited 101 White male and female participants to view 60 images of violence and/or disgust on a computer monitor while controlling their viewing time for each image. Viewing time was lowest for disgusting, non-violent images and highest for violent, non-disgusting images. Images of animal to human violence had higher viewing time than images of human to animal violence, and images of out-group male to in-group male violence had the highest viewing time among images in which we manipulated the group identity of perpetrator and victim. Images of out-group to in-group violence also had higher viewing time than images of accidental, self-inflicted violence. Variation in viewing time in relation to the content of the image was largely similar between men and women. The results of our study are consistent with our hypothesis that differences in viewing time devoted to images with disgusting and violent content reflect functionally adaptive responses to different cues of danger, e.g., presence of pathogens vs physical violence. Preliminary results from a follow-up study using eye tracking while viewing scenes of violence will also be presented and discussed.

Implicit bias toward threatening faces: The role of emotion, hormones, and group membership

Tingting Ji, Joshua Tybur, Mark van Vugt

Previous studies report that women's attitudes towards outgroup men are more negative during the fertile phase of their menstrual cycle, presumably to guard against the increased costs of sexual coercion when fertility is high. Other costs - specifically the cost of pathogen threat also increase during the cycle when women's progesterone is high. In the present study we investigated how women's attitudes towards angry faces (violence threat) and infectious faces (pathogen threat) shifted with the change in reproductive hormones (specifically, estradiol and progesterone) across the menstrual cycle. We also tested how attitudes varied across target-group membership (following a minimal group paradigm). A group of 41 women completed four single-category implicit attitude tasks (one for each threat/group combination) and provided saliva samples once a week for a period of four weeks. Multilevel modeling analyses showed that women in general had a negative attitude toward both angry and pathogenic faces. Further, we found that changes in estradiol-to-progesterone ratio moderated the difference in women's attitudes towards angry faces and pathogenic faces. However, we did not find that bias varied across angry or infectious faces, or that bias was different toward ingroup or outgroup faces. Our findings suggest that attitudes towards violence and pathogen threats might differentially vary as a function of hormonal state, but they do not vary on group membership of the target face.

Pathogen Threat and Vigilance to Norm Violations: An EEG Examination

Cristina Salvador, Joshua Ackerman, Michele Gelfand, Shinobu Kitayama

Pathogen contamination poses a great threat to humans and societies. Indeed, prior work shows that when the threat of pathogens is imminent, people often protect themselves from contamination by avoiding those who may go against social norms. However, little is known about neural mechanisms underlying this defense against the pathogen threat. Here, we tested two distinct neural components: (i) detection of norm-violating behaviors (captured by an N400 event-related potential component) and (ii) increased vigilance (indexed by alpha suppression). In two studies, American undergraduates received either a pathogen threat or control prime and then were asked to judge how violating a series of behaviors (e.g., crying) were in various settings (e.g., funeral or class lecture) as their EEG was monitored. Norm-violating (vs. normal) behaviors elicited a stronger negative deflection of electrocortical response around 400ms post-stimulus (called the N400) indicating norm violations were seen as more incongruent than normal behaviors. Moreover, Alpha (8-13Hz) power was suppressed (indicating greater vigilance) for the norm-violating (vs. normal) conditions, indicating participants were more vigilant of norm violations than normal behaviors. Interestingly, in the pathogen threat condition, this vigilance effect was moderated by interdependence. Our work provides an understanding of the neural mechanisms and individual differences involved in sensitivity to deviant behavior.

Sensitivity to Deviance and to Dissimilarity: Basic Cognitive Processes under Activation of the Behavioral Immune System

Ravit Nussinson, Sari Mentser, Nurit Rosenberg

Throughout evolutionary history, pathogens have imposed strong selection pressures on humans. To minimize humans' exposure to pathogens, a behavioral immune system has evolved, which promotes the detection and avoidance of disease-connoting cues. Although most pathogens are invisible, they produce discernable changes in their environment. As a result, a common denominator of many disease-connoting cues is morphological deviance – figurative disparity from what is normal, visual dissimilarity to the prototype stored in memory. Drawing on an evolutionary rationale, we examined the hypothesis that activation of the behavioral immune system renders people more sensitive to morphological deviance and more prone to perceive dissimilarities between stimuli. In Study 1 (N = 343), participants who scored higher on disgust sensitivity demonstrated greater differentiation between normal and disfigured faces, reflecting greater sensitivity to morphological deviance in the bodily domain. In Study 2 (N = 109), participants who were primed with pathogen threat demonstrated greater differentiation between perfect and imperfect geometrical shapes, reflecting greater sensitivity to morphological deviance even in stimuli that have nothing to do with health or disease. In Study 3 (N = 300), participants who scored higher on disgust sensitivity perceived pairs of neutral pictures as less similar (i.e., more dissimilar) to each other. Implications for social perception will be discussed.

Thursday July 5th, 2018
Session 2 (10:20 – 11:40)

Risk taking
(A0.01)

Applied Evolutionary Theory in Accident Analysis

Russell Jackson, William Felton, Roger Lew

Accident prevention and safety research fields do not noticeably employ evolutionary theory. Perhaps related, some areas within these fields have made no measurable impact at lowering the incidence or severity of their respective health threat. For instance, falling is a leading source of injury and mortality, killing roughly three times as many humans as warfare, and yet its incidence has increased for decades. This health threat likely posed even greater selection on our species in the environments in which we evolved, but there have been no evolutionary approaches to address it in safety or prevention science. In two experiments, we used Evolved Navigation Theory to generate predictions about human behavior in one of the most frequent falling scenarios. As predicted, our data suggest that human perception of safety barriers unconsciously contains tremendous illusions that reflect falling risks in the environments in which we evolved. These illusions persisted, even in truly evolutionarily novel situations and in ways that determine the majority of human navigational decisions. Our findings provide the first such insight to a daily mortality risk and outline a foundation for evolutionarily informed prevention science.

Do sex differences in spatial ability, mobility, and harm avoidance persist outside the West?

Helen Elizabeth Davis, Elizabeth Cashdan

Males are more risk-prone and less harm avoidant than females, which has been associated with sex differences in spatial exploration, range size, and possibly spatial ability. We want to know when in development these sex differences emerge, and whether they are species-typical patterns found across cultures, or whether they are muted in traditional foraging societies, where children experience far greater latitude for environmental exploration than is typical for children in the U.S. today. We report on sex differences in harm avoidance, range size, and spatial ability in juveniles among two small-scale populations, the Tve and Tsimane. These societies differ strikingly in habitat and adult mobility, but are similar in their dependence on foraging and limited exposure to formal education. Tve adults show a marked sex difference in both mobility and spatial ability, while sex differences are small to nonexistent among Tsimane adults. Preliminary analysis of Tve and Tsimane child data suggests that sex differences in range size and spatial ability are small to nonexistent among children in both populations.

Adaptive bases of distributive justice: Rawlsian maximin rule operates as a common cognitive anchor in allocation and risky decisions

Tatsuya Kameda, Keigo Inukai, Satomi Higuchi, Akitoshi Ogawa, Hackjin Kim, Tetsuya Matsuda, Masamichi Sakagami

Distributive justice concerns the moral principles to allocate resources fairly among diverse members of a society. Based on our previous work on adaptive bases of social sharing (Kameda et al., 2002, 2003, 2010), we hypothesized that people's allocation decisions for others are closely related to risky decisions for self at behavioral, cognitive and neural levels, via a concern about the minimum, worst-off position. In a series of experiments, we investigated this "maximin" concern in two disparate tasks: third-party distribution of rewards for others, and choosing gambles for self. The experiments revealed three robust results: (1) participants' distributive choices closely matched their risk preferences — "Rawlsians" maximizing the worst-off position in distributions for others avoided riskier gambles for self, while "utilitarians" favoring the largest-total distributions preferred riskier but more profitable gambles; (2) across such individual preferences, however, participants generally showed the greatest attention to the worst-possible outcomes in both tasks; and (3) this robust concern about the minimum outcomes was correlated with activation of the right temporo-parietal junction (RTPJ), the region associated with perspective-taking. The results provide convergent evidence that distribution for others is psychologically linked to risky decision-making for self, drawing on common neuro-cognitive processes with spontaneous perspective-taking of the worst-off position.

Relative state creates individual differences in risk-taking across domains

Pat Barclay, Sandeep Mishra, Adam Sparks

All decisions involve calculations of risk, whether in cooperation, conflict, mating, parenting, or foraging. Who takes the most risks, and when? The relative state model proposes two non-independent selection pressures governing risk-taking: need-based and ability-based. The need-based functional account suggests that actors engage in risk-taking when they cannot reach goal or desired states with low-risk options (consistent with risk-sensitivity theory). The ability-based account suggests that actors engage in risk-taking when they possess traits or abilities that increase the expected value of risk-taking (by increasing probability of success, enhancing payoffs for success, or buffering against failure). Adaptive risk-taking involves integrating both of these functional considerations. Here we provide mathematical support for this dual-pathway account of risk-taking. Risk-takers compute the expected value of risk-taking based on their relative state, which is the interaction of embodied and situational factors. We use this mathematical model to derive predictions about who will take the most risks and when (e.g., when risk-taking will be performed by those in good, poor, intermediate, or extreme relative state only), and when risk-taking will correlate across domains (domain-generality) or be restricted to single domains (domain-specificity). We illustrate this model with risk-taking in multiple domains, including cooperation, foraging, disgust, and sex differences.

Thursday July 5th, 2018
Session 2 (10:20 – 11:40)

***Fitness-relevant social learning and emotional expression
in infants, young children, and nonhuman primates
(A1.02)***

Social learning rules for acquiring information about plants in human infants

Annie Wertz

There is growing evidence that aspects of the human mind are designed around the ancestrally recurrent problems humans faced with respect to plants. In this talk, I will synthesize the findings from a series of recent studies exploring the social information seeking and acquisition rules that human infants use to learn about plant properties. In these studies, 8- to 18-month-old infants are presented with different types of stimulus objects including plants, novel artifacts matched to shape and color features of the plants, familiar artifacts, and other naturally occurring entities (shells and rocks). Across a series of studies, these objects are presented to infants under the following conditions: (i) an experimenter simply places the stimulus objects in front of the infants and no specific social information conveyed (baseline conditions), (ii) social information indicating edibility is demonstrated prior to offering infants the stimulus objects (edibility conditions), and (iii) social information indicating harm is conveyed before placing the stimulus objects in front of infants (danger conditions). Infants' looking behavior and reaching behavior are assessed. The results show that infants seek out social information more frequently when confronted with plants and selectively acquire certain kinds of social information.

The ontogeny of orangutan social learning

Caroline Schuppli, Carel van Schaik

Social learning increases the signal to noise ratio of information, decreases the risk of injury or poisoning, and allows individuals to build upon things that others have figured out before them. As such, social learning leads to faster skill acquisition than independent learning and animals capable of social learning should rely on it whenever they can. Like all other great apes, orangutans have been shown to be capable of social learning in captivity. However, to what extent they rely on social learning in the wild has so far remained unclear. Here we look at peering behavior (sustained close-range watching of conspecifics' activities) in wild immature Sumatran orangutans (*Pongo abelii*) at Suaq, South Aceh, Indonesia. We found that immature orangutans learn most of their skills (ranging from basic subsistence- to high complexity skills) through socially induced independent practice. Whereas in the first years of life the mother is the preferred role model, other role models become increasingly important towards the end of infancy. Immatures preferentially peer at related and well-known individuals and rates of subsequent practice are higher after peering at those as compared to unrelated individuals. All in all, these results evidence that even in the least sociable of all great apes, social learning is the default skill acquisition mode rather than the exception. The selectivity of social attention suggests that on the proximate level it is emotionally regulated.

Bringing knowledge to the table: the development of food neophobia and food learning in young children

Camille Rioux, Jeremie Lafraire, Delphine Picard

Food learning is a difficult problem, particularly for an omnivorous species like humans. No visual features flawlessly signal which candidate food items may be edible or may contain toxic compounds, making individual trial-and-error food learning a risky enterprise. Instead, a growing number of studies have shown that food learning is largely a social process. Nevertheless few studies have yet investigated the role of individual differences in social food learning. In the present study we investigated the role of food neophobia, an individual disposition to avoid eating new foods, in food learning processes in preschool children. To that aim, we recruited 126 children aged 2-6 years and administered a property generalization task. Children were presented with 8 triads containing one target picture (a vegetable) and two test pictures (a vegetable dissimilar in color to the target and a fruit similar in color to the target). For each triad, participants were taught a novel property about the target picture by an experimenter and were asked to generalize this property to one of the two test pictures. We recorded the number of category-based responses, as well as food neophobia scores (through questionnaires). The results provided the first empirical evidence that children who exhibit less neophobia have more able to generalize socially learned information about a piece of vegetable to new instances of vegetables.

Do we find compositionality in emotional expressions of chimpanzees?

Linda Oña, Wendy Sandler, Katja Liebal

One important feature of human language, compositionality, lends language a high degree of flexibility and is thought to be a uniquely human characteristic. Compositionality entails the capacity to combine and recombine single elements to create more complex meaningful expressions. Although uniquely human, the question arises whether the precursors and thus the root of this characteristic, are situated in non-human communicative systems or in even more basic evolutionarily prior expressive behaviors, e.g. in emotional displays. Recent research emphasized chimpanzees' multimodal use of gestures, vocalizations, facial expressions and body postures. To find out whether these forms entail similarities with human forms of communication, we collected data on dyadic interactions in two semi-wild chimpanzee groups in different social contexts. In this study, we document the use of combinations of specifically gestures and facial expressions and whether the social context has an influence on the response behavior of the recipient. We found that for some signal combinations the signal function is modified depending on their specific form and contextual usage. We discuss the limitations of this study and point to future directions.

Thursday July 5th, 2018

Session 2 (10:20 – 11:40)

Sizing up the competition

(A1.03)

Pitch Lowering Enhances Men's Perceived Aggressive Intent (but not Physical Dominance) Independent of Their Physical Strength

Jinguang Zhang, Carolyn Hodges-Simeon, Scott A. Reid, Steven J. C. Gaulin

Research has shown that men's habitual voice pitch, the perceptual correlate of fundamental frequency (F0), can signal resource-holding potential (e.g., trait aggressiveness, strength, height). However, this finding may not capture the full signaling function of men's voice pitch. Humans can modulate their pitch, and animal behavior research suggests that signals of aggressive intent (i.e., willingness to escalate in fights) are consequential. Men often lower their pitch when addressing competitors perceived to be weaker, which could be used to signal aggressive intent. In two experiments (N's = 66 and 152 men), we manipulated the F0 of a male speakers' reply (e.g., "You just hit my car") to a male opponent (e.g., the participant) to be lower or higher than the speaker's baseline F0, simulating pitch modulation. As predicted, pitch lowering made the speaker sound more likely to attack, and this effect was not moderated by the speaker's perceived strength (measured or manipulated). Further, pitch change still significantly shaped perceptions of aggressive intent when the speaker's perceived chance of winning the pending fight was controlled; however, pitch change did not shape speakers' perceived chance of winning when aggressive-intent perceptions were controlled. These findings are (to our knowledge) the first evidence that pitch lowering is a conventional signal (i.e., usable by both weaker and stronger men) of aggressive intent but not physical dominance.

Voice Pitch is Not a Cue to Competitiveness

Tina Kocic, Marie Armstrong, David Feinberg

Previous research has found that a low voice pitch is associated with perceptions of dominance, size, attractiveness, higher socioeconomic status, and low cooperativeness. Given that men have been found to lower their voice pitch in competitive scenarios, we predicted low voice pitch would also be tied to perceptions of competitiveness of the speaker. We manipulated voice pitch in men's and women's voices, and female participants chose which voice they thought belonged to the person who was more physically dominant, more socially dominant, more competitive, more cooperative, larger in size, higher in socioeconomic status, and more attractive. Women chose low voices as being more physically and socially dominant, less cooperative, larger, higher in socioeconomic status, and (for male voices only) more attractive than higher pitched voices. Surprisingly, voice pitch had no effect on perceptions of competitiveness. This challenges the idea that a low voice pitch in men evolved to signal success in intrasexual competition.

Factors affecting perception of fighting ability in MMA fighters using 360° facial photographs

Jitka Fialová, Vít Třebický, Klára Coufalová, David Stella, Jan Havlíček

Facial perception plays a key role in various social interactions, including formidability assessments. People make relatively accurate inferences about men's physical strength, aggressiveness and success in physical confrontations based on facial cues. However, current studies lack detailed data or use proxies to targets' physical fitness or fighting ability which limits understanding of factors that affect the perception of fighting ability. Here, we aimed to investigate the relationship between perceived and actual fighting ability using high fidelity facial stimuli of Czech mixed martial arts (MMA) fighters and their detailed characteristics that may influence these judgments. We created standardized 360° photographs of 45 MMA fighters which were assessed on perceived fighting ability by 94 (46 males) raters. Further, we obtained data regarding their physical (e.g., age, height, body composition) and performance (MMA score, strength, Wingate test) characteristics. In contrast to previous studies, our present results did not show a significant link between actual and perceived fighting ability. However, multiple regression analysis revealed that fighters with higher handgrip strength and higher maximal performance in Wingate test were judged as more successful. Our results suggest that certain physical performance-related characteristics mirror in individuals' faces, nevertheless, the actual fighting performance was not perceived congruently based on the facial cues.

Cross-Cultural Evidence for Apparent Racial Outgroup Advantage: Congruence between Perceived Facial Aggressiveness and Fighting Success

Vít Třebický, S. Adil Saribay, Karel Kleisner, Robert Mbe Akoko, Tomáš Kočnar, Jaroslava Varella Valentova, Marco Antonio Correa Varella, Jan Havlíček

Research into face processing consistently shows an outgroup disadvantage in areas such as recognition memory and emotional identification. Potential ingroup advantage with respect to inferences regarding personality and behavioral outcomes, on the other hand, has not yet been studied. In the present study, we used the faces of male professional mixed martial arts (MMA) fighters of apparent African, European, or mixed-race origin as targets and males from four distant populations that vary in ethnic composition as perceivers. We then compared the perceivers' inferences about targets' aggressiveness with the fighters' actual performance in MMA championships. Surprisingly, across three distant populations used in the study (Cameroon, Czech Republic, and Turkey), perceivers' inferences based on face rating were more congruent with real-world performance with respect to individuals belonging to an apparent racial outgroup (as opposed to ingroup) targets. In an ethnically mixed population (Brazil), perceivers showed the lowest congruence for apparently mixed-race targets. It thus seems that the outgroup disadvantage observed in other face processing domains does not carry over to inferences about aggressive behavioral outcomes. In fact, it seems that this relationship is, if anything, reversed.

Thursday July 5th, 2018
Session 2 (10:20 – 11:40)

Human nature, literature, and art
(A2.09)

The Evolutionary Vision of H. G. Wells

Emelie Jonsson

H.G. Wells was one of the first literary authors to depict human beings from an explicitly Darwinian perspective. He was a student of biology whose fiction remains appealing because he keenly imagined the past and future of the human species. However, Wells saw nature and culture as separate realms. He wanted moral culture to shape self-serving nature toward his ideal social state. From a modern evolutionary perspective, that divided world gave him an inadequate view of two parts of human nature: cooperative dispositions (including moral emotions, norm-internalization, altruistic display, and social learning) and imaginative culture (including mythology, religion, philosophy, ideology, and the arts). Wells's interpretation of human nature influenced policy-makers during the early 20th century, from Theodore Roosevelt to UNESCO. Similar views appeared in a recent survey of academics studying human behavior. Yet, it is an interpretation in line with known cognitive biases: mind-body dualism, teleological thinking, projections of agency on natural forces. In this case study, I use a combination of evolutionary social theory, evolutionary aesthetics, and historical, biographical sources to explain the psychological functions and effects of two of Wells's best-known novels. Putting Wells back on the Darwinian ground from which humanist scholars have detached him illuminates both his legacy and our current attempts to grapple with human nature.

Literature's contribution to scientific knowledge: How some European novelists developed new a Darwinian view of human nature.

Dario Maestriperi

The theoretical foundations for evolutionary studies of human behavior were provided by Charles Darwin in 1859. Yet, behavioral sciences became Darwinian only after 1965, when for the first time behavioral scientists began to study behavioral and psychological processes as evolutionary adaptations. One of the outcomes of this paradigm shift was the emergence of the concept of human nature. Darwinian views of human nature, however, had already been developed by some European novelists at the end of the 19th century and in the early 20th century. Leopold von Sacher-Masoch, Italo Svevo, and Elias Canetti used Darwinism as a conceptual framework for the literary exploration of the human mind and human behavior. Their novels contained observations, insights, and ideas about human nature that anticipated many scientific discoveries about the human mind and human behavior made at the end of the 20th century by cognitive, social, and evolutionary psychologists. The approach taken by these and other novelists provides important insights as to how future investigations of the human mind and human behavior could benefit from the integration of scientific and humanistic perspectives.

Imaginative Culture

Joseph Carroll

“Culture” has become an increasingly prominent term in the evolutionary social sciences, appearing in combinations such as “gene-culture coevolution,” “culture gene coevolution,” “cultural evolution,” and “cultural group selection.” Scientific consensus about culture, even among evolutionists, remains suspended in debate over interactions between two main sets of causal factors: evolved capacities for social learning and shared attention, on the one side, and on the other evolved intra-individual constraints on mating, parenting, kin relations, and social behavior. Both sides in this controversy have produced findings indispensable to an adequate basic model of the adapted mind. One further area of research is necessary to completing this model. Over the past few years, the term “imagination” has ceased to be the subject of purely speculative commentary and has become the subject of robust scientific research. Streams of research converging on the imagination include neuroimaging of the Brain's Default Mode Network, the psychology of autobiographical narratives, the evolution of language, the adaptive function of religion, cognitive and affective responses to fiction, evolutionary aesthetics, and evolutionary literary theory. Using the umbrella term “imaginative culture,” this presentation synthesizes recent research on imagination and integrates that research with one main form of evolutionary cultural theory.

Human Nature and the Theatre of Male-Male Competition

Catherine Salmon

What is human nature and how is it reflected in popular culture? Popular culture is culture based on the tastes of ordinary people rather than the elite class. As such, it includes both cultural activities and commercial products that have mass appeal. The products of popular culture can be seen as artifacts of human nature. Thus, they can be examined as data in testing theories about human psychological adaptation in much the same way as archaeological artifacts can be used by anthropologists to test hypotheses about human evolution. The performed male-male competition of such cultural products as professional wrestling and modern action films can be viewed as unobtrusive measures of many aspects of male, and occasionally female, psychology. This presentation will examine professional wrestling and action films as data in testing hypotheses about human nature informed by an evolutionary perspective.

Thursday July 5th, 2018
Session 2 (10:20 – 11:40)

Novel methods
(A2.11)

Machine learning demonstrates that ecology is at least as important as culture in predicting societal complexity.

Thomas V. Pollet, Mathijs van Dijk

What drives societal complexity? This is a long-standing question for anthropologists, sociologists, and economists. Some have argued that environmental drivers are key, while others have argued that cultural practices, such as legal and political institutions, are necessary prerequisites for the development of societal complexity. Here we examine what predicts the settlement complexity of 1,000+ societies in the Ethnographic Atlas using 137 candidate variables. These predictors were classified in categories relating to ecology (climate, geography) or culture, similar to Mathew & Perreault (2015). Using a novel machine learning approach (conditional random forests), not suffering from Galton's problem in cross-cultural research, we evaluate which variables predict settlement complexity. The models had relatively good predictive performance (all Spearman's ρ s $>.8$ between observed and actual complexity). Two variables' predictive ability, Agriculture and Subsistence Economy, largely exceeded that of other predictors. After accounting for those variables, ecological variables predicted settlement complexity at least as much as did cultural variables. Interestingly, institutional variables such as property rights and political institutions, which economists have argued to be key (e.g., North, 1991), had a relatively small impact. We discuss the benefits and limitations of the techniques used as well as the implications for understanding societal complexity.

Synthesizing biological, cognitive, and social explanations for human behavior using complex systems: A case study on children's sex-typed toy preferences

Jac Davis, Melissa Hines

Human behavior is the product of a complex system of interactions between innate and environmental influences. Theories of human behavior typically acknowledge these interactions, but empirical studies typically focus on a single influence, such as biology, cognition, or social environment. How can we statistically integrate these perspectives, and see the system as a holistic whole? New methods from complex systems mathematics provide one possible solution. We use a combination of multilevel meta-analysis and Bayesian network models to integrate the results of 43 different studies of biological, cognitive, and social explanations for children's sex-typed toy preferences (combined $N = 2,670$). The integrated model is used to quantify the interactions between biological, cognitive, and social explanations for children's sex-typed toy preferences, and to identify research gaps where further evidence would be most useful. We conclude that complex systems methods can help to synthesize multiple explanations for certain types of human behavior, and to gain new insights that would not have been possible without using this approach.

Compression effects in Reddit Place: The structuring of variation in a large-scale online art collaboration

Thomas F. Müller, James Winters

A central goal of cultural evolution theory is to explain the link between individual biases and population-level patterns. Several studies show that cultural evolutionary processes can result in compression effects. Compression effects are when a set of cultural traits becomes optimized in terms of algorithmic complexity, and can become manifest in two different ways: the removal of variation or the structuring of it. Using a novel, large-scale dataset from Reddit Place, an online collaborative art project, we investigate the evolution of compression effects on a 1000x1000 pixel canvas. All Reddit users could select a colored pixel, place it on the canvas, and then wait for a cool-down period before placing another pixel. By analyzing all 16.5 million pixel placements by over 1 million individuals, we test whether compression follows a predictable trajectory and whether the removal or structuring of variation is causing this trajectory. Our model results indicate that compression in Place follows a quadratic trajectory. This is due to state-dependent development with regard to competition between artworks: Activity decreases compression when the canvas is relatively empty, but increases compression when the canvas is full. We demonstrate that compression effects happen through the structuring, rather than removal, of variation. Together, the results show how different types of compression effects can emerge from individual interactions and lead to population-level patterns.

Spatial dependency in local resource distributions

Andreas Wilke, Taylor Dawley, Steven Pedersen, Tom Langen

We investigated the spatial patterns of different classes of resources in a familiar local environment. Past psychological research investigating why humans are so prone to misunderstand random data sets has typically focused on empirical resource distributions of equal base rates and regular arrangement to compute alternation probabilities that indicate the degree of spatial aggregation, randomness or dispersion. We incorporate a statistical methodology from the spatial ecology literature to overcome these limitations. Over recent semesters, we observed and coded various resources near our university campus from both developed and natural domains, such as seats taken at a café and in a restaurant, occupied parking spots, geese and cow groupings, and patterns of wilderness, forest, and water in the nearby Adirondack State Park. Our data collection methodology for this study included the use of custom-made resource coding sheets, flying of an aerial drone to obtain video footage of the animal distributions, and extracting patterns of land use from published New York State map data. Our results provide new evidence that natural resource domains indeed show similar, yet more aggregated distribution patterns than those from human-developed resource domains. We discuss our results in light of claims that our ancestral human cognitive evolution selected for specific reasoning mechanisms to detect resources that are distributed in clumps or patches in space and time.

Thursday July 5th, 2018
Session 3 (11:50 – 13:10)

Cue use and kinship
(A0.01)

The evolution of sensitive periods in a model of incremental development

Karthik Panchanathan, Willem Frankenhuis

Sensitive periods, in which experience shapes phenotypic development to a larger extent than other periods, are widespread in nature. Despite a recent focus on neural-physiological explanation, few formal models have examined the evolutionary selection pressures that result in developmental mechanisms that produce sensitive periods. In this talk, I'll describe an evolutionary framework I've been developing with colleagues that addresses this issue. We model development as a specialization process during which individuals incrementally adapt to local environmental conditions, while receiving a constant stream of cost-free, imperfect cues to the environmental state. We compute optimal developmental programs across a range of ecological conditions and use these programs to simulate developmental trajectories and obtain distributions of mature phenotypes. We then place our simulated developmental programs in a simulated "cross-fostering" setting to study the changes in developmental sensitivity across time.

The role of childhood co-residence and maternal perinatal association in half sibling relationships

Mirkka Danielsbacka, Antti O. Tanskanen

To regulate investment in kin, one must first detect a person as kin, meaning that humans must have evolved system to detect relatedness. Lieberman, Tooby, and Cosmides have argued childhood co-residence duration and maternal perinatal association (MPA; i.e., seeing own mother nurse a newborn baby) are the most important kin detection mechanisms among human siblings and thus should regulate the sibling relationships quality. Here data from the German Family Panel (Pairfam) sibling module including 1,428 half siblings was used to test these predictions. Individuals who have co-resided longer period with their half siblings during the childhood were closer with these siblings compared to individuals who have co-resided shorter period (if any) with half siblings. Among individuals who have co-resided their entire childhood with half siblings, older siblings did not reported closer sibling relationship to their younger siblings compared to younger siblings who reported their relationship to their older siblings. Finally, among those who have never co-resided with their half siblings, younger siblings reported closer relationship to their older siblings than older siblings to their younger siblings. These findings provided support for the impact of childhood co-residence on sibling relationship closeness but no support for the effect of MPA was detected.

Having other-sex siblings predicts moral attitudes to sibling incest, but not parent-child incest

Lisa DeBruine, Benedict Jones

Previous research suggests moral attitudes against sibling incest are stronger in individuals with other-sex siblings than those without. We tested if this effect replicates and generalizes to moral attitudes toward parent-child incest. Lieberman et al's (2007) moral judgments scale was completed online by 515 women and 145 men having only full siblings of a single sex. We measured sibling incest aversion as the summed ranks of two items involving sibling incest (following previous studies) and parent-child incest aversion as the summed ranks of two items involving other-sex parent incest. We used linear mixed effects modeling to predict incest aversion scores from target (sibling vs. parent), sex and sibling sex. Incest aversion scores were higher for parent than sibling targets and higher for women than men. An interaction among sex, sibling sex and target was interpreted using separate linear models. For sibling incest aversion, there was a significant interaction between sex and sibling sex, where women with brothers had greater sibling incest aversion than women with sisters, while men with brothers had lower sibling incest aversion than men with sisters. For parent incest aversion, there was no such interaction between sex and sibling sex. We replicate previous findings that moral attitudes towards sibling incest are more negative among individuals with other-sex siblings than those without. This effect does not generalize to moral attitudes towards parent-child incest. (osf.io/mwzuzq)

Intuitive Kinship: Infants use cues of birth and feeding to infer relatedness and guide expectations of kin-directed behavior

Debra Lieberman, Beverly Boos, Joseph Billingsley

Research into the cognitive abilities of infants has revealed a rich store of primitive competences. Despite focus on several core knowledge systems, no research has explored whether or how preverbal infants infer genetic relatedness. Here we fill this gap. Using eye-tracking technology to obtain infant focal attention, we investigate preverbal infants' inferences of siblingship. Four studies involving over 250 11-month old infants reveal that preverbal children do indeed reason about relatedness in a manner consistent with inclusive fitness theory. Infants expect sharing opportunities to be directed toward a child birthed and nursed by the same mother (sibling) versus a different mother (nonsibling). This pattern held even in the presence of shared cues to social group membership. Converging lines of evidence that infants infer kinship was obtained via expectations regarding antagonistic interactions. Across all studies, the difference in expectations of sibling versus non-sibling cooperation and exploitation was predicted by the duration of attendance to the kinship cues. This suggests that from a preverbal stage, emerging kin detection systems focus attention toward events indicative of relatedness and guide expectations of both cooperative and competitive efforts directed toward kin.

Thursday July 5th, 2018
Session 3 (11:50 – 13:10)

Social interdependence
(A1.02)

Falling Fertility Creates Trust Gap: Changing Social Network Structure in Demographic Transition

Tamas David-Barrett

Traditional human societies use two of biology's solutions to reduce free-riding: by collaborating with relatives, they rely on kin-selection mechanism, and by forming highly clustered social kin-networks, they can efficiently depend on reputation dynamics. However, both of these solutions assume the presence of relatives. This paper's model shows how social networks change during demographic transition. With falling fertility, there are fewer children that could be relatives to each other. As the missing kin is replaced by non-kin friends, local clustering in the social network drops. This effect is compounded by increasing population size, characteristic of demographic transition. At the same time, with falling fertility the average graph distance decreases, ballooning the set of indirect social contacts two-steps away. A second model shows that the speed at which reputation spreads in the network slows down due to both falling fertility and increasing group size. Thus the demographic transition weakens both mechanisms of free-rider reduction: there are fewer relatives around, and reputation spreads slowly. This new link between falling fertility and the altered structure of the social network offers novel interpretations to the origins of legal institutions, the Small World phenomenon, the social impact of urbanisation, and the birds-of-a-feather friendship choice heuristic.

Evolution of Conditional and Unconditional Commitment

Tadeg Quillien

Research on cooperative and romantic partner choice has proposed that a partner's commitment to a relationship is a highly desirable quality, and that this creates an incentive for people to send signals of commitment. Yet there has been little formal research on the evolutionary dynamics of such commitment signals. Using a simple evolutionary game-theoretic model, I show that if there is uncertainty about agents' incentives to stay in a relationship, that relationship can easily collapse, because of a vicious circle where being skeptical about one's partner's commitment makes one even more likely to leave the relationship. This creates a selection pressure for agents to send costly signals of commitment to each other: ESS analysis and computer simulations show that such costly signaling can invade a population under a wide range of conditions. Interestingly, natural selection can create two kinds of equilibria where agents send commitment signals. Agents with a strategy of conditional commitment send a signal, but then only stay in the relationship if their partner has expressed commitment. Agents with a strategy of unconditional commitment send a signal, then stay in the relationship even in the absence of any evidence that their partner will stay. These results add to a growing body of theory suggesting that individual-level selection can sometimes design seemingly "uncalculating" cooperative behavior.

Happy to Help? A systematic review and meta-analysis of the effects of performing acts of kindness on the well-being of the actor

Oliver Scott Curry, Lee Rowland, Caspar J. Van Lissa, Sally Zlotowitz, John McAlaney, Harvey Whitehouse

Evolutionary approaches to social behaviour have provided a number of explanations of human cooperation and altruism. These theories predict that people will be 'happy to help' family, friends, community members, spouses, and even strangers under some conditions. Here we conduct a systematic review and meta-analysis of the experimental evidence that kindness interventions (for example, performing 'random acts of kindness') boost subjective well-being. Our initial search of the literature identified 489 articles; of which 24 (27 studies) met the inclusion criteria (total N=4,045). These 27 studies, some of which included multiple control conditions and dependent measures, yielded 52 effect sizes. Multi-level modelling revealed that the overall effect of kindness on the well-being of the actor is small-to-medium. The effect was not moderated by sex, age, type of participant, intervention, control condition or outcome measure. There was no indication of publication bias. We discuss the limitations of the current literature, and recommend that future research test more specific theories of kindness: taking kindness-specific individual differences into account; distinguishing between the effects of kindness to specific categories of people; and considering a wider range of proximal and distal outcomes.

Map of Interdependence in Daily Life

Simon Columbus, Catherine Molho, Francesca Righetti, Daniel Balliet

Humans experience a great variety of interdependent situations in their interactions with others in daily life. Philosophers and scientists have long debated the nature of these interactions. The Prisoner's Dilemma, in particular, has been a standard model of social interactions across disciplines, reflecting a belief that life regularly involves conflicts of interests that hinder cooperation. Yet, human social interactions could often involve corresponding interests, with people equally depending on each other for mutual gain. Still, little is known about the prevalence of the different social situations people experience. Here, for the first time we present a survey of the structure of interdependence in daily life. We combine a novel measure of perceived interdependence with experience sampling in individuals and couples (Ns = 282 and 278; k = 7248 and 6766 situations, respectively) to map out the prevalence of (a) mutual dependence, (b) conflicting versus corresponding interests, and (c) power asymmetries. Most social interactions involved moderate mutual dependence, equal power, and corresponding interests. This type of interdependence was associated with high rates of cooperation in daily life and in lab experiments. Our findings suggest that if scientists want to explain the abundant cooperation among humans, future research must move beyond the narrow band of situations presently studied and embrace the diversity of interdependent situations in daily life.

Thursday July 5th, 2018
Session 3 (11:50 – 13:10)

Conflict within and between the sexes
(A1.03)

Hormonal factors impacting women's intrasexual competition

Amanda Hahn, Hannah Fergusson, Kelly Cobey, Lisa DeBruine, Benedict Jones

Intrasexual competition among women typically takes the form of indirect aggression, including self-promotion tactics and competitor derogation. Previous research has generally focused fertility-linked changes in women's intrasexual competition. While this approach is useful for testing hypotheses about the adaptive function of changes in women's intrasexual competitiveness, it offers little insight into the proximate mechanisms through which such changes might occur. To investigate this issue, we carried out a longitudinal study of the hormonal correlates of changes in intrasexual competitiveness in a large sample of heterosexual women (Study 1). Each woman provided saliva samples and completed an intrasexual competitiveness questionnaire in five weekly test sessions. Multilevel modeling of these data revealed a significant, positive within-subject effect of testosterone on intrasexual competitiveness, indicating that women reported greater intrasexual competitiveness when testosterone was high. By contrast, there were no significant effects of estradiol, progesterone, estradiol-to-progesterone ratio, or cortisol. Because hormonal contraception impacts levels of endogenous hormones, we also investigated intrasexual competition in women using combined oral contraceptives or long lasting, progesterone only contraceptives (Study 2). No significant differences were observed for reported intrasexual competition among these two groups of contraceptive users.

Mating competition and cooperation: Restricted mating strategies are associated with prosocial preferences and personality

Amanda Rotella, Pat Barclay

Why are some people more prosocial than others? To address this question we conducted one exploratory study (N = 144) and two confirmatory studies (Ns = 1,040 & 830), investigating if prosocial preferences, as measured by social value orientation (SVO) and HEXACO Honesty-Humility (HH), are related to scales associated with life-history theory, such as socio-sexual orientation (SOI) and risk-taking. SVO and HH were related to SOI with prosocials reporting a more restricted mating strategy, while less prosocial individuals engage in a less restrictive mating strategy, with the effect only being present in males for SVO ($R^2 = .05$ & $.04$), and both genders for HH ($R^2 = .17$ & $.12$). Both measures were associated with risk-taking for ethical and social risks, but not for non-social risks. We propose that prosocial preferences and personality reflect extended mating strategies, such that one's optimal prosocial strategy may be dependent on the amount of mating competition an individual faces. In other words, the more investment one puts into mating, the less one invests in cooperation. We will also present a mathematical model based on game theory as proof of concept for this theory, which demonstrates that as the amount of mating competition increases, the payoff for cooperation decreases.

On the Genetic Nature of the Association between Attachment Anxiety and Intimate Partner Violence Perpetration and Victimization

Nicole Barbaro, Brian Boutwell, Todd Shackelford

Attachment anxiety shows robust associations with intimate partner violence (IPV) perpetration and IPV victimization. Prior research, however, has focused exclusively on environmental factors to explain these associations. Here, we expand the limited research regarding possible genetic influence on IPV by examining the extent to which accounting for genetic influences on IPV and attachment anxiety can inform our understanding of both perpetration and victimization. Study 1 analyzed self-report data ($n=277$; in romantic relationship), which included measures of romantic attachment and IPV perpetration and victimization. Study 2 employed simulation-based modeling to estimate the extent to which genetic covariation explained observed phenotypic associations between attachment anxiety and IPV. Study 1 showed significant positive associations ($r=.20-.30$) between attachment anxiety (but not avoidance) and IPV perpetration and victimization. Models from Study 2 show that genetic covariation has the potential to explain approximately 1/5th to 1/3rd (and, upwards of 1/2) of the phenotypic association between attachment and IPV. Findings suggest that attachment anxiety may be a robust predictor of both IPV perpetration and victimization to the extent that the traits share an underlying genetic core. Discussion highlights the need to consider genetic factors, in addition to environmental factors, in future IPV research. Genetically-sensitive data are needed to confirm model estimates.

Individual Differences in Intrasexual Competitiveness: A Review and Recent Evidence for the Effects of Age and Gender

Abraham Buunk

It is becoming increasingly clear that there are considerable individual differences in the degree of intrasexual competitiveness (ISC), i.e., the tendency to view same-sex others as rivals, especially in mating contexts. ISC is measured with a cross-culturally validated 12-item scale ($\alpha's > .80$; Buunk & Fisher, 2009). An increasing number of studies is showing evidence for the determinants of ISC, and for the effects of ISC on behavior. For instance, ISC appears in part rooted in personality: it is positively correlated with extraversion among men and with a lack of agreeableness among women. ISC is also relatively higher among women who grew up without a father, and mediates between father absence and a variety of non-verbal seductive tactics. Among men ISC is positively associated with T, and mediates between T and mate retention tactics. In addition to reviewing the current state of research on ISC, I present results from a new study in a representative sample of 1466 Dutch individuals, with an age range from 15 to 80, predicting that the need to compete with same-sex others is especially high among adolescents, and will decrease with age. This prediction was confirmed. In addition, somewhat unexpectedly, there was also an effect of gender, with men being higher in ISC than women. These effects were maintained when controlling for educational level. The adaptive functions of ISC are discussed in relation to life history theory and frequency dependent selection.

Thursday July 5th, 2018
Session 3 (11:50 – 13:10)

Scent Signaling:

Olfactory communication of emotion and social information within and across species
(A2.09)

Social Scents within Romantic Relationships: How the Scent of a Romantic Partner Impacts Stress and Sleep

Marlise Hofer, Hanne Collins, Ashley Whillans, Frances Chen

The scent of another person can communicate their fertility status and quality as potential mates. However, little is known about the impact of scent within ongoing romantic relationships. The physical presence of a romantic partner can serve as an effective buffer against stress and increase sleep quality. Does the scent of a romantic partner alone have similar benefits? In two studies, we measured whether exposure to the scent of a romantic partner reduced stress reactivity and increased sleep quality. In Study 1, 96 women were randomly assigned to smell one of three scents (their romantic partner's, a stranger's, or a neutral scent) and exposed to an acute stressor (Trier Social Stress Test). Perceived stress and cortisol were measured throughout the study (5 and 7 times, respectively). Perceived stress was reduced in women who were exposed to their partner's scent. Cortisol levels were elevated in women who were exposed to a stranger's scent. In Study 2, 77 women slept with the scent of their romantic partner for two nights and no scent for two nights (order randomized). Sleep efficiency was measured each night using an actigraphy watch, and perceived sleep quality was assessed each morning via self-report. Women experienced increased sleep efficiency on nights when they were exposed to their romantic partner's scent. The current work reveals that the mere scent of a loved one can impact both psychological and physiological health.

Chemosensory contagion of anxiety in humans

Bettina Pause

Chemosensory communication of stress between members of a given species is ubiquitous among the animal's kingdom and promotes individual and group survival. Humans are capable to effectively process chemosensory anxiety signals of other humans. These signals prime perceptual, neuronal and motor systems in the perceiver, thereby stress-adaptive behavior is triggered. The chemical communication is likely to act contagiously, transmitting stress-related emotions from the sender to the perceiver. The processing of chemosensory anxiety signals does not require attentional mediation, instead, higher-order empathic cognitions are susceptible to be changed by subthreshold chemosignals. Chemosensory anxiety signals are preferentially processed in highly anxious individuals; however, in pregnant females, the chemical contagion of anxiety seems to be absent.

Interspecies transfer of emotion via chemosignals

Gün Semin, Biagio D'Aniello, Alessandra Alterisio, Massimo Aria, Anna Scandurra

Do chemosignals produced by humans in emotional contexts serve as a medium to transfer the induced emotional state between species? This presentation will present the emerging evidence of the communicative function of evolutionarily conserved cues (chemosignals) as the background against which a study will be reported demonstrating the interspecies transfer of emotions. The study shows that body odors produced by humans under emotional conditions of happiness and fear provide information that is detectable by pet dogs (Labrador and Golden retrievers). The study had three chemosignal (body odor) conditions [fear, happiness, and control] to which the pet dogs were assigned randomly. The dependent variables were the relevant behaviors of the dogs (e.g., approaching, interacting and gazing) directed to the three targets (owner, stranger, sweat dispenser) aside from the dogs' stress and heart rate indicators. We find confirmatory evidence, namely dogs manifested the predicted behaviors in the three conditions. There were fewer and shorter owner directed behaviors and more frequent stranger directed behaviors when they were in the “happy odor condition” compared to the fear odor and control conditions. In the fear odor condition, they displayed more stressful behaviors. The heart rate data in the control and happy conditions were significantly lower than in the fear condition. Our findings suggest that interspecies emotional communication is facilitated by chemosignals.

Stress and odors

Anna Blomkvist, Pehr Granqvist, Johan Lundström

Compared to our other senses, the sense of smell has a unique and anatomically direct pathway to the hypothalamic-pituitary-adrenal -axis which might have many important implicit and explicit functions in reducing stress. In a set of behavioral experiments, we pursued the hypothesis that the sense of smell could reduce psychophysiological measured stress, i.e. skin conductance levels (SCL), after a stress induction paradigm using weak electric shocks. In study one, we used the framework of attachment theory stating that an adult attachment figure should provide a relief and comfort if the individual is exposed to a stressful event. The results showed that such a relief and comfort can be achieved for the secure individuals by simply smelling their partner's body odor. Presence of their partners body odor significantly reduced SCL compared to when smelling their own, a neutral or a positive odor. In study two, a multisensory paradigm with virtual reality was used to test whether odors uniquely reduce stress responses within three different environments; urban parks, forests and cities. Our findings showed that high psychological pleasantness was linked to low stress response for the olfactory and visual senses. Taken together these findings demonstrate that both social and environmental odors are able to provide stress release and further, provide a framework for understanding the underlying mechanisms of olfaction cues and stress.

Thursday July 5th, 2018
Session 3 (11:50 – 13:10)

Cultural evolution
(A2.11)

Morality and the cultural evolution of reasons

Stefaan Blancke

Karen Wynn et al. argue that culture and rationality play a key role in the development of adult morality. However, they leave untouched the important question how these phenomena exert an effect. I propose an answer building on naturalistic approaches to rationality and culture, viz. the interactionist theory of reasoning and cultural attraction theory (CAT). The former theory holds that the proper function of reasoning is to produce and evaluate reasons in interaction with others. Reasons are for social consumption, either as justifications or as arguments. In both cases, reasons play an important role in associating motivations and norms. A reason is presented to others as an individual motivation supported by shared norms. To give reasons is to encourage others to recognize their normative aptness. Building on CAT, I argue that some reasons are more convincing than others, making them more likely to spread and stabilize across a population. Members of the same group then expect every individual of that group to attune one's behaviour to the norms that these reasons implicitly or explicitly invoke. Norms of action underlying such widely shared reasons correspond to what is often labelled "morality". I identify some of the factors that affect this distribution of reasons across a social group (e.g., intuitive appeal, reputation). Finally, I explain how adult morality develops through adopting the reasons that people in one's social environment find acceptable as norms.

Descriptive modelling of utterance transformations in chains: short-term linguistic evolution in a large-scale online experiment

Sébastien Lérique, Camille Roth

Current approaches to cultural evolution essentially fall into the so-called Californian and Parisian traditions. The former rather relies on replication-based theories, successfully adapting models from population genetics. The latter is more centred on the transformation of cultural items and has so far principally produced stylized models. This uneven state of modelling in the two approaches clouds the question of whether they mostly differ in granularity or fundamentally disagree. Our work contributes to the empirical modelling of cultural evolution within the Parisian tradition and, thereby, aims at shedding more light on this issue. We propose a novel approach for characterizing the short-term transformation-based evolution of written utterances. In practice, we develop an online platform to produce high-quality transmission chains, combining (1) computational analysis, (2) use of realistic data and (3) control over data generation. By extending a bioinformatics sequence alignment algorithm, we capture the transformations of short utterances as a combination of elemental operations which relate to known low-level mechanisms of sentence processing, thus bridging the gap with high-level transmission biases elicited by standard transmission chains. To our knowledge, this is the first modelling application of the Parisian tradition in linguistic evolution, an endeavour which should further help map the differences with the Californian framework.

Metarepresentation as an adaptation for epistemic vigilance: Enhanced source memory for minimally counterintuitive concepts

Spencer Mermelstein, Michael Barlev, Tamsin German

Communication brings great benefits, but it also exposes one to exploitation. For communication to remain adaptive, theorists have proposed the evolution of cognitive mechanisms for epistemic vigilance: the evaluation of transmitted information. One hypothesized adaptation underlying epistemic vigilance 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.

Rumour propagation and the eco-evolutionary dynamics of social information use

Alexandre Suire, Minus van Baalen

Information is a crucial currency for living organisms as it allows them to adjust their behaviour to environmental fluctuations. Thus, natural selection should have favoured the capacity of collecting information from different sources, including social interactions whereby individuals could quickly gain reliable information. However, such conditions may also favor the gathering of potentially detrimental information, such as false or misinterpreted accounts of environmental and social phenomena such as rumours, which may spread via informational cascades. Modern human societies are constantly exposed to these phenomena in the form, for instance, of fake news, which can lead to severe populational consequences. Moreover, information is spread swiftly without being checked along long transmission chains through internet and mass media. In this context, we applied ecological and evolutionary principles to investigate how the propagation of social information at a populational level affects the propensity to assimilate such information, here defined as the gullibility. We developed a model inspired from Susceptible-Infected-Recovered models used in epidemiology to study such aspects. Our results show that the evolution of an individual's susceptibility to assimilate information strongly depends on eco-evolutionary feedbacks, in particular when both useful and detrimental information circulate and that such feedbacks are reinforced by social structure.

Thursday July 5th, 2018
Session 4 (14:30 – 15:50)

Development in harsh conditions
(A0.01)

Cognitive Adaptations to Harsh Environments

Willem Frankenhuis, Wenkuo Chen, Dion Akkerman

An extensive body of research has documented cognitive impairments in people who develop in high-adversity environments. These findings have led to the predominant view that chronic stress impairs cognition. But this is not the whole story. Recent theory and data suggests that these same individuals also develop enhanced cognitive abilities for solving problems that are more relevant to their situations. This hypothesis predicts that people from harsh environments show improved performance on tasks matching recurrent problems in those environments. Here, we examine the ability to learn about danger versus non-danger information. We present results of a preregistered study that uses two retrospective questionnaires (IVs) and a well-established flashcard paradigm (DV) to investigate whether exposure to, and involvement in, violence enhances university students' (N=126) learning and memory for danger, but not for location, information. Our results suggest that college students with more involvement in (but not students with more exposure to) violence are better able to learn danger information, but not location information, than their peers. Our next step will be to evaluate whether this finding replicates in a more diverse community sample known to have experienced more violence. At an applied level, the better we understand harsh-adapted minds—including their strengths—the more effective we can tailor education, policy, and interventions to fit their needs and potentials.

A life History perspective on stress, coping, and disruptive life events

Dimitri Van der Linden, Curtis S. Dunkel, Mattie Tops, Michael Hengartner, Paris Petrou

Life history (LH) theory poses a continuum ranging from fast to slow LH strategies. A fast LH strategy is characterized by increased effort in mating versus parenting, a slow LH strategy indicates the reverse (more parenting effort, less mating effort). Previous research has indicated that faster LH strategists experience higher mean levels of stress. There are, however, still many open questions as to what causes this association. For example, faster LH strategists may encounter more stressful life events, be less effective in coping with stress, or both. Three studies with diverse samples (Ns range from 129 to 273; diverse in age, sex, educational background, occupation, etc.) are presented testing these basic questions using direct and validated measures of coping strategies and number of disruptive life events. Self- and other ratings of stress were included. Moreover, it was tested whether life events and coping mediate the LH strategy-stress relation. The studies used various psychometric indicators of LH strategy (e.g., mini-K, K-SF-42, HKSS, personality profiles). Controlling for age and sex, all studies found that a faster LH strategy was significantly associated with more disruptive life events in the previous years, and less effective patterns of coping styles. In all studies, life events and coping, partially mediated the LH strategy-stress relation. The results contribute to insight in the mechanisms through which LH strategy may affect general health.

Cross-country relationships between life expectancy, intertemporal choice and age at first birth

Adam Bulley, Gillian Pepper

Humans, like other animals, typically discount the value of delayed rewards relative to those available in the present. From an evolutionary perspective, prioritising immediate rewards is a predictable response to high local mortality rates, as is an acceleration of reproductive scheduling. In a sample of 46 countries, we explored the cross-country relationships between average life expectancy, intertemporal choice, and women's age at first birth. We find that, across countries, lower life expectancy is associated with both a smaller percentage of people willing to wait for a larger but delayed reward, as well as a younger age at first birth. These results, which hold when controlling for region and economic pressure (GDP-per capita), dovetail with findings at the individual level to suggest that life expectancy is an important ecological predictor of both intertemporal and reproductive decision-making.

Discriminating Ecologies: A Life History Approach to Stigma and Health

Steven Neuberg

How does being discriminated against affect one's health, and through what mechanisms? Most research has focused on how discrimination increases psychological stress and exposure to neighborhood hazards. I advance a complementary set of mechanisms through which stigma and discrimination may shape health. Grounded in life history theory, the framework holds that discrimination alters aspects of the ecologies in which people live (e.g., access to economic resources, unpredictable extrinsic causes of early mortality, sex ratios, community social networks). In turn, these discriminating ecologies pull for specific behaviors and physiological responses (e.g., related to risk taking, sexual activity, offspring care, fat storage) that can be viewed as active, strategic, and rational given the threats and opportunities afforded by these ecologies, but which have downstream implications for many health outcomes. This framework generates unique hypotheses about (a) the effects of discrimination on a large number of (often underappreciated) negative health outcomes, ranging from physical injury and sexually transmitted diseases to diseases related to obesity and drug use; and (b) the ecological factors and behavioral and physiological strategies that mediate between stigmatization and health outcomes. The life history framework complements traditional perspectives by providing nuanced insights and hypotheses about the discrimination-health relationship.

Thursday July 5th, 2018
Session 4 (14:30 – 15:50)

The evolution of vocal production and perception
(A1.02)

How do babies laugh?

Disa Sauter, Mariska Kret, Dianne Venneker, Bronwen Evans

Some socio-emotional expressions in humans have deep ancestral roots. One example is laughter, which occurs across all great ape species. Comparative research has established phylogenetic continuity in the laughter signal, suggesting that these emotional expressions are homologies across great apes. Yet human laughter differs from that of other primates: In non-human apes, laughter is typically produced in the context of tickling or rough-and-tumble play. This is true also of human infants, but not of human adults, where laughter occurs across many different kinds of social interactions. Human laughter is also unique in that it is primarily produced on the exhale, whereas other primates laugh on both the inhale and exhale. In the current study, we examined whether human infant laughter is acoustically more similar to non-human apes' laughter, or whether human infant laughter resembles the laughter of human adults from the outset. Laughter clips from infants were used in a perception study, in which naive listeners judged the degree to which each laugh was produced during exhalation or inhalation. The results show that the proportion of infants' laughter produced on the exhale increases with age, with a positive relationship between a child's age and exhalation. This result suggests that human laughter gradually develops into the vocal style of human adults. These results are discussed in the context of vocal control maturation and social learning.

Spontaneous and volitional emotional vocalizations: An evolutionary perspective

Andrey Anikin

Emotional vocalizations have recently attracted considerable attention due to their abundance in human interactions, rich communicative potential, and significant cross-cultural similarities. A potential limitation is that most available recordings are actor portrayals. However, since some emotional expressions are known to be honest, hard-to-fake signals, volitional vocalizations may differ from spontaneous forms. In a series of studies we compiled and tested a large collection of naturalistic emotional vocalizations obtained from social media. The accuracy of emotion recognition was similar across cultures, suggesting that spontaneous vocalizations may be even less culture-specific than actor portrayals. In a comparison with several published corpora, listeners were above chance when guessing the spontaneous or volitional nature of vocalizations across all emotional categories, with accuracy highest for high-stakes emotions such as fear and anger. In addition, acoustic categories, such as “laugh” or “scream”, were more salient than emotional categories, suggesting that humans produce and perceive call types, while their interpretation in terms of emotion may be secondary. This brings the research on human nonlinguistic vocalizations more in line with bioacoustics, which bodes well for the evolutionary approach and speaks in favor of using spontaneous expressions for the purposes of phylogenetic reconstruction.

Identity perception from spontaneous and volitional laughter

Carolyn McGettigan, Nadine Lavan

There are two neuroanatomical pathways supporting the control of the human voice – a midline system that is conserved across humans and other mammals and thought to control innate and involuntary vocal behaviour, and a newer lateral system originating in primary motor cortex that is associated with the control of learned, volitional vocalizations (e.g. speech, song; Pisanski et al., 2016). In a series of studies, we measured voice identity perception from spontaneous and volitional laughter. Performance is impaired, for both familiar and unfamiliar listeners, when they are asked to classify talker sex (Lavan et al., under review) or to perform speaker discriminations (Lavan et al., 2016) on spontaneous laughter. A follow-up examination of the latter effect suggested that identity-related information is indeed less successfully encoded in spontaneously produced laughter, which is associated with the evolutionarily older vocal control system (Lavan et al., 2018). We propose that claims for a limitless human capacity to process identity-related information from voices may be linked to the literature’s focus on articulate speech – by extension, it may be the human capacity for volitional control of the voice that facilitates the encoding of speaker-specific cues. In sum, we recommend that theoretical and methodological frameworks of person identity processing should be adjusted to explicitly include the full range of sounds produced by the human voice.

Infants perceive affiliation in colaughter at 5 months

Greg Bryant, Athena Vouloumanos

Laughter is a ubiquitous nonlinguistic vocalization with a variety of rich social functions. Colaughter is coordinated laughter between two or more individuals which allows third party listeners across different cultures and languages to quickly evaluate affiliation in a social group. We examined whether infants are sensitive to affiliative cues in colaughter, specifically whether they can differentiate colaughter between friends and strangers. In the first experiment, infants who heard alternating trials of colaughter between friends and strangers listened longer to colaughter between friends. In a second experiment, we examined whether infants were sensitive to the social context appropriate for each type of colaughter. Infants heard colaughter between friends and colaughter between strangers preceded by a silent visual scene depicting one of two different social contexts: either two people affiliating or turning away from each other. Infants looked longer when the social scene was incongruent with the type of colaughter. By 5 months, infants preferentially listen to colaughter between friends, and detect when colaughter does not match the affiliative nature of a social interaction. The ability to rapidly evaluate acoustic features in colaughter that reveal social relationships between novel individuals appears early in human infancy and might be the product of an adaptive affiliation detection system that uses vocal features.

Thursday July 5th, 2018
Session 4 (14:30 – 15:50)

Inclusive fitness
(A1.03)

How to test Hamilton's rule empirically

Matthijs van Veelen

How generally Hamilton's rule holds is a much debated question. Here we discuss the possibilities for empirical tests of Hamilton's rule. These possibilities depend on how costs and benefits are defined. When using the regression method to define costs and benefits, there is no scope for violations of Hamilton's rule, and there can only be spurious reasons for finding apparent violations. When using the counterfactual method, there is room for violations, but there are limitations to observing them in equilibrium. In situations with only synergies, the discrepancies between Hamilton's rule and the direction of selection imply that selection will eventually take the population outside the region of disagreement, precluding observations of violations in equilibrium. With other types of interactions, in equilibrium violations are possible, but observing them requires the use of statistical models that allow for identifying non-linearities in the fitness function. Interactions that predict coexistence of cooperators and defectors are particularly conducive to violations in equilibrium.

Reconceptualizing kinship in terms of fitness interdependence

Lee Cronk, Dieter Steklis, Netzin Steklis, Olmo van den Akker, Athena Aktipis

Although genetic relatedness has been shown to be an important determinant of helping and other forms of cooperation among kin, it does not correspond well to the different types of kin designated by the kin terminologies used in human societies. This mismatch between genetic relatedness and kin terms has led some scholars to reject the idea that kin terms, and by extension the concept of kinship itself, has anything to do with genetic relatedness or anything else biological. The evolutionary and cultural anthropological views of kinship can be reconciled through an appreciation of the concept of fitness interdependence, defined as the degree to which two or more organisms positively or negatively influence each other's success in replicating their genes. Fitness interdependence may arise for a variety of reasons, including not only genetic relatedness but also mating and marriage, risk-pooling, mutual aid, and common group membership. The six major kin term systems correspond to recurrent but cross-culturally variable patterns of fitness interdependence among different types of kin. In addition, changes from one kin term system to another are associated with corresponding changes in recurrent patterns of fitness interdependence among kin, and kin terms are often used metaphorically in situations in which fitness interdependence has arisen among non-kin.

Do Parents Favour Sons? A Study of Sex-biased Parental Investment in Rural Tanzania

Anushé Hassan, Susan Schaffnit, Rebecca Sear, Mark Urassa, David Lawson

Evolutionary parental investment (PI) theory predicts that parents will favour certain offspring if this results in greater subsequent pay-offs. We explore evidence for sex-biased PI in a high fertility, polygynous population with strong patriarchal norms and where variance in male reproductive success is assumed to be relatively high. Under such conditions, we anticipate generalised biased PI in sons over daughters, although past research indicates that parents favour daughters for some forms of PI (education). Our data come from a novel cross-sectional study of 810 children under 5yrs in two Sukuma agro-pastoralist villages in Tanzania. We test if PI is sex-biased and if biases vary by contextual factors (including for a Trivers-Willard Effect). Regression models compare boys with girls in regard to 1) parental allocation of resources (money, clothes, medicine) and provision of direct care (washing, feeding, playing with, caring for when sick, supervising and sleeping next to) 2) duration of breastfeeding and 3) parents' residence. Preliminary analyses indicate that sons have higher odds of receiving several forms of direct care from fathers and higher odds of parents being co-resident compared to daughters. No bias is seen by child's sex in resource provision from either parent, direct care provision from mothers, and duration of breastfeeding. We discuss possible reasons for the variation in investment patterns seen by child's sex, parent's sex and investment indicators.

Rural economy diversification and its effects on child growth in Timor-Leste

Phoebe Spencer, Katherine Sanders, Debra Judge

Periodic resource shortages in early human history selected for plasticity in child growth. Agricultural production introduced strong ties to geographical place, thus potentially increasing the effects of seasonal food shortages. In populations transitioning from agriculture to a market economy, opportunities arise for traditionally subsistence households to diversify income sources and possibly mediate the risks of small-scale agriculture. Timor-Leste is undergoing this transition; however, little is known about the patterns of household strategies and the effects of rural development on child wellbeing. We derive strategies from 190 households in two rural Timor-Leste communities, and examine the links between resource strategies, household composition and child growth using linear mixed modelling. Children's z-height, z-weight and z-BMI are well below international standards (n = 737). Agriculture remains largely subsistence-based, with some reliance on cash flow from government pensions. Households with stable income sources are better able to accumulate wealth, and children living in salaried households have better z-height. Mother's height relates to child z-height and to z-weight, indicating intergenerational effects. The effects of past conditions on child growth are independent of the effects of current household ecology and probably include epigenetic programming. Epigenetic effects could slow the measurable improvement of child growth with resource improvement.

Thursday July 5th, 2018
Session 4 (14:30 – 15:50)

Networks and food sharing
(A2.09)

It's more than just tapas: The effects of sharing food on levels of trust and cooperation.

Charlotte De Backer, Anna Jansen, Konrad Rudnicki, Katrien Maldoy, Karolien Poels

In ancestral environments the acquisition and distribution of food necessitated trust and cooperation among group members. Today, the sharing of (similar) foods may still boost trust and cohesion. Some have suggested making a difference between “eating together” -eating in the company of other people- and “food-sharing”, where food platters are shared. “Food-sharing” brings about potential dilemma’s -about if and how foods should be equally divided- that may be absent when merely “eating together”. This study aimed to empirically test if food-sharing versus to eating together (as compared to interacting with no food involved) may differently boost trust, cooperation and cohesion. This hypothesis was tested in an experiment with pairs of male strangers (n=90) meeting for 15 minutes and either eating tapas together that were (1) offered on individual plates or (2) offered centrally on the table, both compared to (3) a control group who met and talked about food (using pictures of the tapas used in the experimental conditions). Measurements of interaction quality, social cohesion, and trust were collected, along with changes in HRV (a measure of parasympathetic activity related to pair bonding). Social Value Orientation was recorded and used as a control measure. Preliminary results confirm the prediction that food-sharing leads to the highest levels of trust and cohesion. More detailed results, including the SVO and HRV data will be available for presentation in July.

Daily food sharing in nonindustrial societies: effects of subsistence ecology, socioecology, and phylogeny

Erik Ringen, Adrian Jaeggi

While beyond-household food sharing is ubiquitous across nonindustrial populations, relatively few populations customarily share food on a daily basis. Daily food sharing is predicted when 1) there is daily household-level variation in food production, 2) that variation is relatively uncorrelated across households, and 3) other means of smoothing production (such as storage) or commodifying food (such as external trade) are lacking. Using a sample of 73 ethnographically-described populations from the Standard Cross Cultural Sample, we model the relationships between daily food sharing customs and various factors capturing these predictions such as subsistence strategy, food storage technology, environmental predictability, and inter-community trade. We also control for spatial, phylogenetic, and temporal autocorrelation among populations using geographic/temporal distance matrices and a genetic/linguistic supertree. Information-criteria driven model comparison suggests that several covariates contribute to food sharing customs, with subsistence strategy and egalitarian social organization emerging as some of the strongest predictors. We also find evidence of substantial phylogenetic co-variance between populations. These findings implicate subsistence ecology, as well as cultural/technological innovations, as influences on cooperative behavior and reiterate the need to account for statistical non-independence in cross-cultural research.

Influence of culture on sharing behaviour among "selfish" Ik former hunter-gatherers

Cathryn Townsend, Lee Cronk, Athena Aktipis

The Ik are a group of former hunter-gatherers in Uganda who were characterized as “the loveless people” and as “unfriendly”, “uncharitable” and “mean” in a famous ethnography by anthropologist Colin Turnbull published in 1972. Turnbull argued that the emotionally distressing Ik behaviour he witnessed was due to a cultural adaptation to conditions of scarcity and encapsulation by neighbouring pastoralists. Scholars in the social and biological sciences have repeated this claim uncritically. For example, Richard Dawkins characterized Ik culture as one of “utter selfishness.” However, our research shows that these are misleading descriptions of both Ik behaviour and Ik culture. In fact, the Ik have various cultural traits that inhibit selfishness in some social contexts and that promote sharing and mutual aid. These Ik cultural traits of generosity are present despite the fact that the Ik live in conditions of ecological scarcity and seasonal food shortages and are the victims of violence perpetrated against them by neighbouring pastoralist groups. Turnbull's observations about Ik behaviour should thus be historically situated within the context of a severe environmental shock that led to famine, and subsequent physiological and social exhaustion, rather than interpreted as the result of cultural adaptation.

The network dynamics of cooperation and social status in a small-scale society

Chris von Rueden, Daniel Redhead

The emergence of cooperation among non-kin in human societies may have depended critically on status hierarchy. Specifically, individuals high in prestige are targeted as cooperative partners (Henrich & Gil-White 2001), in part because individuals who cooperate with prestigious individuals will increase their own prestige over time. We test these predictions among the Tsimane forager-horticulturalists of Bolivia. Three waves of panel data, encompassing a period of 9 years, were collected from one Tsimane village. Cooperation networks were constructed using self-reported food sharing and production partners. Prestige status was measured through aggregated peer photo-rankings of respect and community-wide influence. Data were analyzed using stochastic actor-oriented modelling for the co-development of networks and behaviors (often termed RSiena or longitudinal social network analysis). Results indicate that cooperation was structured by reciprocity, transitivity, and preference for kin. Importantly, individuals high in prestige status were more likely to receive cooperative partnership nominations and, over time, the prestige of an individual's cooperative partners increased their own prestige. This study provides one of the first longitudinal assessments of cooperation in a preindustrial setting, and identifies the dynamic relationship between prestige and cooperation as central to their evolution.

Thursday July 5th, 2018
Session 4 (14:30 – 15:50)

Religious beliefs
(A2.11)

Moralizing high gods are a consequence, not a cause, of social organization

James Carney, Tamas David-Barrett

Does a collective belief in an all-powerful, morally concerned god drive human cooperation? Against the prevailing view, we argue that it does not. Instead, we propose that moralizing high gods emerge as a consequence rather than a cause of social organization. Our model shows that any neutral collective belief can yield synchrony benefits for groups above a certain size. This implies that the presence of moral high gods (MHG) and the causal role of beliefs in punitive divine agents is not a necessary to achieve a large groups size. This leads two claims: (1) that belief in MHGs is promoted in a post hoc way by the social hierarchies that emerge after synchrony has been established; and (2) that belief in MHGs persists because it confers intergenerational permanency on the hierarchy in question. We support our claims using a behavioral synchrony model, which allows us to make anthropologically plausible assessments of how social networks respond to low-level changes in agent interactions.

Does social organisation co-evolve with witchcraft beliefs?

Sarah Peacey, Ruth Mace

Belief in witchcraft, or the idea that certain individuals harm others through supernatural means, is widespread, and can have serious consequences for those accused. Diverse kinship structures produce different forms of conflict and competition within societies. We investigated whether aspects of social organisation co-evolve with witchcraft beliefs, in Bantu societies from sub-Saharan Africa (n=65). The hypotheses were: 1) societies with more polygamous marriage have more witchcraft belief resulting in accusations between co-wives competing for reproductive resources 2) matrilocal societies (where couples reside with the wife's family after marriage) with matrilineal descent patterns (traced through the female line) have lower post-marital dispersal overall and higher competition for resources, leading to higher levels of witchcraft belief. We used a combined dataset with variables on witchcraft beliefs and social organization, and a phylogenetic tree of Bantu languages. Bayesian phylogenetic comparative methods evaluated models of dependent evolution (traits co-evolve), and independent evolution, (traits evolve separately). There was no evidence that societal levels of witchcraft belief and kinship structures co-evolve. Witchcraft belief may not relate to social organisation, or kinship forms may influence the evolution of witchcraft phenotypes within individual cultures but not overall levels of belief.

Different Gods for different minds: How belief reflects different models of mind

Rita Anne McNamara

Supernatural agent (SNA) beliefs may have evolved from social cognition aimed at natural (i.e. human) agents. But, much social cognition research examines a Western model of mind that assumes a) behavior starts in the mind, b) one can infer what others think, and c) mental state inference is the best explanation for actions. I recruit Indigenous iTaukei Fijians (N = 108) with co-existing Christian and traditional beliefs, as well as a local model of mind that discourages mental state inference – instead focusing on actions. In 2 studies (study 1: SNA likes/ dislikes; study 2: punishment/ reward), I use a free listing task to examine how the Western and local models of mind relate to different beliefs. In study 1, the Christian God cared about peoples' traits – more in line with the Western, internally-focused model of mind. The ancestor spirits cared about specific actions – more in line with the local, action-focused model of mind. In study 2, the Christian God punished and rewarded both thoughts and actions by causing ecological events (i.e. cyclones, droughts) or events in the afterlife. The ancestor spirits had less access to thought and punished actions that showed disrespect for traditional village spaces/ values. Results give a window into processes leading culture and cognition to co-evolve: introduced cultural forms can spread new cognitive approaches, while Indigenous beliefs can continue to reflect local socio-ecological issues like preserving community.

Do as I Do, Not as I Say: Context biases in transmission of religious beliefs

Aiyana Willard

Religions contain unverifiable and causally opaque beliefs. This poses a problem for theories of the transmission of religious beliefs based on their content alone. How do people come to adopt these types of often unbelievable beliefs? Credibility enhancing displays (CREDs) are an evolved context bias that can aid in the transmission of this type of otherwise unverifiable cultural beliefs. CREDs are behaviors that signal the sincere belief of others to a new cultural learner. Thus CREDs demonstrate the truth and importance of maintaining that belief to new members of a society. The transmission of religious beliefs should increase when beliefs are presented with the observation of others' credible behavioral support for those beliefs. In a set of studies (N = 483), participants who observed another's credible behavior were more likely to endorse a related belief than those who received only a verbal endorsement of that belief. This increase in belief made up for a lack of belief created by counterintuitive content. In a field study, religiously raised Czech and Slovak participants (N = 914) were more likely to have maintained their religiousness if they had been exposed to religious CREDs in childhood. Further, religiously raised Slovak participants had been exposed to far more of these displays than religiously raised Czech participants. This can account for 53% of the difference in religiosity in these two countries today.

Friday July 6th, 2018
Session 5 (10:20 – 11:40)

Human mating revisited
(A0.01)

Sexual Strategies Theory 2.0

David Buss, David Schmitt

Sexual Strategies Theory (SST), originally proposed by Buss and Schmitt in 1993, has been one of the most influential theories in the burgeoning field of evolutionary psychology. It has attained over 4,000 scholarly citations since its first articulation 25 years ago, as well as hundreds of empirical studies testing its 9 core hypotheses and 22 specific predictions. SST has also drawn some theoretical challenges and purported empirical refutations. This talk takes stock of the scientific status of SST. We discuss the core premises of SST, which involve the evolution of a menu of long-term and short-term mating strategies in women and men; sex differences and similarities in the design features of sexual psychology; and context-specific shifts in mating strategy depending on individual, social, and ecological qualities such as mate value, life history strategy, sex ratio, and cultural norms. We discuss the large body of empirical work that has tested its key predictions and challenges to its core premises. Challenges include whether the predicted sex differences actually exist; whether competing theories provide compelling alternative explanations; and whether mate preferences predict actual mating behavior. We conclude by presenting Sexual Strategies Theory 2.0 and offering suggestions for the future science of human mating.

Predictive Validity of Partner Preferences: Evidence from a Large-Scale Prospective Study

Tanja M. Gerlach, Thomas Schultze, Ruben C. Arslan, Selina K. Reinhard, Lars Penke

There is an ongoing debate in psychological and evolutionary science about the relevance of ideal partner preferences for romantic relationships. Contributing to this debate, we present data from the Göttingen Mate Choice Study (GMCS). In this prospective longitudinal study, we followed up on a large sample ($N > 700$) of participants who were initially single (T1) over a period of 16 months. We assessed participants' relationship status and, if applicable, their partners' characteristics after 5 months (T2). After another 11 months (T3), we assessed whether they were still in their T2 relationships and, if so, how satisfied and committed they were. T1 preferences were predictive of the T2 partner characteristics; in cases where partners' characteristics fell short of the initial preferences, we observed downward adjustment of the preferences stated at T2. Irrespective of these adjustments, discrepancies between T1 preferences and T2 partner characteristics negatively predicted whether participants who had entered a relationship by T2 ($N > 200$) were still in a relationship with the same partner at T3. Among those still with the same partner, larger preference-partner discrepancies were associated with reduced relationship satisfaction and commitment. These results speak to the relevance of ideal partner preferences for the initiation and maintenance of and satisfaction with romantic relationships.

Sex differences in mating-related age preferences: From unbelievable to undeniable to a screen near you

Douglas Kenrick, Jaimie Arona Krebs

Before 1990, it was a well-known fact that women were attracted to men two years older (and men to women two years younger). Most researchers attributed this to Western norms stipulating that men should seek partners who were below their own height, status, and age, and the converse for women. But research one of us conducted with Rich Keefe suggested that this fact, and its proposed explanation, were both wrong. Analyses of singles' ads suggested that young men were interested in older and younger women, with older men seeking progressively younger partners. Those data suggested women were seeking status and men were seeking fertility. When this notion was first presented at the University of Michigan in 1988, it drew a self-righteous and even hostile reaction. One commentator declared that the ads merely reflected men's "fantasies," and even those would not be found in other societies, so everything about the evolutionary explanation was wrong. Three decades later, that commentator's self-confidence seems misplaced. The sex differences in those ads are evident in marital choices and have been replicated across cultures—those differences are even exaggerated in non-Western societies, in ways that make theoretical sense. These differences are also exaggerated in art and cinema, again in ways that make theoretical sense. We discuss the broader lessons this line of research holds evolutionary approaches to social psychology, and for the field of psychology more generally.

Sex Differences in Mate Preferences Across 44 Cultures: A Large-Scale Replication

Kathryn Walter, Daniel Conroy-Beam

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 44 cultures.

Friday July 6th, 2018
Session 5 (10:20 – 11:40)

Leadership
(A1.02)

Cross-cultural perceptions of facial prosociality, attractiveness, health and dominance

Daniel Freund, Tobias Kordsmeyer, Atsushi Ueshima, Kiri Kuroda, Tatsuya Kameda, Lars Penke

Facial characteristics may signal information about an individual. Important perceptual domains for various kinds of social interactions, including intrasexual competition and mate choice, are prosociality, attractiveness, dominance, and health. First results have shown that observers base their interpersonal judgments on stable facial characteristics, such as facial masculinity, asymmetry and width-to-height ratio (fWHR). Testosterone (T) and cortisol (C) levels are physiological markers thought to partly influence these facial characteristics. Initial findings suggest that interpersonal perceptions of facial characteristics may differ cross-culturally, with consequences for social interactions in our globalized world. We investigated and compared ratings of N=165 European men's facial prosociality, attractiveness, dominance, and health by European and Asian observers, and moderating influences of stable facial traits and baseline T, C, and the TxC interaction. Results showed a strong agreement between European and Asian perceptions. Facial dominance was positively related to objective facial masculinity, fWHR, lower-face-height/face-height ratio, baseline T, and negatively to cheekbone prominence. Only spurious associations of facial attractiveness and prosociality with fWHR, and of facial health with T, but no associations for facial asymmetry, C or TxC were detected. Implications and limitations of these findings, and suggestions for further research will be discussed.

The impact of social rank on saliva cortisol and testosterone in relation to prosocial behavior in humans

Bernard Wallner, Johannes Jäschke, Benjamin Siart

Game theoretic research has contributed to a better understanding of human prosocial behavior. Most studies, however, do not consider parameters like social hierarchy or socio-economic-status in relation to endocrine reactions of interacting partners in their research. Therefore, we investigated in 3 studies the impact of social rank in relation to cooperation, respectively, fairness on its impact to the HPA axis. In study 1, high social status of supervisors was related to decreased cortisol concentrations in students and vice versa. In study 2, students of low social rank showed significantly increased saliva cortisol concentrations after cooperating with high rank and high reciprocity individuals but, cortisol concentrations were significantly decreased after a relaxation period. Students who played against low rank and low reciprocity individuals showed no changes in cortisol. In study 3, the impact of military rank on fairness and behavior in relation to salivary cortisol levels were investigated in male soldiers. We found that high-ranking soldiers played more unfair and their rank was positively associated with elevated cortisol levels, before, during and after the game. From these studies we conclude, under different environmental conditions individuals of low social status show reduced saliva cortisol levels after interacting with individuals of high status, even if the latter play unfair.

Humans detect valid facial cues of leadership in chimpanzees

Alexander Bor, Darren Schreiber, Sarah Brosnan, Susan Lambeth, Steven Schapiro, Frans de Waal, Mark Van Vugt

Humans rely on facial cues to assess the leadership ability of their peers, which affects the selection and assessment of leaders in political and business settings. Prominent theoretical explanations propose that facial cues serve as inputs into an adaptive, context-sensitive followership psychology. Here, we push this evolutionary explanation further by testing if humans are able to identify chimpanzee (*pan troglodytes*) leaders. Importantly, we do not claim that detecting leadership across species had adaptive benefits. Instead, we argue that it is reasonable to assume that facial cues of leadership may be similar across humans and chimps due to convergences and/or homologies and that humans' facial cue detecting mechanisms are triggered by encountering chimpanzee faces. We, therefore, predict that alpha chimpanzees will be perceived to be more dominant and leader-looking than non-alpha chimpanzees. We test our hypothesis relying on a unique inventory of over 150 standardized photographs of more than 70 captive adult male chimpanzees from three colonies. Naive human raters recruited on Amazon's Mechanical Turk rated these photographs on six traits (dominance, age, leader ability, attractiveness, likability and competence). Subsequently, we compare the average trait ratings of alpha and non-alpha targets. Preliminary results show that interrater reliability of evaluations are very high and that alpha males are rated higher on dominance, age and leader ability.

Power corrupts some (but not all) leaders: A situational affordances hypothesis

Ard Barends, Reinout De Vries, Mark Van Vugt

Power differences are ubiquitous across human societies. Power is often granted to leaders so they can benefit the collective, however, there is always the possibility that leaders misuse their power to enrich themselves at the cost of the collective. So handing such power to some individuals may be undesirable from a collective perspective. Based on an evolutionary situational affordances model we show across three experiments ($n = 198$; $n = 60$; $n = 158$ respectively) that individual differences in integrity (as measured by the Honesty-Humility trait of the HEXACO personality model) predict decision-making in economic games, and that this relation is moderated by power. Power was manipulated through either a standard power prime or by comparing games in which allocators (leaders) either had absolute power (dictator game) or shared power (ultimatum game). In line with the situational affordances perspective, we hypothesized that in absolute power conditions leaders with lower Honesty-Humility would be more exploitative. Additionally, we predicted that those low in Honesty-Humility would have better outcomes in games in which they had absolute power than in games in which they shared power. The results were generally supportive of our main hypotheses. Our findings contribute to understanding situational and personality effects on integrity risks in positions of power.

Friday July 6th, 2018
Session 5 (10:20 – 11:40)

The evolution of perception
(A1.03)

You decide, I judge: Rich inferences from ostensibly irrelevant behavior

Max Krasnow

Human social psychology is populated by powerful mechanisms of person perception and character attribution that allow us to predict the future behavior of others. Yet, research on social decision making using behavioral economics methods has typically assumed that the ‘facts on the ground’ of an experimental game—the monetary stakes at play and what information can objectively influence them—are the relevant features that should guide a decision-maker’s behavior. Many assume, for instance, that if games are played anonymously, then reputational concerns are removed; if you are anonymous to me and your actions only concern others, then these actions should be irrelevant to me. But, does human nature agree? I will present studies showing this answer is “no”. People reliably infer character information from ostensibly irrelevant actions across a variety of economic games. These inferences are robust to prior experience in anonymous studies, so do not reflect naivete or confusion. These inferences drive consequential decision-making, and so are not mere epiphenomena. Rather, they are the predictable result of our social psychology doing what it should: extracting social information whenever it is available.

Visual attention to multiple individuals is driven by age and attractiveness

Rick O’Gorman, Tom Foulsham

Visual attention is a core aspect of work on attractiveness, but most work to date focuses on still images and manipulation of stimuli, with evolutionary hypotheses about features such as symmetry and averageness driving research paradigms. There may be a benefit to ‘zooming out’ and examining what features drive visual attention more broadly, in particular using dynamic stimuli in natural settings. Such an approach can then place visual attention and attractiveness in a wider social context. In the present study, younger and older observers were eye-tracked watching video clips of real street scenes depicting multiple individuals. We found robust age differences, showing that younger observers spent less time looking at older targets, but more time looking at younger and more attractive targets, regardless of sex of target or observer. In contrast, older participants did not discriminate, looking at old and young targets equally and showing no reliable effect of target attractiveness. These results demonstrate that our social attention does not treat all conspecifics equally, and that, at least on first encounter, visual attention is drawn by attractiveness and age but independent of sex. The findings also contribute to a recent discourse in mass media that older women report feeling ignored and invisible in social settings.

The evolution of graphic complexity

Helena Miton, James Winters, Piers Kelly, Olivier Morin

Systems of visual communication often perform different functions (e.g., signalling membership of a group) and face different evolutionary pressures through the course of their history. We focus on the evolution of graphic complexity in two visual communication systems. The first one is European heraldry, i.e., coats of arms. In this case study, we examine how the relationship between complexity and frequency evolves through time, by using two samples from different time periods (before and after the invention of printing). Our second case study focuses on the Vai script, an emergent writing system from Liberia created by non-literate individuals with fifteen time-steps between its invention in 1834 and 2005. We found that: (i) Overall visual complexity decreases over time; (ii) The complexity of characters with higher visual complexity decrease more than characters with initially low visual complexity; (iii) Variance in complexity among characters decreases with successive versions of the script. Together, those findings provide real-world evidence for the idea that compression effects might be dependent on specific characteristics of the visual communication systems – whereas our results suggest that they are at work in the cultural evolution of writing systems, their emergence in coats of arms seems to be more dependent on the communication system's technological environment.

Coevolutionary Psychology and the Embodied Social Brain

D. Vaughn Becker

How have social signals coevolved with the cognitive mechanisms designed to detect and process them? Facial expressions of anger and happiness provide one example in which the signal form seems to have coevolved to take advantage of pre-existing detection mechanisms. But face-processing also requires more complex internal simulations that serve diverse computational goals, from basic biological needs to high-level social inferences. The social brain hypothesis suggests that increasing prosociality selected for mirror-neuron systems to provide nested workspaces (representing faces, persons, interacting dyads and groups) where more specialized social drives can interact to simulate, interpret, and predict ambiguous social information. Motivational and emotional systems monitor these workspaces during perception to maintain vigilance for stimuli that threaten or promote social goals enhancing reproductive fitness. Such workspaces also raise new questions about how attentional systems have been sculpted to pick-up information relevant to social goals, and how memory systems prioritize offline simulations (through reveries and dreams) of these goals. This is the deep structure of embodiment, spanning the gap between proximate perception-action coupling and the abstract symbolic/propositional models of traditional cognitive science. Domain-general aspects of the human mind may thus have arisen from fundamental motives coevolving with increasingly complex social and cultural worlds.

Friday July 6th, 2018
Session 5 (10:20 – 11:40)

Genetics
(A2.08)

Human Mating and Relationship Genetics in the Postgenomic Era

Shimon Saphire-Bernstein

This talk provides a cutting-edge survey of genetic and genomic studies of human mating and pairbonding, a literature that has grown explosively over the past decade. We begin with candidate gene association studies of constructs in the mating domain, with a particular focus on the replication difficulties encountered by such studies via the example of studies investigating effects of markers in the AVPR1A, DRD4 and OXTR genes on infidelity. Next, we provide an overview of genomewide association studies (GWASs) and the growing use of Polygenic Risk Scores (PGRSs) derived from these GWASs. Switching gears to survey assortative mating for genetic markers, we next build upon a recent effort to comprehensively meta-analyze the literature on MHC similarity in primate attraction and mating by summarizing that study's findings and then bringing the audience up to date on several findings that were published after the meta-analysis, including two studies from our own laboratory. Finally, we review the recent spate of studies utilizing genomewide markers to assess assortative mating in humans, considering both a controversial claim that human couples assort positively on genetic markers across the genome and a different approach to genetic assortment that investigates similarity on PGRSs derived from GWASs of various psychosocial traits. Finally, we present recommendations for investigators interested in joining this dynamic new field of human mating and relationship genetics.

The evolutionary genetics of homosexuality

Brendan Zietsch, Andrea Ganna, Karin Verweij, Felix Day, Michel Nivard, Robert Maier, Robbee Wedow, Abdel Abdellaoui, Benjamin Neale, John Perry

Homosexual behaviour in humans is genetically influenced and is associated with having fewer offspring. This presents a Darwinian paradox: why have genes that predispose to homosexual behaviour been maintained in the population despite apparent selection against them? Here we show that genes associated with homosexual behaviour are, in heterosexuals, associated with greater mating success. In a genotyped sample of more than 400,000 individuals from the UK and USA, we for the first time found genomewide-significant association of specific variants with ever having had a same-sex partner, and hundreds of additional variants were significantly associated in aggregate. Among men and women who had never had a same-sex partner, these same aggregate genetic effects were significantly associated with having more lifetime sexual partners and, in an independent sample, with being judged more physically attractive. Our results suggest that genes that predispose to homosexual behaviour may have been evolutionarily maintained in the population because they confer a mating advantage to heterosexual carriers.

Schizophrenia risk and reproductive success: A Mendelian randomization study.

Rebecca Lawn, Hannah Sallis, Amy Taylor, Robyn Wootton, George Davey Smith, Neil Davies, Abigail Fraser, Ian Penton-Voak, Marcus Munafò

Schizophrenia is a highly debilitating and heritable mental disorder associated with lower reproductive success. The prevalence of schizophrenia, however, remains stable over populations and time. This creates an evolutionary puzzle as schizophrenia is maintained in the population despite apparent fitness costs. One possibility is that increased genetic risk for schizophrenia, in the absence of a clinical diagnosis, may confer some reproductive advantage, such as via creativity. We assessed the correlation and causal effect of genetic risk of schizophrenia with number of offspring and age at first birth using LD score regression and Mendelian randomization with data from the Psychiatric Genomics Consortium GWAS (36,989 cases and 113,075 controls) and UK Biobank. We find no strong evidence of genetic correlations between schizophrenia risk and these outcomes (number of offspring: $r_g=0.002$, $p=0.837$; age at first birth: $r_g=-0.007$, $p=0.445$). We also find no strong evidence for a causal effect of genetic liability for schizophrenia on number of offspring (mean difference: 0.004 increase in number of offspring per unit increase in the natural log odds ratio of schizophrenia risk, 95% CI: -0.005 to 0.013) or age at first birth (-0.006 years lower age at first birth, 95% CI: -0.062 to 0.050). These results suggest that the sustained prevalence in the population is not due to balancing selection, with increased genetic risk of schizophrenia conferring no reproductive advantage.

Japanese Milk Consumption: Asymptomatic Lactose Intolerance Following a Recent Cultural Diffusion

Bret Beheim, Masanori Takezawa

Like all mammals, humans typically lose the ability to digest milk in adolescence, thereafter experiencing gastrointestinal discomfort when exposed to the sugar lactose, found only in milk. Some individuals of European and African descent possess mutations that preserve lactose digestion into adulthood, the classic example of gene-culture coevolution. For lack of the genetic mutations that arose in dairying cultures, adult milk consumption is correspondingly rare in Africa, Asia, the Americas. Here we present evidence that greatly complicates this story, focusing on the recent adoption of government-sponsored milk-drinking in Japan. The Japanese have no known mutations for lactose tolerance, and only began producing and consuming milk in large quantities after the end of the American Occupation in 1952. Nevertheless, and despite the standard gene-culture story, the Japanese milk industry is thriving and reports less than a fifth of the population claim to be lactose intolerant. To substantiate this claim, we conducted 41 lactose intolerance tests on a sample of adults from across the Japanese archipelago, administering 25g of pure lactose in water. By standard diagnostic criterion of +20 ppm of H₂ on a breath hydrogen test, we found 34 (83%) do not produce lactase enzymes. This result came as a surprise to our subjects, as most described no discomfort during the test, and regularly consume milk. We speculate that an alternative solution involves a lactose-friendly microbiome.

Friday July 6th, 2018
Session 5 (10:20 – 11:40)

Perception of voices
(A2.11)

Beyond the Halo Effect in Vocal Attractiveness

David R. Feinberg, Marie M. Armstrong, Tina Kocic

People with attractive voices are perceived to have other positive personality traits. People also associate attractive faces with attractive voices, even among mismatched identities. To test the halo effect, we morphed the 12 most and least [attribute] sounding male voices to create prototype voices high and low on the following dimensions: aggressiveness, attractiveness, health, height, intelligence, physical dominance, social dominance, trust, weight, and over/under weight. Participants chose which voice sound more [attribute] and more attractive. We partially replicated the halo effect, whereby voices that were rated as attractive were also rated highly on some, but not all positive dimensions. In contrast to the “what is beautiful is good hypothesis”, we found that attractive prototypes also sounded more aggressive, or had no effect on other attributes, invalidating the “beauty is good” vocal attractiveness stereotype. We also found limited support for a “what is good sounds beautiful” stereotype. Prototype voices representing the some positive dimensions were found more attractive, however, aggressive sounding voices also sounded more attractive. Collectively, these results suggest that what is attractive is not always good, and what is good is not always attractive. Sometimes negative personality traits are attractive in the voice, and attractive voice traits are also associated with negative personality traits. Thus a halo effect is unlikely to be operating on voice.

Does he sound cooperative? Acoustic correlates of cooperativeness

Arnaud Tognetti, Valerie Durand, Melissa Barkat-Defradas, Astrid Hopfensitz

It has been suggested that voice could be a cue of cooperativeness because high pitched-voice and high pitch variations are associated with perceived cooperativeness. However, no study has showed that these components are associated with actual (and not perceived) cooperativeness. We examined whether high cooperative individuals have a higher pitched-voice with higher pitch variations compared to low cooperative individuals and investigated whether cooperativeness can be assessed through vocal cues. We quantify cooperativeness of 64 native French men by a one-shot public goods game and we recorded their voice. Fundamental frequency (mean F0) and pitch variations (F0-SD) were measured using Praat. Moreover, we selected the highest (n=7) and lowest (n=7) contributors to the public good to form a series of 49 pairs of vocal samples. Then, 158 French judges listen to pairs of voice and distinguish between the highest vs. the lowest cooperative men in the pair. A linear model showed significant effects of F0 and F0-SD on contributions suggesting that high cooperative men have a deeper voice and produce more pitch variations. In our perception task, judges detected the highest cooperative men in the pairs above chance expectations (proportion test: 57%, $P < 0.02$). Our results are the first to show that acoustic correlates of cooperativeness do exist and are used to assess cooperativeness. The honesty of these traits has now to be investigated.

Preferences for vocal masculinity among breastfeeding and nulliparous women in the Philippines

Michelle Escasa-Dorne, Talia Shirazi, David Puts

Preferences for sexually dimorphic traits, including preferences for masculine vocal characteristics, may be modulated by factors related to reproductive potential. These can include variation in fertility during different points in an ovulatory cycle, or life phases which see declines in fertility, such as during lactational amenorrhea. The current study investigates women's preferences for a highly sexually dimorphic vocal characteristic, voice pitch, and sex steroid hormones (progesterone, testosterone, and estradiol) across a sample of nulliparous (n = 65) and breastfeeding (n = 63) women in Manila, Philippines. Both nulliparous and breastfeeding women displayed preferences for feminized, rather than masculinized, pitch. Estradiol and progesterone positively interacted in predicting pitch preferences, such that estradiol tended to negatively predict preferences for masculinized pitch when progesterone was low, and to positively predict preferences when progesterone was high. This talk will discuss cultural traits and female potential of reproduction influencing preferences for sexually dimorphic traits. We emphasize the importance of assessing measures of reproductive potential when evaluating mate preferences.

Singing Voice Attractiveness is Related to Facial Attractiveness in Women

Marie M. Armstrong, Tina Kocic, David R. Feinberg

Music is found universally across cultures, and a large proportion of it features the human voice. Human singing may serve many purposes, such as soothing infants, increasing group cohesion, and attracting mates. Previous research has shown that facial and vocal attractiveness are related in women, but to date only spoken voices have been studied. We tested the relationship between judgments of women's facial and singing voice attractiveness. Male participants rated attractiveness of women's voices only, faces only, or face and voice presented together. Vocal attractiveness was strongly correlated with facial attractiveness. The relationship between total attractiveness and facial attractiveness was significantly stronger than the relationship between vocal attractiveness and facial attractiveness. This suggests that facial attractiveness is a stronger component of overall attractiveness than is vocal attractiveness. When comparing our results to previous work on speaking voices, we find that singing voice attractiveness may be a relatively stronger indicator of overall attractiveness than is speaking voice attractiveness.

Friday, July 6th, 2018
New Investigator Award Competition
11:50-12:50
(A0.01)

Sexual desire changes across the menstrual cycle differ by relationship status and object of desire

Ruben C. Arslan

Past research reported ovulatory shifts consistent with theories of adaptive mate choice, most prominently that women with sexually unattractive partners pursue extra-pair mating when fertile. We and others could not replicate these purported shifts in mate preferences in previous work. Now, in a preregistered diary study of 655 naturally cycling women and a quasi-control group of 451 hormonal contraception users who both answered questions over up to 70 days, we find evidence that there is a specific ovulatory shift in extra-pair desire. Ovulatory increases in desire for men other than the partner were larger than increases in desire for the primary partner. Moreover, single women showed smaller ovulatory increases in desire for other men than partnered women. Women on hormonal contraception showed a constant, lower level of extra-pair desire. We could not explain this difference by adjustments for demographic factors, personality, and relationship satisfaction. At the same time, Jünger et al. continue to find no evidence that different characteristics are preferred around ovulation. We find no evidence that changing from or to hormonal contraception since meeting the partner matters.

How the mind builds evolutionarily new concepts

Michael Barlev

The human mind is equipped with a variety of evolved mechanisms, each specialized for representing concepts from an adaptively important domain, such as persons and their mental states, animals and their biology, plants, and physical objects and their mechanical properties. But how does the mind build concepts that were not targets of natural selection, that is, concepts that go beyond or even conflict with the inferences engineered into these evolved mechanisms? Are evolutionarily new concepts built out of nothing (as domain-general learning theories predict), or are they built by initially co-opting evolved concepts? And if evolutionary new concepts initially co-opt evolved ones, do they later revise the evolved concepts, or do they co-exist alongside them? I evaluate these questions using the Christian God concept as a case study. I demonstrate using a sentence verification paradigm that, first, the God concept is built by co-opting the evolved person concept, and, second, that in the minds of Christian religious adherents, acquired theological representations of God which conflict with person representations (e.g. infallibility) co-exist alongside and do not revise them. I discuss the implications of these findings to domain-general versus domain-specific theories of learning.

A general evolutionary framework for the role of intuition and deliberation in cooperation

Stephan Jagau

In the experimental and theoretical literature on social heuristics, the case has been made for dual-process cooperation. Empirical evidence is thought to be consistent with the idea that people tend to be nice before thinking twice. A recent theoretical paper moreover suggests that this is also the type of dual process one would expect from evolution. In 'Intuition, deliberation, and the evolution of cooperation' by Bear and Rand (2016), natural selection never favours agents who use deliberation to override the impulse to defect, while deliberation can be favoured if it serves to undermine cooperation in interactions without future repercussions. Here we show that this conclusion depends on a seemingly innocuous assumption about the distribution of the costs of deliberation, and that with different distributions, dual-process defectors can also evolve. Dual-process defectors intuitively defect, but use deliberation to switch to cooperation when it is in their self-interest to do so (that is, when future repercussions exist). The more general model also shows that there is a variety of strategies that combine intuition and deliberation with Bayesian learning and strategic ignorance. Our results thereby unify and generalize findings from different, seemingly unrelated parts of the literature.

Friday, July 6th, 2018
Postdoc Award Competition
14:30-15:30
(A0.01)

Female Sexualization On Social Media: Testing Associations With Gender Inequity And Economic Inequality At Multiple Geographic Scales

Khandis Blake

Publicly displayed, sexualized depictions of women have proliferated, enabled by new communication technologies including the Internet and mobile devices. These depictions are often claimed to be outcomes of a culture of gender inequity and female oppression, but, paradoxically, recent rises in sexualization are most notable in societies that have made strong progress toward gender parity. Few empirical tests of the relation between gender equity and cultural sexualization have been forthcoming, and even fewer tests of alternative hypotheses exist. Here we examine aggregate patterns in 69K sexualized self-portrait photographs (“sexy selfies”) shared publically on Twitter and Instagram and their association with city, county, and cross-national indicators of gender oppression. We then investigate the association between sexy selfies and income inequality, to see if income inequality elevates intrasexually competitive behavior amongst women as it does amongst men. Amongst 5.6K US cities and 1.6K US counties, we find that areas with many sexy selfies are more economically unequal but not more gender oppressive. A complimentary pattern emerges cross-nationally (113 nations), with income inequality positively covarying with sexy selfie prevalence amongst developed but not under-developed nations. Here we provide a fundamentally new empirical understanding of what female sexualization reflects in societies and why it proliferates.

The Abercrombie & Fitch effect: The impact of physical dominance on male customers' status-signaling consumption

Tobias Otterbring

Consumer lay theory suggests that women will spend more money than men in the presence of a physically dominant male employee, while theories of intrasexual competition from evolutionary psychology predict the opposite outcome. A retail field study demonstrates that male customers spend more money and purchase more expensive products than their female counterparts in the presence (vs. absence) of a physically dominant male employee. This effect has a more powerful impact on male customers who lack bodily markers of dominance (shorter stature or measures linked to lower levels of testosterone). When confronted with other physically dominant (vs. non-dominant) men, these male customers are particularly prone to signal status through price or logo size. Their elevated feelings of intrasexual (male-to-male) competitiveness drive them to spend more money on status-signaling, but not functional products, and to prefer and draw larger brand logos. As pictorial exposure is sufficient for the effect to occur, these findings are not limited to in-store interactions with dominant male employees, but have broad implications for marketing and advertising.

Form and function in human song

Samuel Mehr

Humans use music for a wide variety of social functions: we sing to accompany dance, to soothe babies, to heal illness, to communicate love, and so on. Across animal taxa, vocalization forms are shaped by their functions, including in humans. In three experiments, we show that vocal music exhibits recurrent, distinct, and cross-culturally robust form-function relations detectable by listeners across the globe. In Experiment 1, internet users (N = 750) in 60 countries listened to brief excerpts of songs, rating each song's function on six dimensions (e.g., "used to soothe a baby"). Excerpts were drawn from a geographically-stratified pseudorandom sample of dance songs, lullabies, healing songs, and love songs recorded in 86 mostly small-scale societies, including hunter-gatherers, pastoralists, and subsistence farmers. Ratings demonstrated accurate and cross-culturally reliable inferences about song functions on the basis of song forms alone. In Experiment 2, internet users (N = 1000) in the United States and India rated contextual and musical features of each excerpt, which were predictive of Experiment 1 function ratings. In Experiment 3, we successfully replicated the findings of Experiment 1 in a small-scale population with limited exposure to Western music, finding high concordance between function ratings of internet users and Mentawai Islanders (N = 60). These findings are consistent with the existence of universal links between form and function in vocal music.

Friday July 6th, 2018
Session 6 (15:50 – 17:10)

Health
(A0.01)

Quantifying life history trade-offs across the life span

Aaron Blackwell

Life history theory examines how organisms allocate resources between competing demands, and how these allocations change across the lifespan. To date, many theories about the strategies organisms should use to solve life history allocation problems have depended on unverified assumptions about the actual costs of allocations, since direct measures of the costs of expenses such as growth, reproduction, maintenance, learning, and activity were not available or sufficiently detailed. Here, I address this lack by combining precise data on organ size and tissue specific metabolic rates with detailed population studies providing data on body composition, immune function, activity, and reproduction across the lifespan, to generate detailed estimates of lifetime and age-specific energy allocations for both a forager-horticulturalist and a wealthy post-industrialized population. Key insights from these estimates include the observation that except in infancy, the costs of physical growth are dwarfed by the costs of maintenance for a larger body, supporting the idea that predictive adaptive responses, rather than constraints, regulate trade-offs with growth. Moreover, maintenance costs may be a key determinate of adult body size across populations, as well as a determining factor in why males typically have poorer immune function than females.

Sociality and the microbiome: How human social interactions influence the evolution of microbial fitness effects on hosts

Athena Aktipis

Social interactions are central to solving many of our adaptive goals, from disease avoidance to affiliation to food acquisition to mating. But our social interactions influence not just our fitness, but also the fitness of the microbes that live in and on us – the members of our microbiomes. Recent research shows that microbes can have both positive and negative effects on host health and fitness – and also that microbes can influence host social behavior. Furthermore, microbes can benefit from altering host phenotype in ways that make hosts more attractive as social partners and more likely to engage in social interactions. Here I describe a new model of host-microbe evolution in which microbes can evolve to have both positive and negative effects on host fitness, as well as evolving different probabilities of transmission during host social contact. In this model, microbes also have the capacity to influence host-host contact indirectly through affecting the host phenotype. This framework predicts less restrictive conditions for the evolution of microbes that do not harm hosts (i.e., low virulence and even beneficial effects on hosts) than traditional models of host-parasite co-evolution with horizontal transmission.

Efficiency of Mitochondrial Functioning as the Fundamental Biological Mechanism of General Intelligence (g)

David Geary

General intelligence or *g* is one of the most thoroughly studied concepts in the behavioral sciences. Intelligence is predictive of educational and occupational outcomes, as well as physical health and successful aging. It is recognized that a fundamental biological mechanism underlies the nexus of relations among *g*, health, and aging, among other outcomes. But, there is no consensus regarding what that mechanism might be. Cell-damaging oxidative stress has been proposed as one of many potential mechanisms, but the proposal does not capture other important mitochondrial functions. I will flesh out this proposal and argue that the overall efficiency of mitochondrial functioning is a core component of *g*; the fundamental biological mechanism that is common to all brain and cognitive processes and that underlies the relations among intelligence, health, and aging. The proposal integrates more than a century of intelligence research with recent models of the centrality of mitochondria to brain development and functioning and health more generally. Moreover, the combination of the maternal inheritance of mitochondrial DNA (mtDNA), the evolution of compensatory nuclear DNA, and the inability of evolutionary processes to purge deleterious mtDNA in males may contribute to the sex difference in variability in intelligence.

Omega-3 Fatty Acids: Why They're Anti-Inflammatory and Why It Matters

Steven Gangestad, Tran Dinh, Joe Alcock

Long-chain (LC) omega-3 fatty acids (notably, DHA) are found in high concentrations in humans only in cell membranes of brain tissue and retinas, where they promote conduction of electrical signals. Dietary omega-3 fatty acids (found in, e.g., fish oil and cold-water fish) are also touted for widespread health benefits, partly achieved through their anti-inflammatory effects. But why are LC omega-3s anti-inflammatory? As these effects are mediated through specialized physiological mechanisms, they were almost certainly shaped by selection. We propose a reason why: The same physical properties of LC omega-3s that promote fast conductivity—flexibility and fluidity—also render them unstable, prone to oxidative damage. As inflammatory cascades give rise to oxidative bursts, selection has favored mechanisms that protect omega-3-rich membranes from damage through rapid resolution of inflammation. Such adaptation, however, comes at a cost: It reduces resistance to infection. Incorporation of LC omega-3s into tissue, then, is more costly when infections are prevalent and/or individuals are prone to infection, conditions that may favor incorporation of somewhat less flexible and fluid LC omega-6s. We discuss implications for understanding behavior and neurodevelopment.

Friday July 6th, 2018
Session 6 (15:50 – 17:10)

Maternal fitness
(A1.02)

Family vs friends vs health professionals: Antenatal support and breastfeeding outcomes in the UK

Emily H. Emmott, Sarah Myers, Abigail V. Page

Despite widely known health benefits, breastfeeding rates in the UK are among the lowest in the world: Only 0.5% of mothers are estimated to achieve exclusive breastfeeding for 6 months. Much of the public health literature conclude that social support is associated with longer breastfeeding. However, available studies focus on informational or emotional support- overlooking practical support. From an evolutionary perspective, breastfeeding is a costly maternal activity. In developed populations, the availability of formula brings opportunities for allomothers to substitute infant feeding. With this, practical support (unlike informational or emotional) may lead to lower levels of breastfeeding driven by substitutive infant caregiving. A previous study by Emmott & Mace (2015) showed broad associations between proxies of paternal and grand-maternal practical support and lower levels of breastfeeding in a UK cohort – but the mechanisms around these findings are not known. Here we build on this study by investigating the associations between types of support and breastfeeding length in a sample of first time mothers in the UK (N=427). Through cox proportional hazard models, we investigate the risk of breastfeeding cessation by types of support (informational, emotional and practical) and sources of support (maternal grandmothers, fathers, friends and health practitioners). We pay particular attention to practical support behaviours and its association with breastfeeding.

Twinning reduces maternal fitness

Ian Rickard

Previous studies of natural fertility populations have shown that the lifetime probability of a woman becoming a twin mother is higher in those with greater realised lifetime fertility. This has been taken to indicate that twinning can be used as a marker of 'phenotypic quality'. However, it has subsequently been shown that a positive correlation between a woman's fertility and her binary lifetime twinning status inevitably occurs as a statistical artefact; it is in fact a mathematical certainty that over a lifetime, the more times that a woman gives birth, the more she accumulates opportunities to acquire twin mother status. The true nature of the relationship between lifetime fertility and actual twinning propensity remains unknown. In the present study, we investigate the relationship between lifetime fertility and twinning in six pre-industrial Northern European populations (N > 100k births to > 20k mothers). We find that in direct opposition to the conclusions of previous studies, when twinning propensity is analysed at the level of the birth event, its relationship with lifetime fertility is negative. We subsequently test different explanations for this negative relationship. We find that following a twin, women are more likely to experience an end to their reproductive career. Thus in these populations at least, it appears that twinning does not provide a mark of high individual quality, and that in fact twins actively reduce maternal fitness.

Parent-Offspring Conflict in Adolescence and Young Adulthood: Findings from a Micronesian population

Kristen Syme, Edward Hagen

Parent-offspring (PO) conflict highlights that the interests of parents and offspring, though overlapping, also diverge. The literature on PO conflict focuses on conflicts in the early stages of development when parental investment is high (e.g., pregnancy trade-offs and the weaning period). However, humans have a long period of juvenile dependence relative to non-human primates, and across societies, humans continue to invest in offspring into adulthood, including arranging marriages and assisting in the care of grandchildren. The present study investigates the causes of parent-offspring conflict among the Chuukese—a Micronesian population. Participants (n=40) were interviewed about conflicts with their parents during adolescence and/or young adulthood. The interviews were coded, producing binary data (presence/absence) on conflict causes, resolution strategies, and outcome. The findings indicate that conflicts of interest often concerned non-kin third parties (e.g., peers, mates). High-risk bargaining strategies (e.g., running away, illicit drug and alcohol use) were predicted by older age of offspring and high conflict severity. Younger age of offspring and low conflict severity predicted offspring acquiescence. Parent-offspring conflict in adolescence and young adulthood is an underexplored but rich avenue for evolutionary theoretical research.

Practice for parturition: A novel hypothesis for the adaptive significance of female sexuality and orgasm

Natalie Dinsdale, Bernard Crespi

The adaptive significance of human female sexuality remains largely unknown. Niles Newton, a pioneering behavioral scientist and lactation expert, described how female sexual behavior and orgasm overlap with core features of natural childbirth. We propose the novel hypothesis that selection for 'practice' in giving birth has shaped the phenotypic structure of female sexuality and orgasm. These traits may enable women to psychologically and physically prepare for the challenging, unpredictable, and novel experiences of labor and birth through: 1) reinforcing environmental and psychological contexts where birth is likely to proceed unimpeded; 2) activation of a 'pain-pleasure' pathway that functions during sex, labor, and birth; and 3) maintaining healthy functionality while enhancing awareness of pelvic floor muscles and reflexes through regular, varied use. To test our hypothesis, we examine four lines of evidence: 1) impacts of pre-pregnancy and pre-parturition sexual activity on labor and birth outcomes; 2) effects of altered modes of thinking and feeling on sex and birth; 3) outcomes of disturbed pain-pleasure processing on birth as revealed by data on pain, trauma, and birth complications; and 4) studies from sex therapy and birth education that demonstrate how genital stimulation and breathing techniques can enhance pleasure and reduce birth complications and injury. These existing lines of evidence largely support our hypothesis, and tests with novel data are ongoing.

Friday July 6th, 2018
Session 6 (15:50 – 17:10)

Social consequences of sexual strategies
(A1.03)

Can cues of sexual competition affect attitudes towards promiscuity and the price of sex?

Rob Brooks, Amany Gouda-Vossos, Barnaby Dixson

Attitudes concerning sex are predicted to be shaped by local mating market conditions. Here we test the effects of two cues of mating market conditions – sex ratio and beard frequency – on subject attitudes concerning promiscuity in a simulated online dating experiment. We primed subjects (men= 540, women= 522) with one of the nine possible combinations of three sex ratio (female bias 3:1; neutral 1:1; male bias 1:3) and three frequency of beard (no beards; half beards/half no beards; all beards) treatments. To simulate local mating market effects, subjects were told images were of people ‘within 5 miles’ of them and were asked to rate profiles as ‘hot’ or ‘not’. They were then asked to complete the wrongness of promiscuity and self-reported mate value scales. Contrary to my predictions, we found that men, but not women, view both male and female promiscuity more negatively when exposed to male biased sex ratios and rate female promiscuity slightly more negative when exposed to men with beards than clean shaven. This may be in response to male intra-sexual competition associated with mating within a ‘high price of sex’ environment, including but not limited to paternity threat. We found that high SOI (i.e. permissive) individuals judge opposite-sex promiscuity more harshly than same-sex promiscuity, but low SOI individuals show no difference. We interpret our results in light of both evolutionary and sexual economic explanations for the origins of sexual double standards.

Do religious people perform more mate retention behaviors?

Adam Tratner, Yael Sela, Todd Shackelford, Virgil Zeigler-Hill

Religion encompasses many aspects of human life, and influences individuals' attitudes, values, and even romantic relationships. Many religions prescribe rules for proper sexual conduct, and enforce high-commitment, high-fertility reproductive lifestyles among adherents. Religious people have, on average, fewer lifetime sexual partners, high-commitment marital patterns, more offspring, and restricted sociosexuality (Weeden, Cohen, & Kenrick, 2008). An important aspect of mating relationships is mate retention behaviors, or behaviors designed to thwart a romantic partner's infidelity or permanent defection. Because many religions strongly emphasize commitment and fidelity in relationships, religious beliefs may activate an underlying evolved mating psychology, thereby facilitating behaviors that reduce the likelihood of infidelity and mate defection. However, previous research has not investigated whether religiosity is related to mate retention behaviors. College students (n = 302) in long-term, committed relationships completed a survey assessing their own and their partner's religious beliefs, mate retention behaviors, and other facets of the relationship. Results indicated that partner's religiosity - but not own religiosity - is related to the frequency with which individuals engage in mate retention behaviors. Discussion addresses these results and more broadly considers the links between religious beliefs and mating behaviors.

Religious people are trusted because they are viewed as slow life-history strategists

Jordan W. Moon, Jaimie Arona Krems, Adam B. Cohen

Religious people are more trusted than nonreligious people. Although most theorists attribute these perceptions to the beliefs of religious targets, religious individuals also differ in behavioral ways that might cue trust. We examined whether perceivers might trust religious targets more because they heuristically associate religion with slow life-history strategies. In three experiments, we found that religious targets are viewed as slow life-history strategists, and that these findings are not the result of a universally positive halo effect; that the effect of target religion on trust is significantly mediated by the target's life-history traits (i.e., perceived reproductive strategy); and that, when perceivers have direct information about a target's reproductive strategy, their ratings of trust are driven primarily by his or her reproductive strategy, rather than religion. These effects operate over and above targets' belief in moralizing gods, and offer a novel theoretical perspective on religion and trust.

Disgust sensitivity relates to attitudes toward gay men and lesbian women (and other sexual groups) across 31 nations

Florian van Leeuwen

Prejudice against gay men and lesbian women is longstanding and widespread. This prejudice might in part result from the fundamental motivational system for pathogen avoidance, i.e., the behavioral immune system. There are at least two reasons why the behavioral immune system could generate anti-gay attitudes. First, the system could be designed to generate motivations for general social avoidance, as other people are a pathway for infections. Second, the system could motivate antipathy toward individuals who are not monogamous heterosexuals. Analysis of survey data from adult heterosexuals (N = 11,200) from 31 countries shows a cross-culturally stable relation between anti-gay attitudes and individual differences in pathogen avoidance (i.e., pathogen disgust sensitivity). Furthermore, the association between pathogen avoidance and anti-gay attitudes is explained by the relation between pathogen avoidance and antipathy toward sexually promiscuous groups (e.g., prostitutes). These results do not support the notion that pathogen avoidance relates to anti-gay prejudice because of motivations for general social avoidance. Instead, the results support the view that the relation between pathogen avoidance and anti-gay prejudice is a by-product of the behavioral immune system outputting negative views toward non-monogamy. The findings suggest that anti-gay prejudice might be reduced by cultivating stereotypes of gay men and lesbians as engaged in long-term pair-bonded relationships.

Friday July 6th, 2018
Session 6 (15:50 – 17:10)

Frontiers in friendship research
(A2.08)

Interest in extra-community friends is a product of both resource needs and existing relationships in the Bolivian Amazon

Anne Pisor

Humans are plastically parochial, sometimes investing in relationships with members of other communities, sometimes engaging in same-community favoritism at extra-community expense. Research from across the social sciences suggests that this flexibility in behavior reflects individuals' perceptions of the net benefits of forming extra-community relationships; I have suggested that our sensitivity to these net benefits is likely a product of selection pressures to buffer local shortfalls and maintain access to non-locally-available resources, both frequently necessary in the human foraging ecology. If extra-community relationship formation is indeed responsive to these expected net benefits, preferences for new extra-community relationships should reflect both needs for resource access as well as whether individuals have existing extra-community relationships that can provide this access. For two populations of market-integrating horticulturalists living in the Bolivian Amazon, I find that this is the case: participants who were hard hit by a recent community-wide shortfall or who lack non-local resource access are especially likely to prefer a new friendship with an extra-community target over a same-community target, but only if they do not have existing extra-community partners who can provide this access. I conclude by highlighting the utility of mixed-method approaches for studying human sociality and identifying ways forward for studying extra-community relationships.

What threatens our friendships? Cause(s) of friendship jealousy

Jaimie Arona Krems, Keelah E. G. Williams, Douglas Kenrick, Athena Aktipis

Just like well-studied romantic relationships, friendships are central to our daily lives and can be highly beneficial—even to our reproductive fitness. Recent work suggests that both romantic/sexual jealousy and friendship jealousy might similarly function to help us maintain valued social relationships in the face of certain threats—that is, possible interlopers. Other existing work on friendship jealousy also notes, however, that this emotional reaction may be maladaptive, immature, or the inappropriate result of one's low self-esteem, negative social comparisons with the interloper, and/or the expected loss of time with one's friend. Here, we test between those existing versus more recent functional notions—building on existing research positing the functions of friendship (e.g., providing alliance partners, material benefits)—in investigating what specific threats evoke friendship jealousy. Findings from a series of experiments suggest that friendship jealousy is evoked most strongly by the prospective loss of one's alliance ranking (e.g., that interlopers will replace them in their best friends' alliance ranking), as opposed to, for one example, the amount of time one believes the best friend is spending with the interloper. For another example, these findings are robust against reported self-esteem. Taken together, these data render “maladaptive” accounts less tractable and may also have useful implications for understanding the complex function(s) of friendship.

Friendship signals: The cues preferred in same-sex friendships

Keelah Williams, Jessica Ayers, Jaimie Krems, Anna Rich

Abundant literature on mate preferences suggests that the different reproductive challenges faced by either sex lead men and women to value different qualities in potential mates. Friendships, like mating relationships, also serve important social functions and have significant implications for fitness. Given that men and women's friendships also offer somewhat distinct benefits and challenges, we explored potential sex differences in the importance of various “friendship signals”-cues that signal the value of a particular friendship for us. Across two studies (N = 500, comprised of undergraduate students and Amazon MTurkers), we find that the value of different friendship benefits (e.g., acting as a sociometer, providing support in conflict situations, enhancing our status, guarding our mates) depends on the extent to which they facilitate the particular goals of the relationship, and find sex differences in the perceived utility of these friendship benefits. That is, not only do we value certain qualities in our friends as a function of the fitness benefits conferred, but we also attend to the ways that friends demonstrate which specific values they possess.

Morality, alliances, and the side-taking hypothesis

Alex Shaw, Anam Barakzai, Peter DeScioli, Robert Kurzban

Imagine that you did something morally wrong and your friend must decide whether or not to support you. Here loyalty and morality conflict because people often expect friends to take their side. However, a recent side-taking hypothesis (DeScioli & Kurzban, 2013) suggests that one of the functions of morality is to allow people to take sides based on the actions of those involved rather than one's loyalty to them. This hypothesis makes two predictions. First, when one is in the wrong in a conflict, lack of support from the friend will be less damaging to the friendship than when one is in the right because one could believe the friend's lack of support is based on morality rather than a lack of loyalty. Second, people will make inferences about their friend's moral beliefs and behavior based on their friend's siding response—siding with a perpetrator will be seen as supporting the morally bad action and vice versa. Further, neutrality from a friend will be seen as supporting a transgression when one is a victim rather than a perpetrator because why would a friend be neutral in the former case if they were against the morally bad action? In five studies, we explore these two predictions by examining how people react to a friend who opposes them, supports them, or remains neutral in a conflicts where they themselves are in the right or wrong. We measure people's inferences about the friendship and their friend's moral beliefs, finding support for these two predictions.

Friday July 6th, 2018
Session 6 (15:50 – 17:10)

Leadership and followership
(A2.11)

Dominance and Prestige: Debates, Misunderstandings, and New Evidence

Joey T. Cheng, Jessica L. Tracy, Joseph Henrich

Few scholars doubt that prestige (respect earned via expertise) is a key avenue to social rank. However, debates persist regarding whether dominance (force and intimidation) is a second coexisting avenue. Addressing these debates, this talk disputes two recurrent claims: (1) dominance “works” only for individuals who lack formal leadership, but is ineffective for leaders whose force will be resisted by followers (van Vugt, 2011); and (2) dominant strategists succeed because their assertiveness is confused for competence and contribution, so dominance operates via prestige rather than intimidation (Anderson, 2009; Chapais, 2015; Lukaszewski, 2016). Two studies of lab-based task groups (N = 248 in 64 groups; N = 840 in 210 groups) provide strong support against both claims. Results reveal that: (a) dominance and prestige are pathways for both formal and informal leadership, predicting greater influence for designated leaders and non-leaders; and (b) dominant individuals are not deemed more prestigious, and their influence cannot be explained by (mis)perceived greater contribution. This much needed evidence rectifies fundamental misunderstandings about the nature of social hierarchy.

On the dynamics of social hierarchy: A longitudinal investigation of the rise and fall of prestige, dominance, and social rank

Daniel Redhead, Rick O’Gorman, Joey Cheng, Charles Driver, Tom Foulsham

Recent research has provided a cross-sectional snapshot of how two distinct psychological profiles, dominance (related to the induction of fear) and prestige (associated with respect and admiration), relate to social rank in human groups. However, whether dominance and prestige are potentially viable long-term strategies, rather than more effective short-term tactics, for acquiring rank in groups remains an open question. The current research addresses this gap by examining the temporal dynamics between prestige, dominance and social rank and thus supplies the first longitudinal empirical assessment of these processes’ relationships. Using participants (N = 263) working in naturalistic student project groups, the present research tracks the temporal relationships between prestige, dominance and social rank-provided through round-robin teammate-ratings-from the initial formation of the collaborative task groups through to the end of a 16-week long academic semester. Results of a hierarchical Bayesian continuous-time structural equation model indicate that, whilst dominance and prestige both promoted social rank in unacquainted groups initially and were distinct processes throughout, only prestige had a positive effect on social rank over time. Results further reveal that the temporal relationship between prestige and social rank was bidirectional, such that acquiring social rank perpetuates future prestige.

Adaptive Followership Psychology and Political Ideology: Assessing Competing Explanations for Conservatives' Preferences for Dominant Leaders

Lasse Laustsen, Michael Bang Petersen, Israel Waismel-Manor

Studies of human followership demonstrate that followers facing coalitional threats are likely to endorse leaders with dominant facial looks, voices and personalities. This effect has been demonstrated in relation to (a) democratic elections of leaders in modern western societies, and (b) gives rise to enhanced preferences for dominant leaders among right-wing individuals (Laustsen & Petersen, 2015, 2016, 2017; Laustsen, Petersen & Klofstadt, 2015). From the perspective of evolutionary followership theory, right-wing individuals' preferences for dominant leaders reflect that such leaders are more competent in solving problems of coalitional conflict. Yet, this explanation has been challenged by theories of stereotyping, suggesting that people hold the stereotypes that imply that dominant-looking leaders have more right-wing policy positions (Samochowiec et al., 2010; Olivola et al., 2012). In this presentation, we pit these explanations against each other. Using observational data on real politicians, we demonstrate that more dominant-looking politicians are indeed more right-wing on some issues. Yet, using experiments embedded in nationally representative surveys (N=1,524), we also demonstrate that right-wing individuals strongly prefer dominant candidates even if they are clearly politically closer to non-dominant candidates. This finding is consistent with the predictions from evolutionary followership theory and inconsistent with explanations based on stereotyping.

Infants ascribe unique responsibilities to leaders

Maayan Stavans, Renée Baillargeon

Infants can represent different types of hierarchical social relations, such as leadership and bullying. Here we examined how infants construe leaders, and more specifically whether they view leaders as having specific duties toward their subordinates. In two violation-of-expectation experiments, we asked whether 17-month-olds would expect a leader to rectify a transgression among subordinates. Infants watched live interactions among three bear puppets, a leader and two subordinates; the leader was identified either by its larger size (Experiment 1) or by compliance with its instructions (Experiment 2). The leader brought in two toys and offered them to the subordinates; one (the perpetrator) quickly grabbed both toys, leaving none for the other (the victim). In the rectify event, the leader then took one toy away from the perpetrator and gave it to the victim. In the ignore event, the leader approached each subordinate in turn but did not re-distribute a toy. Infants expected the leader to rectify the transgression and detected a violation (as indexed by longer looking times) if it did not. In additional experiments this effect was eliminated (1) when the leader was replaced by a third subordinate, or (2) when one subordinate declined the leader's toy offer, so it was no longer a transgression when the other subordinate took both toys. These results point to early-emerging expectations about authority figures and, in particular, about leaders' duties to their subordinates.

Saturday July 7th, 2018
Session 7 (10:20 – 11:40)

Energetics
(A0.01)

Oxidative Stress and Facultative Adjustment of Energy Allocation

Nicholas Grebe, Melissa Emery Thompson, Steven Gangestad

All aerobic organisms produce Reactive Oxygen Species (ROS) as a consequence of oxygen metabolism. Organisms possess anti-oxidant mechanisms to combat the deleterious effects of ROS. Individuals vary in their capacity to control oxidative stress, a state in which ROS production exceeds anti-oxidant efforts. Evolutionary biologists have posed arguments framing oxidative stress as a potential indicator of genetic quality and/or ability to allocate energetic resources to somatic maintenance. Here, we investigate associations between biomarkers of oxidative stress, personality and health measures, and sleep patterns in two independent non-clinical samples of young adults (Ns = 150 and 98). We find that multiple behavioral indications of overall 'condition' predict oxidative stress, primarily in men, but several of the patterns we report diverge depending on time of collection. Oxidative stress levels assessed upon waking (possibly reflecting the extent of somatic repair processes overnight), but not at other times, relate negatively to measures of dominance and athleticism, suggesting that individuals may adjust investment in these traits based on what they can energetically afford. We tentatively conclude that an assessment of oxidative stress might provide information regarding the differing marginal costs individuals pay to develop highly fit phenotypes; future work should seek to identify the source of these individual differences.

Lassitude: an emotion for adjustment to energetic stress

Joshua Schrock, Josh Snodgrass, Lawrence Sugiyama

Energetic stress occurs when the body's energy requirements exceed its energy availability. This has been a reliably occurring adaptive problem throughout human evolutionary history. Active energy expenditure (AEE, the amount of energy spent on physical activity) is the most variable component of human energetic budgets. We describe an emotional state, lassitude, and hypothesize that it functions to downregulate AEE in response to energetic stress. The characteristics of lassitude include subjective feelings of low energy, reduced partitioning of energy to systems that mediate voluntary muscular effort, and reduced locomotion. The proposed computational structures underlying lassitude detect information about the energetic state of the body, integrate information from these cues to estimate internal regulatory variables, and facilitate adjustments that promote reductions in AEE. These adjustments are made in proportion to the extent that cues of energetic stress are present. We develop a model of the information-processing structure of lassitude and discuss empirical predictions that arise from this model. Testing these predictions may generate novel insights regarding human energetic uniqueness, mechanisms that mediate life history tradeoffs, the structure and function of regulatory systems underlying sickness behavior, and the etiology of contemporary epidemics of chronic disease.

A life history perspective on maternal emotional investment in children during infancy

Sarah Myers, Sarah Johns

A range of literature points to the utility of a life history approach to mother-infant emotional bonding – it is associated with infant development, is contingent on maternal and infant condition, and is potentially energetically costly. Using data from a longitudinal study tracking 97 Western women from pregnancy to 6 months postpartum, we test an ‘emotional capital’ theory of maternal emotional investment. We quantified emotional investment as the strength of bond at 1 month and the time taken for strong bonds to form, and defined maternal ‘emotional capital’ by assessing available emotional resources (emotional intelligence, personality, emotional wellbeing), and the emotional support received from a range of allocarers, pre and post-birth. We evaluated 1) how important mothers think bonding is, 2) whether emotional capital positively predicts emotional investment, 3) whether emotional investment positively predicts a decline in maternal emotional resources, and 4) whether emotional support acts as a buffer against declines in emotional resources. Our results show that mothers view emotional bonding as an investment in offspring quality. Maternal emotional investments appear to be contingent on available emotional capital, with bonding incurring a cost when access to emotional support from allocarers is low. Mothers make higher emotional investments in association with higher support from friends and kin, but may offset costs when support is available from paternal kin.

Single men feel competitive and hungry for high-calorie food after exposure to sexualized female models

Sylvie Borau, Jean-François Bonnefon

Many fast food companies use sex to target males, and they do so to sell high-energy foods, products that are not directly related to sex. The purpose of this research is to better understand why and how sex can sell high-energy foods to male consumers. We conducted four online experimental studies among heterosexual men in the US. In Study 1 (N=311), exposure to sexualized stimuli (vs. landscapes) increases single men’s hunger (but not partnered men’s hunger). Study 2 (N=330) replicates and extends the findings of Study 1 in an advertising context: exposure to an ad featuring a sexy female model (vs. the same ad without the model) increases single men’s hunger and their intention to eat a high-calorie food item (a burger). In Study 3 (N=218), these results do not replicate for a low-calorie item (an apple). Studies 1 to 3 also investigate the underlying mechanism of this effect: sexual stimuli trigger hunger by eliciting male competitiveness. Study 4 (N=242) confirms this mechanism: by manipulating the operational sex ratio in an advert, we show that male intrasexual competitiveness increases hunger for a high-calorie food item. This research suggests that sexualized advertising triggers men to prepare for competition against other men, by pursuing opportunities for somatic investment, and hence high-calorie foods. This behavioral response can have dramatic consequences in a modern environment, where sexualized female models are just as ubiquitous as fatty and sugary foods.

Saturday July 7th, 2018
Session 7 (10:20 – 11:40)

The ontogeny of naive sociology.
Representing and navigating social relations based on dominance
(A1.02)

The origins of social stratification: Human adults' and infants' representations of derived social dominance.

Olivier Mascaró

In many human and non-human primate societies, individuals can “derive” their dominance status from alliance relationships, e.g., an individual may dominate other people by virtue of being allied with someone outranking these people. Derived dominance shapes social structures, rank inheritance, and relationships between groups. Here, we test the origins of human's representation of derived dominance. In Study 1 (N = 60), a paired-associates learning paradigm confirms that adults draw inferences consistent with dominance being derived. In Study 2 (N = 32), we familiarize 14-month-olds to 2D animations showing that (i) one agent is dominant over another one, and that (ii) the dominant and the subordinate agent each have a different ally. During the test, infants look significantly longer when the subordinate's ally prevails over the dominant's ally than when the opposite happens ($p = .009$). Controls confirm that these results cannot be explained by low-level-features of videos, or by parental influence. Thus, infants infer social relationships by appealing to expectations of derived dominance. In sum, systematic expectations about the way alliances and social dominance interact guide and constrain the discovery of social structures from infancy onwards. These results contribute to explain why humans often form stratified hierarchies, despite the immense diversity of theoretically possible social dominance structures.

Giving as a cue of equality-matching relations: evidence from infants' encoding of bookkeeping-relevant information

Denis Tatone

The emergence of active transfer (giving) among nonkin is a unique feature of the human sharing complex. Its evolution has been argued to reflect selective pressures for the formation of mutualistic associations based on reciprocal benefit exchange. Here we hypothesize that the co-variation of giving and exchange relations that this scenario presupposes has itself become a selection target, resulting in a preparedness to interpret giving as a cue of equality-matching (EM) relations: associations patterned on the coordination rule of long-term even balance. This hypothesis predicts that observing giving-based interactions should induce the encoding of information functional to track features specifically relevant to the assumed EM relation, such as the accumulation of welfare imbalances. Supporting such predictions, we present two sets of looking-time studies showing that 12-month-old infants encode (1) the direction of transfer (despite irrelevant for tracking relations over time) and (2) the identity of a transferred object (despite irrelevant for representing action goals) selectively for giving, but not kinematically similar taking actions. These findings corroborate the hypothesis that humans evolved an early-developing tendency to interpret giving as an episodic instantiation of EM-like relations, suggesting that there may be default mapping rules between types of transfer and corresponding relational models reflecting regularities of our ancestral social ecology.

Three-month-old human infants use vocal cues of body size.

David Pietraszewski, Annie Wertz, Gregory Bryant, Karen Wynn

Differences in vocal fundamental (F0) and average formant (Fn) frequencies co-vary with body size in most terrestrial mammals, both between species and also across different sex and life-stage morphs within species; here we examined whether human infants would be sensitive to this relationship by three months of age. Using a violation-of-expectation paradigm, we found that infants looked longer at stimuli inconsistent with this size/sound relationship—a smaller organism producing lower frequencies, and a larger organism producing higher frequencies—than at stimuli that were consistent with it. This effect was stronger for fundamental frequency than it was for average formant frequency. These results suggest that by three months of age, human infants are already picking up on biologically-relevant covariation between vocalization frequencies and visual cues to body size. This ability is likely a consequence of developmental adaptations for building a phenotype capable of identifying and representing an organism's size, sex, and life-stage.

Preschoolers Use the Gratefulness of Newcomers as a Cue for Their Future Altruism

Lotte Thomsen, Joakim Haugane, Erik Kjos Fohn, Victoria Born

A critical problem for the evolution of altruism towards non-kin is how to motivate and recognize cooperators so that altruistic help may be directed towards them, rather than to freeriders. Here we show that Norwegian preschoolers use the gratefulness of their peers as a cue for their future altruism and intend to modify their own altruism towards them accordingly. Using a computer-animated scenario, we asked 3-6 year-olds to imagine that they had made a fine drawing to each of two new children starting in their daycare. One beneficiary “was very happy for the drawing and said thank you” and one was not. Study 1 demonstrated that preschoolers expected grateful rather than ungrateful children to share scarce resources (Kool-Aid and candy) and information (an important secret) and also extend help (finding a lost shoe) and affiliation (joining you when you are playing alone) to them. Study 2 demonstrated that preschoolers themselves intend to act in such altruistic ways towards grateful rather than ungrateful peers; Study 3 that preschoolers generalize a beneficiary’s gratefulness towards themselves to predict her future altruism towards others; Study 4 that the effect of gratefulness is significantly stronger for predicting whether a beneficiary will perform altruistic acts rather than other positive, normative actions (i.e. waiting your turn); and Study 5 that preschoolers use genuine gratefulness, but not mom-solicited thankfulness, to predict future altruism.

Saturday July 7th, 2018
Session 7 (10:20 – 11:40)

Behavioral immune system
(A1.03)

Sounds of sickness: Can people identify infectious disease using auditory cues?

Joshua Ackerman, Oliver Sng, Nicholas Michalak, Iris Wang

Cough, cough. Is that person sick or does she just have a tickle in her throat? A growing body of research shows that people are highly sensitive to the presence of pathogenic threats, enacting a variety of psychological responses that serve to mitigate the risk of becoming infected. This work has largely focused on downstream effects of such threats, including interpersonal avoidance and stigmatization, with much less considering their initial detection and identification. Here, we examine whether perceivers are able to accurately categorize the presence of infection using an understudied sensory modality—sound. Participants in four studies listened to coughs and sneezes produced by people either sick with a communicable disease or not and attempted to identify the causal origin of those sounds. In every study, average accuracy was below or at chance levels. Measurement and manipulation of attention to the disgusting nature of the sounds suggested that people use disgust evaluations to determine the cause of a sound, with more disgusting sounds judged as more likely to be infectious in origin. However, paying attention to disgust did not enhance overall identification accuracy. Thus, unlike recent research indicating that perceivers can accurately identify infection through certain sensory modalities (e.g., smell), we find only a disgust-based overgeneralization of threat when using auditory cues.

People who lack social connection are more disgusted by pathogen cues

Theresa Robertson, Andrew Delton

Humans receive care from close social others when they get sick—and one of the costs of lacking close social connection is less reliable access to such care. Lacking close social connections therefore actually makes it more dangerous to contract a pathogen. One way to counter this increased risk is by increasing the sensitivity of the behavioral immune system—for example, by experiencing greater disgust reactions to pathogen-related stimuli, and thus being more likely to avoid infectious agents. To test this, we measured loneliness and also experimentally intensified focus on low social connections by having people remember a time when they were rejected or reduced it by having people remember a different kind of negative experience (academic failure) or a neutral experience. Lonely people in general, and especially lonely people who recalled a time they were rejected, perceived themselves as more vulnerable to disease and were more disgusted by infection cues and sexual acts. Importantly, however, the effect was specific to cues of pathogen risk: They were not more disgusted by immoral acts.

Infectious Disease Has Many Faces: Are They All the Same?

Nicholas Michalak, Joshua Ackerman

How can people tell whether someone has an infectious illness? Behavioral Immune System research suggests people rely on physically anomalous cues perceivable in others (e.g., facial disfigurement, obesity) to assess pathogenic infection risk from interpersonal contact. Such cues are thought to superficially resemble true markers of infectious disease. But do perceivers equally associate features such as disfigurement and obesity with infection? In Study 1 (N = 268), participants completed an Implicit Association Test (IAT) in which they categorized words as either Harmless (e.g., typewriter) or Infectious (e.g., bacteria) and faces as either (a) Average or Obese, or (b) Average or Disfigured. In both conditions, participants showed automatic associations between Infectious concepts and superficial cues; however, participants showed stronger associations between Infectious concepts and Disfigured faces compared to Obese faces. In Study 2 (N = 221), participants completed the same IAT except they categorized faces as either Obese or Disfigured. As in Study 1, participants showed stronger associations between Infectious concepts and Disfigured faces compared to Obese faces. Unlike in Study 1, participants showed weaker associations between Obese faces and Infectious concepts compared to Harmless concepts. Obesity can be associated with infection, but this association may be disrupted in the presence of a more representative infectious disease cue such as facial disfigurement.

Pupil Dilation as a Measure of Disgust

Kate McCulloch, Rick O'Gorman, Dominique Knutsen, Gerulf Rieger

Recent work on disgust's evolutionary role has focused on self-report measures. However, arguments for the existence of discrete emotions and research into specific emotions, including disgust, have suggested the need for a distinct physiological response for each emotion. One physiological measure, pupillometry, has been used to measure emotional arousal and valence, with both negative and positive hedonic valence causing pupil dilation, reflecting sympathetic activity. We therefore aim to extend this research and assess the validity of this as a method of directly measuring and distinguishing between discrete emotions. Seventy-nine participants had their pupil size recorded during presentation emotionally engaging imagery and sounds, and rated the extent to which the stimulus made them feel happy, sad, angry, fearful or disgusted. Using mixed effects linear models to account for natural differences in pupil size and low-level stimulus properties; we found that self-reported feelings of disgust predicted significant pupil dilation for both sounds and images. Fear and sadness also predicted pupil dilation but only in response to sounds, which has implications for the effect of stimuli choice used in emotional research. Neither anger nor happiness significantly predicted pupil dilation or constriction. Our data suggests some discrete activation, and that measures of pupil diameter would be useful when investigating disgust.

Saturday July 7th, 2018
Session 7 (10:20 – 11:40)

To compete or cooperate?
(A2.07)

The Cancellation Effect at the Group Level

Aslihan Akdeniz, Matthijs van Veelen

Group selection models balance selection pressure at the individual level with selection pressure at the group level (Sober and Wilson, 1998; Traulsen and Nowak, 2006; Wilson and Wilson, 2007; Simon, 2010; Simon et al., 2013; Luo, 2014). Cooperation can be costly for individuals, but beneficial for the group, and therefore, if groups are sufficiently much assorted, and cooperators find themselves in groups with disproportionately many other cooperators, cooperation can evolve. The existing literature on group selection generally assumes that competition between groups occurs in a well-mixed population of groups, where any given group competes with any other group equally intensely. Competition between groups however might very well occur locally; groups may compete more intensely with their neighbours than with far-away groups. We show that if competition is indeed local, then the evolution of cooperation can be hindered by the fact that groups with many cooperators will mostly compete against neighbouring groups that are similarly cooperative, and therefore harder to outcompete. At the individual level, a similar phenomenon is called the cancellation effect, and has been discovered by Wilson et al. (1992) and Taylor (1992). In this paper, we show that cancellation effects also occur at the group level, and that ignoring them makes empirical estimates of the benefit-to-cost ratios for which a given group structure could sustain cooperation too positive.

The importance of learning in public goods experiment - a comparative analysis of 130 studies

Maxwell Burton-Chellew, Zoe Griffiths, Stuart West

The public goods game is routinely used to study human cooperation in groups. Hundreds of studies have shown that groups typically start off cooperating around 50%, but that cooperation declines steadily over time. The most commonly given explanation for this pattern is that individuals are motivated by an altruistic concern for fairness ('inequity aversion'), and so contribute in an attempt to match the contributions of others, leading to a downward spiral in contributions. However, individuals behave in the same way when playing with computers, suggesting that fairness is not the motivating factor. An alternative explanation is that individuals start the game uncertain and then learn from experience how to improve their earnings. Several studies show that many players can be described as 'confused' in some way about the game. The subsequent gradual decline in contribution is then consistent with various forms of trial-and-error learning. The learning hypothesis predicts that cooperation will decline faster when there is greater scope for learning, i.e. when individuals have greater relative influence over their own earnings. We developed an objective measure of the scope for learning across 130 studies involving over 18,000 players and tested if it predicted the rate of decline in cooperation. We find that the scope for learning significantly predicts the decline in cooperation, and statistically outperforms all competing models based on inequity aversion.

Emergence of cooperative division of labor in dyadic foraging under risk

Kiri Kuroda, Tatsuya Kameda

Monitoring risk is an important adaptive task when humans engage in group foraging. In group foraging, some individuals (“watchers”) who guard against risks must bear opportunity-cost personally, while others (“foragers”) can take advantage of the vigilance behavior by concentrating on own foraging, yielding a structure called a producer-scrounger game. Here we examined how risk levels in the foraging situation might affect participants' collective behavior, together with their cognitive/physiological responses, using an eye-tracker and a physiological-measurement device. In each experimental session, two participants were paired to work on the foraging task, where each individual decided whether to be on vigilance (sure gain of 10 yen) or to forage under risk (50/50 chance of gaining or losing 60 yen) without communication; however, if one individual was on vigilance, the risk level for the forager was reduced by $P\%$ ($P=80$ in the low-risk and $P=30$ in the high-risk condition). Participant's pupil dilation and skin conductance were measured as an index of cognitive load and emotional arousal respectively. Results showed that Pareto-efficient cooperative division of labor, where the pair takes turns between the watcher and forager roles across trials, emerged in the low-risk but not in the high-risk condition. We also observed that cognitive control of emotional arousal was the key to the emergence of cooperative division of labor under risk.

Competition for Priority and the Natural Selection of Bad Science

Leonid Tiokhin, Minhua Yan, Thomas J.H. Morgan

It is becoming increasingly clear that many published findings do not replicate (i.e. the “reproducibility crisis”) and there is a growing desire to understand how various factors affect scientific reliability. Among these, incentive structures are thought to be especially important. Here we develop an evolutionary agent-based model to test the effect of incentive structures on the reliability of scientific findings. Specifically, we consider an incentive structure that rewards priority of discovery. In our model, pairs of scientists investigate a phenomenon and compete to be first to obtain a statistically significant result. Scientists can increase statistical power by using larger samples, but this takes more time and so increases their risk of being “scooped”. We find that competition for priority causes populations of scientists to evolve towards lower sample sizes and, in turn, statistical power. This mirrors the results of previous models about the natural selection of bad science. However, we also find that increasing the startup costs of a single study reduces the negative effects of competition, increasing equilibrium sample size and statistical power. This occurs because startup costs lower the relative payoff of pursuing a “quantity” strategy by conducting many low-quality studies. We discuss the implications of these findings for preventing low-quality research and use them to evaluate the effectiveness of proposed scientific reforms (e.g. registered reports).

Saturday July 7th, 2018
Session 7 (10:20 – 11:40)

Reproduction
(A2.11)

Sharing the load: do co-resident children influence intra-household allocation of work and schooling in north-western Tanzania?

Sophie Hedges, David W. Lawson, Jim Todd, Mark Urassa, Rebecca Sear

To efficiently meet short-term subsistence needs, and long-term investment in children's skills and development, intra-household variation in time and resource allocation is expected. Evolutionary and economic models of parental investment have often predicted that education may be biased towards earlier-born children. However, parents may prefer that earlier-born children carry out productive tasks as they are more efficient, freeing later-born children's time to attend school. Previous findings are mixed, and most studies have looked only at education. We investigate how co-resident children affect each other's school enrolment and time spent in work and leisure in north-western Tanzania, using detailed time use data collected from multiple children per household (N=1,273). We find opposing effects of age order within the household for boys and girls. Eldest girls are less likely to be enrolled in school, do more household chores and have less leisure time, and out-of-school girls appear to substitute for schoolgirls' chores. In contrast, eldest boys are more likely to be enrolled in school, and in cattle-herding households, do less herding work. Household work is allocated on a gendered basis, with boys doing fewer chores when there are more co-resident girls. We discuss these findings in the context of rapid education uptake, and their implications for our understanding of parental investment biases and household division of resources.

Effects of individual extrinsic mortality experience on out of wedlock fertility in 18th and 19th centuries Krummhörn, Germany

Katharina Pink, Kai Willführ, Eckart Voland, Paul Puschmann

Life history theory predicts that exposure to high extrinsic mortality in early childhood leads to faster and riskier reproductive strategies. More specifically, individuals who grew up in a high mortality regime will not overly wait until they find a suitable partner and form a stable union as premature death might prevent them from reproducing at all. In order to test these propositions, Cox proportional hazard models are estimated to determine whether women who experienced the death of brothers and sisters during childhood reproduced earlier and were at an increased risk of giving birth to an illegitimate child, whereby illegitimacy serves as a proxy for risky sexual behavior. Furthermore we investigate if giving birth to an illegitimate child is influenced by individual mortality experience or by mortality/more promiscuous sexual behavior that is clustered in certain families. The models are fitted on pedigree data from the 18th and 19th-century Krummhörn population in Germany. The results are in line with life history theory and show that there is a relationship between sibling death in early childhood (0-7 years) and the timing of the first birth, as well as the risk of reproducing out of wedlock. The risk of giving birth out of wedlock is linked to individual mortality experience rather than to family-level effects. In contrast adjustments in reproductive timing are influenced more by family-level effects than by the individual mortality experience.

Integration and reproduction in a refugee population: Integration increases social status while ingroup bonding increases fitness outcomes of Finnish evacuees in World War II.

Robert Lynch, Virpi Lummaa, John Loehr

Understanding the conditions that affect how refugees integrate into host societies is of general interest. In 1940, the Soviet Union invaded Finland leading to the displacement of over 400,000 individuals from southern Karelia. Approximately half of these migrants returned to the region when it was recovered by Finland in 1941 but were forced to evacuate again when it was recaptured by the Soviet Union in 1944. Using records tracking the movements and life histories of 77,000 of these refugees, we analyze how age, sex, occupation, social class, education, migration history, marriage and population size interact to affect integration and reproduction. We find that: 1) younger, more educated evacuees who worked in professional occupations were both less likely to return to Karelia between the wars and more likely to marry into the host population; 2) older, less educated evacuees, farmers and those who were evacuated to less populated towns were more likely to return home when Karelia was recaptured by Finland and 3) evacuees who married fellow Karelians and returned to Karelia had more children. These results suggest that higher social class and population density enhance integration while stronger ingroup bonds amongst immigrants increase fitness outcomes. We discuss these results within the framework of bridging and bonding social capital and suggest how they can inform our understanding of evolutionary adaptations that affect tribalism.

Matrilateral bias in grandmaternal care: urban-rural differences and changes over time

Martin Daly, Gretchen Perry

Maternal grandmothers (MGMs) usually provide more grandchild care than their paternal counterparts (PGMs), a pattern which evolutionists have attributed to paternity uncertainty and the greater nepotistic value of daughters as compared to daughters-in-law. Pashos has reported, however, that this matrilateral bias is reversed in rural (but not urban) Greece. We assessed whether this reversal is peculiar to Greece or more widespread, using 29,782 interviews of women with young grandchildren from three waves of the Survey of Health, Aging and Retirement in Europe (SHARE) in which Greece participated. Data from Waves 1 (2004) and 2 (2006) confirm the rural-urban contrast in Greece, although the slight rural patrilateral bias was not statistically significant and was further reduced when differential proximity was controlled. A similar pattern prevailed in Switzerland, but not elsewhere in Europe, where the usual matrilateral bias was ubiquitous. Surprisingly, when Greece rejoined SHARE for Wave 6 in 2015, grandmaternal childcare had declined greatly, and the rural data now exhibited a large matrilateral bias. We will discuss what these findings imply about the interacting effects of laterality, proximity, and other variables on grandmaternal care.

Saturday July 7th, 2018
Session 8 (11:50 – 13:10)

False beliefs
(A0.01)

An evolutionary perspective on paranoid thinking

Nichola Raihani, Vaughan Bell

We have good reason to be suspicious: one of the biggest threats to our wellbeing (and even our survival) comes from other people. One way of understanding paranoia is therefore through the lens of an evolved psychology that is adapted for group living. Humans are thought to have specialized psychological mechanisms that help us monitor group membership, maintain alliances, and detect social threats. These mechanisms work by allowing us to accurately attribute intentions to other individuals, and people should become less trusting as social threat increases. However, inferences about others' intentions are often made in relatively ambiguous scenarios, and there is therefore much scope for variation and error in deciding when we should and should not trust others. Paranoia - a form of distrustful thinking - is present to varying degrees in the general population but is also the most common positive symptom of psychotic-spectrum disorders. Here I show how variation in paranoid ideation across the full clinical and non-clinical spectrum affects social cognition and behaviour, using large-N pre-registered game-theory experiments. Paranoia exerts marked, but specific effects on intention attribution, and similar effects are observed in healthy subjects when exposed to experimental social threat. Our findings suggest that paranoia is best understood as a lowered threshold for detecting threat, rather than impaired reactivity to it.

Cognitive and motivational obstacles to the spread of counter-intuitive beliefs

Hugo Mercier, Nicolas Claidière, Martin Dockendorff, Thomas Castelain, Yoshimasa Majima

Cultural attraction theory suggests that intuitive beliefs (or minimally counter-intuitive beliefs) will be those most likely to spread and stabilize in populations. However, it is critical that some counter-intuitive beliefs (CIB) be accepted by large portions of modern populations, from the efficacy of vaccination to global warming. Fortunately, humans are endowed with mechanisms that allow them to accept CIB under certain conditions, for instance when they are supported by good arguments, or defended by trustworthy sources. However, very little is known about how CIB can be transmitted across chains. Are people who have been convinced to accept a CIB able to convince others in turn? Are those who accepted CIB based on a source's trustworthiness able to spread it further? We report a series of experiments in which people are made to accept a CIB —the answer to a reasoning problem, a perceptual problem, or a general knowledge question—and we test whether they can make other people accept the CIB in turn, in transmission chains. We find that the transmission of CIB is efficient in the case of the reasoning problem, creating one of the first loss-less transmission chain experimentally studied. By contrast, the transmission of other CIB is dramatically hampered by cognitive and motivational biases in the way people attempt to convince others to accept CIB. In particular people seem biased to produce arguments that make them look competent, but that are not persuasive.

Coalitional Psychology and The Spread of Fake News

Michael Bang Petersen, Mathias Osmundsen

Coalitional conflict has been a key adaptive problem facing our ancestors. Compared to interpersonal conflict, conflicts between coalitions are special as they put a premium on collaboration within the group (Tooby & Cosmides, 2010). The most well-coordinated coalition will outcompete the less-coordinated coalition and coalitional conflict can be viewed as an arms race of coordination. Given this selection pressure, human coalitional psychology is predicted to be designed to engage in behaviors that enhance joint attention and commitment in the face of coalitional threats. Consistent with evidence on the dynamics of ethnic massacres (Horowitz, 2001), we suggest that one such behavioral strategy is the spread rumors that emphasize the outgroup's (1) power, (2) low valuation of the ingroup and (3) readiness to attack. In this project, we investigate how the underlying psychological mechanisms are (a) activated by current levels of political polarization and (b) shapes beliefs in and motivations to spread rumors about political groups. In surveys replicated in Denmark and United States (N = 2000), we demonstrate that a massive predictor of motivations to spread rumors about political groups are intentions to engage in violence on behalf of one's coalition. These intentions take effect over and beyond people's tendency to actually believe in the rumors. Hence, fake news is spread not because they are believed but because they are useful in the context of coalitional conflict.

Orwell meets Darwin: Collective stupidity and the evolutionary politics of information

John Tooby

Successful problem-solving requires bringing together all available relevant true information, but researchers have shown that subjects remember good arguments on their side, and opponents' bad arguments. If coalitions compete in a collective, zero-sum fashion for status (relative entitlement to determine outcomes) then criteria for accepting information, and for allowing it to become inferentially operational should vary with its probable effect on the relative entitlement of one's coalition. Truth value should only be a factor to the extent it is imminently publicly demonstrable, and hence embracing errors risks being discrediting. The epidemiology of relativism should track the implicit estimation of how core coalitional claims would fare if objectively evaluated. Polarization and increasing coalitional identification should be associated with reduced truth-seeking. Argumentation (e.g., ad hominem) directly targeting the status of rivals should be experienced as nonfallacious and relevant because the real goal is zero-sum status jockeying not truth discovery. Our cognitive architectures should be designed to quarantine sets of representations subversive of coalitional status, rendering large parts of our knowledge paralyzed and inert. Specialists in the generation and transmission of representations cultivate emerging belief systems about their own moral authority and expertise that that systematically exaggerate their impartiality, accuracy, and freedom from corruption.

Saturday July 7th, 2018
Session 8 (11:50 – 13:10)

Mate preferences
(A1.02)

Willingness to Protect is a Special Domain of Investment for Women, but not Men: A Meta-Analysis of Sexually Dimorphic Effects of Resource Domains in Mate and Friend Choice

Sakura Arai, Michael Barlev, Leda Cosmides, John Tooby

It has been argued that willingness and ability of a partner to confer fitness benefits have key roles in cooperative and reproductive partner choice (Barclay, 2013; Ellis, 1994; Trivers, 1972). Notably, women are predicted to prefer mates who are willing and able to provide them with resources such as food and physical protection. But does the mind collapse all forms of investment into a single register of “willingness to invest”—or are estimates of willingness to protect stored separately from estimates of willingness to provide food? The present studies examine how we evaluate partners’ willingness and ability to provide resources in different domains. A meta-analysis on our 8 experiments reveals that: (1) across resources and partner types, both sexes value willingness more than ability to invest; (2) for men, cues of willingness in both domains were equally attractive in potential mates and potential friends (of either sex); (3) for mate choice, women give a distinctly high value to willingness to provide physical protection, even when compared to the large effect size for willingness to provision; (4) women show a similar pattern when evaluating friends (of either sex), although being unwilling to protect is a deal-breaker in a mate but not in a friend. Male minds might collapse all forms of investment into a single register of willingness, but the results suggest that female minds have separate registers for willingness to provide protection versus food.

Good things come to those who “weight”: Comparison of trait integration methods

Jordann L. Brandner, Sydni A.J. Huxman, Gary L. Brase

Previous mate preferences and choice research has tended to focus on either analyzing discrete traits which contribute to assessment of potential mates or the effects of holistic mate value on decisions. Only recently has research turned to the issue of how individual traits are integrated into overall mate value assessments. Many integration methods have been proposed, including Euclidean distance algorithms, threshold models, aspiration models, non-compensatory heuristics, correlations between potential and ideal partner traits, and weighted additive models. The present study involved 108 undergraduate participants, who completed a series of 100 two-alternative choices, indicating which of two profiles were most attractive. They then reported the relative importance, ideal values, and minimum values of eight continuous traits (which were randomly varied in the prior profiles). Predicted decisions were generated for nine different integration strategies, using participants’ individual cue evaluations. Accuracies of the predicted decisions were compared using nine multilevel logistic regressions, which showed that a weighted additive strategy better described actual decisions than any other proposed integration model, including Euclidean distance models.

Investigating mate preferences through a data-driven analysis of online personal descriptions.

Anthony J. Lee, Benedict C. Jones, Lisa M. DeBruine

Previous research investigating mate preferences has often used a theory-driven approach; however, this can be limiting as only traits predicted by existing theories can be investigated. Here, we use a data-driven approach and a large sample of online personal advertisements to identify and assess traits important for mating decisions. Personal descriptions were collected from publicly available online dating websites (N = 10,024). Latent Dirichlet Allocation (LDA; a clustering method developed in computer science) was used to identify the common topics. A subset of these profiles (N = 468) were rated for desirability by a different group of 100 participants. These participants were also asked to write a personal description of themselves as if they were writing for a dating website. The LDA identified 25 topics. Men were more likely to advertise education/status, while women were more likely to discuss being honest/nurturing and caring for pets. Both men and women who discussed a healthy lifestyle, outdoor activities, and music/culture were rated as more desirable as a partner. Men who discussed sex and women who mentioned being a single parent were rated as less desirable. When comparing the topic probabilities between profiles collected online and those written by the raters, we found that raters preferred profiles that were more similar to their own, which suggests assortative mating for revealed characteristics.

How to do it? Controlled experiments might sacrifice ecological validity

Elisabeth Oberzaucher

Error management is a fast and frugal algorithm that allows making adaptive decisions. It is adaptive to avoid costly mistakes by allowing for cheaper mistakes. When assessing potential reproductive partners, mistakes were not equally costly for both sexes: Therefore, women tend to underestimate male interest (Type II error) while men, on the other hand, tend towards an overestimation of female interest (Type I error). In a sequence of studies we investigated whether the sex difference in error management is observable in problems unrelated to reproduction. We used patience games in different experimental setups. Subjects were asked whether they thought they could solve the task. Results depended strongly on investigated cohorts and experimental setup. When adult subjects were asked by female experimenters, men tended to lean towards Type I and women towards Type II assessments. There was no sexual dimorphism in a teenage cohort who was interviewed by an older student. In anonymous theatre and online settings, men and women did not differ in their assessments. These studies highlight the importance of experimental setup, as some behaviours might surface only under certain conditions. While experiments allow us to control conditions, ecological validity should not be neglected. Especially when investigating social aspects of human behaviour, a social setting might be required to gain meaningful insights.

Saturday July 7th, 2018
Session 8 (11:50 – 13:10)

Trust and cooperation
(A1.03)

Cooperation, Corruption, Competition, and the Evolution of Evil Eye

Michael Muthukrishna

As children we were warned about getting into cars with strangers and even as adults we were unlikely to spend the night at a stranger's house in a strange city. Today, with Uber or AirBnB apps in hand, we do it without a second thought. Even prior to these reputation management technologies, our species cooperated at an unprecedented scale with people we've never met and will probably never meet again. We now have a good understanding of the different mechanisms that sustain cooperation at different scales. What's less appreciated is that these scales can undermine each other—we call this corruption. When a leader gives his daughter a government contract, it's nepotism. But it's also inclusive fitness undermining state-level cooperation. When a manager gives her friend a job, it's cronyism. But it's also direct reciprocity undermining the meritocracy. Bribery is a cooperative act between two people, and so on. Attempts to invoke lower-order mechanisms to explain larger-scale cooperation needs to explain why these lower-order scales do not undermine the larger-scale. I present new theoretical and empirical work that helps us understand these competing scales of cooperation. An extension of this work gives us a theory to explain the evolution of evil eye—the belief that the envy from others can harm you—including why hunter-gatherers lack evil eye beliefs and are highly egalitarian. I'll also introduce a new measure of cultural distance that we use to construct a WEIRD scale.

Generosity on the steppes: Allocation games among Mongolian nomadic pastoralists

Thomas Conte

Anthropologists, economists, and psychologists frequently use dictator games to assess patterns of generosity and resource sharing in diverse communities. However, recent research has highlighted potential problems regarding the validity of dictator games. Several studies suggest that patterns of giving commonly observed in dictator games may be a result of experimenter bias. Recipient identity conditioned heuristic (RICH) games have been proposed as a means of increasing the external validity of experimental games by allowing players to allocate resources in the context of real communities and relationships with known individuals. This presentation will present the results of a RICH allocation game involving male and female nomadic pastoralists living in western Mongolia. The results indicate that individuals allocate more resources to consanguinal and affinal kin relative to non-kin. An individual's perception of another player's need was also a significant driver in people's allocation decision making. This study represents the first of its kind in Mongolia, and the first, to the author's knowledge, to include an entirely female sample as part of its analysis. The study's implications for understanding the evolution of human generosity will also be discussed.

Parochial Trust and Cooperation Across 17 Societies

Angelo Romano, Daniel Balliet, Toshio Yamagishi, James H. Liu

Intergroup relations are becoming increasingly important in a globalized world. Thus, cross-national investigations are needed to understand why, who and where people are more willing to cooperate with ingroup, compared to outgroup members. We conducted an experimental study (N = 3236) to test contrasting hypotheses from prominent social and evolutionary psychology theories on ingroup favoritism across 17 nations. The experiment involved several online interactions in the trust game, either as a trustor or trustee. We manipulated partner group membership in the trust game (ingroup, outgroup, or unknown) and if individuals' reputation was at stake during the interaction. Results show that people trusted more ingroup compared to outgroup members. Moreover, people tended to trust more their partners in situations involving mutual knowledge about the other partner nationality, regardless of group membership. Then, contradicting the view that pro-socials trust more ingroup members, we found that they cooperated more with others in general, irrespective of others' group membership. Women tended to trust less others, and men discriminated more between ingroup and outgroup members. Finally, we did not find support for three cross-cultural theories (e.g., material security, religiosity, and pathogen stress) predicting variations of ingroup favoritism across countries.

Sex Differences in Trust and Trustworthiness: A Meta-Analysis of the Trust Game and the Gift-Exchange Game

Olmo van den Akker, Marcel van Assen, Jelte Wicherts, Mark van Vugt, Daniel Balliet

Do men and women differ in trusting behavior? This question is directly relevant to social, economic, and political domains yet the answer remains elusive. We hypothesize that parental investment theory and social role theory predict men to be more trusting and women to be more trustworthy. These hypotheses were tested using a meta-analytic review of the literature on sex differences in the trust game and the gift-exchange game. The trust game meta-analysis consists of 82 papers encompassing 237 effect sizes and 16,431 participants in 22 countries, while the gift-exchange game meta-analysis consists of 21 papers encompassing 32 effect sizes and 1,308 participants in 13 countries. We found that men send significantly more than women as first movers in the trust game, $g = 0.22$, and as second movers in the gift-exchange game, $g = 0.256$. We did not find a sex difference in first mover behavior in the trust game and second mover behavior in the gift-exchange game. These findings lead us to believe that there is a 'male multiplier effect': men only send more than women when their transfer gets multiplied. We discuss the underlying mechanism and the boundary conditions of this effect.

Saturday July 7th, 2018
Session 8 (11:50 – 13:10)

Evolution, psychology, and health
(A2.07)

Beggars Can't Be Choosers: Disgust Sensitivity Varies as a Function of Control over Pathogen Exposure

Hannah Bradshaw, Jeff Gassen, Sarah Hill

Disgust functions to protect people from interacting with aspects of their environment that pose an infection risk. However, the costs and benefits of disease avoidance behavior vary based on the ability to control exposure to potential contaminants. Therefore, investment in behavioral disease avoidance mechanisms, such as the emotion of disgust, should fluctuate alongside this cost/benefit ratio. We test this hypothesis across four studies. Study 1 (N=101) reveals that low control over pathogen exposure is related to more positive perceptions of disgusting stimuli. Study 2 (N=101) finds that completing an experiment in a dirty room (compared to a clean one) leads to suppressed disgust sensitivity exhibited by more positivity towards disgusting stimuli. Providing discriminant validity for the hypothesized effect, Study 3 (N=121) demonstrates that compared to those who were unable to control their exposure to pathogen cues (i.e., dirty room condition), those who were able to exert control over pathogen exposure (i.e., allowed to clean dirty room condition) are less positive towards visual stimuli denoting pathogen cues, indicating restored disgust sensitivity. Study 4 (N=132) shows that decreased disgust sensitivity arising from an inability to control pathogen exposure is driven by a corresponding increase in physiological immune defenses. These findings indicate that disgust is a luxury emotion that is heavily influenced by one's control over their immediate environment.

Inflammation Predicts Decision-Making Characterized by Impulsivity, Present Focus, and an Inability to Delay Gratification

Jeff Gassen, Sarah Hill, Randi Proffitt Leyva, Gary Boehm, Marjorie Prokosch, Julia Peterman, Jordon White, Micah Eimerbrink

Life history theory predicts that the preference for immediate versus distal rewards should vary in response to ecological cues of one's mortality risk, with more impulsivity being favored in the context of higher mortality. Here, we shift the focus inward, examining if inflammation – a known internal contributor to all-cause mortality – also plays a role in modulating these preferences. In the current research, we measured proinflammatory cytokine activity both in vivo and in vitro and measured impulsivity. Results revealed that levels of circulating proinflammatory cytokines predicted higher levels of impulsivity. Release of proinflammatory cytokines by participants' peripheral blood mononuclear cells (PBMCs) contributed to this relationship as a significant predictor of circulating inflammation. Moreover, alternative models revealed that the behavioral sequelae of impulsivity did not predict inflammation, lending additional support for the proposed directionality of our model. Together, these results suggest that the immune system may play a key role in the development of decision-making patterns that can contribute to undesirable personal and societal outcomes.

Are healthy dates sexier mates? Exploring the relationship between men's health and their mate value.

Summer Mengelkoch, Jeff Gassen Sarah Hill

Much research in the evolutionary sciences suggests that individuals choose mates based on the degree to which they possess traits that impact fitness. Among these qualities are traits bearing on one's health. For example, the preference for symmetry and testosterone markers in males are each believed to have evolved because they provide women with cues to a partner's health. However, much less is known about whether (a) explicitly provided health information influences men's and women's perceptions of a prospective partner's desirability, (b) whether individuals' personal health knowledge influences their self-perceived mate value, and (c) whether the effect of health knowledge on self- and other-perceived desirability is sex differentiated. Here, we present the results of four studies that redress these gaps. Results revealed that perceived health – whether experimentally manipulated or measured – plays an important role in men's self-perceived desirability as a mate. No such relationship was found for women. Complementary results are found in cross-sex perceptions of desirability as a mate, demonstrating that health information plays a more important role in influencing men's desirability than women's. Together, these findings highlight the role played that men's health plays in self- and other-perceived mate value. Discussion will focus on the evolutionary underpinnings of these results.

Environmental Unpredictability in Childhood Predicts Eating in the Absence of Hunger

Randi Proffitt Leyva, Eric Russell, Sarah Hill

Life History Theory predicts that growing up in certain environmental circumstances should promote the development of adult phenotypes that can survive in similar circumstances. Researchers have recently proposed that growing up poor should encourage eating strategies that promote survivability in resource scarce environments, with individuals reared in poorer circumstances eating comparable amounts of calories, regardless of energy need. Additional research indicates that childhood experiences with parental inconsistency, dangerous neighborhoods, development of an unpredictability schema (e.g., a mindset about the world, people, and future outcomes as unpredictable), and lowered body awareness predict this same pattern of results in adulthood. The purpose of the current research was to examine the impact of environmental conditions such as pregnancy stress experienced by the mother, family financial struggles, and predictability of the childhood environment on the emergence of eating in the absence of hunger in children ages 3-14. Results indicate that increased pregnancy stress and environmental unpredictability significantly predict eating in the absence of hunger.

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Rituals
(A2.11)

The cultural evolution of shamanism

Manvir Singh

Magico-religious practitioners, who possess jurisdiction over certain interventions and rituals, exist in nearly every human society. A special class of such practitioners are shamans, here defined as those individuals who enter trance to provide services to their community. Shamanism existed in most documented small-scale societies, recurs in contemporary contexts (e.g., prophets and trance channelers), and is often cited by anthropologists as the “first profession”, representing the first institutionalized division of labor beyond age and sex. Here I present a cultural evolutionary theory to explain why shamanism consistently develops. I argue that shamanism is a set of traditions developed through cultural evolution that adapts to people's intuitions and convinces them that a practitioner can influence otherwise unpredictable, significant events. The shaman does this by ostensibly transforming, violating folk-intuitions of humanness to assure group-members that he or she can interact with the invisible forces that control uncertain outcomes. Using a cross-cultural data-set of trance-practitioners as well as ethnographic descriptions of shamans, I review how this theory explains the jurisdiction of shamans, the features of trance, and the form of “transformative practices”. In short, I show that shamanism is an ancient human institution that recurs because of the capacity of cultural evolution to produce practices adapted to innate psychological tendencies.

The puzzle of large scale costly ritual – how the costs of a few can bind the many

Ronald Fischer, Andreas Roepstorff, Punya Tepsing, Kemtong Sinwongsuwat

Collective ritual has been shown to bond performers into cohesive social groups and a range of ritualistic features contribute to the bonding among actors. In this presentation, we compare and extend existing theoretical accounts to examine what variables may contribute to greater social bonding (measured with identity fusion) among spectators of extreme rituals (individuals who do not engage in high ordeal acts, N =1041). Results in this naturalistic environment replicate previously reported effects of kin-related social bonding: identity fusion is higher among spectators who have kin participating in high ordeal rituals. In line with emotional process explanations, negative emotions were weak, but significant predictors. Surprisingly, positive emotions emerged as stronger predictors, challenging some previous evolutionary theories of ritual. Extending costly signalling theory and social exchange theory, we predicted and found that authenticity and integration in social exchange networks correlated strongly with identity fusion. Authenticity also modified empathy and dysphoric affective responses, suggesting that top-down processes modify emotional reactions that bond spectators. Overall, our study outlines the mechanisms that can bond large collectives of spectators into cohesive groups.

Gene-Culture Coevolution of Bonding Rituals

Karl Frost

Socially learned rituals have the potential to generate prosocial emotional responses arising from genetically evolved behavioral dispositions, hijacking these genetic behavioral dispositions to solve otherwise intractable coordination problems. While this argument is not novel, this paper formally models the two-trait coevolutionary dynamics. A gene-culture coevolution model is used to explore the dynamics of a socially learned ritual hijacking a genetically evolved behavioral potential to generate prosociality, using both an analytic model and computer simulation. This takes a ‘genetic mismatch’ hypothesis and models it dynamically, predicting trajectories for both the socially learned behavior and the hijacked genetic trait over time. Relying on fast culture and slow genes, it demonstrates how high levels of prosocial ritual efficacy may be established, at least temporarily. It also suggests the dynamics of slow feedback on genetic composition of the population, which, under specific payoff relations, may lead to either a decline in the presence of the hijacked genetic trait in the population or cycling of genetic and cultural variants. Moreover, the time scales of change predicted by the simulation emphasize the importance of considering non-equilibrium dynamics when making evolutionary arguments about prosociality and rituals.

How brave is she? “Affordance testing” to actively assess others’ potential opportunities and threats

Cari M. Pick, Steven L. Neuberg

As social perceivers, we continually assess the potential threats and opportunities afforded by others—for example, whether a mate will be faithful or a business partner creative. We generally make such inferences by observing cues that (imperfectly) predict the underlying capacities and inclinations of interest, as when a certain facial expression implies underlying anger and aggressive intent. Often, however, this inference task is difficult. Acts of bravery occur infrequently and have few highly diagnostic observable cues; even highly dishonest people behave honestly most of the time; and people holding unpopular beliefs sometimes mask these beliefs and the cues to them. How else, then—beyond observation—do people assess the affordance potential of others? People may “affordance test”—actively manipulate other people’s circumstances to reveal their hard-to-observe characteristics. Some examples include hazing, job interviews, coming-of-age rituals, and common dating practices. This broader notion has received little conceptual or empirical attention. In several studies of affordance testing, we expected—and found—that people: 1) believe that there is variability in the observability of different characteristics; 2) believe certain “tests” are more useful than others for inferring different characteristics; and 3) employ the more useful tests. We are currently testing whether urgency makes people more likely to test others, and what circumstances cause such urgency.

Saturday July 7th, 2018
Session 9 (14:30 – 15:50)

Testing theories of human cooperation
(A0.01)

Baker's Town: A novel game to test theories and models of cooperation

Jolene Tan

Researchers across the biological, social and cognitive sciences are interested in cooperation and have asked diverse questions such as how it evolved, how it can be resistant to cheaters or be enhanced, as well as how the decisions are made. Despite the range of questions asked, an estimated 80% of studies use an economic game (EG) to measure cooperation. In this talk, I will argue that this dominance impedes the advancement of cooperation research and will also review some concerns about EGs' lack of internal and external validity. Next, I will describe my proposed alternative paradigm, Baker's town, which overcomes some of EGs' weakness while preserving the multiple-trial and numerical-payoff structure that are its strengths. This paradigm's design is influenced by error management theory but is not restricted to testing theories from that lineage. I will also present the results of a proof-of-concept study with Baker's town where I found that participants' cooperative behavior is influenced by their partners' characteristics (i.e., reputation, and previous behavior) as well as by stable individual differences such as their social trust beliefs and their attitude towards forgiveness. I will also demonstrate how the paradigm can be adapted to investigate different social dilemmas and real-world scenarios of cooperation. Finally, I will discuss how this paradigm creates psychological realism and facilitates the testing of theories and models of cooperation.

Why hate the good guy? Antisocial punishment of high cooperators is higher when people compete to be chosen

Aleta Pleasant, Pat Barclay

When choosing social partners, people prefer good cooperators (all else equal). Given this preference, anyone wishing to be chosen can either increase their own cooperation to become more desirable, or suppress others' cooperation to make them less desirable. Previous research shows that very cooperative people sometimes get punished ("antisocial punishment") or criticized ("do-gooder derogation") in many cultures. Here we use a public goods game with punishment to test whether antisocial punishment is used as a means of competing to be chosen by suppressing others' cooperation. As predicted, there was more antisocial punishment when participants were competing to be chosen for a subsequent cooperative task (a Trust Game) than without a subsequent task. This difference in antisocial punishment cannot be explained by differences in contributions, moralistic punishment, or confusion. This suggests that antisocial punishment is a social strategy that low cooperators use to avoid looking bad when high cooperators escalate cooperation.

Prestige, dominance, and social learning among leaders in an egalitarian society

Zachary Garfield, Edward Hagen

This study investigates leadership among a population of transitional hunter-gatherers and is the first investigation of dominance and prestige biased learning among leaders in a small-scale society. The Chabu have recently adopted the Kebele system, a local administrative unit of the Ethiopian government. Under this system, the community elects various male and female leaders. Hence, there was an opportunity to research leadership in an egalitarian society transitioning to increased hierarchy. Using self-report, peer-rated, free-listed, and anthropometric measures we investigate the utility of the dominance-prestige model, and others, in predicting elected leaders through bivariate tests, linear models, and exploratory analysis. In general, there was a strong positive correlation between peer-ratings across several leadership traits, including both dominance and prestige, and with leader status. For women, however, being feared and fighting ability were negatively correlated with other measures as well as with leader status. Male leaders score higher than non-leaders on dominance, intelligence, prestige, and mentorship; female leaders score higher on prestige. Prestige is a stronger predictor of leadership than dominance. Male leadership is associated with biased social learning, which applies to individuals scoring high on both dominance and prestige. These results provide a rare, gendered-view of leadership among a transitioning egalitarian society.

Reciprocity Outperforms Conformity to Promote Cooperation

Daniel Balliet, Angelo Romano

Evolutionary psychologists have proposed two processes that could give rise to the pervasiveness of human cooperation observed among individuals who are not genetically related: reciprocity and conformity. We tested whether reciprocity outperformed conformity in promoting cooperation, especially when these psychological processes would promote a different cooperative or noncooperative response. To do so, across three studies ($n = 2,104$), we observed participants' cooperation with a partner after learning (a) that their partner had behaved cooperatively (or not) on several previous trials and (b) that their group members had behaved cooperatively (or not) on several previous trials with that same partner. Although we found that people both reciprocate and conform, reciprocity has a stronger influence on cooperation. Moreover, we found that conformity can be partly explained by a concern about one's reputation—a finding that supports a reciprocity framework.

Saturday July 7th, 2018
Session 9 (14:30 – 15:50)

War and violence
(A1.02)

Obscuring Warfare and Violence among Hunter-Gatherers

Raymond Hames

There is a well-entrenched schism on the frequency (how often) and intensity of warfare (death per 100,000/year) among hunter-gatherers and more complexly organized tribal peoples. To simplify, Rousseauians argue that warfare among prehistoric and contemporary hunter-gatherers and was nearly absent and, if present, was a late cultural invention. In contrast, so-called Hobbesians often take an evolutionary perspective to argue that violence was relatively common but variable among hunter-gatherers. Through a review of recent research by prominent Rousseauian scholars I argue they use a variety of tactics to obscure the frequency of warfare. The frequently cited Science article by Fry and Söderberg represent many attributes of the Rousseauian approach and is problematic on at least three counts. First, in their analysis, a lethal event is an event that kills at least one person and is equal to a lethal event that kills 25 people (e.g., Aweikoma). Second, their reliance of “primary authoritative sources” censors reliable accounts of warfare in their sample. For example, they claim that there was only one lethal event among the Andaman Islanders killing a single individual when sources they ignore are relied upon by other ethnographers report that one group nearly exterminated another. Third their inconsistent distinction of fighting between independent residential groups as feud also diminishes the intensity of warfare. To conclude, I will present a series of tables with quantified data that will provide a more accurate account of lethal coalitionary violence among hunter-gatherers.

Why war is a man's game

Alberto Micheletti, Graeme Ruxton, Andy Gardner

Interest in the evolutionary origins and drivers of warfare in ancient and contemporary small-scale human societies has greatly increased in the last decade, and has been particularly spurred by exciting archaeological discoveries that suggest our ancestors led more violent lives than previously imagined. However, the striking observation that warfare is an almost-exclusively male activity remains unexplained. Three general hypotheses have been proposed, concerning greater male effectiveness in warfare, lower male costs, and patrilocality. But while each of these factors might explain why warfare is more common in men, they do not convincingly explain why women almost never participate. Here, we develop a mathematical model to formally assess these hypotheses. Surprisingly, we find that exclusively-male warfare may evolve even in the absence of any such sex differences, though sex biases in these parameters can make this evolutionary outcome more likely. The qualitative observation that participants in warfare are almost-exclusively male is ultimately explained by the fundamentally sex-specific nature of Darwinian competition - in fitness terms, men compete with men and women with women. These results reveal a potentially key role for ancestral ecology in shaping our species' patterns of sexual division of labour and violence-related adaptations and behavioural disorders.

Economic inequality and violence in London neighbourhoods

Jaye McLaughlin, Nicholas Pound

Previous research has indicated that economic inequality levels predict homicide rates, and it has been theorised that this is due to the way inequality increases the intensity of male intrasexual competition, and therefore levels of interpersonal violence more generally. However, some contention remains as to whether inequality or poverty is the better predictor of violent crime. Most previous studies have examined large scale variation (e.g. between countries, states, or provinces). Therefore, we investigated the association between economic inequality and non-lethal violence in the UK (where homicide rates are low), and at a finer geographical resolution. Income estimates for small geographical census areas (LSOAs) were used to calculate Gini coefficients (a measure of income inequality) for London wards. Following exclusions due to census boundary changes, multiple linear regression analyses were performed examining average income and income inequality as predictors of violence for 553 wards. Separate analyses were performed for two independent per capita measures of interpersonal violence; violent crimes recorded by the Metropolitan Police, and assaults recorded by the London Ambulance Service. Both income inequality and average income were significant independent predictors of both measures of non-lethal violence. This is consistent with the theory that economic inequality is associated with increased violence, suggesting that lowering inequality could reduce violence.

Lifetime reproductive success of women volunteers in a Second World War paramilitary organization

John Loehr, Robert Lynch, Virpi Lummaa

Evolutionary theory suggests that human participation in intergroup conflict can bring fitness benefits to individuals who demonstrate prosocial behavior towards in-groups and aggression towards out-groups. Although much is known about the reproductive consequences of male participation in warfare, little is known about how it affects females. Prior to World War II, female paramilitary organizations were founded and developed in many countries across Europe and Asia. In Finland, the Lotta Svärd organization was tasked with supporting troops as nurses, air raid spotters, mess personnel and in other auxiliary capacities. By the end of the War, volunteers numbered over 230,000 in the adult and youth corps. Using detailed life history and service records we analyzed the reproductive outcomes of women who voluntarily participated in war. Here we compare fitness outcomes of Lotta Svärd volunteers and women who did not participate for over 70,000 Finnish women aged 12 to 50 in 1944. Volunteers over 20 years of age had markedly lower lifetime reproductive success and reproductive onset was delayed compared to the general population. However, those who participated in the War who were 20 years old or younger tended to have an earlier reproductive onset. To our knowledge this is the only evidence for lifetime reproductive success of females who participate in intergroup conflict, thus providing new insight into the implications of war on humans.

Saturday July 7th, 2018
Session 9 (14:30 – 15:50)

Attractiveness and mating
(A1.03)

Why Women Wear High Heels: Evolution, Lumbar Curvature, and Attractiveness

David Lewis, Eric Russell, Laith Al-Shawaf, Vivian Ta, Zeynep Senveli, William Ickes, David Buss

Despite the widespread use of high-heeled footwear in both developing and modernized societies, we lack an understanding of this behavioral phenomenon at both proximate and distal levels of explanation. The current manuscript advances and tests a novel, evolutionarily anchored hypothesis for why women wear high heels, and provides convergent support for this hypothesis across multiple methods. Using a recently discovered evolved mate preference, we hypothesized that high heels influence women's attractiveness via effects on their lumbar curvature. Independent studies that employed distinct methods, eliminated multiple confounds, and ruled out alternative explanations showed that when women wear high heels, their lumbar curvature increased and they were perceived as more attractive. Closer analysis revealed an even more precise pattern aligning with human evolved psychology: high-heeled footwear increased women's attractiveness only when wearing heels altered their lumbar curvature to be closer to an evolutionarily optimal angle. These findings illustrate how human evolved psychology can contribute to and intersect with aspects of cultural evolution, highlighting that the two are not independent or autonomous processes but rather are deeply intertwined.

Attractive bodies: Are sexually dimorphic features important in a face-to-face context?

Morgan Sidari, Anthony Lee, Sean Murphy, Barnaby Dixson, Brendan Zietsch

Understanding what features influence body attractiveness is fundamental to assessing the role opposite-sex preferences may have had in shaping the evolution of men's and women's bodies. It is therefore not surprising that more than 150 studies have investigated the determinants of body attractiveness, but it is surprising that these have all used faceless, inert models, presented on screens or on paper. The extent to which these preferences translate into real-time, face-to-face evaluations of potential partners, which is how active mate selection occurred during our evolution, remains unclear. Here we used a speed-dating paradigm in which participants (275 females and 264 males in 1080 dates) had their body dimensions measured and rated each other's body, face, personality, and overall attractiveness. Analysis using linear mixed effects modeling showed that women with smaller waists and lower waist-to-hip ratios were found most attractive and men with broader shoulders, smaller waists, and higher shoulder-to-waist ratios were found most attractive. Taller individuals were preferred by both sexes. Body attractiveness was important to overall attractiveness in both sexes, but more so for males rating females. Our results show that body dimensions previously associated with greater health, fertility, and strength (in men) influence real-time, face-to-face evaluations of attractiveness, consistent with a role of intersexual selection in shaping human bodies.

Male sexual dimorphism as a predictor of mating/reproductive success: a meta-analysis

Linda H. Lidborg, Catharine P. Cross, Lynda G. Boothroyd

In human males, sexually dimorphic traits, such as facial masculinity, physical formidability and a low voice pitch, are generally dependent upon prenatal and adolescent exposure to testosterone (T). Based on a hypothesized suppressive effect of T on immunity, outlined in the immunocompetence handicap hypothesis (ICHH), masculine traits are posited to function as honest signals of heritable good genes. A key prediction of the ICHH is that, due to their high mate quality, highly dimorphic males should enjoy greater reproductive success. To date, the evidence for this prediction is inconclusive. Thus, a systematic search and meta-analysis was conducted to assess the relationship between male sexual dimorphism and mating/reproductive success. In total, 270 articles published before February 2018 were reviewed, located using PsycINFO, PubMed, Web of Science and by cross-referencing. Selected studies measured dimorphism in terms of T levels, facial morphology, body morphology/strength, digit ratios, voice pitch, or height. Outcomes included number of sex partners, sexual/reproductive onset, sociosexual/short-term mating orientation, extra-pair copulations, number of spouses, number of offspring/grand-offspring, or offspring survival/mortality. Effect sizes from 57 studies were meta-analyzed; moderation analysis was conducted based on study quality and p-curve analysis was performed. The results are discussed in terms of their implications for human sexual selection theory.

The role of vocal parameters in perception of male dominance and attractiveness

Christoph Schild, Tobias Kordsmeyer, David Puts, Lars Penke

Previous studies on the vocal perception of attractiveness and dominance in men's voice have mainly used experimentally manipulated vocal parameters. Furthermore, evidence explaining why using vocal cues could be advantageous in intra- and intersexual contexts is generally quite sparse. In order to address these limitations, we conducted a preregistered study with a correlational design in which 160 unmanipulated voice recordings of male speakers were rated on short- and long-term attractiveness as well as social and physical dominance. Whether using specific vocal parameters for judgments is adaptive was explored by associating them with hormonal data (cortisol and testosterone levels), body morphology and strength measures of the male speakers. The vocal parameters fundamental frequency (F0), formant frequencies, and shimmer were related to perceptions of attractiveness and dominance to different degrees. While F0 and shimmer provided valid information about target hormone levels, formant measures were related to body morphology and strength measures. The study thus offers empirical support for adaptive relations between observer perceptions, vocal parameters and target characteristics.

Saturday July 7th, 2018
Session 9 (14:30 – 15:50)

Conflict in mating and parenting
(A2.07)

Parent-Offspring Conflict over Mate Choice: Cross-cultural Evidence from the HRAF

Steven J.C. Gaulin, Addison Morris, Maya Chandy, Elizabeth Agey

Widely studied mate-choice algorithms presumably confer reproductive advantages on the choosers, an often tacit assumption supported by a relatively small set of studies that experimentally thwart mating preferences in various animal taxa. Such experiments could not be performed in humans but might be approximated by comparisons between the fitness-relevant outcomes of arranged and “love” marriages. A recent study using that design (Sorokowski et al. 2017) found no effect in a sample of approximately 300 couples drawn from three different societies. We (and perhaps others) are in the process of replicating and extending that approach, but their null result raises the possibility that arranged and “love” marriages produce similar reproductive outcomes because there is no discordance between the mates chosen by the marrying couple and the mates selected for them by their parents (or other kin). The results of our systematic analysis of extensive cross-cultural data (from the HRAF) weaken this candidate explanation. Certain arranged marriages may engender minimal parent-offspring conflict, but others reveal strong disagreement (e.g., as indicated by suicide), suggesting that parental and offspring preferences differ in ways that justify the underlying logic of the Sorokowski et al. research design.

Does arranged marriage disrupt evolved mate-choice algorithms? A test from the Chitwan Valley of Nepal.

Elizabeth Agey, Steven J.C. Gaulin

Mating preferences presumably evolved to advance reproductive interests, an assumption that has been supported via experimental disruptions or random mate assignments in a few non-human species. This method is unsuitable for exploring the possible benefits of mate choice in humans; thus Sorokowski et al. (2017) looked for parallel fitness differentials between arranged and “love” marriages in a sample of approximately 300 couples gleaned from three geographically and culturally distinct societies. They found no effect, but examined only two outcome measures and could not control for important confounds in such a heterogeneous sample. We exploited a similar quasi-experimental design to examine multiple fitness-related outcomes in a large, well-controlled single-culture, sample of families living in a restricted geographic region of Nepal (CVFS; Axinn et al. 2014).

Parent-Offspring Conflict Over Marital Timing Among Sukuma Agropastoralists in Northwestern Tanzania

Susan Schaffnit, Anushé Hassan, Mark Urassa, David Lawson

Marriage before 18yrs, often referred to as 'child marriage', is normative throughout low-income countries, particularly across Sub-Saharan Africa. We consider the hypothesis that early marriage is driven by parent-offspring conflict, benefiting parents at a cost to their daughter's wellbeing or fitness. Conflict over marital timing is predicted where parents receive bridewealth payments and where men prefer younger brides, but women benefit from relatively delayed marriage. If parent-offspring conflict exists, we predict that early marriage will be associated with (1) a lower probability of women choosing their own partner (2) higher bridewealth payments reflecting the desirability of young brides; and (3) having more older brothers, with parents marrying daughters to gain capital to marry sons. We test these predictions using data collected from 1,000 young women in two rural, predominantly Sukuma agropastoralist communities in Tanzania, where early marriage is common (35% of women marry <18yrs). We find mixed evidence for parent-offspring conflict. At all ages, women predominantly report choosing their own husband. Bridewealth is highest for younger brides, although not all early marriages involve bridewealth, and women with more older siblings - brothers or sisters - marry earliest. Interpreting these results in conjunction with data on women's wellbeing, we suggest that parent-offspring conflict poorly accounts for the high frequency of early marriage in this context.

Can evolutionary theory explain patterns of male-to-female intimate partner violence across 13 sub-Saharan African countries? Testing the evidence for paternity certainty and reproductive conflict.

Janet A. Howard, Mhairi A. Gibson

The WHO estimates that globally almost a third of women experience physical and/or sexual intimate partner violence (IPV) when in a relationship. Due to the detrimental impact on women, the motivations behind male-to-female IPV are of interest to policy-makers, social scientists, and increasingly to evolutionary anthropologists. Male-to-female IPV has been linked to reducing women's extra-pair sexual relations which may increase paternity certainty and decrease men's risk of raising genetically unrelated offspring. It is also suggested that male-to-female IPV arises due to conflict between the sexes over reproduction, when men seek additional offspring either within or outside the relationship. To date, however, these ideas remain largely untested using empirical data. Here we use Demographic and Health Survey data from 13 African countries to test for associations between men's attitudes towards IPV and incidence of IPV and 1) indicators of paternity concern (wife's sexual activity before and during marriage) and 2) indicators of sexual conflict over reproductive interests (disparity in number of desired offspring, and contraceptive use). Moreover, as male-to-female IPV may be a response to social cues from others within the community, we use multilevel analysis to explore both individual and community influences (e.g. prevalence of extra-pair sexual activity and male controlling behaviours towards women within the community, and social acceptance of IPV).

Saturday July 7th, 2018
Session 9 (14:30 – 15:50)

Strategic minds
(A2.11)

Double Standards of the Political Mind: Empirical Support for the Alliance Theory

David Pinosof

According to many prominent theories in political psychology, ideologies are a type of ethical belief system. According to the Alliance Theory, however, ideologies are collections of ad hoc arguments designed to mobilize support for one's political allies (e.g. the demographic groups associated with one's political party) in particular conflicts. Accordingly, the two frameworks make different predictions about the prevalence of ideological double standards (i.e. inconsistently held moral principles). If ideologies are ethical belief systems, then moral principles should be held consistently. But if ideologies are collections of ad hoc arguments, then moral "principles" should change depending on whether they are applied to one's political allies or enemies. Here, I present American polling data using cellphones and landlines (N = 1,215) showing that majorities of both Democrats and Republicans endorse moral double standards across different questions in the same survey. For example, of the Republicans who trust Vladimir Putin when he said that he did not interfere with the 2016 presidential election, 71% say that Americans should be less trusting of foreigners. Of the Democrats who object to blaming terrorist attacks on Muslims as a group, 65% blame the Charlottesville killing on Trump supporters as a group. Overall, results support the Alliance Theory and suggest that ideologies are less morally principled, and more strategic, than has been previously supposed.

Children's and apes' capacity to imagine and prepare for alternative future possibilities

Jonathan Redshaw, Thomas Suddendorf

Because future events can be difficult to predict, adult humans often envision and prepare for multiple alternative possibilities. I will present several studies examining the developmental trajectory and phylogenetic distribution of this capacity with a minimalist paradigm. In the original study, young children and apes were given the opportunity to catch a desirable item that was dropped into an inverted Y-shaped forked tube with two possible exits. Whereas 2-year-olds and apes typically covered only one exit when preparing to catch the item, some 3-year-olds and most 4-year-olds spontaneously covered both exits from the first trial onward. This basic pattern of results was replicated in a follow-up study where the uncertain outcome was visibly controlled by a social agent, rather than by a hidden physical mechanism. Additional follow-up studies suggested that young children's difficulties with these tasks were related to specific limitations in reasoning about mutually exclusive alternatives, rather than with coordinating their hands in the necessary manner to pass. In a final study, the developmental pattern of improvement throughout early childhood on the original forked tube task was replicated in three diverse cultural settings. On the whole, these results suggest that humans may universally become able to imagine and prepare for alternative future possibilities during the early childhood years, whereas this capacity may be absent in our closest living relatives.

Better social reasoning through mistrust and mindreading: conditional inferences are correlated with theory of mind ability and lower interpersonal trust

Gary L. Brase, Jordann L. Brandner

Although several theories of human conditional reasoning exist, little research has explored predicted relationships between reasoning performance and individual differences based on these views. Domain-specific evolutionary theories of reasoning predict that variations in abilities such as theory of mind (reading others' intentions) and interpersonal trust may be differentially related to reasoning about social contracts, and perhaps also to precaution rules. These abilities should not be related, however, to reasoning about descriptive conditional rules. One study showed that a measure of theory of mind (focused on reading facial emotion expressions) was significantly correlated with reasoning about social exchanges and precautions after taking into account general reasoning ability, although other mindreading ability measures were not. Two further studies showed that interpersonal trust measures were also significantly correlated with conditional reasoning, and this relationship was stronger for social exchange and precaution contexts. For comparison, reasoning performance was largely unrelated to major personality (HEXACO) factors. These results provide some support for the position that reasoning about these social rules are based on cognitive mechanisms tailored to the specific domains, which may be deontic regulations or possibly narrower domains of social exchanges and precautions.

Welfare tradeoff psychology is present in early childhood

Rhea Howard, Annie Spokes, Samuel Mehr, Max Krasnow

Optimizing fitness in social situations requires weighing one's own desires against the needs and preferences of others. Adults are adept at incorporating multiple contextual features when deciding how to act, for example: they are more willing to forgo a resource to benefit friends over strangers (a feature of the individual) or when the opportunity cost of giving up the resource is low (a feature of the situation). But when does this capacity emerge in development? In Study 1 (N = 208), we assessed the decisions of 4- to 10-year-old children in a picture-based resource tradeoff task to test two questions: (1) When making repeated welfare tradeoff decisions, are children's choices internally consistent? (2) Do children value friends more highly than strangers and enemies? As predicted, children demonstrated consistent person-specific welfare valuations, and valued friends more highly than strangers and enemies. In Study 2 (N = 200), we tested adults using the same pictorial method. The pattern of results replicated, but adults' decisions were more consistent than children's and they expressed more extreme valuations (i.e., they valued friends more highly, but valued enemies less). We conclude that despite children's limited experience with complex social networks and allocating resources, like adults, they reference a stable valuation when deciding whether to benefit themselves or another and that this rule is parameterized by the child's relationship with the target.

Saturday July 7th, 2018
Session 10 (16:10 – 17:30)

Social evaluation: Universal logic and evolutionary consequences
(A0.01)

How Humans Assess and Allocate Status

Patrick Durkee, Aaron Lukaszewski, David Buss

Humans evolved in small groups in which status hierarchies were ubiquitous. The adaptive challenges posed by status hierarchies select for adaptations for assessing status and allocating it among group members. These adaptations are hypothesized to use cues that probabilistically predict others' ability to channel the flow of benefits, as well as the costs, within a group. We present data from 14 countries from Brazil to Zimbabwe (N = 2,762) on (1) the impacts of 240 acts, characteristics, and events on men's and women's status in the eyes of people's peers; and (2) the cue-based inferences that regulate these status valuations. Our findings strongly suggest that the ability to generate benefits for others is the foremost determinant of men's and women's status across cultures. Discussion focuses on the implications for an evolutionary theory of social status.

Cross-cultural regularities in the cognitive architecture of pride

Daniel Sznycer

Pride occurs in every known culture, appears early in development, and causes a characteristic display that is recognized everywhere. Here we evaluate the theory that pride evolved to guide decisions relevant to pursuing actions that enhance valuation and respect for a person in the minds of others. By hypothesis, pride is a neuro-computational program tailored by selection to orchestrate cognition and behavior in the service of: (i) motivating the cost-effective pursuit of courses of action that would increase others' valuations and respect of the individual, (ii) motivating the advertisement of acts or characteristics whose recognition by others would lead them to enhance their evaluations of the individual, and (iii) mobilizing the individual to take advantage of the resulting enhanced social landscape. To modulate how much to invest in actions that might lead to enhanced evaluations by others, the pride system must forecast the magnitude of the evaluations the action would evoke in the audience and calibrate its activation proportionally. We tested this prediction in 16 countries across 4 continents (n = 2,085), for 25 acts and traits. As predicted, the pride intensity for a given act or trait closely tracks the valuations of audiences, local (mean $r = +.82$) and foreign (mean $r = +.75$). This relationship is specific to pride and does not generalize to other positively-valenced emotions that co-activate with pride but lack its audience-recalibrating function.

Global self-evaluations track locally valued traits across cultures

Aaron Lukaszewski, Daniel Conroy-Beam, Peter Jonason, David Lewis, Kosuke Takemura, Hitoshi Tominaga

Given the strategic importance of representing one's own traits and social positions for optimal decision-making, natural selection has crafted self-evaluative internal regulatory variables (IRVs) designed to index one's standing on critical social dimensions. Two such IRVs are the Inclusion Index (which tracks one's degree of social inclusion) and the Power Index (which tracks one's ability to influence others in desired ways). We hypothesize that (1) the global self-evaluations produced by these IRVs are influenced by traits that determine one's ability to confer benefits and inflict costs on others and (2) the possession of specific traits influences global self-evaluations in proportion to the local social valuation of those traits. A cross-cultural study conducted in nations on four continents (Australia, Japan, Turkey, USA) supported these hypotheses. Across ten socially valued traits (e.g., oratorical skill, athletic ability, sexual attractiveness), a given trait's association with global self-evaluations tracked its local importance in determining a person's social value. Overall, our findings shed light on both the universal design and evoked cultural variability of IRVs for self-evaluation.

Assortative Mating and the Evolution of Human Trait Covariation

Daniel Conroy-Beam

Human individual differences are not distributed randomly and covariances between seemingly unrelated traits have long posed a puzzle for evolutionary theories of mind and behavior. I will present the results of work suggesting that one process, assortative mating for mate value, accounts for a particularly broad pattern of human trait covariation. I use agent-based models to demonstrate that assortative mating causes the evolution of a positive manifold of desirability, d , such that an individual who is desirable as a mate along any one dimension tends to be desirable across all other dimensions. Further, I use a large cross-cultural sample with $n = 14,478$ from 45 countries around the world to show that this d -factor emerges in human samples, is a cross-cultural universal, and is patterned in a way uniquely consistent with an evolutionary history of assortative mating.

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Session 10 (16:10 – 17:30)

Coalitional conflict
(A1.02)

How to divide to conquer: Spoils division rules shape aggression between natural groups

Hannes Rusch, Gönül Doğan, Luke Glowacki

Many of the benefits obtainable by victorious parties in violent intergroup conflicts are non-excludable goods available to all group members, whereas participation entails substantial individual risks and costs. Thus, a collective action problem emerges, raising the question why individuals participate in such conflicts at all. Distinguishing offensive from defensive intergroup aggression provides a partial answer: defensive aggression is adaptive under many circumstances. However, participation in offensive aggression still requires an explanation. Here, we focus on one condition hypothesized to facilitate the emergence of offensive intergroup aggression: asymmetries in the division of a conflict's spoils may motivate those profiting from such inequality to initiate intergroup aggression, even if doing so jeopardizes their group's welfare. We test this hypothesis by manipulating how benefits among victors are shared in an economic contest experiment among three Ethiopian societies whose relations are either peaceful or violent (2x2 between-subjects design, N=192). Under equal sharing, real-world between-group hostility increased contest contributions. In contrast, unequal sharing prompted offensive contribution strategies in privileged participants, while disadvantaged participants resorted to defensive strategies, both irrespective of group relations. Our results demonstrate that spoils division rules are crucial in the emergence of intergroup aggression.

Here Comes Trouble: The investigation of male intimidation poses

Nicholas Kerry, Damian Murray, Jason Harman, John-Luke McCord

Vicariously experiencing major sporting events is a worldwide phenomenon; however, limited research has examined how results from sporting events influence socio-political attitudes. The current study examined how sports results affect spectators' moral and political attitudes. "Strategic" perspectives on morality and political attitudes suggest that spectators may have higher ingroup biases and less egalitarian attitudes after seeing their team win than after seeing them lose. Two studies examined people's attitudes immediately after real, major sporting events. Study 1 surveyed 589 participants from the United Kingdom immediately following games during the Euro 2016 soccer tournament. Study 2 surveyed 648 fans outside four major college football games in the USA. We found consistent evidence that vicarious winners were more biased in favor of their ingroup and less egalitarian than vicarious losers. These findings suggest that events such as sports results, which seem irrelevant to politics, may acutely influence moral and political views.

Synchronisation and coordination differentially affect perceived group formidability and social bondedness

Jacques Launay

Studies suggest that synchronisation can cause social bonding and perceived group formidability, and it has been argued that activities like dance may have played a functional role in encouraging group cohesion or fending off enemies. However, real examples of dance rarely include exact matching of movements, but instead involve more complex forms of contingent activity ('coordinated' movement). Although synchronisation effectively creates bonds between strangers, more complex forms of coordination could create bonds and indicate formidability differently. In two separate experiments participants were shown video clips (YouTube clips and carefully designed stimuli with avatars) involving synchronised movements (moving the same time) or coordinated movements (contingent movements without synchronisation). Videos involved 'good' performance or 'bad' performance (2x2 design: 'good' vs. 'bad' performance, synchrony vs. coordination). Participants rated videos on visual and Likert scales which measured perceived social bonds between actors, and group formidability. Participants rated formidability and social closeness differently, and while coordination was always considered to indicate greater formidability than synchrony, only good coordination was rated as indicating more social closeness than synchronization. Separating synchrony and more complex coordination might be critical in trying to understand the adaptive advantages conveyed by movement activities like dance.

Memory (Mis)Matches: Accurate and Biased Recall of Terror-Suspects

Miriam Lindner

Evolutionary psychologists suggest that memory retention is enhanced for fitness-relevant stimuli, a notion commonly referred to as adaptive memory. Since intergroup conflict has – and continues to be – associated with grave costs to our species, human beings should therefore be more vigilant to coalitional threat cues. This study tests the assumption that recognition memory is enhanced for coalitional threat cues in the domain of terrorist violence. Employing a survey experiment on a nationally representative sample of 1,473 White U.S. adults, participants were exposed to eight experimental vignettes including subtle coalitional threat cues pertaining to terror-suspect sex, ethnicity, and coalition size. Results suggest that male outgroup coalitions are associated with enhanced recognition memory. Further, those who failed to accurately recall the threat cues exhibited tendencies for bias. Specifically, and in line with Error Management Theory, those exposed to female terror suspects, ingroup suspects, and individual perpetrators were more likely to commit false positive errors. Overall, these findings speak to our coalitional psychology which continues to factor into intuitions about mass violence today. That is, not only seem people more alert to cues implying coalitional aggression – associated biases might also drive down the attention that threats from female suspects, lone wolves, and ingroup attackers receive at the level of public debate.

Saturday July 7th, 2018
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Punishment and outrage
(A1.03)

Understanding cooperativeness in humans

Victoria V. Rostovtseva, Mikael Puurtinen, Marina L. Butovskaya, Franz J. Weissing

We report on an experimental study where human subjects (N=176) had to take decisions in 7 game-like situations that focus on different aspects of cooperation (generosity, trust, trustworthiness, free-riding, division of labour, coordination, punishment). In each situation, subjects had to take the same kind of decision repeatedly, either with an anonymous interaction partner or in a 'personalized' setting where they were shown a neutral silent video of their partner. We will present and discuss three findings. First, individuals differed considerably in their decisions. Their decisions were correlated across contexts, corresponding to differences in overall 'cooperativeness'. As in earlier experiments (with different set-up), generosity, trust, trustworthiness were positively correlated to each other, whereas the tendency to punish non-cooperative individuals was not associated with "cooperativeness". These correlations were particularly pronounced in males. Second, behaviour in personalized interactions was considerably different from behaviour in anonymous interactions. Subjects tended to be more 'cooperative' toward interaction partners whose face pictures were judged 'trustworthy', 'happy', 'attractive', 'not greedy', 'not angry' by a separate panel. Hence, face judgements clearly affected behaviour in cooperation games. Third, the cooperativeness of subjects in the games was only weakly and inconsistently correlated to the judgement of their face pictures by others.

The effect of counter-punishment on the efficiency of cooperation in public goods game

Joon Hwang

This study investigates the effect of counter-punishment on the efficiency of cooperation in public goods game. The vast majority of counter-punishment studies have focused on illustrating the negative effect of it on cooperation because it reduces player's willingness to punish free riders. However, since the punishment inflicts costs on both the punisher and the punished, excessive use of it lowers the efficiency of cooperation. Therefore, in the environment where the excessive amount of resources is already spent on punishment, allowing retaliation against the punishment can help restore the efficiency of cooperation. The researcher designed the experimental environment where inequality aversion strongly motivates players to punish higher earners, by providing information on the amount of the income other players have earned through previous rounds (cumulative earnings). In one-time punishment condition, players severely punished others with higher cumulative earnings so that the cost of punishment outweighed the benefits of cooperation. Also, observed punishments against higher earners were mainly anti-social, because in many cases higher earners made higher contributions. In contrast, when the punisher can be retaliated, the players restrained themselves from punishing higher earners, resulting in the preservation of cooperation benefits. Furthermore, no evidence was found that allowing retaliation against punishment has negatively affected contribution level.

Second- and third-party punishment are characterized by different emotions and different aggressive tactics

Catherine Molho, Joshua Tybur, Daniel Balliet

Previous research has shown that people are willing to punish individuals who impose costs on themselves (second-party punishment) or on others (third-party punishment). However, existing work has overwhelmingly focused on a particular type of punishment: economic sanctioning in laboratory experiments. In daily life, victims and third party observers can use an array of punishment tactics, including low-cost, indirect tactics (e.g., gossip and social exclusion) and higher-cost, direct tactics (e.g., verbal or physical confrontation). In three studies (Ns = 819, 347, 233), we test whether second- and third-parties differentially use direct versus indirect tactics, and whether the use of such tactics is associated with distinct moral emotions. We find that second-parties report more anger and a higher willingness to confront moral offenders, whereas third-parties report more disgust and a lower willingness to engage in direct confrontation. However, second- and third-parties show similar preferences for the use of indirect punishment tactics. For both second- and third-parties, anger is associated with direct, confrontational tactics, whereas disgust is associated with indirect tactics of reputation manipulation. We discuss implications of these findings for our understanding of altruistic and moralistic punishment.

Man up and take it: Greater concern for female than male suffering

Tania Reynolds, Hallgeir Sjøstad, Chuck Howard, Tyler Okimoto, Roy Baumeister, Karl Aquino, JongHan Kim

Throughout human history, women set the upper limit on reproduction. Women's greater physiological contribution to reproduction may have favored psychological mechanisms within individuals aimed at protecting women from harm. Across 5 studies, we tested the prediction that harm to women would evoke greater concern and outrage than equivalent harm to men. In Study 1, participants more readily assumed an unspecified harmed target was a woman than a man, but especially if the terms 'victim/perpetrator' were used. In Study 2, participants expected both female victims and female perpetrators to experience more pain than male victims or perpetrators. They were also less willing to forgive and more strongly desired to punish male perpetrators. Using a variety of social scenarios (e.g., affirmative action, sex-biased careers), Studies 3-5 found female harm or disadvantage evoked more sympathy and outrage and was perceived as more unfair than equivalent male harm or disadvantage. Participants more strongly blamed men for their own disadvantages, were more supportive of policies that favored women, and donated more to a female-only (vs male-only) homeless shelter. Female participants showed a stronger in-group bias, perceiving women's harm as more problematic and more strongly endorsed policies that favored women.

Saturday July 7th, 2018
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Comparative studies of cooperation
(A2.07)

The evolutionary origin of social bonding through shared experiences: adults, infants and great apes connect with others through joint attention.

Wouter Wolf, Michael Tomasello

The formation of social relationships in humans differs from great apes. In the formation of social bonds apes seem to rely solely on physical interaction whereas humans also engage in a variety of social activities that do not require physical contact (e.g. playing games, watching a movie together). As such activities require joint attention, this process might be crucial in the formation of human social relationships. To test this hypothesis, we conducted a study showing that adult participants reported feeling closer to a partner after doing a task in joint attention than after doing a task in disjoint attention. Yet, if joint attention is what makes human bonding idiosyncratic, this dynamic should emerge early in ontogeny and be unique to our species. We therefore conducted a follow-up experiment with human infants (18 and 30 month olds) and great apes. Preliminary data suggests that human infants approach a new experimenter faster after having watched a video in joint attention with that experimenter than when the experimenter was sitting next to them reading a book. To our surprise, our finalized data showed the same pattern in great apes. These results suggest that (1) forming a connection through shared experiences is a social dynamic that emerges early in ontogeny and (2) this dynamic also seems to be present, at least to some degree, in great apes. These results have profound implications for the evolutionary origin of human social bonding.

Time choices: the 'sexy ape' spends far more time in play than in sex

Isabel Behncke, Phyllis Lee, Tetsuya Sakamaki, Robin Dunbar

The allocation of time determines the wider context of animals' sociality and its study sheds light on fitness trade-offs of different sex and age classes and communities. Here we report for the first time the individual time budget allocations in the E1 group of wild bonobos of Wamba, D.R.Congo, where observational data were collected during three field seasons. How do bonobos allocate their time so that it results in such an unusually cohesive society? Is not simple. Bonobo social life has diverse and dynamic components: immatures do most of the playing and adults most of grooming, but what is unusual in bonobos is that adults also play, immatures also groom, and both age classes engages in sexual behaviour. Play – and less so sex – are significant elements of the bonobo social budget. Grooming takes less than half of social time and as such should not be the only activity considered in bonobo social activity budgets. The majority of play in bonobos is done by immatures, but adult bonobos spend around 20% of their social time budget playing. Adult bonobos spend twice as much time playing as they do in sexual interactions. This suggest a role for play in adult bonobos that has not been recognised, as most of the literature notes sexual activity in bonobos as a key aspect to their unique sociality. The findings are discussed in the context of human evolution, in particular in relation to high-intensity and short-duration activities such as in ludic and festive contexts.

How do chimpanzees overcome conflicts of interest to coordinate their actions and solve the Volunteer's Dilemma?

Shona Duguid, Esther Herrmann, Michael Tomasello

Coordinating decisions and actions is a vital aspect of living in a group for highly social species such as chimpanzees (*Pan troglodytes*). In many cases successful coordination results in imbalanced costs and benefits for the individuals involved, e.g. although individuals have differing preferences for the direction of travel, it is necessary to agree on one if they are to travel as a group. The aim of the current study is to understand how individuals resolve these conflicts of interest while avoiding coordination failure and whether they are able to use knowledge about other's behaviour to gain strategic advantage. We presented captive chimpanzees (groups of 2-4) with a task based on the Volunteer's Dilemma: highly preferred food was placed out of reach inside boxes (one for each individual), the food could be accessed for a short period of time if one individual paid the cost of volunteering by moving to another location to activate the release mechanism. This individual thus had less time to access the food reward. If no-one volunteered the food remained inaccessible. We found that these chimpanzees were willing and able to use the release mechanism for themselves when tested alone. In contrast, when there was the possibility of a partner paying this cost, they waited for others to volunteer even when this occasionally resulted in coordination failure (no reward). We did not, however, find evidence of subjects using prior observations of partners to their own advantage.

Why be nice to strangers: the case of bonobos and the first impression hypothesis

Jingzhi Tan, Dan Ariely, Brian Hare

Humans live in an exploded social network of unfamiliar cooperators who regularly exchange services, goods and information. This exceptional tolerance with strangers has been thought to be unique to humans. We present a series of experiments showing that bonobos (*Pan paniscus*) can be highly tolerant and prosocial towards unfamiliar conspecifics. In a food delivery test, adult and juvenile bonobos from Lola ya Bonobo sanctuary (N = 16) assisted an unfamiliar individual from another social group to obtain out-of-reach food items. Their helping could be considered proactive as it occurred even when the recipient did not gesture to overtly signal a desire for the food or a request for help. We then examined contagious yawning, a known indicator of social affiliation, among complete strangers. Sanctuary bonobos (N = 21), adults and juveniles, demonstrated yawn contagion while watching videos of conspecifics whom they have never met before. Our experiments show converging evidence that bonobos demonstrate a positive response towards unfamiliar individuals (i.e. xenophilia). These results support the first impression hypothesis, which proposes that strangers can become future partners in repeated encounters, and xenophilia likely emerges when immigrating members can achieve dominant status, as in bonobo societies.

Saturday July 7th, 2018
Session 10 (16:10 – 17:30)

Mate preferences and tactics
(A2.11)

I know what I like...or do I? Illusory preference in mate choice

Edward Morrison, Alex Mills, Jay McCloskey, Imogen Harvey, Ella Wilkinson

Measuring preferences can be done in several ways: by asking people what they prefer; by giving them a choice in a lab task; and seeing what they actually choose in real life. But does one type of preference always predict another? This study looked at the relationship between what people report finding attractive and what they actually like when given a series of stimuli to rate. In study 1 125 women rated the attractiveness men who varied in terms of hair colour, hair length, eye colour, facial hair, body hair, and muscularity. They then stated which of these traits they preferred or whether they had no preference compared to others. Participants were generally highly inaccurate. Stated preferences did not predict actual preferences for hair colour, hair length eye colour, or body hair although they did for musculature and facial hair. In study 2, 124 participants were tested on non-mate-choice stimuli. Stated preferences for different types of houses and cars closely matched actual preferences in all cases. In study 3, 63 participants completed implicit association tasks to measure unconscious preferences. Stated preferences and implicit preferences matched for tattoos but not for facial hair. These data suggest some of people's stated preferences are a kind of cognitive bias, similar to "choice blindness" where people confabulate false reasons for their preferences. These confabulations seem to be widespread in mate choice, but not in other domains.

Longitudinal analysis of men's intrasexual competitiveness, state anxiety, salivary testosterone, and salivary cortisol

Jaimie S. Torrance, Amanda Hahn, Michal Kandrik, Lisa DeBruine, Ben Jones

Prior research suggests that competition-induced increases in men's testosterone levels are associated with increases in their intrasexual competitiveness. Whether these relationships are also evident when considering naturally occurring (i.e. non-experimentally induced) changes in men's testosterone levels is an open question, however. To investigate this issue, we carried out a longitudinal analysis of steroid hormone levels and men's responses on the Intrasexual Competitiveness Scale. 54 men completed up to five weekly test sessions. At each session saliva samples were collected, to be assayed for salivary testosterone and salivary cortisol. Additionally at each session participants completed Intrasexual Competitiveness Scale and a State Anxiety Inventory questionnaires. We used linear mixed models to test for possible effects of hormonal status on intrasexual competitiveness and state anxiety. We found no evidence that men's intrasexual competitiveness scores tracked naturally occurring changes in salivary testosterone, cortisol, or their interaction. However, men did report greater current (i.e., state) anxiety when cortisol was high, replicating previous findings. Our null results for steroid hormones and intrasexual competitiveness suggest that findings for relationships between competition-induced changes in testosterone and men's intrasexual competitiveness may not necessarily generalize well to relationships with naturally occurring fluctuation in steroid hormones.

Cross sectional and longitudinal evidence that body mass and waist-hip ratio ideals are subject to cultural influence in a non-WEIRD sample.

Lynda Boothroyd

Preferences for female adiposity and waist-hip ratio (WHR) have been observed to vary across cultural groups and it has been suggested that access to Western media and starvation risk may partly explain some such differences. Cross-cultural studies, however, typically consider groups which are highly differentiated on a number of factors, even within countries. The current studies take advantage of a naturalistic experiment in media access in the Pearl Lagoon Basin of Nicaragua in which some villages have electricity while other very similar neighbouring locations do not. We present here an ethnically balanced sample of 300 individuals across 7 villages who rated 50 bodies of known BMI and WHR for attractiveness on a 7 point Likert scale. We use mixed effect models with individuals clustered within villages, to show that greater television consumption is a significant predictor of preferences for slimmer and for curvier (lower WHR) female figures. Within-individual longitudinal analyses of a subset of participants also show an association between TV consumption and body preferences across time for those with only intermittent TV access. In contrast we do not find clear evidence of a role for hunger in driving preferences. Results are discussed in terms of potentially domain general mechanisms in physical attraction.

Kin support for female genital cutting in rural Ethiopia

Mhairi Gibson, Eshetu Gurmu, Beatriz Cobo, Maria del Mar Rueda, Isabel Scott

Female genital cutting (FGC) has major implications for women's health and well-being, and elimination is a key public health target. Barriers to achieving this include 1) obtaining accurate data on a sensitive and illegal topic, and 2) understanding how and why the practice is maintained and accepted in some populations. Here we combine evolutionary kin selection and sexual conflict theories with indirect questioning methods designed to obtain anonymous responses to explore how kinship influences support for FGC in rural Ethiopia. Surveying Arsi Oromo adults (n=1620) we measure directly-stated versus privately-held views on FGC. We find that both men and women are equally supportive of FGC, and attempt to conceal their support in front of interviewers. We also assess desirability of FGC for daughters versus daughters-in-law, which has not been previously tested. We find no overall variation in support for FGC for daughters over daughters-in-law, indicative that the fitness costs and benefits of cutting are equivalent. However, we find that men are less inclined to conceal their support for cutting daughters, than for daughters-in-law. This may reflect particular pressures for fathers to openly signal sexual fidelity of their daughters to potential in-laws. We discuss the relevance of our findings for public health interventions and for the proposal that sexual conflict is an evolved human universal.

Poster Presentation Abstracts

Poster 1. Does morality lead to trust and cooperation?

Cristina Acedo-Carmona, Antoni Gomila

Morality is considered from an evolutionary perspective as a capacity developed to guide behaviors in society, which provides an advantage for species' survival. In this sense, moral attitudes are argued to be related to cooperative ones. But, do higher levels of morality lead to higher levels of cooperation? We can answer this question if we relate moral levels to some attitudes about others' behaviors that influence cooperation, such as judgments, expectations, and punishments. In fact, moral attitudes can contribute positively to cooperation when they lead to establish judgments prudently, punish reasonably or keep positive expectations about others' behaviors. However, an excessive level of morality could have an opposite effect on cooperation. These are the starting points of our study, in which we measure the moral levels of a large sample of individuals using moral questionnaires and compare them with judgment, punishment, trust and cooperation attitudes in front of some decisions taken in economic games. Our results support our hypotheses about the direct, although not proportional, relationship between morality, judgment and punishment, and the not direct relationship between morality, trust and cooperation. These results support the idea that morality and trust are independent mechanisms that respond to different social situations. Thus, morality could emerge as a by-product of other psychological mechanisms for social bonding not directly linked to cooperation.

Poster 2. High Rank as a Double-Edged Sword: Cost-Benefit Tradeoffs of Social Status

Cristian Acevedo, Frank Reyes, Aaron Lukaszewski

Social status is defined as the rank an individual holds within a pyramidal hierarchy of a cooperative group. Having high status is typically seen as a straightforwardly beneficial outcome, given that relative status regulates access to contested resources (e.g., food, mates, influence). However, reciprocity-based theories of status imply that high status can also be costly. According to these theories, status is allocated and maintained based on a social contract between higher- and lower-ranking group members, wherein high ranking individuals are obligated to perform costly services that benefit the group (e.g., leadership, conflict arbitration, warriorship), and receive in return high status in the minds of other. The current study tests a first-order prediction from this theory: that experiencing the benefits of status will be strongly positively correlated with its attendant costs. To this end, we constructed a survey assessing (i) subjects' self-assessed status in real face-to-face groups of which they are members, (ii) hypothesized costs of high status (e.g., accountability for group outcomes; time investment in group activities); and (iii) hypothesized benefits of high status (e.g., influence over collective decisions; social support from other members). As predicted, relative status was robustly positively correlated with all specific cost and benefit dimensions, which in turn strongly inter-correlated.

Poster 3. Choose your words wisely: Evolutionary perspectives on personality assessments based on language use in online dating

Dorothea C. Adler, Maximilian T. P. von Andrian-Werburg, Frank Schwab, Sascha Schwarz, Alicia L. Schäfer, Leonie S. Albrecht, Sarah H. Häring, Benjamin P. Lange

The internet and its constitutive services like dating apps (e.g., Tinder) changed the ways of human mating (Valkenburg & Peter, 2007). First contacts are now often text-based (Koch et al., 2005). The question arises, whether mate-choice adaptations that were selected for face-to-face interactions still work in such an online context. Is it, for example, possible to make valid personality assessments about a potential lover, if only text-based cues are available? And is it further possible to identify the cues that are related to the respective assessments? In step 1 of our two-step online-speed-dating study, participants (N = 309, 153 female, Mage = 26.72 years) completed an online questionnaire to assess their personality (e.g., Big Five, Dark Triad). In step 2, some of them (n = 51, 26 female, Mage = 24.0 years) took part in computer-mediated text-based speed-dating sessions at our laboratory. After the first session they assessed the personality of their respective chat partner on a shortened version of the questionnaire from step 1. Chat logs were analyzed with LIWC (linguistic inquiry and word count), a quantitative content (text) analysis tool. For example, self-assessed and judged openness correlated positively with each other ($r = .41$, $p < .001$). In contrast, self-assessed psychopathy correlated negatively with judged psychopathy ($r = -.29$, $p < .05$). Findings are discussed with respect to evolutionary and media psychological approaches on human communication.

Poster 4. Can listeners assess health from men's voices?

Graham Albert, Zeynep Şenveli, Steven Arnocky, Carolyn Hodges-Simeon

Men's voices may serve as a cue of overall condition. However, little research has assessed if voice parameters honestly signal health. In Study 1 we investigated if listeners accurately assess men's health from their voices. Voice recordings were obtained from men who varied on self-reported physical health. Participants then listened to 20 voices at a time and rated each for speaker health, disease likelihood, illness frequency, and symptom severity. Women also rated attractiveness and men rated dominance. Results showed that participants perceived the voice recordings from healthier men as healthier, less likely to get a disease, and to experience illness less frequently and less severely. Women rated these voices as more attractive and men rated them as more dominant. In Study 2 we investigated if manipulating two sexually dimorphic vocal parameters—fundamental frequency (F0) or apparent vocal tract length (VTL)—affected listeners' health ratings. We selected four samples from men whose self-reported health fell at the sample median and manipulated them on F0 and apparent VTL. Participants rated men's voices with lower F0 (but not VTL) as healthier, less likely to get a disease, and to experience illness less frequently and severely. Women rated voices with lower F0 and VTL as more attractive, and men rated them as more dominant. Our results provide evidence that individuals can accurately assess male health from voices.

Poster 5. Do transgender people respond according to their biological sex or their gender identity when confronted with romantic rivals?

Ines Aristegui, Alejandro Castro Solano, Abraham P. Buunk

This study examined which dimensions of rival characteristics evoke more jealousy among transgender individuals and whether this varies according to their gender identity. Associations of jealousy with intrasexual competition and social comparison orientation were also explored. 134 male-to-female (MtoF) and 94 female-to-male (FtoM) transgender individuals from Argentina responded to a questionnaire. Results showed that FtoM individuals experienced more jealousy than MtoF individuals when confronted with a physically dominant rival. In contrast, MtoF individuals experienced more jealousy than FtoM individuals when their rival was physically attractive and display social power and dominance. In both groups social-communal attributes were the most jealousy-evoking characteristic, followed by physical attractiveness in MtoF and by social power and dominance in FtoM participants. Transgender individuals high in intrasexual competition experienced more jealousy than those with lower levels of competition in response to all the rival characteristics. The association between jealousy-evoking characteristics and social comparison orientation was only found among for MtoF participants. Overall, results indicate that transgender individuals mainly respond according to their gender identity when facing romantic rivals and provide support for the evolutionary hypothesis of existence of a sex-specific rival-oriented mechanism in the rival characteristics that may evoke jealousy.

Poster 6. Explaining Individual Differences in Sexual Morality Within an American Sample

Kelly Asao, David Buss

Americans show large variation in sexual morality, from beliefs about homosexuality to short term sex. Why, within a given culture, would moral norms vary so greatly? Across two studies, we examine several potential explanations for individual differences in sexual morality, including religiosity, political orientation, life history strategy, personality, and disgust-sensitivity. In Study 1, 312 participants (127 men, 185 women) completed an online survey that measured sexual moral judgments and responses to key individual difference variables. The majority (85%) of the apriori predictions based on evolutionary theorizing and past research were supported. Study 2, 387 participants (116 men, 171 women), replicated the findings of Study 1 using the Sexual Morality Inventory. Religiosity, political orientation, SOI, and disgust-sensitivity were significantly correlated with moralization across a range of sexual domains. Among personality variables, psychopathy, narcissism and honesty-humility predicted moralization of sex. After controlling for all other variables, we found that disgust sensitivity and attitudinal SOI remained strong predictors of sexual morality.

Poster 7. Are there rules in friendship?

Jessica D. Ayers, Jaimie Arona Krems, Athena Aktipis

Friendships are typically thought of as positive relationships from which both friends receive benefits. However, friendships can also be costly and exploitative. One way individuals can manage these potential costs is to monitor their friendships for violations of explicit or implicit “friendship rules” that protect them from being exploited. Such decision rules that individuals might use when deciding whether to initiate and maintain friendships have not been systematically studied. Here, we present a preliminary investigation into what we term the Rules of Friendship - a set of “rules” that individuals use to assess and monitor the characteristics of current and potential friends. We build on previous social psychological research to suggest that individuals might use these rules of friendship as a heuristic to assess a friend’s underlying characteristics and to determine whether the friendship should be continued. We present results from a sample of undergraduates describing the relationships between traits valued in friends and the accompanying rules of friendship that signal possession of these traits.

Poster 8. Women With Competitive Partner Cooperative With Other Fertile Woman Under Male-threat Context

Sojung Baek, Dayk Jang

Previous studies have found that women’s intrasexual competitive motivation is increased during the fertile phase. Here, we examine the effect of interpersonal and contextual factors that result in increased cooperative motivation of women towards other ovulating women. In a study using mTurk (N=153), partnered women were shown with a photo of either fertile or non-fertile woman. Further, the target was depicted to be encountering a threat from a male but at the same time showing a mate poaching behavior towards their partner. Results showed that the positive relationship between target’s fertility and interaction intention was moderated by partner’s competitiveness (Model 1, Hayes, 2013). Specifically, those with a less competitive partner showed lower level of interaction intention towards fertile target than those with a highly competitive partner. A supplementary study was conducted to examine psychological perception towards fertile target under male threat context (N=72). It was found that fertile target was perceived to be riskier than non-fertile target. Findings suggest that women with highly competitive partners show cooperation towards other fertile woman, when the target is under male-threat context.

Poster 9. Dark Triad Personality, Impulsivity and Sexual Coercion: A study of Chilean men

Carmen Gloria Baeza, Ana María Fernandez

The dark triad of personality is composed of Machiavellianism, Narcissism and Psychopathy. These personalities share characteristics of manipulation, deception and interpersonal aggression. However, each personality profile also presents unique characteristics. For example, there are important differences in impulsivity. Specifically, narcissism is associated with functional impulsivity and psychopathy with dysfunctional impulsivity. In addition, research indicates that the dark triad covaries with coercive sexual behavior. However, these investigations have focused on the influence of these traits on sexual coercion in short-term romantic relationships. The objective of this research is to evaluate a path analysis that explains the use of sexual coercion in men with their long-term romantic partners, considering that these behaviors may be mediated by the type of impulsivity they present. We used a sample of 322 men who are currently in a stable romantic relationship and answered the questionnaires SD3, Dickman impulsivity inventory and SCIRS. The proposed model presented an adequate adjustment (CMIN / DF = 2.38, CFI = .98; RMSEA = .06). The results indicate that psychopathy, in conjunction with dysfunctional impulsivity, are the variables that best explain sexual coercion. From an evolutionary perspective, this behaviors would be beneficial in terms of reproductive success, however, is necessary to examine the costs associated with these behaviors.

Poster 10. Submissive now does not mean submissive later: Children's inferences about power

Anam Barakzai, Hannah Kim, Alex Shaw

Research suggests that, from a young age, humans are able to infer dominance and predict fighting outcomes based on a variety of factors (Charafeddine et al., 2014; Gülgöz & Gelman, 2017; Pietraszewski & Shaw, 2015). However, the precise inference that children make when they see one person be dominant over another is currently unclear: do they simply infer that one person is dominant over another person in this situational only, do they infer that one person is dominant generally and the other submissive generally, or do they make a specific inference about the power dynamic between the two individuals? Across five studies (N = 485), we investigate the inferences that children make about others' dominance and submissiveness. To do so, we tell 4- to 10-year-old children about a person who was dominant over another person. We then ask whether they think the dominant person will again be dominant when paired with a novel person and also if the submissive person will again be submissive when paired with a novel person. Across studies, we find that children (and also adults) consistently generalize dominance but not submissiveness: that is they predict that a dominant person will again be dominant over a novel person, but not that a submissive person will again be submissive. We rule out that this is driven by a simple bias to think that winners will keep winning and discuss the implications of these results for research on dominance and power.

Poster 11. 'Green beard' relatedness, not indirect reciprocity, explains why individuals help those who help others

Gilbert Roberts

Indirect reciprocity has attracted great interest as a potential explanation for human sociality, language and moral systems. It is thought to work through 'image scoring', in which those who have helped others are more likely to be helped. However, the fundamental question of why an individual would follow a rule of 'help those who help others' has not been answered. Here I show that helping those who help others in image scoring systems is not indirect reciprocity, but is instead due to 'green beard' relatedness. Drawing on complementary game theoretic analyses, evolutionary simulation and empirical data, I first show why helpers should not take into account a recipient's image score, and hence why image scoring strategies are not adaptive. Secondly, I show that helping can be favoured in image scoring systems without reciprocation, hence image scoring systems are not models of indirect reciprocity. Thirdly, I show that relatedness explains cooperation in image scoring (and 'standing') systems because donors get indirect fitness benefits from helping others that share their strategy. This is because of the unique property of the strategy of helping those who help: by helping others, the strategy helps copies of itself. Thus, despite some recent doubts about the usefulness of Hamilton's rule, image scoring systems are a powerful demonstration of the role of relatedness in driving cooperation.

Poster 12. Jealously in the lab: the effect of a third party investment in the romantic partner

María Teresa Barbato, Ana María Fernández, Carlos Rodríguez-Sickert

An open question in mating is whether jealousy is caused by general distrust on the exclusivity of the partner or whether it is an evolutionary reaction evoked by an interloper that potentially can attract away the partner. We present an ongoing project to experimentally explore the evolutionary design of jealousy with new and method to evaluate sexual differences in jealousy using economic games. We use a game theory protocol in which each member of 50 committed couples participate in two dictator games against an opposite sex third party. In the first dictator game, each member of the couple performs the role of the allocator. In the second dictator game, each member of the couple performs the role of the recipient. The outcome of these games will be informed to the partner (jealousy evoking mechanism). We hypothesize that i) self-reported evoked jealousy will be greater for female subjects when informed about the outcome of the game in which her partner plays the role of the allocator (the game represents a situation in which their male partner invests resources in another female); and conversely, ii) self-reported jealousy will be greater for male subjects when their partner plays the role of the recipient (the game represents a situation in which his female partner receives resources from another male). We discuss the implications of these hypotheses for experimentally modeling romantic jealousy.

Poster 13. Adaptations to risk in different life history strategies: The specific functions of anxiety and worry

Heitor Barcellos Ferreira Fernandes, Claudio Hutz, Leif Edward Ottesen Kennair, Daniel Kruger, A.J. Figueredo, Elin Aamelfot, Regine Bakken, Mateo Peñaherrera Aguirre

Adaptive functions of anxiety and worry are generally discussed with little empirical examination. The general psychological literature suggests that anxiety, an affective experience, is a heuristic process focused on immediate and short-lived risks whereas worry is a cognitive mechanism relying on effortful information-processing to focus on distant or long-term risks; however, an integration with the evolutionary literature is necessary. We hypothesize that slow life history strategy (a cluster of traits involving future orientation, and cautious and long-term investments in continued payoffs) and worry are related whereas fast life histories (involving impulsiveness and investments in short-term rewards) and anxiety are related. Psychometric data from American and Norwegian student and general population samples supported these hypotheses. Several indicators of slower life history directly predicted worry and inversely predicted trait anxiety, even after controlling for the confounding effect of neuroticism. A Sequential Canonical Analysis (an exploratory form of Structural Equation Modelling) indicated that consideration of the future does not mediate the relations among life history, anxiety, and worry, but rather independently explains variance in these traits. Results suggest anxiety and worry are, at least partly, components of distinct strategies that facilitate adaptation to individual socioecological conditions.

Poster 14. Vocal modulation and its relation to mating success

Melissa Barkat-Defradas, Michel Raymond, Alexandre Suire

Human voice conveys diverse biological and psychosocial information through and exploits listeners' perceptual abilities in the context of same-sex competition and mate choice. However, studies investigating the evolutionary benefits of vocal behavior modifications as a function of social contexts, more specifically its correlations to mating success are scarce. In this study, we investigated the way French native speakers of both sexes vocally behave in courtship and competitive interactions using an experimental design based on a simulated dating game. We assessed which acoustic and prosodic parameters best predict mating success. In the courtship context, men exhibiting higher speaking rate and reduced speech duration reported more sexual partners whereas in the competitive context, men exhibiting higher voice pitch with greater intonation patterns and who spoke longer reported less sexual partners. In the courtship context, women with higher voice pitch exhibiting little vocal roughness and breathiness reported less sexual partners whereas for the competitive context, no vocal parameter could predict the number of sexual partners for females. Overall, results show that voice modulation influences speakers' mating success. This study also reveals the existence of a dimorphic vocal behavior when seducing and competing for mates as well as a potential cultural variation since vocal behaviors observed in French do not completely match those previously observed in English.

Poster 15. Physical formidability and participation in political violence: Survey evidence from Belarus, South Africa, and Venezuela

Henrikas Bartusevicius

Research suggests that individual formidability influences decisions about state-level warfare. Physically strong men seem to be supportive of war. So far, this research has focused on a limited set of outcomes, largely, expressed support for international war. Here, I aim to advance this research program by analyzing the effects of formidability on willingness to participate or actual participation in political violence. Since today's warfare within states is much more common than warfare between states, I focus on domestic forms of political violence, such as violent protest or civil conflict. Further, to address external and ecological validity concerns, I analyze individuals from countries that experience (or recently experienced) domestic political violence. Analysis of original survey data from Belarus (N = 387), South Africa (N = 2,170), and Venezuela (N = 1,000) shows that formidability is not significantly associated with self-reported willingness to participate or participation in political violence (more than 100 interviewees reported actual participation in political violence). In addition, the analysis indicates that coalitional formidability (proxied by N of male friends or male relatives) is similarly not associated with the two outcomes. Robust predictors of willingness to participate and actual participation in various forms of domestic political violence include male sex, young age, social dominance orientation, and status-related risk taking.

Poster 16. Electronic helping behavior: Do men help only beautiful women in Social Networks?

Lisa Baßfeld, Sascha Schwarz

Can using a flattering profile picture in Social Networks influence the probability to obtain help from others? Online helping behavior may be explained evolutionarily by sex-specific mating strategies and the costly signaling hypothesis (Buss & Schmitt, 1993; Zahavi, 1977). We predict that men, because they value physical attractiveness in a potential partner (Schwarz & Hassebrauck, 2012) and want to signal their mating quality (Bhagal, Galbraith, & Manktelow, 2016), will be more willing to help a woman with an attractive profile picture. However, physical attractiveness of a female help seeker should not influence females helping behavior. In Study 1, participants (N = 362) received a help request via a Social Network from a female student of high, low or unknown physical attractiveness. Participants' (verbal) helping behavior was assessed directly. Results indicate that females were not affected in their helping behavior by the help seeker's attractiveness. Men, however, answered more often and devoted more energy to their answer to a high physically attractive woman. If they answered, they also answered friendlier to the woman of unknown attractiveness. In Study 2, an independent sample of participants (N = 298) received the same help request as in Study 1. Participant's self-reported intention to help and the evaluation of help seeker was measured. The findings indicate that the results of both studies are most likely interpretable from males' mating psychology.

Poster 17. What makes men and women jealous? Stereotypical beliefs vs evolved adaptations

Mons Bendixen, Leif Edward Ottesen Kennair

A general social psychology approach suggest that gender roles and social structures create sex differences. May own jealousy responses reflect culturally transformed stereotypical beliefs about jealousy responses in men and women? This study examines this assumption and contrasts it to the notion that these sex differences results from evolved adaptations. A Facebook snowballing method was used for sampling. Heterosexuals (n=990) aged between 18 and 30 responded to three infidelity scenarios regarding what aspect of infidelity (emotional or sexual) they believed would make men and women more jealous, and what aspect would make themselves more jealous. We also measured their level of exposure to typical jealousy responses (family, friends, education, and media). Sex differences in own jealousy responses were large ($d = 0.83$). Regardless of respondent sex, beliefs about men's jealousy responses were stereotypical (both sexes believed men were more upset by the sexual aspect of infidelity relative to men's self-reports). Beliefs about women's jealousy responses differed somewhat between sexes, with women holding more stereotypical beliefs about other women's reactions than men did. Stereotypical beliefs for same-sex others were strongly associated with own reactions. Exposure showed no association with stereotypical beliefs about reactions to infidelity. Results are discussed in light of whether jealousy responses are adaptations or culturally transformed.

Poster 18. Fearing violence elicits attractiveness to thinner men in Colombian women

Martha Lucia Borrás Guevara, Carlota Batres, David I. Perrett

Previous studies revealed that women who feel at higher risk of domestic violence, prefer less masculine male faces. Masculinity correlates positively with strength and facial cues to body mass index (BMI), no study so far has examined if there are similar violence effects on preferences for facial cues to BMI. We therefore, examined the effects of individuals' perceptions of violence on preferences for facial correlates of men's BMI. Two studies took place in Colombia, the first one with 161 participants (mean age \pm SD=33.4 \pm 12.9) and the second one with 122 women (mean age \pm SD=34.79 \pm 13.2). Participants were shown pairs of transformed faces that epitomize the shape correlates of high/low BMI, of either European, Salvadoran or Colombian men. Participants were asked to choose the most attractive face. Subsequently, participants answered a survey about their health (e.g., illnesses frequency), media access (e.g., internet use frequency), education level (e.g., graduating from school) and experiences/perceptions of violence (e.g., frequency of being robbed, danger feelings). Results showed that Colombians who experienced/perceived higher danger of violence preferred faces of low BMI Salvadoran men. Preferences for facial cues of low BMI were explained significantly by violence (public and domestic) experience/perceptions, even controlling for all other variables. These results reflect participant's strategy to avoid male partners or competitors capable of inflicting harm.

Poster 19. Psychopathy induces favorable impressions from potential mates: Testing a function hypothesis

Kristopher Brazil, Adelle Forth

A two-part study examined how psychopathic traits (e.g., manipulateness, reduced affect, disinhibition) in males may function to deceptively gain trust and attract mates during naïve interpersonal encounters. Study 1 had male students (N=46) assessed on psychopathic traits and social intelligence (proxy for social navigation ability). Males were video-recorded in two contexts: (1) telling a feigned remorse story (gauging trustworthiness) and (2) on a blind date (gauging attractiveness). As predicted, psychopathy was related to particular facets of social intelligence. In study 2, single and committed female students (N=108) completed personality assessments and rated trustworthiness and attractiveness of males based on the respective study 1 videos. Females also left a short voicemail message for each male they viewed in the dating videos. Psychopathy was related to receiving higher trustworthiness ratings from single females and higher attractiveness ratings across all females. Within females, personality (particularly Emotionality) influenced giving preferentially higher ratings to high but not low psychopathy males. Across females, voice pitch increased to males higher in the core personality factor of psychopathy but decreased to the behavioural factor. Findings support the proposed function and suggest, in males, psychopathy may have been evolutionarily selected to exploit female mate choice, generating favorable impressions from available and/or susceptible females.

Poster 20. Fictional outgroups in a VR environment as trigger for the self-protection system

Michael Brill, Florian Nerz, Frank Schwab

The self-protection system (SPS; Neuberg, Kenrick, & Schaller, 2011) has been proposed as an evolved solution to facilitate adaptive behavioral and emotional responses towards threats. Research suggests the SPS elicits fear responses especially when confronted with angry male outgroup members. From an evolutionary media psychology perspective, the present study investigated if the SPS also elicits fear responses when confronted with fictional outgroup members in a fantasy setting. In line with assumptions of media use as pretense games in an organizing mode, it was also tested if SPS activation led to more game enjoyment as a rewarding experience. In an experiment, participants controlled a human avatar in a customized virtual reality environment and encountered either a human character as an ingroup member (control group), or a mostly identical orc as an outgroup member (experimental group). With skin-conductance responses (SCR) during the encounter and self-reported game enjoyment as dependent variables, data from 66 participants showed that SCRs were significantly stronger in participants who encountered the fictional outgroup; no significant difference was found for enjoyment. Results support the hypothesis that the SPS is activated by fictional outgroups. Future studies can address the study's limitations by making use of now improved VR technology, and by varying group membership to separate the effects of SPS from possible effects of learned genre knowledge.

Poster 21. Empathy and intolerance for people with disabilities: gender and personal differences among Russian students

Valentina Burkova, Marina Butovskaya, Yulia Fedenok

In this paper we present the results of a study on empathy and intolerance in relation to people with disabilities among Russian students. We investigated gender and personal differences in the relationship between the level of aggressive behavior, empathy and anxiety (as an indicator of stress). The sample consisted of 390 students - 195 of young men (17 to 22 years old, average age 20 years) and 195 of young women (17 to 21 years old, average age 20 years). We used a psychological questionnaires and experimental design with the presentation of stimulating photographs. At the first stage, all respondents filled in a personal questionnaire of the self-ratings on aggressive behavior by Bass & Perry, questionnaire of empathic abilities developed by Boyko, and the Spielberg-Khanin questionnaire for determining the level of anxiety. On the next step, we showed a stimulus material - a set of pictures with disabled people. After photo session, we asked respondents to fill in questionnaires on empathy and anxiety again. The results of the study show that the effect of stimulant photos stimulated the arousal of the level of anxiety and empathy in students. The study was supported by Russian Science Foundation (project No. 18-18-00075).

Poster 22. Do aggressive males have more children in traditional pastoral society: the Maasai of Tanzania

Marina Butovskaya, Dmitriy Karelin, Audax Mabulla

The goal of this study was to test the possible association between the physical aggression and reproductive success in men. For this purposes we study the sample of 170 men (age range from 18 to 80) from the traditional seminomadic population of Maasai, located in Ngorongoro Conservation Area. Data were collected in Endulen, NCA, Tanzania in 2016-2017. The following information were collected: age, number of wives, number of children, number of cow owned, self-ratings on physical aggression (Buss-Perry Aggression Questionnaire), number of fights during the last year, right hand 2D:4D ratio. Data were analyzed in SPSS-23. It was found that, while controlling for age, the number of children in men were significantly correlated with the number of their wives ($R=0,662$, $p=0,0001$), number of cows they owned ($R=0,188$, $p=0,013$), and physical aggression ($R=0,154$, $p=0,044$). It was also found that physical aggression was positively correlated with the number of fights ($R=0,168$, $p=0,028$), and negatively with the right hand digit ratio ($R=-0,169$, $p=0,027$). No correlation between the number of cows and physical aggression in men was found. We conclude that the number of children in men in traditional Maasai pastoral society depends both on economic and personality factors. The latter may be, at least partly, connected to prenatal androgenization. Supported by RFBR, grant 16-06-00223?.

Poster 23. The impact of sound teeth and a fresh breath on interpersonal relationships

Yvonne Buunk-Werkhoven, Abraham Buunk

Oral health has an important effect upon attractiveness. For example, crooked teeth, missing one frontal tooth and a bad breath reduce the attractiveness of an individual as well as perceived trustworthiness and intelligence. Unhealthy teeth may signal bad mutations, and a poor overall health. Remarkably, in research on physical attractiveness, little attention has been paid to the role of teeth and breath, although there seems an evolved tendency to pay attention to the quality of someone's teeth when evaluating potential partners. We examined sex differences in the fear of social rejection because of one's poor oral health and the tendency to reject potential intimate partners based on their oral health (i.e., bad breath and ugly teeth), and related this to intrasexual competitiveness. Results from a cross-sectional study in a representative sample of 1462 Dutch respondents of 18 years and older, showed that, overall, a bad breath and ugly teeth were, after a bad body odor, the most important reasons to reject a potential partner. Women expressed more than men a fear of social rejection because one's poor oral health and a stronger tendency to reject potential partners based on their poor oral health. Both variables were among both genders associated with intrasexual competitiveness. These findings confirm the negative effects that poor oral health may have on the impression individuals make on others, especially on their attractiveness to the opposite sex.

Poster 24. Multidimensionality of food neophobia: Variation across meats and plants

Çağla Çınar, Joshua M. Tybur, Annika K. Karinen

People vary in their willingness to try new foods. This variation, which is most frequently measured using the Food Neophobia Scale (FNS: Pliner & Hobden, 1992), is thought to be unidimensional. Here, we test whether food neophobia is indeed unidimensional, and we explore sources of variation across two potential dimensions of food neophobia: that toward meat and that toward plants. To test whether food neophobia can be divided into meat versus plant dimensions, we asked 210 participants on Amazon MTurk to rate their willingness to eat 35 exotic meat and 35 exotic plant products. Additionally, participants completed the FNS and a measure of pathogen disgust. Results indicated distinct meat and plant neophobia factors. Overall, meat (vs. plant) neophobia was greater among participants. Although plant neophobia was similar for men and women, women had greater meat neophobia than men. In Study 2, we replicated the multidimensional nature of food neophobia with 306 Amazon MTurk participants and tested whether disgust sensitivity, gender roles, empathy towards animals, and overall liking of meats explain the variation in meat neophobia. Results supported the gender role and disgust sensitivity accounts, but not the animal empathy and meat liking accounts. Overall, our studies suggest that food neophobia is a multidimensional construct, and open up fruitful study areas for the future.

Poster 25. No evidence that facial attractiveness, femininity, averageness, or coloration are valid health cues in young adult women

Ziyi Cai, Amanda Hahn, Weiqing Zhang, Iris Holzleitner, Anthony Lee, Lisa DeBruine, Benendict Jones

Previous reports that women with attractive faces are healthier have been widely cited as evidence that sexual selection has shaped human mate preferences. However, evidence for correlations between women's physical health and facial attractiveness is equivocal. Moreover, positive results on this issue have generally come from studies of self-reported health in small samples. The current study took standardized face photographs of women who completed three different health questionnaires (Ns=582, 583, 572). Of these women, 221 also provided a saliva sample that was assayed for immunoglobulin A (a marker of immune function). Analyses showed no significant correlations between rated facial attractiveness and either scores on any of the health questionnaires or salivary immunoglobulin A. Furthermore there was no compelling evidence that objective measures of sexual dimorphism of face shape, averageness of face shape, or facial coloration were correlated with health. These null results do not support the prominent and influential assumption that women's facial attractiveness is a health cue, at least in young adult women.

Poster 26. Kinship, Mateship and Facial Similarity

Rachel Cassar, Iris Holzleitner, Lisa DeBruine

Studies exploring sexual imprinting suggest that humans learn a mental model of their opposite-sex parent's phenotype for use as a mate choice template. The proposed study will contribute to this body of research by exploring whether similarity in pairs of adults predicts whether they are perceived as siblings or couples. Using images of 139 couples collected by the lab, we will ask online participants to provide judgements on one of: (i) kinship – whether the pairs are siblings or not; (ii) mateship - whether the pairs are couples or not, or (iii) similarity – rated on a scale of 0-10. A linear mixed effects model will be employed to analyse the relationship between similarity ratings and the judgements for kinship and mateship. We expect to find that perceptions of similarity will be strongly predicted by judgements of kinship and mateship. The study will provide insight to the relationship between subjective views of similarity and separate judgements of kinship and mateship on pairs of faces. It will also provide pilot parameters for future research.

Poster 27. Human Violence and Hierarchies: the theory of inequality in the access to Wealth and Sexuality

Radoje Cerovi

While Steven Pinker explains the overall decline in levels of social violence as a mostly due to cultural and cognitive phenomena, I propose an alternative explanation entirely based on Evolutionary Psychology. If violence among primates is mostly a matter of ranking and hierarchies there is no reason to dismiss the idea that such mechanisms are present in case of humans. I discuss in detail the evidence showing the graphs of internal wealth inequality (internal Gini Coefficient) and social violence (crime rates, homicide and rape rates) being largely correlated. Similar hypotheses (with fewer data available) can be advanced for Sexuality. Unequal access to sexuality (typical of patriarchal and hierarchical societies) might act as an independent factor fostering social violence. I propose an explanation based on Behavioral Epigenetics - levels of aggressive behavior being regulated according to ecological conditions (access to wealth/food and sex/procreation). This regulating mechanism might drive individuals/societies to span between two different extremes: chimp-like (aggressive, patriarchal, hierarchical) and bonobo-like (egalitarian or matriarchal, peaceful, hyper-sexual) type of behavior/social order. Evidence supporting such claims can be retrieved for both human and non-human primates (R. Sapolsky). In summary human hierarchical behavior might be among the most underestimated aspects in modern psychology.

Poster 28. How One Copes Under Uncertainty Depends on Childhood Experiences: A Life History Theory Approach

Young-Jae Cha

Why do some people persist in solving a problem with active coping, while others disengage from it? By explaining how early environmental threats shape an individual's sense of control, which is known as the determinant of the use of coping strategies, the evolutionary framework of life history strategy predicts that childhood SES should influence preferences for a particular type of coping strategy. Using MTurk, two experiments (total N = 248) revealed that the individuals' sense of control under threats mediates strategic differences in coping. Individuals with wealthier childhoods who perceive that they can control threats were more likely to use an active coping strategy. Conversely, individuals with poorer childhoods who perceive that they cannot manage threats were more prone to use a disengaging strategy. This divergence only emerged under conditions of economic uncertainty. Implications of life history strategies were discussed regarding the multi dimensionality of coping strategies and the functional flexibility principle.

Poster 29. Exploring humans' perception of randomness with two spatial distribution statistics

Noah Chicoine, Andreas Wilke

Previous research has shown that humans often perceive systematic patterns in statistically random data sets. Typically, past studies have assessed humans' ability to accurately perceive randomness in 1-dimensional and 2-dimensional data sets by computing alternation probabilities. Though this technique provides insight into the relation between subjective human-perceived patterns and objective statistical environmental distributions, the probability of alternation is only applicable in rectangular spatial arrangements with an equal number of presences and absences of resource items. Accounting for more realistic natural spatial distributions, recent studies have adopted the Joint Count statistic as a better method to evaluate spatial randomness. The goal of this study was to examine how the probability of alternation relates to the Joint Count statistic when comparing various grids sizes with different base rates. Analysis of the 10x10 grid method shows that the observed probability of alternation can predict the Joint Count statistics of binary grids. This predictive capability could be used in a model in order to predict the probability of alternation of any rectangular grid, even those with unequal base rates. This would allow for more non-restrictive studies of humans' perception of randomness in real world environments. The model could also be used to estimate the probability of alternation of geometrically imperfect areas with more connections than a binary grid.

Poster 30. Genetic and Environmental Contributions to Age at Menarche: Interactive Effects of Father Absence and the LIN28B Gene

Hyun-Jin Cho, Gabriel Schlomer

Substantial research and theory over a number of years have linked father absence to earlier age at menarche (AAM). More recent work has centered on explaining the relative genetic and environmental contributions to this correlation. The purpose of the current study was to evaluate the combined effects of father absence and variation in the LIN28B gene on AAM. A sample of 300 women (age 18-25) successfully genotyped for two LIN28B single nucleotide polymorphisms (SNPs; rs364663 and rs314273) were used to test gene-environment interaction models. Results for both SNPs were consistent with the hypothesis that father absence would attenuate later AAM associated with LIN28B. Genetic index analysis of combined LIN28B SNPs showed that girls with at least one copy of the T/T genotype had later AAM if they were father present. Study strengths and the implications of GxE research for life history models are discussed.

Poster 31. Characterizing symptoms of psychopathology on fast and slow Life History dimensions

Kristine Joy Chua, Joseph H. Manson, Molly Fox, Aaron Lukaszewski

Psychometric approaches to life history strategy (LHS) variation have explained and predicted human personality variation. However, psychopathology has received less attention in an LH framework, and specific syndromes have generally been dichotomized as either “fast” or “slow.” In contrast, recent theoretical work has argued that some clinical labels obscure distinctions between fast- and slow-derived behavioral strategies. This work raises the question of how motivational and situational variables interact to generate psychopathology-linked behavior. A hitherto independent line of research has explored the structure of situation variation. The present study uses LH theory in conjunction with 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. For example, although high adversity situations should elicit state anxiety in people generally, it will take the form of hypervigilance in fast strategists but excessive caution in slow strategists. A sample of 385 U.S. undergraduates provided self-report data on a variety of personality, LH, and psychopathological constructs. Results support that situational affordances and constraints play an important role in revealing LHS-linked normal and pathological personality variation.

Poster 32. Less Attractive Individuals Choose More Flattering Online Dating Profiles but Do Not Exhibit Greater Choosiness

Samantha Cohen, Peter Todd

Attractiveness is one of the most sought after attributes in a mate and allows individuals to be more choosy. However, in the modern dating world, attractiveness can be easily obscured. Unattractive individuals may make efforts to make themselves appear more attractive to enjoy greater choosiness (e.g. Hancock & Toma, 2010). We tested whether less attractive individuals choose photos that make them appear more attractive and how this choice impacted their mate choosiness. 40 undergraduate users of a popular, swipe-based dating application were evaluated on attractiveness and choosiness. We compared the attractiveness of a user’s chosen profile photo to their standardized neutral headshot taken in the lab. To measure choosiness, 32 of 40 participants swiped on a stream of real profiles within the app and we calculated the proportion of profiles “disliked.” We replicated Hancock & Toma’s (2010) finding that the less attractive one’s neutral photo, the larger the change in attractiveness between conditions (Pearson’s R , $r=-0.46$, $p=0.003$, $n=40$). However, counter to expectations, there was no significant correlation between this gap in attractiveness and choosiness (Pearson’s R , $r=-0.05$, $p=0.79$). Interestingly, there was no relationship between attractiveness and choosiness (Pearson’s R , $r=0.25$, $p=0.17$), suggesting the online dating environment impacts mate choice behavior and the generalizability of results to those found in to face-to-face settings.

Poster 33. Patterns of weather-forecast use are consistent with evolutionary explanations of sex differences

Graduates of the Project Practicum Human Behavior, Sonja Windhager, Katrin Schaefer

In 2009, a survey reported that U.S. adults obtain forecasts about three times a day. Five years later, mobile app stores offered more than 5000 weather apps. Placing weather-forecast use in an evolutionary psychology perspective on sex differences, we predict to find reminiscents of the hominoid sexual dimorphism in home range size and risk aversion/risk taking, that are rooted in differential parental investment. Our sample consisted of 690 German-speaking participants, split into three age groups (18–30, 31–50, 51–65 years), who were approached in public places in Austria and completed a questionnaire on intensity, reasons, and behavioral adaptations as a consequence of their weather forecast use. There were no age differences for the main scales. Overall, men and women did not differ in the intensity of use, but in quality. Men were significantly more interested in large-scale weather patterns and satellite images than women ($U=51457$, $p=.012$), whereas women focused more on local ($U=53094$, $p=.025$) and short-term forecasts ($U=51473$, $p=.040$). Furthermore, female participants reported more frequent behavioral adaptations (clothing, umbrella) in the face of bad weather ($U=43046$, $p<.001$). These results match neatly what is predicted for evolutionarily adapted minds. Weather information is important to both sexes, but for different purposes. Women are more locally and timely concerned with the weather and more likely to adjust behavior in favor of self (and child-) protection.

Poster 34. Domains of Sexual Disgust

Courtney Crosby, David Buss

Sexual disgust is an important emotion hypothesized to deter individuals from engaging in sexual activities that are probabilistically detrimental to components of fitness. Prior measures of sexual disgust are limited because they fail to sample adequately from the conceptual space covered by sexual disgust and treat sexual disgust as a unitary construct. Two studies were conducted to correct these limitations. In Study 1, women and men ($N=204$) nominated over 2,300 unique items that they considered sexually disgusting within a variety of different contexts. Examples of nominations include sexual pleasure through use of human feces, incest, and other non-normative sexual behaviors. Study 2 ($N=200$) identified the factor structure of the 50 most frequently nominated items and individual differences in sexual disgust proclivity. Discussion focuses on the Sexual Disgust Inventory: a new, comprehensive scale for assessing the multidimensionality of sexual disgust.

Poster 35. Sex, demographics, 'n' mate value. Psychometric characteristics and demographic correlates of the Mate Value Scale

Zsófia Csajbók, Jan Havlíček, Zsolt Demetrovics, Mihály Berkics

The concept of mate value involves laypeople's understanding of how much they are 'worth' as potential romantic partners. Although it is a useful concept, there is no agreement in how to measure it. Moreover, there is much theorizing but not so much data about its relationship with demographic variables. Study 1 tested the convergent and discriminant validity of the Mate Value Scale (MVS; Edlund & Sagarin, 2014) against loneliness, sociosexual orientation, self-esteem, and life satisfaction, with confirmatory factor analysis on a heterosexual sample (N = 1,131). Study 2 tested mate value across age, gender, sexual orientation, relationship status and satisfaction, level of education, and socioeconomic status in a large sample (N = 21,288). The MVS was found to be a reliable and valid instrument (Study 1). Contrary to theoretical expectations and previous findings with smaller samples, demographic differences, while significant because of the large sample size, were very small (sexual orientation, age, education) or small (sex, socio-economic status, relationship status) in terms of effect size (Study 2). Further investigation is needed using different approach, and exploring the underlying processes of the evaluation of mate value.

Poster 36. Political Fears: How the fundamental motives of disease avoidance and self protection affect conservative views of out-groups

Laura Dane, Douglas College Navdeep, Khabra

Fundamental motives framework suggests that we have developed motivational systems for solving evolutionary relevant social challenges (Kenrick et al., 2010). Our experiment focused on how disease avoidance and self-protection motives interact with political views. Participants completed individual difference measures and were exposed to photographs in either: control, disease or safety threat conditions. They then completed social distancing scales and reported feelings toward: gay men, gang members, immigrants and environmentalists. Men reported wanting more social distance and feeling less positive toward gay men after control and safety primes than women. In all 3 experimental conditions conservative views were negatively correlated with positive attitudes toward all groups except gangs. Attitudes were most positive toward gay men and least positive toward immigrants and gangs. Controlling for age, sex, ethnicity, disease avoidance and self protection motives, there was no effect of political views on attitudes toward any group in the control prime, but after disease and safety threat primes conservatives reported more negative attitudes toward gay men. Conservative participants in the safety threat condition reported more negative attitudes toward environmentalists and immigrants but not gangs (due to a floor effect). Attitudes toward out-groups (particularly threatening ones) may be influenced both by individual differences and contextual primes of fundamental motives.

Poster 37. Measuring the effectiveness of benefit-provisioning and cost-inflicting mate retention tactics in married couples

Tara DeLecce, Glenn Weisfeld, Carol Weisfeld, Julliang Shen

Mate retention has received much less research attention compared to mate choice and attraction. Even the research that has been done on mate retention often only aims to identify what constitutes as mate retention tactics. In the current study, the effectiveness of mate retention tactics is explored by measuring relationship outcomes of tactics unlike previous research that measures effectiveness through perceptions of relationship satisfaction. Specifically, the cost-inflicting/benefit-provisioning mate retention framework (Miner, et al., 2009) was applied to predict a period of separation in married couples from America, China, and Britain. Results were generally consistent with this theoretical framework, moderation by spousal sex was revealed such that cost-inflicting tactics were more strongly linked to separation when performed by husbands, and male mate value was negatively associated with the use of cost-inflicting tactics. Discussion integrates these findings across cultures. Limitations and future directions are also addressed.

Poster 38. Childhood adversity and abuse: An overlooked moderator of ovulatory cycle shifts for “good genes” preferences?

Tran Dinh, Steven Gangestad

In an ancestral world without modern contraception, how did women regulate their fertility? We argue that fertility is regulated in part by context-dependent changes in sexual motivation during the conceptive phase of the menstrual cycle. Accordingly, we predict that ovulatory changes in sexual motivation vary as a function of women's exposure to childhood adversity. Previously, we tested this prediction on an mTurk sample of 1,004 normally ovulating, pair-bonded women. Women from high relative to low childhood adversity backgrounds displayed higher estrus-phase sexual motivation towards their partner, particularly at early stages of their relationship (Dinh et al., 2017). We extend this finding in a sample of 238 normally ovulating university women. Women who experienced childhood abuse had heightened midcycle sexual preferences for men exhibiting intrasexually competitive traits. By contrast, women who did not experience childhood abuse showed no cycle shifts in preferences. Findings provide evidence that women possess evolved psychological mechanisms that are calibrated by childhood environments to regulate their reproductive strategies.

Poster 39. Adaptive Benefits of Limited Working Memory Capacity in Dynamic Environments.

Mahi Luthra, Peter Todd

Humans (and other animals) are often faced with situations where the best course of action is uncertain, and choosing a future course should be based on previous outcomes (e.g., when selecting among food patches). However, given our limited working memory (WM) capacity, our ability to access memories of previous outcomes to make accurately calculated predictions is strongly constrained. The current research tests the idea that such a constraint can actually confer an adaptive benefit as it forces us to prioritize a smaller, but more recent sample of information, which is more representative of the current state of the dynamic world. For instance, when assessing a time-varying food patch, a limited WM capacity prioritizes recent harvest levels, which are more predictive of the current output than older ones. This hypothesis will be tested in a foraging task where participants are asked to forage from a small set of trees across multiple trials. The trees are available one at a time and participants cannot return to a previous tree once they have left it. Outputs from all trees are stochastic and decline across the “harvest season”, and participants must decide when to leave the tree to maximize their reward. To test the influence of WM capacity, tree-leaving decisions are compared across three conditions—high, low, and no WM load. We hypothesize that as WM load increases, participants will rely on smaller and more recent output, making them more responsive to recent changes.

Poster 40. Getting in touch – Social status predicts physical interaction in classrooms

Stephanie Josephine Eder, Elisabeth Oberzaucher

Social interactions and hierarchical structures in classrooms are studied by a number of scientific disciplines, yet the complexity of such systems makes them hard to investigate. In this study we investigate the relations between social status and bodily interaction. We developed a novel approach to assess social status in grammar school students: Classmates assessed their peers in intellectual, social and physical domains. Additionally, we measured the amount and nature of physical interactions among classmates during breaks in the classroom. These interactions were tracked with the help of older, trained and regularly supervised students from the same school. This peer-to-peer method generated large amounts of data over a period of two months, during which 168 students were observed repeatedly. Results show touching behaviour is modulated by social status and sex: Interactions with the opposite sex correlate significantly with social status. Same sex touching of private areas such as breasts, lap and buttocks occur more frequently among same-status girls and between boys differing in status. Extremely high and low ranked individuals are the only ones to touch private areas of the opposite sex. This study helps to understand formative interactions within classrooms and give rise to new questions on the establishment and maintenance on hierarchies in peer groups.

Poster 41. Ethnicity, folk-theories, and psychological essentialism among Wichí communities of Northern Argentina

Alejandro Erut

This work explores the cognitive bases of ethnic ascriptions in the cultural context of Wichí communities of Northern Argentina. In Study 1 evidence to support the folk-sociology hypothesis is presented and contrasted with folk-biological alternatives. The results suggest that subjects from Wichí communities do not use biological information, and do not make ontological commitments based on it when ascribing ethnic identity. Study 2 presents evidence that addresses psychological essentialism as a collection of heuristics that are suitable for being instantiated independently for different cognitive domains. In this sense, the proposal advocates for a disaggregation of the heuristics associated with psychological essentialism, and for the implementation of an approach that explores each heuristic separately as a consequence of the cultural, ecological, and - perhaps - historical context of instantiation. The results of Study 2 suggest that a minimal trace of essentialism underlies the Wichí ethnic conceptual structure. However, this trace is not related to heuristics that receive biological information as an input; on the contrary, it seems that the ascription of ethnic identity relates to the process of socialization. In both cases -- Study 1 and Study 2 -- subjects were presented with variants of an Adoption Task vignette (12 vignettes and a questionnaire grouped in six sets (N = 18-25, depending on the set)).

Poster 42. Incongruent autobiographical information about individuals' trustworthiness affects their recognition: Empirical investigation of an adaptive memory for social exchanges

Daniel Farrelly, Fatima Felisberti

Our ability to detect (and remember) cheats in social exchanges is well-established, but an alternative view is that rarer or unusual events are more memorable, such as when an individual's behavior in such exchanges (e.g. trustworthiness) is incongruent. Research presented here examined the latter to see how the congruency of autobiographical information about individuals' perceived trustworthiness affected their later recognition. Across two experiments with university students (N=384), participants were presented with the faces of individuals described as having either a high or low trustworthy occupation, and behaving in either a high or low trustworthy manner. Participants were then asked to identify the faces of these individuals, and results show that in some conditions, recognition accuracy was higher for faces tagged with incongruent rather than congruent trustworthiness. Furthermore these experiments included control conditions with autobiographical information that would be of less importance to social exchanges (in this case, intelligence) instead of trustworthiness, and no effects of congruence were found. This suggests that the effect of incongruence on recognition here is an adaptive cognitive mechanism specifically for facilitating social interactions in humans. The research is presented here in terms of existing literature and also their application to real world social exchanges, such as handwashing behavior in healthcare settings.

Poster 43. Birth order does not affect ability to detect kin

Vanessa Fasolt, Iris J. Holzeitner, Kieran J. O'Shea, Anthony J. Lee, Benedict C. Jones, Lisa M. DeBruine

Some evidence shows that birth order affects kinship detection ability. Kaminski et al. (2010) argue that firstborns use facial cues combined with contextual cues e.g. perinatal association to assess kinship in their own family, leading to a disadvantage in assessing kinship from facial cues only in strangers. In contrast, laterborns do not have the contextual cue of perinatal association hence rely more on facial cues, leading to an advantage in detecting kin from facial cues only. We replicated this study with raters looking at child siblings rather than parent-neonate sets. 112 raters viewed 132 pairs of photographs of children (age 3-17), and indicated whether each pair was related or unrelated. Half of the pairs were sibling pairs and half were unrelated child pairs that were age- and gender- matched to a related pair. No image was shown more than once, related pairs were not related to any other image in the study, and individuals from unrelated pairs were not related to any other image. We used binomial logistic mixed effects modelling to predict kinship judgments from relatedness and birth order (with image pair & rater as random factors). Relatedness was the main factor driving kinship judgments; related child-pairs were more than twice as likely as unrelated pairs to be judged as kin. Kinship judgment accuracy was unaffected by rater birth order. These findings indicate that laterborns do not have an advantage in detecting child sibling pairs. <https://osf.io/ifds5/>

Poster 44. Are non-verbal facial cues of altruism cross-culturally readable?

Charlotte Faurie, Noriko Yamagata-Nakashima, Arnaud Tognetti, Ryo Oda

Although both dynamic (i.e., facial expressions) and static facial traits are used as cues of altruism, only static facial traits have been shown to be cross-culturally readable with respect to altruism detection skills. To investigate whether dynamic facial cues of altruism are also cross-cultural, we asked French subjects to estimate the altruism of Japanese individuals on the basis of silent video clips. These video clips were taken from a previous experiment, which found that Japanese raters were able to accurately estimate the altruism of a videotaped Japanese individual. By using the same design and stimuli in France, we found that French raters were unable to assess the altruism of a Japanese individual. Hence, our results suggest that dynamic facial cues of altruistic intent are culturally specific rather than universally readable.

Poster 45. Dishonest Behavior in Brazilian Context

Claudia Feitosa-Santana, Tiago Bortolini, Juliane Kristine De Lima, Lucas Alves Lima, Geovanni Vitor Oliveira-Santos, Jorge Moll, Edson Amaro Junior

The objective of this study was to evaluate behavior related to dishonesty in a Brazilian sample. We used same approach from Mazar et al. (2008) adapted to local context in a 3 x 3 between-subjects factorial design (possibility to cheat vs. payment levels). Possibility to cheat factors levels: self-report performance (recycle), self-report with post-test evaluation but no participants' awareness (shredder), and no possibility to cheat (control). Payment levels: \$0.50 and \$2 monetary units (Brazilian reais) per matrix solved, and no monetary incentive. We observed a significant interaction between possibility to cheat and monetary incentive. Participants exhibit more dishonest behavior with lower monetary incentive (\$0.50) and even more when there was no momentary incentive, and especially when having possibility to cheat (recycle vs. control) but not in the shredder condition. Interestingly, there was no difference with higher monetary incentive (\$2) across conditions. Our results reproduced to a certain extent the original study: maybe people are less careful the lower is the monetary incentive. However, Brazilians are maybe more distrustful (shredder condition) and more careful with higher incentive (\$2). Moreover, the dishonest behavior found in this sample is similar to the original study, and even less dishonest with higher monetary incentive, a result that points against the Brazilian self common sense.

Poster 46. Barriers to Applied Evolution Research

William Felton, Kate Ringer, Eve Buck, Romana Hyde, Kirsie Lundholm, Oscar Salinas, Russell Jackson

Falling has ostensibly killed more humans over evolutionary history than any other accidental source. This health risk continues to account for a major portion of all accidental injuries and fatalities in our species, yet prevention efforts have not decreased its incidence for several decades. Interestingly, falling prevention and safety science has not utilized evolutionary theory, despite the availability of evolutionary theories that explicitly address falling and other navigational risks. We tested predictions from Evolved Navigation Theory in two experiments on human behavior in a common falling scenario. Our data suggest that modern human visual perception unconsciously reflects falling risks that were present in the environments in which humans evolved. Further, these data identify that the most common modern falling prevention measures (barriers) are subject to dramatic evolved illusions that no previous safety measure or research has addressed. This study establishes a radically different approach to safety science by addressing the selective forces that have shaped human cognition and navigational behavior.

Poster 47. Relationship jealousy in women using various hormonal contraceptives

Hannah Fergusson, Benjamin Skillman, Julia Kandus, Amanda Hahn

Previous research has suggested that the use of hormonal contraception affects women's feelings of relationship jealousy (i.e., the extent to which women would become jealous at the thought or observation of their partner interacting with another woman). Initiation of combined oral contraceptive use, in partnered women, has been linked to an increase in reported feelings of relationship jealousy, especially among women using a high-estrogen dose pill formulation. While the combined oral contraceptive pill is one of the most widely used forms of hormonal contraception, many health care professionals now encourage young women to use long lasting, progesterone-only contraceptive methods. The current study compares reported relationship jealousy in women using combined oral contraceptives and women using long lasting, progesterone-only contraceptives using Buunk's (1997) relationship jealousy scale. Results indicate no differences in overall reported relationship jealousy, or any of the individual components of relationship jealousy, in women using combined oral contraceptives compared to women using long lasting, progesterone-only methods.

Poster 48. Mating appeal of the Sex and the City characters in a Spanish sample

Ana Maria Fernandez, Cristina Acedo-Carmona, Ania Grant, Maryanne Fisher, Oriana Figueroa, Patricia MacEachern-Fee

From an evolutionary perspective, the popularity and appeal of some fictional characters seem to rest in the evolved design of human psychology underlying the temporal mating focus and emotional availability of these characters. Using the television series Sex and the City, we investigate how men and women comprehend and relate to the range of mating strategies depicted by the four main characters. We provided short descriptions of each character and asked participants about their preferences for interaction with the characters in different hypothetical contexts (long or short-term mating, partying, and introducing her to their parents, for example). Based on a previous study with a small Canadian sample, we confirm sex similarities and differences in the assessment of each of the four characters by a sample of 795 Spanish students (approximately 30% men). Male and female participants' categorization of these fictional characters reflects sexual motivations previously discussed in literature on human mating. Men and women prefer the more committed and emotionally interested characters (Carrie and Charlotte) in the context of long-term mating and parenting, while in the context of short-term mating the more emotionally uninterested characters (Samantha and Miranda) are chosen by both sexes. An interesting finding is discussed, with women considering the more emotionally uninterested character (Miranda) as the second best option for a mother after Carrie.

Poster 49. I am violent because I don't feel sexy

Ana Maria Fernandez, Jose Muñoz-Reyes, Oriana Figueroa, Paula Pavez, Maryanne Fisher

According to the mating literature, people who are attractive enjoy high status among their peers, and are often selected and pursued by the opposite sex as romantic partners. High mate value is characterized by increased delivery of benefits, in comparison to low mate value. The struggle of unattractive individuals is different, and it has been documented that low mate value tends to underlie the delivery of costs and more conflict within reproductive relationships. We evaluated the mate value of 132 heterosexual couples, and compared the sample according to a clinical as well as a paper and pencil assessment of partner violence. The results are consistent with the literature, showing that violent individuals of both sexes are the ones that report significantly lower levels of mate value, and other undesirable traits. We discuss that high mate value brings about more benefit delivery than relationship costs, while the reverse is true of low mate value.

Poster 50. Religion, Wealth and Inequality in the USA

Kathryn Ford, Michael Price, Jacques Launay, Tara Marshall

It has been observed that more economically developed countries have comparatively lower levels of religiosity than less economically developed countries, however, nations with low economic output also tend to have high levels of economic inequality, making it unclear as to whether it is deprivation or inequality that drives increases in rates of religiosity, and who drives the relationship. The USA offers an interesting opportunity to investigate the relationship between the economy and religion, due to being one of the richest nations, yet also one of the most unequal western nations. Using data from two waves of the Pew Religious Landscape Survey, and data from the American Census website, a hierarchical linear model was used to investigate the relationship between religiosity, wealth, and inequality at both the individual and state level. It was found that while simple correlations indicated that personal wealth had a negative relationship with religiosity, once state variability was controlled for using the hierarchical linear model, personal income had a positive relationship with religiosity.

Poster 51. A strange situation: Introducing the concept of “adaptation asynchrony” using disorganised attachment to describe adaptations unfolding under conditions of environmental mismatch

Paz Fortier, Kristopher Brazil, Louis Schmidt

Evolutionary lag blurs the concepts of adaptation and disorder. Mismatch between characteristics of the species-typical environments of the Pleistocene and the modern world mean that developmental outcomes may deviate from their naturally selected phenotype. The characterisation of such outcomes, and where they fall among the concepts of adaptation and disorder, is debated. Amid such debate, this work proposes the consideration of a nuanced concept, that of adaptation asynchrony. Adaptation asynchrony refers to an adaptation (e.g., traits, strategies, etc.) that is properly genetically coded yet is unfolding under conditions notably different from the species-typical environment. The resulting phenotype appears disorganised or disordered, yet genetically, represents an inherently organised adaptation. How do these environmentally mismatched outcomes compare to phenotypes representing traditional adaptation and disorder? Here the concept of adaptation asynchrony is illustrated and discussed, using the example of disorganised attachment. Topics to be discussed include the relation between adaptation, disorder, and adaptation asynchrony, the nature of this concept as dimensional or categorical, and the implications of using this concept to describe clinical phenomena. In a time ripe with conspicuous cases of evolutionary lag, adaptation asynchrony may serve as a useful concept, clarifying the nature of evolutionarily ancient adaptations unfolding in a modern world.

Poster 52. Using Interleukin-6 to Predict Life History Variation

Michael Frederick, Ingrid Tulloch

Life history theory suggests stress and uncertainty during development can lead an individual to pursue more short-term reproductive strategies, and to allocate fewer resources towards somatic maintenance and long-term planning. Those who experience less stress and uncertainty tend to be healthier and higher in K-factor, which reflects a slower life history strategy. While an individual's current life history strategy can be assessed using questionnaires, measuring developmental stress is more challenging. Past research has often relied on birth weight, socioeconomic status (SES), and self-reports. Our aim was to assess developmental stress in an adult sample by measuring serum concentration of the protein interleukin-6 (IL-6), while controlling for age and body mass index. IL-6 is released during stress, and elevated serum levels correlate with early life stressors and subsequent aging-related decline in cognition and health. Other stress measures included self-reported childhood SES and exposure to trauma. Participants also completed surveys measuring K-factor, mating and parenting effort, sensation seeking, impulsivity, sociosexuality, social trust, and political orientation. Based on life history theory and previous research, we hypothesize that those with greater relative concentrations of IL-6 will display lower levels of K-factor, social trust, and parenting effort, and higher levels of mating effort, sensation seeking, impulsivity, sociosexuality, and conservatism.

Poster 53. International Comparisons of Behavioral Immune System among Japan, Malaysia, and the Philippines

Yasuyuki Fukukawa, Kai Hiraishi, Ryo Oda, Tan-Soon Aun, Sarvarubini Nainee, Maria-Guadalupe Salanga, John-Jamir-Benzon Aruta

The purpose of this study was to examine the functions of Behavioral Immune System of human beings, by comparing its tendencies among the three Asian countries (Japan, Malaysia, and the Philippines). A total of 1,142 university students completed the paper-and-pencil questionnaires including the Perceived Vulnerability to Disease Scale (PVD-S: Duncan et al., 2009) and the Death Anxiety Scale (Templer, 1970). Analyses were conducted on the data for 1,055 valid respondents. Compared to Japan which is mostly in the temperate climate zone, the tropical countries (Malaysia and the Philippines) indicated higher sub-scores of the PVD-S (Germ Aversion: Emotional discomfort in contexts that connote a high potential for pathogen transmission). Females were also found to report a higher Germ Aversion tendency, compared to their male counterparts. The other PVD-S sub-score (Perceived Infectability: Beliefs about one's own susceptibility to infectious diseases) indicated no such regional and sex differences. Furthermore, death anxiety was highly related to Germ Aversion, while its relationship with Perceived Infectability was weak in magnitude. Poor current health status was strongly linked to Perceived Infectability, instead. The implication of this study was that Germ Aversion, rather than Perceived Infectability, reflects the evolutionary process of adaptation that provides proactive defense against disease-causing pathogens.

Poster 54. Digit ratios, masculinization markers and conspicuous spend in a Colombian sample

Oscar Galindo

This research builds its foundations on the signaling theory and Fundamental Motives Framework. In the frame of a big study, exploring the hormone effects over conspicuous and luxury consumption in a Colombian sample, the present study shows a partial results in regard of digit ratios, facial masculinization, hand's strong as proxy of prenatal testosterone over the willing to pay for some products (conspicuous/unconspicuous and beauty enhanced/neutral) and willing to donate measures in mating and competence context. The procedure include the random assing of participants to three different conditions: short time mating prime, competence prime, neutral prime and a subsecuent report of willing to pay or donate for different products and causes, after of which, the antropometrics measures are taken. The relevance of this research remain in the transcultural importance of this data for one hand, and for the other hand in contribute to increse evidence to the 2D/4D masculinization effects over some evolutionary relevant fundamental motives. The results discuss about the masculinization traits in both sex and their possible relation with testosterone prenatal and puberal levels in relation with purchase motivations in the frame of Fundamental Motives.

Poster 55. Fairness is what you can get away with

David Gordon, Mikael Puurtinen

An aversion to advantageous inequality, i.e. receiving more than others, is given as evidence for an evolved egalitarian instinct. However, research on power contradicts this assessment, consistently showing that the powerful are more willing to take a greater share. Thus, the question is not whether humans have an egalitarian preference, but what factors induce egalitarian behaviour. Participants played a modified Ultimatum Game with multiple-responders for 20 rounds. Roles were fixed. The ease at which Responders could collectively reject the Proposer offers was manipulated; 'easy', 'medium', 'hard' and 'impossible'. Proposers immediately adjusted their offers to the condition, with those in the easy and medium conditions making more egalitarian offers than those in the hard and impossible conditions. Responders consistently attempted to reject unequal offers across conditions. Responders in the easy condition felt the session was fairer than those in the hard and impossible conditions, but all indicated an equal split would have been fair. Proposer felt the session was fair regardless of condition, and what constituted a fair offer also differed between conditions. For Proposers, fairness was dictated by the ability of Responders to reject. Advantageous inequality aversion is not evidence of an egalitarian instinct per se, more a product of other mechanisms related to social cognition and threat of punishment; fairness is what you can get away with

Poster 56. Spatial adaptations for cognitive search: A literature search

Belle Hall, Taylor Dawley, Andreas Wilke

The present study investigated the number of papers citing two major cognitive biases, the hot hand phenomenon and the gambler's fallacy. Research in the behavioral decision sciences typically assumes that these two biases are fallacies that occur when subjects judge binary random sequential events. Research from the past years in Evolutionary Psychology, however, strongly questioned this notion and argued instead that the hot hand phenomenon is a cognitive adaptation to clumpy resources. In the present literature search, we tackle the often observed claim that the two fallacies are seen as two opposing, symmetric co-occurring biases (e.g., like to sides of a coin). From an ecological point of view, we predicted that the hot hand effect is a lot more frequent than the occurrence of the gambler's fallacy due to the fact that most natural resource environments actually consist of clumps and patches rather than following dispersion of mathematical randomness (see Wilke et al., in press). By utilizing various literature search databases (e.g., Web of Science, Google Scholar, PsychInfo), we explored the citations of a seminal paper that started the debate around the hot hand phenomenon, investigated the content of these papers, statistically analyzed the amount of keyword occurrences and co-occurrences for each term of the two terms, and categorized each papers' core results.

Poster 57. No evidence for correlations between handgrip strength and sexually dimorphic acoustic properties of voices

Chengyang Han, Hongyi Wang, Vanessa Fasolt, Amanda Hahn, Iris Holzleitner, Junpeng Lao, Lisa DeBruine, David Feinberg, Benedict Jones

Recent research on the signal value of masculine physical characteristics in men has focused on the possibility that such characteristics are valid cues of physical strength. However, evidence that sexually dimorphic vocal characteristics are correlated with physical strength is equivocal. Consequently, we undertook a further test for possible relationships between physical strength and masculine vocal characteristics. We tested the putative relationships between White UK (N=115) and Chinese (N=106) participants' handgrip strength (a widely used proxy for general upper-body strength) and five sexually dimorphic acoustic properties of voices: fundamental frequency (F0), fundamental frequency's standard deviation (F0-SD), formant dispersion (Df), formant position (Pf), and estimated vocal-tract length (VTL). Analyses revealed no evidence that stronger individuals had more masculine voices. Our results do not support the hypothesis that masculine vocal characteristics are a valid cue of physical strength in humans.

Poster 58. Ambiguous Eye Contact Increases Perceptions of Threat in Real World Settings

Christian Hart

Humans use eye contact and gaze following as non-verbal communication channels for gleaning information about others' mental states and intentions. People misperceive themselves as the targets of others gazes when those others seem angry or threatening. This is especially true under conditions of uncertainty, such as when ocular cues are obscured. Our hypothesis was that when subjects perceive that they are the target of someone's gaze, and the other's eyes are obscured, subjects would feel more uneasy and more endangered. In real-world settings, 210 people participated in a study in which confederates either stared at them or averted their eyes from the participants. Confederates also varied how obscured their eyes were by wearing dark sunglasses or not. Participants were then asked to rate how uncomfortable or endangered they felt. In support of our hypothesis, the results of a factorial ANOVA showed that there were significant interaction effects, where participants felt more uncomfortable and endangered when confederates were directing their gaze at them, but only when the confederates' eyes were obscured. The findings suggest that concealing ocular cues can lead to ambiguity about how threatening others are, causing discomfort and a sense of danger. Processing cues about the direction of others' gazes may be an evolved mechanism for tracking threatening intentions, and ambiguity about gaze may lead to greater wariness and caution.

Poster 59. Vocal cues as signaling behavior in early childhood

Carlos Hernández-Blasi, David F. Bjorklund, Sonia Agut, Francisco Lozano, Miguel Ángel Martínez

Classic research by Konrad Lorenz (1943) and John Bowlby (1969) clearly illustrated the importance of cues of physical immaturity (“baby schema”) and some signaling behaviors (e.g., crying) for infants and young children to catch adults’ attention and elicit caretaking. In recent years, we have demonstrated, for example, the positive role that some cognitive verbal cues, typically expressed by preschool-age children (supernatural thinking; e.g., “The sun’s not out today because it’s mad”), have to evoke both Positive Affect and Helplessness feelings in adults, as well as the advantage of these cues over some physical cues (faces) when presented together. In the present study, we explore the role of vocal cues. 75 college students were presented pairs of voices, each contrasting a 5- vs. a 10-year-old child repeating a series of neutral sentences (e.g., “I like going to the beach more than going to the mountains”), and asked to rate which child fit better a list of 14 adjectives (e.g., “nice”) and short statements (e.g., “feel more protective towards”). We found that adults expressed more Positive Affect and Helplessness attitudes toward the voices of 5-year olds, attributed greater Intelligence to the voices of 10-year olds, but showed no bias toward either the younger or older voices for Negative Affect. Overall, vocal cues seem to be more informative for adults than physical cues, and as informative as cognitive cues.

Poster 60. Women's perception of men's overperception of women's sexual-intent and what she says she really wants.

Kai Hiraishi, Yurina Kawahata, Kaiho Nomura, Hidenori Shigematsu

Based on the error management theory, Haselton and Buss (2000, hereafter H&B) hypothesized and demonstrated that men are more likely to overperceive sexual intent from women's sexual/romantic behaviors (e.g., body-touching, gift-giving) in order not to miss potential sexual opportunities. Recently, however, Perilloux and Kurzban (2015, hereafter P&K) proposed that what had appeared to be men's overperception was, in actual, women's understatement of their sexual intent. In this presentation, we show several experimental data supporting P&K's argument. Study 1 (N=332) successfully replicated H&B's original findings with a Japanese sample, showing that our sample was comparable to others. Study 2 (N=338) showed that women's perception of other women's sexual intent was on par with men's perception, that parallels the findings of P&K. Study 3 (N=447) suggested that women were aware of men's overperception bias; Women's estimation of men's perception of women's sexual intent was close to men's actual perception and was higher than women's self-reported intent. However, the pattern was obscured by unexpected question order effects. We are preparing a between-participants experiment and report the data at the conference. Given the results, we will argue the possibility that it was female's intentional/unintentional self-presentation tactics that produced the apparent men's sexual overperception effects and that this notion would expand the scope of the error management theory.

Poster 61. Ease your Partner's Jealousy by Cheating Again: Jealousy Decreases as Partner Number Increases.

Benjamin Gelbart, Cari M. Pick, Asha Ganesan, Adam Cohen

A large body of research suggests that men report more jealousy following a partner's imagined sexual infidelity, whereas women report more jealousy following a partner's imagined emotional infidelity (Sagarin et al., 2012). Here, we build upon this research by suggesting that the number of sexual cheating partners with whom one is involved may be a novel cue to the likelihood of concomitant emotional infidelity. Sexual cheating with a single person, particularly when done repeatedly, may cue concurrent emotional involvement. Conversely, sexual cheating with multiple partners, particularly when consisting of one-time encounters, may suggest that emotional involvement is unlikely. Across two studies in online (N = 345) and undergraduate (N = 488) samples, results from regression analyses showed that jealousy is greatest when imagining a romantic partner cheating with a single individual, relative to multiple individuals ($p < .001$). This effect held across genders, remained when holding the number of sexual encounters constant, and appeared to be unique to jealousy. Other emotions -- including anger, distress, and disgust -- increased when imagining multiple cheating partners. The relationship between partner number and jealousy was significantly mediated by concerns of emotional attachment. These findings highlight the functionally specialized nature of sexual jealousy.

Poster 62. Which 3D shape cues drive perceptions of facial similarity?

Iris Holzleitner, Kieran O'Shea, Vanessa Fasolt, Benedict Jones, Lisa DeBruine

Previous studies have used rated similarity of faces as a means to investigate kin recognition as well as homogamy in romantic partners. Little is known, however, about which facial cues drive perceptions of similarity. We used a data-driven approach to test whether perceived facial similarity is linked to similarity in 3D face shape and which facial dimensions are most important in eliciting perceptions of similarity. We took 3D images of 139 heterosexual couples. Paired images of each couple were presented to 26 participants, who assessed how similar each face pair looked. 3D face models were subjected to a principal component analysis of shape, and two similarity measures were derived: closeness in 3D face space, and distance on individual face dimensions (shape PCs). The same set of measures was also derived for locally circumscribed regions (eyes, nose, mouth). Mixed-effect models showed faces were perceived as more similar the closer they were in face space. In particular, similarity in face width vs height (PC2) was a strong predictor of perceived similarity. Looking at individual facial regions, similarity in eye and nose but not mouth regions predicted perceived similarity. When asked to judge the similarity of opposite-sex faces, raters mainly relied on similarity in facial dimensions explaining substantial parts of general variance in face shape (higher-order shape PCs). In a next step, we will test whether these features can also be used to predict kinship.

Poster 63. Friends with potential benefits: Exploring the relationships between individual differences and backup mates

Sydni A. J. Huxman, Jordann L. Brandner, Gary L. Brase

An important but understudied aspect of the mate switching hypothesis is the use of a backup mate as part of a mating strategy. Some features of this aspect, such as the average number of backup mates (~3 per participant), have been documented, but other features, such as individual differences, have been evaluated less thoroughly. Using both a college and mTurk sample, we examined the effects of mate value, sex, and attachment style on number of backup mates. Backup mates should have a lower mate value than participants' current partners (because otherwise a partner should theoretically mate switch), and those with anxious attachment styles should have more backup mates due to a general anxiety about their current partner leaving them. There are competing hypotheses about which sex should have more backup mates. Results indicate that the number of backup mates being used in the college sample is much lower than previous studies have reported, but when backup mates were being employed they were in the theoretically predicted patterns; individual differences in both mate value and attachment style are related to the use of backup mates. Women were also more likely to employ backup mating as a strategy. This study has implications for both the nature and extent of backup mating strategies and the mate switching hypothesis.

Poster 64. Second-Order Reputation in a Linked Game

Misato Inaba, Nobuyuki Takahashi

Since social dilemmas (SDs) are often embedded in other types of social exchange, excluding SD defectors from other exchanges (e.g., indirect reciprocal relationship) functions as a costless selective incentive. Past studies showed that such 'linkage' (Aoki, 2001) between SDs and indirect reciprocal exchanges could resolve SDs. Theoretically, one of the necessary conditions for solving SD by linkage is utilizing higher-order information. In the current study, we investigated how people use second-order information in a linked game. Participants (N=84) played an SD game and a giving game alternately. Each participant was assigned a name used for both games and their decisions were presented publicly. This meant participants could identify whether their recipient in the giving game cooperated or defected in SD and if they adopted the linkage strategy. We compared the giving directed to two types of recipients; the cooperative type, who chose to give to SD cooperators, and non-linkage type, who chose to give to SD defectors. If people utilized second-order information, the giving rate towards the non-linkage participants should be lower than that of the cooperative participants. However, the giving rates were not different between the two types of recipients. This result indicates that participants did not make use of the second-order information. This finding is inconsistent with theoretical arguments presented in previous studies.

Poster 65. The Effects of Facial Skin Smoothness and Blemishes on Trait Impressions

Bastian Jaeger, Fieke M. A. Wagemans, Anthony M. Evans, Ilja van Beest

People make trait inferences based on facial appearance and these inferences guide social approach and avoidance. In two pre-registered studies with Dutch and American participants, we investigated the effects of textural features on trait impressions from faces. In contrast to previous work, which exclusively manipulated skin smoothness, we manipulated smoothness and the presence of skin blemishes independently (Study 1, $n = 203$) and orthogonally (Study 2, $n = 160$). We hypothesized that people are particularly sensitive to skin blemishes because they potentially indicate the presence of an infectious disease. The results of both studies are in line with this reasoning. Across ratings of health, trustworthiness, competence, and attractiveness, the negative influence of skin blemishes was stronger and more consistent than the positive influence of skin smoothness (Study 1). Moreover, the presence of blemishes diminished the positive effect of smoothness on attractiveness ratings (Study 2). In sum, both facial skin blemishes and facial skin smoothness influence trait impression, but the negative effects of skin blemishes outweigh the positive effects of smooth skin. Our findings converge with prior work on disease-avoidance mechanisms showing that people are particularly sensitive to cues connoting poor health in order to avoid potentially contagious individuals.

Poster 66. Gains to cooperation drive the evolution of egalitarianism

Adrian Jaeggi, Paul Hooper, Hillard Kaplan

There is wide variety in dominance hierarchies in both animal and human societies, and understanding which conditions influence hierarchy and inequality is of great theoretical and societal interest. Previous work highlighted the role of economic defensibility of resources, costs of competition, levelling coalitions, and gains to cooperation. However, there is a lack of formal theoretical models that combine these conditions and generalize well across species and contexts. Here we provide a simple evolutionary model that incorporates economic defensibility, costs of competition, and gains to cooperation. The model combines the well-known Hawk-Dove and Prisoner's Dilemma games. Using both analytical solutions and simulations, we show that when both games are played iteratively and the gains to cooperation are high, a 'Leveller' strategy—which punishes Hawks with non-cooperation—can evolve and drive Hawks out of the population. We find empirical support for the model among human foragers, in that societies with a greater reliance on hunting, indicating high gains to cooperation, are more likely to be egalitarian. Unlike previous theoretical models of egalitarianism our model does not depend on levelling coalitions or sophisticated cognitive abilities, but rather on simple 2nd party punishment, which is common among human foragers. The model highlights a small number of parameters that can directly explain variation in dominance hierarchies and inequality.

Poster 67. Using Emotional Intelligence and Musical Training to Predict Emotion-Detection in Music: A Cross-Cultural Study

Olivia Jewell, Amanda Baroni, Jacqueline DiSanto

Recently, research in music and emotions has become very popular, and has indicated that individuals can detect emotions in various pieces of music across cultural borders. Additionally, research has explored emotional intelligence and musical training with respect to this skill. However, no previous study has examined if emotional intelligence or musical training is more predictive of one's ability to perceive an emotion in a piece of music across cultures. The current study seeks to explore this question, by providing participants with musical clips that they will listen to, and then choose the emotion that they feel fits it the best. The musical clips come from a subset of 36 clips that were used in a pilot study to determine whether individuals can discern the emotion in the piece of music. Additionally, participants will fill out measures of musical training and emotional intelligence. A multiple regression will be run to determine which of these traits is more predictive of perception of emotion in music. If emotional intelligence is more important to this skill than musical training, we believe it is suggestive of an adaptive origin for music, with relation to social relationships and cohesion.

Poster 68. Postnatal depression is associated with detrimental life-long and multi-generational impacts on relationship quality

Sarah E. Johns, Sarah Myers

Postnatal depression causes a range of detrimental outcomes, given its disruptive impact on mother-child relationships. However, until now, little has been known about the impact of PND on the longer-term relationships between mothers and their children, and any intergenerational effects this may have. Mother-child relationship quality is of interest from an evolutionary perspective as it plays a role in the accrual of offspring embodied capital, thus affecting offspring quality and offspring's capacity to subsequently invest in their own children. Relationships with offspring also mediate grandparent-grandchild relations; if PND negatively affects long-term mother-offspring relationship quality, it is also likely to negatively affect grandmaternal investment via reduced grandmother-grandchild relationship quality. Here, we use responses to a retrospective questionnaire study of postmenopausal women to assess the long-term impact of PND on mother-child relationship quality, and also on the relationship quality with any resulting grandchildren. We found average mother-child relationship quality was lower when the child's birth was associated with PND. Intergenerational relationships also appear to be affected, with PND negatively associated with grandmother-grandchild emotional closeness. That PND has long-term consequences for mother-child relationships highlights the need for investment in strategies to prevent PND and its cascade of negative multigenerational effects.

Poster 69. Bright lights, big city: The Dark Triad traits and geographical preferences

PK Jonason

Purpose: Do people characterized by the Dark Triad traits have a bias towards living in the city and if so, what features of the city-living draw them towards such geographical preferences? Method: Study 1 (N = 753, students) assessed the correlations between population density and size and the Dark Triad traits. Study 2 (N = 270, MTurk) asked participant's where they lived and compared rates of the Dark Triad traits. Study 3 (N = 273, MTurk) assessed where people wish they lived based on location (e.g., city, rural) and features of that environment and related that to the Dark Triad traits. Results: Across three studies, there was a pervasive and methodologically robust bias of those who are high in the Dark Triad traits—especially psychopathy—towards city life. In Study 3, sex differences in the features people want in where they live, sex differences in those featural preferences, and how the Dark Triad traits correlated with the featural preferences were examined and suggest effects consistent with life history theory. Conclusions: Results are discussed using life history and selection-evocation-manipulation paradigms. The Dark Triad traits were associated with selective preferences for living conditions that would facilitate their fast life history strategy.

Poster 70. Can children's growth be used to determine when suites of subsistence practices are "adaptive strategies"?

Debra Judge, Phoebe Spencer

With economic development, subsistence farmers experience increased exposure to new markets, wage labor opportunities and other resource flows. Households face novel decision making tasks relative to the allocation of work effort to various schemes for resource acquisition. Fifteen years after independence, rural areas of Timor-Leste are developing slowly. Despite numerous education and intervention programs, children continue to exhibit poor growth by international standards. Spencer et al. use Principle Components Analyses of household interview data to determine the agricultural, labor income, and family composition practices undertaken by households in two rural communities in Timor-Leste, and relate those suites of practices to the growth of 700+ children. Herein, we use PCA to derive a combined resource-based factor, and then look at family composition and child growth in 185 households that have low participation, or diverse practices, or specialization in one suite of practices. Family composition factors are associated with particular resource suites and with the tendency of families to specialize or diversify. If the derived suites of activities are truly "strategic," households that specialize rather than diversifying across strategies may demonstrate improved child growth. Specialization did not influence Z height but diversification was significant to ZBMI. This suggests the importance of external constraints on household subsistence practices.

Poster 71. Testing a Life History Model of Psychopathology

Bianca Kahl, Phil Kavanagh, David Gleaves

Early life experiences are often investigated for their considerable influence on life trajectories as well as later physical and mental health outcomes; however, there is little known about how these adverse childhood experiences are translated into mental health concerns. The life history model of psychopathology offers a sound theoretical framework that strives to explain the structure, development, and aetiology of psychopathology. At present there is little empirical support for this model. The current study (N = 343) investigated the associations between life history strategies, including a number of indicators (i.e., pubertal timing, family structure, sociosexual orientation), symptoms of psychopathology, and attachment (perceived parental support) in a sample from the general population and local mental health services. The results revealed that faster life history strategies were associated with poorer perceived parental support, and an increased number and overall severity of experienced symptoms of psychopathology. The study also examined how different types of symptoms map onto the life history continuum, and whether certain symptoms are more reflective of fast or slow life history strategies. The research has a number of theoretical and practical implications, providing insight into the fundamental underpinnings of psychopathology, comorbidity patterns, and determining individual differences in risk profiles for a range of mental disorders.

Poster 72. Functional brain connectivity of homo economicus: A multi-modal imaging study using the Human Connectome Project pipeline

Kei Kanari, Atsushi Miyazaki, Toru Ishihara, Hiroki Tanaka, Kuniyuki Nishina, Takayuki Fujii, Muneyoshi Takahasi, Tetsuya Matusda, Toshio Yamagishi

Homo economicus (HE), a model of human nature used in economics, is a rational maximizer of self-interest. In a previous large-scale study, about 7% of participants (31 out of 446) who did not allocate money in a dictator game and did not cooperate with an opponent in a prisoner's dilemma game were defined as HE (Yamagishi et al., 2014). In this study, we collected resting-state fMRI data from 206 adults (114 women; 26 to 69 years old) and examined the resting-state functional connectivity of HE participants. Graph metrics on brain based on the Human Connectome Project pipeline (Glasser et al, 2016) were calculated as indices of the functional brain connectivity. All participants were divided into one of four groups (the HE group [n = 13], the quasi-HE (q-HE) [n = 18] group, the ordinary (ORD) group [n = 123], and the consistent cooperator (CC) group [n = 52]). Results showed that degree and eigenvector centralities of graph metrics in right OFC were significantly higher in the HE group than in the q-HE, ORD, and CC groups. These results suggest that functional brain connectivity in the OFC plays a role in HE.

Poster 73. Using thermography to measure stress responses

Julia Kandus, Yacoub Innabi, Ben Skillman, Carmen LeFevre, David Perrett, Amanda Hahn

The stress response reflects a coordinated pattern of physiological changes that serves the adaptive of increasing an organism's ability to cope with situations that require action or defense. The changes in blood flow associated with the stress response may be detectable using the relatively new research technique of thermal imaging. Indeed, thermal imaging has been used to detect changes in skin temperature (associated with changes in blood flow) during sexual arousal and fear. The present study was designed to determine the time-course and topography of temperature changes in the most consistently visible parts of human skin, the face and chest, during the experience of a stressor. Twenty-nine women participated, each wearing a standard tank top to ensure consistency in visible skin. Infrared images were taken while these participants completed the mental arithmetic component of the Trier Social Stress Test (TSST). During the task, participants continuously self-reported their experienced stress levels using a slider bar. All participants reported an increase in experienced stress levels during the task. Skin temperature was measured from 5 facial ROIs (forehead, eyes, nose, cheeks, and mouth). Significant changes in skin temperature were observed in the forehead, mouth, and cheek regions, with a marginal effect in the eye region. These results suggest that thermography may offer a non-invasive method for assessing arousal.

Poster 74. Cooperation in context: Strategic affordances influence evaluations of prosociality

Mia Karabegovic, Christophe Heintz

Prosocial actions should favorably reflect on one's chances to secure cooperative partners, but in order for observers to minimize the probability of being tricked into a costly future interaction, the context in which an action is performed should be taken into account. In this study, we test the hypothesis that evaluations of prosociality depend on strategic affordances present in the observed situation. Specifically, we predict that actions have less bearing on perceived prosociality when they can be ascribed to self-promotion directed at a relevant audience. We recruited 230 volunteers through university and online social networks. The survey contained three vignettes presented in random order, which described actors performing different prosocial actions (charitable contribution, public good contribution, helping a friend). Observation (none, relevant audience, irrelevant audience) and the level of the final contribution varied: each participant saw a random combination of the two variables per story, evaluated the actor on a set of characteristics (generosity, trustworthiness, likability) and predicted the actor's future behavior when reputational affordances are absent. The main results suggest that increasing one's monetary contribution in the presence of a relevant (as opposed to irrelevant or non-existent) audience significantly decreases the evaluations of prosocial traits and likability, but not in the case of time/effort invested to help a friend.

Poster 75. Affiliative Response to Stress: an empirical investigation of Tend-and-Befriend model

K.V. Karastoyanova, M.A. Sharp

Human stress research has been considered predominantly within the conceptual framework of Cannon's Fight-Flight model. In what has been described as a pioneering alternative stress response for females, the model was re-evaluated by Taylor and colleagues, (2000). They proposed a parallel adaptive mechanism of tending and befriending, which facilitated both female and offspring survival. In order to test this theory, the present study investigated sex differences in affiliative responses to stress using a threat of public speaking task. Ninety heterosexual participants (45 males, age $M=22.51$, $SD\pm 2.97$; 45 females, age $M=22.93$, $SD\pm 2.48$) took part. Potential confounding factors such as personality traits, relationship status, menstrual cycle phase and contraceptive pill administration were considered. Affiliative behaviour was measured by participants' engagement with a same-sex confederate. The results revealed that females display significantly larger affiliative behaviour ($M=47.1s$, $SD\pm 79.1$) than males ($M=13.6s$, $SD\pm 27.6$), supporting Taylor's model. Sex appeared as the only significant contributory variable for differences in response to stress. Menstrual cycle phase and contraceptive pill administration in female population did not reveal any statistically significant differences, however, clear biological dissimilarities were observed across the menstrual cycle phases.

Poster 76. Is my disgust showing? – Self-other agreement in disgust sensitivity

Annika K. Karinen, Joshua M. Tybur, Reinout E. de Vries

People vary in how intensely they react to disgust-inducing stimuli, and this variation relates to social and political variables, such as conservatism, xenophobia, and moral judgment. Although self-reported disgust sensitivity (DS) predicts avoidant behavior toward disgust-eliciting objects, no direct evidence informs whether DS is an observable trait. The aim of this study was to examine the visibility of DS. We examined self-other agreement (SOA), a technique that allows for estimates of trait visibility. Romantic partners ($N=137$), friends ($N=89$) and acquaintances ($N=20$) rated each other on pathogen, sexual, and moral DS, and the HEXACO personality dimensions. The dyad members' ratings were correlated to determine the level of SOA. We found significant SOA in all types of DS in partner and friend dyads, but in acquaintance dyads, SOA was significant only in sexual DS. The romantic partners' SOA correlations were $r = .61$ for pathogen, $r = .68$ for sexual, and $r = .43$ for moral DS. To compare, the highest and lowest SOA's for HEXACO were emotionality ($r = .76$) and honesty-humility ($r = .49$). These results suggest that disgust sensitivity is visible to others, given sufficient acquaintanceship. Contrary to past research suggesting that affective traits are less visible than personality traits, our results suggest that trait-level disgust is visible to similar extent as personality. Further, the visibility of DS may make it relevant for partner-selection in real-world contexts.

Poster 77. Intergenerational influence on breastfeeding in a post-demographic transition society

Shantha Karthigesu, David Coall, James Chisholm

Breastfeeding is a highly evolved biological mechanism with proven positive effects on the health status of mothers and infants. But it has been rendered complex in societies with a strong influence of western medicine and heavy marketing of infant formula. While the factors affecting rates of breastfeeding vary widely, grandparents remain a source of influence across time and cultures. A qualitative study of 73 adults in a post-demographic transition society found that grandparents' breastfeeding experiences, beliefs and attitudes influenced parents' expectation to successfully breastfeed. In cases where grandmothers failed to breast feed, mothers found it easier to justify formula feeding their infants. Grandparents, while agreeing that breast feeding was best for infants said as parents they were curtailed by the inability to feed in public. The lack of commercially produced infant foods was cited as a source of anxiety when efforts to breastfeed failed, which often led to early introduction of solid foods. Their experience contrasts with the challenges faced by parents today as mothers are forced to return to work, and the abundance of commercial infant food means failure to initiate and sustain breastfeeding has a relatively easier solution. The intergenerational influence on breastfeeding seen in this study sample underscores the importance of breastfeeding education and support for parents to ensure future generations benefit from this unique mammalian trait.

Poster 78. Is the function of the saying-is-believing effect to facilitate coordination?

Victor Keller, Joseph Cesario

The saying-is-believing effect – believing in something if one communicates it – does not occur when the messenger thinks the recipient did not receive the message. An explanation for this finding is that the function of the saying-is-believing effect is to facilitate coordination. If that is the case, the saying-is-believing effect should only occur when the messenger knows that the recipient knows that the messenger knows (ad infinitum) that both share a belief (i.e. there is common knowledge – a prerequisite for coordination). In a study (n = 135) using the communication-game (Higgins & Rholes, 1978), common knowledge was manipulated by telling participants that the recipient of their message believes that their message came from them (common knowledge condition) or from someone else (no common knowledge condition). About half of the participants reported the incorrect answer to the manipulation checks. Among the participants who passed the manipulation checks, the saying-is-believing effect did not depend on common knowledge – i.e. the saying-is-believing effect occurred in both conditions. This finding was replicated in an ongoing study using a more intuitive and ecologically valid manipulation of common knowledge. More research is needed to determine the functional underpinnings of the saying-is-believing effect.

Poster 79. How couple's intercourse frequency is affected by relationship length, relationship quality and sociosexuality

Leif Edward Ottesen Kennair, Trond Viggo Grøntvedt, Mons Bendixen

Frequency of sexual intercourse within couples is associated with length, sexual and relationship satisfaction, and perceived quality of the relationship. Love as a commitment device might reduce interest in extra-pair sex. Therefore, the frequency of sex in couples may be influenced by factors related to each party's preference for short-term sexual strategies. This study examined how his and hers sociosexuality, relationship length and various dimensions of relationship quality impact couples' intercourse frequency. Structural Equation Modelling analyses were performed on data from 92 romantically involved, heterosexual couples recruited at a Norwegian university. Participants were in average 22.5 years old (range: 19 to 30 years). The current relationship length ranged from one month to nine years ($M = 21$ months). Both his and her ratings of relationship passion were strongly associated with frequency of having sex, but negatively associated with desire for extra-pair sex. As predicted, intercourse frequency decreased with increased length of relationship. More frequent intercourse was reported in couples where women had unrestricted attitudes, while men's level of sociosexuality had no effect on intercourse frequency in any of the models. These novel findings suggest that while men in general might desire sex more, in this sample from a highly egalitarian nation, men might be compromising more than women do.

Poster 80. Political Results: Outcomes of Sporting Events Affect Political Attitudes and Biases

Nicholas Kerry, Damian Murray, Jason Harman, John-Luke McCord

Vicariously experiencing major sporting events is a worldwide phenomenon; however, limited research has examined how results from sporting events influence socio-political attitudes. The current study examined how sports results affect spectators' moral and political attitudes. "Strategic" perspectives on morality and political attitudes suggest that spectators may have higher ingroup biases and less egalitarian attitudes after seeing their team win than after seeing them lose. Two studies examined people's attitudes immediately after real, major sporting events. Study 1 surveyed 589 participants from the United Kingdom immediately following games during the Euro 2016 soccer tournament. Study 2 surveyed 648 fans outside four major college football games in the USA. We found consistent evidence that vicarious winners were more biased in favor of their ingroup and less egalitarian than vicarious losers. These findings suggest that events such as sports results, which seem irrelevant to politics, may acutely influence moral and political views.

Poster 81. The cultural phylogeny of polished stone dagger in Korean peninsula

Jun-Hong Kim, Chuntaek Seong, Seungki Kwak

The purpose of this paper is to estimate the cultural phylogeny of polished stone dagger in Korean peninsula using cultural phylogeny. Polished stone dagger (7 ~ 3rd century B.C.) is only found in Korean peninsula and Manchu region. Most archaeologists are uncertain about its origin and topological relationships. Its style resembles bronze dagger of same period and it is usually found as grave goods that may signal the authority of dead individuals (usually elite class). Since its main function was probably prestige goods or ritual, most polished stone dagger is preserved intact. Using Bayesian estimation of cultural phylogeny of stone dagger, we can obtain insight about its origin as well as cultural interactions of Korean peninsula during bronze period.

Poster 82. Salivary testosterone promotes dominance in the Ultimatum Game only when players' social rank is high.

Toko Kiyonari, Aoyama Gakuin University Yukako, Inoue Robert, Burriss Taiki, Takahashi Toshikazu, Hasegawa Toshio, Yamagishi

Endogenous testosterone (T) is generally considered to enhance social dominance, but the results of economic game experiments that have examined the relationship between decision making and T are inconsistent. In a previous study (Inoue et al., 2017), we explored the relationship between pre-existing social status and salivary T level among members of a rugby team at a Japanese university, where a strong seniority norm maintains hierarchical relationships. We analyzed participants' level of acquiescence (how much more they offered beyond the lowest offer they would accept) based on their decisions both as proposer and responder in a series of one-shot Ultimatum Games. We showed that higher T was associated with lower acquiescence in senior participants, but with higher acquiescence in junior participants. Here we present the results of a follow up study conducted two years later, when the previously junior participants had advanced to senior status. We find further evidence for the higher T being associated with lower acquiescence among senior participants, we do not replicate the relationship between T level and acquiescence among junior participants. In summary, our results consistently suggest that T may enhance socially dominant behavior among higher-status persons, and that the effect of T on lower-status persons merits further investigation.

Poster 83. Q: Is happiness predicted by self-perceived mate value? A: Am I a man or a woman?

Ahra Ko, Eunkook M. Suh, Steven L. Neuberg

One function of happiness is to signal progress toward fitness-relevant goals. Successful romantic and sexual relationships are central to one's reproductive fitness, leading people to seek partners of high mate value. If happiness signals progress toward fitness-relevant goals, and people seek partners of high mate value, one's own happiness should be sensitive to beliefs about one's own mate value. The happiness of people seeking long-term relationships (both men and women) should be calibrated to beliefs about their long-term mate value, whereas the happiness of people seeking short-term relationships (especially men) should be calibrated to beliefs about their short-term mate value. Using the Desirability scale (Haselton, 2003) and the Satisfaction With Life Scale (Diener et al., 1985), findings from college and MTurk samples ($N = 1,054$) support these hypotheses. Whereas long-term self-perceived mate value significantly predicted happiness for both sexes, short-term self-perceived mate value predicted only men's happiness (interaction, $F_1(1, 814) = 14.07$, $F_2(1, 231) = 7.52$, $p < .01$). Also, consistent with hypotheses, women high in short-term mating motivation showed a positive relationship between short-term self-perceived mate value and happiness, whereas women low in short-term mating motivation showed no such relationship. This research illustrates how the evolutionary perspective can offer novel insights for understanding the psychology of happiness and well-being.

Poster 84. Finding the Replication: Perceived Atheist Prevalence does Reduce Anti-Atheist Prejudice

Janae Koger, Cari D. Goetz

The sociofunctional approach to understanding prejudice suggests that prejudice towards outgroups is derived from the particular fitness threat that the outgroup poses. Gervais (2011) used this approach to understand anti-atheist prejudice. He demonstrated that atheists are unique in that as perceived prevalence of atheists increases, distrust towards atheists decreases. Gervais (2011) argued that since atheists are not powerful nor cohesive as a group, their increased prevalence is not threatening. The goal of the present study was to replicate and extend this work on anti-atheist prejudice by explicitly manipulating the perceived power and cohesion of atheists as a group. We hypothesized that if atheist were described as powerful and cohesive, perceived prevalence would no longer decrease distrust. Participants ($N = 350$) read one of six articles manipulating atheist prevalence (common or rare) and power (powerful and cohesive, non powerful and not cohesive, or no information). Then they completed measures of anti-atheist prejudice, responded to questions about their religious and political beliefs, and answered other demographic questions. We replicated the finding that increased prevalence decreases distrust towards atheists, however, we did not find support for our novel hypotheses. The present study expands our knowledge of why increased prevalence decreases prejudice and why atheists pose a unique threat if they are perceived as prevalent or rare.

Poster 85. Can Heart Rate Tell the Difference between Moral Anger and Moral Disgust?

Naoki Konishi, Yohsuke Ohtsubo

People often experience moral anger and/or disgust when observing someone's wrongdoings. An evolutionary psychological view suggests that these moral emotions have distinct social functions: moral anger is associated with direct aggression against the wrongdoer, while moral disgust is associated with indirect aggression (Molho et al., 2017). However, some scholars pointed out that moral anger and disgust tend to be simultaneously experienced, and thus cannot be regarded as separate emotions (Cameron et al., 2007; Nabi, 2002). The present research examined the discriminability of moral anger and moral disgust based on participants' heart rates (HR). Prior research revealed that core anger is associated with the increase in HR, whereas the core disgust is associated with the decrease in HR (e.g., Levenson, 1992). We exposed participants to a series of hypothetical moral violation scenarios while measuring their HR. The results showed that self-reported moral disgust was associated with the significant decrease in HR. The association between self-reported anger and HR increase remained marginally significant. Partially consistent with evolutionary conceptualization of moral disgust, the HR decrease was significantly correlated with the self-reported intention to avoid the perpetrator. Therefore, moral anger and moral disgust appear to be distinct emotions that are associated with differential physiological reactions, and possibly with differential behavioral tendencies.

Poster 86. Identification with traditional gender roles predicts women's preferences for masculine faces

Luca Kozma, Vít Třebický, Ferenc Kocsor

Many factors have been named which influence women's perception of male faces, like interest in short-term relationships, self- and other-rated attractiveness, relationship status, extraversion. However, whether varying levels of gender role ideology are associated with distinct preferences is still an open question. 139 female participants (mean age: 27.04, SD: 8.45) were asked to judge male faces on four criteria: dominance, masculinity, assertiveness and attractiveness, they were also asked to complete the Femininity Ideology Scale. The masculinity indices of the male faces were calculated using the method described by Penton-Voak et al. (2001). We used linear mixed effects regression to analyse the relationship between participants' femininity ideology, face preference and men's facial masculinity. Our results show a significant positive association between higher level of identification with female gender role norms and the perception of attractiveness of male faces. Moreover, more masculine faces were judged as more attractive. However, no significant results were found when focusing on the perception of masculinity, dominance or assertiveness – neither when we considered feminine ideology, nor men's facial masculinity. Implications of this study highlight the need for more focus on social constructs like gender roles when it comes to understanding individual differences in mate choice and face preferences.

Poster 87. Validating a Life History Model for Interpreting Men's Conspicuous Consumption Signals

Daniel Kruger, Jessica Kruger

The standard ultimate explanation for men's conspicuous wealth displays considers them attractive to women because they signal substantial expected resource investment. This is likely often true; however, some male conspicuous displays may function as mating effort, at the cost of paternal investment. We developed a model based on Life History Theory for interpreting the function of men's material signals. Two pre-registered studies and two replications tested one prediction of this model, that men's material signals functioning primarily as mating effort would mimic the properties of male secondary sexual characteristics across species. Participants completed anonymous on-line surveys at their convenience, reading descriptions of and viewing pictures of consumer products and men's consumer choices. Participants rated each character on life history characteristics (mating effort and parental investment), relationship interests, and relationship attractiveness. Participants demonstrated an intuitive understanding that men's material displays with exaggerated features such as size and coloration were associated with life history strategies higher in mating effort and lower in paternal investment, higher interests in brief sexual relationships, and lower interests in long-term committed relationships. Results confirmed predictions and demonstrated the power of Life History Theory for understanding human psychology and behavior in technologically advanced societies.

Poster 88. To Swipe Left or Right? Sex Differences in Tinder Profiles: A Replication Study

Barry X. Kuhle, William Beck, Angelika Dzieza, Kimberly Lavelle, Alyssa Piranio

Before the internet, evolutionary psychologists explored the nature of “lonely hearts” personal advertisements in newspapers to identify what women and men actually look for in and how they advertise themselves to potential romantic partners (e.g., Thiessen, Young, & Burroughs, 1993). Kuhle et al. (June, 2016) explored what Northeastern U.S. heterosexual adults seek and how they sell themselves on the modern and popular mobile dating app Tinder. Given psychology’s replication crisis, we conducted an empirical generalization study on two non-western populations: Tinder users in New Zealand and Ireland. We created fake male and female Tinder accounts and content-analyzed the profiles and pictures of male and female Tinder users. Results from our foreign samples largely dovetail with the sex differences in what men and women desire and how they attract mates evidenced in U.S. newspaper lonely hearts ads from yesteryear and U.S. Tinder users’ profiles and pictures nowadays via smartphones.

Poster 89. Kinship cues in voices: Does vocal similarity indicate relatedness?

Rebecca J. Lai, Kieran J. O'Shea, Chengyang Han, Benedict C. Jones, Lisa M. DeBruine

The human voice is a rich source of socially relevant information, with the richness of the vocal signal being sufficient to allow perceivers to differentiate between individuals, determine ingroup/outgroup affiliations via accents, and form impressions of personality. This project is a preliminary investigation into the potential for vocal similarity to indicate kinship between genetically related individuals. Using voice recordings from UK same-sex adult sibling pairs and non-sibling pairs, both of monophthong vowels and longer passages, I will be collecting ratings of kinship (yes or no) and similarity (0-10) from different groups of individuals and comparing the ratings in a manner similar to Maloney and Dal Martello (2006). Data will be analysed using linear mixed effects models to establish the relationship between ratings of vocal similarity and judgments of kinship. It is expected that vocal samples from siblings will be rated as more similar and more likely to be rated as related than those from non-siblings. This relationship is predicted to be more strongly exhibited in the trials comparing longer speech passages due to higher-level vocal qualities, such as accent.

Poster 90. The voice of symmetry – More symmetrical larynxes in men are associated with higher voice attractiveness and mate-choice relevant anthropometric measures

Benjamin P. Lange, Harald A. Euler, Katrin Neumann, Eugen Zaretsky, Verena Ungericht

Voice, body, and face attractiveness are correlated with each other (e.g., Saxton et al., 2009), thus allowing for assessing people's mate value. We were interested in morphological correlates of voice attractiveness. We assumed, among others, that more symmetrical larynxes would produce more attractive voices. Using laryngostroboscopy, we made video recordings of our participants' larynxes (N=80) that were rated by two phoniatic experts on larynx symmetry. We also took facial photographs (for attractiveness ratings and symmetry measurements), conducted body measurements (WHR, SHR, NC), and assessed health-related variables. We also recorded our participants' voices for voice attractiveness ratings. We found a negative correlation between larynx asymmetry and voice attractiveness in men ($r=-.58$). Larynx asymmetry in men was also negatively correlated with facial attractiveness ($r=-.61$) and positively with NC ($r=.52$). In women, there was a positive correlation between larynx asymmetry and nicotine abuse ($r=.24$). Furthermore, we found a negative correlation between female WHR and voice attractiveness ratings by men ($r=-.23$). However, a curvilinear regression provided the best fit, with the highest voice attractiveness around a WHR of 0.7 (all p 's < 05). Our study is the first assessing the structure of the vocal tract from an evolutionary perspective.

Poster 91. Women value male facial cues to muscularity more in short- than long-term relationships

Xue Lei, Iris Holzleitner, David Perrett

Evolutionary psychology suggests that women have different mate preferences for different mating strategies. For short-term relationships, women tend to prefer men who are masculine, healthy, tall and physically attractive, while such traits appear to be less important in a long-term relationship context. Increased muscle mass (but not fat mass) is a cue to physical fitness and long-term health. The present study investigated whether women show a different preference for facial correlates of fat and muscle for short and long-term relationships. We predicted that women would prefer cues to a higher level of muscle mass for short- compared to long-term relationships. Male faces were shown to heterosexual female participants (aged 18-45). Participants were asked to adjust a slider to change the shape of face images to most resemble someone they would find attractive for a short-term or long-term relationship. Face images were transformed to simulate shape changes associated with change in weight (+/- 4 Body Mass Index units). Transforms simulated either change in muscle or fat mass controlling for body height and age. Women preferred a higher level of facial cues to muscle mass for short-term relationship compared to long-term relationship but showed no difference in short and long-term preferences for facial cues to fat mass. These findings suggest women are more demanding regarding the physical fitness/masculinity of male partners in a short than long term context.

Poster 92. Bisexual women show positive sexual imprinting on the partner-sex parent for eye colour

Victoria Leigh, Benedict Jones, Lisa DeBruine

Humans show an assortative mating pattern. Multiple hypotheses have been tested by studying partner eye colour and its relationship to parent and own eye colour. Most evidence is consistent with positive parental imprinting, whereby mate choice is biased towards parental traits. Research on heterosexual people found that the best predictor of partner eye colour was maternal eye colour for men and paternal eye colour for women. However, research into those with same-sex attraction found that the best predictor of partner eye colour was the partner-sex parent, regardless of the sex of participant. The current study investigates the relationship between partner and parent eye colour in a population of bisexual participants. Data were collected online by asking participants to describe the eye colours of themselves, their most recent male and/or female partners, and their male and female parents. We analysed data from participants who reported a known eye colour for all categories. Because very few men met these criteria, we restricted analyses to women (n = 556). We used binomial logistic regression models to predict partner eye colour from various combinations of own, maternal, and paternal eye colour. Comparison of models revealed that female partner eye colour was best predicted by maternal eye colour, while male partner eye colour was best predicted by paternal eye colour. Our results show that bisexual women follow a positive sexual imprinting pattern for human eye colour.

Poster 93. How Chinese women maintain perceived attractiveness norms while studying in England

Jiawei Liu, Lynda Boothroyd, Nadja Reissland, Martin Tovee

Attractiveness is a feature of an individual's physical presence that has important implications for their life. This research focuses on how contemporary emphasis on the significance of an attractive appearance influences the body ideal held by Chinese university students. Ideal body sizes in China and the UK differ, as do attitudes towards skin colour and the influence of globalised media. It is unclear whether these differences reflect flexible norms or are strongly ingrained by adulthood. We ran a cross-sectional study comparing male and female Chinese postgraduates in mainland China with Chinese postgraduates in the UK and UK students. The participants rated the attractiveness of 63 computer graphic images of Chinese-appearing women, including three different colours of skin tone, and 21 different body shapes with a score ranging from 1 (less attractive) to 7 (perfect body shape). The participants also completed a questionnaire assessing their acculturation and thin ideal internalisation (Sociocultural Attitudes Towards Appearance Questionnaire). Results suggested that national differences in body and skin ideals may be relatively robust against cultural exposure in this high SES sample, which contrasts with studies comparing groups across cultures in lower SES contexts or where there is a significant gradient in nutritional factors. Results will be discussed in terms of evolutionary versus sociocultural models of body weight ideals in particular.

Poster 94. ANGUS: A real-time software tool for manipulation of vocal roughness

Marco Liuni, Luc Ardaillon, Jean-Julien Aucouturier

We propose a new preparation technique for audio stimuli, called ANGUS, which is able to simulate cues of arousal/roughness on arbitrary voice signals with a high degree of realism. Recent psychophysical and neuroimaging studies have suggested that rough sounds, characterized by specific spectro-temporal modulations, target neural circuits involved in fear/danger processing and signal vocal arousal in both humans and a variety of non-human animals. Vocal roughness is generated by highly unstable modes of vibration in the vocal folds and tract, which result in sub-harmonics and nonlinear components which are not present in standard phonation. We propose to simulate this physiological mechanism using multiple amplitude modulations driven by the fundamental frequency of the incoming sound. The technique, which is made available as free, open-source software in the Max programming language, works in real-time and allows a high degree of realism and parametric control, thus providing new means of stimulus manipulation for psychological experiments aiming to test the effect of these cues on behavior.

Poster 95. Conservative Parenting: Investigating the Relationships between Parenthood, Moral Judgment, and Social Conservatism

Riley Loria, Nick Kerry, Damian Murray

Strategic perspectives on moral and political attitudes suggest that people often tailor such attitudes to serve the current or future needs of themselves and their families. Given the critical importance of parenting in human life, we were interested in whether parenthood affects political and moral attitudes, and whether parenthood and parental motivation might partly explain age differences in political attitudes. Given that a key element of social conservatism is vigilance towards uncertainty and threat, and given that parenting is often associated with risk aversion, we predicted that parents (and those high in parenting motivation) would be more morally vigilant (especially in domains pertaining to social cohesion), and more socially conservative. Across four studies including over 1500 participants, we found evidence consistent with these predictions. Further analyses revealed that parenthood partly accounted for the relationships between age and both social conservatism and moral vigilance.

Poster 96. The influence of gender conformity on preferences for sexual dimorphism in male and female faces

Jenna Lunge, Lisa Welling

Previous research has found that sex drive (i.e., the motivation to behave sexually) positively correlates with attraction to sexually dimorphic faces in the preferred-sex only among heterosexual and homosexual men, and that it positively correlates with attraction to sexually dimorphic male and female faces among heterosexual women. However, preferences for sexual dimorphism are not as straight forward among lesbians; sex drive in homosexual women relates to preferences for masculine men, but not feminine women. Using a two-alternative forced-choice face preference task, I have investigated if these inconsistencies may be due to differences in gender conformity among homosexual women. Though heterosexual men ($n = 26$) and women ($n = 433$), and homosexual women ($n = 26$), preferred sexually dimorphic female faces, homosexual women's degree of gender conformity did not predict preferences for sexual dimorphism in male or female faces. Contrary to previous research, heterosexual women's scores on the Sexual Desire Inventory-2 (SDI-2) were positively correlated with their preferences for sexually dimorphic female faces only, whereas SDI-2 was not significantly correlated with preferences for sexually dimorphic male or female faces in homosexual men ($n = 7$), homosexual women, or heterosexual men. Though sex drive and gender conformity did not predict preferences for sexual dimorphism as expected, these results may be limited by the small sample sizes in homosexual groups.

Poster 97. The Dark Triad, socio-sexual orientation, and short and long-term mate preferences

Minna Lyons, Gayle Brewer, Agata Jaremba, Elin Payne, Imogen Jones, Urszula Marcinkowska

Individual differences can influence the types of partners that people prefer. In the present study, we investigated the influence of the Dark Triad (i.e., Machiavellianism, narcissism, and psychopathy) and socio-sexual orientation on short and long-term mating preferences. In an on-line study, 282 (59 men) participants completed the Buss and Barnes (1986) mate preference questionnaire for long and short-term relationships, and selected their preferred opposite sex face from a masculine or feminine pair. None of the traits predicted a preference for facial morphs. In men, when evaluating long-term partner characteristics, psychopathy predicted lower preference for sociability, and Machiavellianism a higher preference for good looks. In women, narcissism emerged as a positive predictor for desire to have partners with status and good looks in long and short-term relationships. Narcissistic women also desired long-term partners who are sociable, have high levels of education, and are willing to have children. High psychopathy in women had an association with less importance of looks, sociability, dependability, and mutual love in long-term partners, and less importance of sociability and dependability in short-term partners. We discuss the result with a reference to adaptive individual differences in short and long-term mating strategies.

Poster 98. Maternal shyness and self-regulation differentially predict empathic concern in 6-year-old children

Taigan MacGowan, Louis Schmidt

Poor self-regulation in children is a susceptibility factor for adverse outcomes. For example, physiologically and emotionally dysregulated children show less empathic response than regulated children. Environmental family factors such as maternal personality may also contribute to development of self-regulatory skills. Here we examined children's self-regulation, empathy, and maternal shyness in 48 typically developing 6-year-old children and their mothers. Vagal withdrawal was derived by subtracting 5 minutes of on-task RSA from 5 minutes of baseline RSA. Empathy was coded from child's reaction to a female experimenter feigning injury and expressing pain for a 35-second period. Mothers reported on their own shyness using the Cheek and Buss Shyness scale and their child's soothability using the Colorado Childhood Temperament Index (CCTI). We found that children with low self-regulation (low vagal withdrawal + low soothability) were differentially susceptible to maternal personality in predicting empathic concerns. Children with poor self-regulation exhibited the high and lowest empathic concern depending on whether their mothers were low and high in shyness, respectively. Children classified as "good" self-regulators were insensitive to their mother's personality, showing an average level of concern regardless of mother's shyness. This work implies that development of some social cognitive skills in dysregulated children may depend on environmental family factors.

Poster 99. Females prefer less complex music and males prefer more complex music: Support that music may function as a signal of fitness in sexual selection

Guy Madison

Music is a human universal, suggesting a biological adaptation. Charles Darwin suggested that music has evolved as a human trait through sexual selection. According to such a scenario, intra-sex competition may use any dimension that provides an honest signal of fitness. Previous research indicates that cognitive ability is an important such dimension, which is likely to manifest itself in music in terms of complexity. Parental investment theory further predicts asymmetries between the sexes. While the ability to perceive and evaluate the signal must be equal, the interest in the signal, and the motivation for engaging in signalling, is stronger for males than for females, as well-documented in song birds. Here, we examine this prediction for listening data from LastFM, an international music streaming service. From a database with ~20 million listening events by 992 listeners, we first selected the 1,000 songs most frequently listened to. Out of these, 42 songs that were listened to by about equal numbers of males and females were rated on complexity by an expert panel (with both males and females). The mean complexity rating of each song was correlated with the number of times it was listened to by each user. The correlations were 0.50 for males and -0.61 for females, showing that males tend to listen more to the more complex songs, and females more to the less complex songs.

Poster 100. Fleeting beauty – Decision making in men is altered by ejaculation

Berry Maletzky, Sabine Tebbich, Elisabeth Oberzaucher

Behavioural endocrinology addresses the changes in perception, cognition and behaviour brought about by hormones. Ejaculation is linked to substantial changes in hormones and leads to complex modifications in behaviour. Increased testosterone levels have been found to be associated with higher levels of aggression, higher sex drive and altered decision-making. The present study investigated how the physiological changes brought about by ejaculation affect the assessment of attractiveness of female faces. Eighteen heterosexual men made their assessments before and thirteen after they made a sperm donation, saliva was collected at both times. Our preliminary results indicate that men rate female faces as less attractive after ejaculating. The lower ratings could be due to lowered testosterone levels and resulting decreased sex drive. An alternative explanation could be the „Farrah Effect“: The act of sperm donation was facilitated by providing pictures and movies of female porn stars. The attractiveness and presentation of women in these materials might lead to a shift in attractiveness perception. This study demonstrates that short term changes in hormone levels affect assessment of female attractiveness in men.

Poster 101. Life History Strategy and the Dark Triad: Are Some Facets of Narcissism Indicators of a Slow LHS?

Joseph Manson

The relationships between the Dark Triad (DT) traits (narcissism, Machiavellianism and psychopathy) and life history strategy (LHS) have received considerable research attention but are only partly understood. Issues of measurement, power, and sample representativeness figure in ongoing controversies in this area. I recruited 929 U.S. resident Amazon Mechanical Turk workers to complete two LHS measures (the K-SF-42 and the Life History Rating Form [LHRF]) and a DT inventory comprising the 25-item Narcissistic Personality Inventory, 5-item Trimmed MACH*, and 20-item Self-Report of Psychopathy. Factor analysis revealed two factors. All four psychopathy facets (callous affect, interpersonal manipulation, erratic lifestyle, and criminal tendencies), Machiavellianism, and the entitlement/exploitativeness facet of narcissism loaded on the first factor, while the leadership/authority and grandiose exhibitionism facets of narcissism loaded on the second factor. Slow LHS, as measured by both the K-SF-42 and LHRF, was significantly negatively related to the first factor and positively related to the second factor, but the strength of these relationships differed between the two LHS instruments. Most notably, the K-SF-42 explained 11% of the variance, whereas the LHRF explained only 1% of the variance, in scores on the DT factor comprising the two “positive” narcissism facets. Results are considered in light of theory and data regarding the personality indicators of LHS.

Poster 102. Mate Expulsion Tactics

Nestor Maria, Kelsey Meyer, Cari Goetz

Mate retention tactics have been well-documented in literature using an evolutionary perspective. These tactics function to deter romantic partners from defection and fend off potential alternative partners. However, when individuals are in a relationship where the costs outweigh the benefits mate expulsion, not retention, may be their desired goal. The present set of studies were designed to identify mate expulsion tactics and examine the relationships between mate expulsion, mate retention, and relationship satisfaction. A first set of participants (N = 100) nominated behaviors individuals do to reduce commitment in, or terminate, a long-term relationship. This generated 195 possible mate expulsion tactics which were then rated by a second set of participants (N = 141). We retained the tactics most frequently used by participants during break-ups, which reduced the list to 47 tactics. A third group of participants, (N= 400) rated how often they participated in these mate expulsion behaviors, completed the Mate Retention Inventory- Short Form (Buss, Shackelford, & McKibbin, 2008), and completed relationship satisfaction and break-up measures. Frequency of mate expulsion was negatively related to relationship satisfaction and explained variance in relationship outcomes unique from mate retention. Our results suggest human mating psychology includes mechanisms that function to terminate relationships and expulse mates in addition to mechanisms related to mate retention.

Poster 103. Looking at trees - Leaf shapes and preferences

Kathrin Masuch, Pia Marlena Böhm, Johanna Köllner, Stefania Zingale, Elisabeth Oberzaucher

During hominid evolution, trees and shrubs of the African savannah provided food, shade and protective shelter, as well as good vantage points to view the surroundings and scan them for potential dangers and opportunities. Thus, it lies at hand that natural green still affects our behaviour and wellbeing. Hareli et al. showed that house prices are affected by the kind of plants surrounding real estate. Palm trees increase the willingness to pay. Several studies found a visual preference of sharp and pointy leaves over round and softer leaves. In the present study we used the original stimuli by Hareli et al. to investigate whether the effect of palm trees on willingness to pay can be linked to visual preference: In a forced choice looking experiment we presented 36 pairs of stimuli (individual leaves and real estate pictures), juxtaposing round and sharp contours, to a total of 97 participants. We measured visual preference by means of looking duration. Looking duration was linked to the willingness to pay data from the original study. Our findings link consumer behaviour to visual behaviour. By investigating the perceptual underpinnings of human behaviour, we gain better understanding of the mechanisms underlying decision making.

Poster 104. Religiosity and sexual and cooperation based moral transgressions - a test of the Reproductive Morality Model

Tiffany Matej Hrkalovic, Igor Miklousic

New findings question religious morality as primarily large-scale cooperation adaptation and propose that religious communities and rituals are mainly used by individuals pursuing a more committed mating strategy to deter others from seeking promiscuous sexual strategy. In our study, we aimed to examine these conflicting theories and test the extent to which religious belief and ritual attendance moderated our perceptions of both sexual and cooperation based moral transgressions. Using an online survey we applied vignettes depicting sexual moral transgressions (cheating & promiscuity), and vignettes containing cooperation centred moral transgressions (disloyalty & betrayal) on a sample of 305 participants (M=94, F=201). The results indicated that non-believers tend to perceive sexual transgressions as both less morally unacceptable and more forgivable. However, religious attendance and frequency of prayer were positively related to forgiveness of cooperation centred moral transgression. These findings indicate how it is possible that both hypotheses could simultaneously be plausible. Seeking religious affiliation will surround individuals with people who have more negative views on sexual transgressions while religious attendance seems to indicate there is a tendency toward a more cooperation facilitating attitudes that promote redemptive attitudes within religious communities.

Poster 105. Population Density and Life History Strategy in Japan

Masafumi Matsuda, Tessei Kobayashi

Sng et al. (2017), using survey data across nations and across the United States, found that dense populations exhibit behaviors corresponding to a slower life history strategy, including greater investment in education, more long-term mating orientation, later marriage age, lower fertility, and greater parental investment. Though the results were robust, it is necessary to investigate whether these phenomena were universal across nations and to examine other related variables. To that end, this research replicated their study with prefecture-level data in Japan, which includes 47 areas. Our results were generally consistent with the previous ones and the prediction of life history strategy; that is, people living in denser prefectures followed a slower life history strategy. Regardless of per capita income, it was confirmed that population density was correlated with late marriage age, preschool enrollment rates and degree completion rates. However, correlations between population density and birthing behaviors, fertility rates and teenage birth rates were dismissed by adjusting per capita income. Higher income correlated with rather low rates. In addition to these results, life expectancy was neither correlated with population density nor per capita income. These findings suggest mating and rearing behavior could be predicted by population density or life history status; however, birthing behavior might be influenced by economic status in Japan.

Poster 106. I Know How You Feel: Emotional Reactions towards a Robot

Isabelle M. Menne

Robots are moving from industry halls to our private homes, which leads to new questions, such as: How do people react emotionally towards this new “form of life”? External observable cues, such as facial expressions, are an important factor for an interaction partner’s ability to infer the affective state of its communication partner. Research indicates, facial expressions are associated with emotions. As emotions are a complex multilevel phenomenon, their measurement could profit from a multi-method approach to increase the validity of results. Furthermore, systematic research on spontaneous facial (emotional) expressions towards robots remains rather scarce. Thus, we studied whether a human’s emotional reaction towards a robot can be observed in the face. We used the Facial Action Coding System as it is the most widely and most frequently used method for facial expression analysis in multiple fields. As stimulus material we used the robot Pleo and showed participants videos of Pleo either being tortured or being treated friendly. Participants (N = 62) displayed more facial expressions associated with unpleasantness and fear/disgust when watching Pleo being tortured. Participants also reported feeling more negatively after the torture video. The results indicate an evolutionary explanation of emotional reactions towards social robots.

Poster 107. Mansplaining: Chauvinism or status striving? An evolutionary functional approach.

Kelsey Meyer, Robert Mitchell, Cari Goetz

"Mansplaining" is a recently described behavior in which a man explains something, typically to a woman, in a way that is perceived to be condescending or patronizing. Incidences of "mansplaining" often involve the actor interrupting the target and explaining or re-explaining something that the target is already knowledgeable about. We hypothesized that mansplaining behavior is functional not because it is designed to derogate the target, but because it draws attention to the speaker, who may earn gains in status by displaying knowledge of a particular topic. We hypothesized that males who "mansplain" would be perceived as more knowledgeable and as having greater status than females who do the same behavior. Furthermore, we hypothesized that males would gain a greater benefit if they interrupted another speaker. Participants viewed one of four researcher-created videos in which the same conversation took place between opposite-sex actors. Videos varied on sex of the actor displaying knowledge (male or female) and the presence of interrupting (did or did not occur). Participants rated the actors on a number of dimensions, including knowledge and projected status. Hypotheses were partially supported and provide evidence for a functional explanation for the phenomenon of mansplaining."

Poster 108. Mapping the Moral Domain in Croatia: Validation of the Moral Foundations Questionnaire and its Relation to Personality and Effic Morality Factors

Igor Miklousic, Boris Mlacic, Goran Milas

Following the popularity of the Moral Foundations Theory, we examined the construct validity of the most widely used instrument for accessing the moral dimensions proposed by this theory - The Moral Foundations Questionnaire. The instrument aimed initially at measuring five dimensions - Harm/Care, Fairness/Reciprocity, Ingroup/Loyalty, Authority/Respect, and Purity/Sanctity, was supplemented with new items aiming at the new potential foundation of Liberty/Oppression. We applied the six-dimensional MFQ on a sample of 649 students (self-ratings) and 649 their close acquaintances (peer-ratings) in Croatia. Factor analysis yielded a two-factor structure consisting of an individualizing factor and a binding factor, suggesting that two-factor solution may be the most acceptable. We discuss the relations between MFQ dimensions, Big-Five factors and morality dimensions derived from the natural language.

Poster 109. Life history antecedents of relative deprivation

Sandeep Mishra, Shadi Beshai, Martin Day, Lukas Neville

Fitness is necessarily relative: Individuals who are advantaged within a competitive landscape are more likely to successfully reproduce and have their genes represented in subsequent generations. It has been suggested that personal relative deprivation—subjective feelings of anger, resentment, and frustration in response to being deprived of outcomes compared to others—is a proximate “barometer” of one’s standing within a competitive landscape. We examined whether relevant life history variables are associated with the development of feelings of personal relative deprivation. Results indicate that personal relative deprivation is robustly associated with early childhood unpredictability, adverse childhood events, and with life history orientation. That is, heightened feelings of relative deprivation are associated with (a) harsh and unpredictable early childhood environments, and (b) relatively faster life history strategies (i.e., more impulsive and presented-oriented strategies). Further, moderation analyses suggest that the associations of harsh and unpredictable early childhood environments with relative deprivation are significantly moderated by life history orientation. Taken together, these results provide the first evidence that life history-relevant developmental inputs (and life history orientation itself) contribute to people’s perceptions of their relative position in competitive landscapes.

Poster 110. Compartir el Pan: A Social Evolutionary Perspective of the Abriended Caminos Intervention

Shannin Moody, Kimberly Greder, Brianna Routh, Wen Wang, Elizabeth Shirtcliff, Marian Kohut, Margarita Teran-Garcia

Evidence suggests stress contributes to obesity risk and that social support, a buffer to stress, could be an important element for interventions aimed at improving health. A 2017 pilot intervention designed to improve healthy lifestyles among Mexican immigrant families in a Midwestern state examined associations between cortisol and social support in families. Families (N=21) were assigned to a control group (CG) (N=10) that received printed materials or an intervention group (IG) (N=11) that participated in six 2-hour workshops focused on nutrition and healthy life-styles over 6 weeks. At T1-before intervention and T2- 6 months post-intervention, parent (N=35) and child (N=27) hair samples were assayed at 3cm to reflect cortisol (cort) over the prior 3 months. Parent social support (SS) was also measured via a survey. T1 IG and CG group cort levels did not differ ($t(28)=.121, p=.904$) however, CG cort rose from T1 (5.55 pg/mg, SD=5.94) to T2 (20.06 pg/mg, SD=38.01), $t(16) = -1.85, p=.08$ while IG cort did not, T1 (5.92 pg/mg, SD=10.46) to T2 (11.67 pg/mg, SD=10.92), $t(12) = -1.27, p=.23$. CG SS was higher than IG SS at T1 ($t(30)= -2.51, p=.02$). Over time IG SS rose (T1= 4.93, SD= 1.69; T2=5.28, SD=1.93) as CG SS fell (T1= 6.05, SD=.61; T2= 5.63, SD=1.91). T2 hair cort was negatively associated with T2 SS for the CG ($t= -.91, p<.00$), but not for the IG ($t= .24, p= .61$). Stressors may have “gotten under the skin” of CG participants as cort increased between T1 and T2.

Poster 111. *Poster canceled*

Poster 112. Personality, Gender, Psychopathy, and Sociosexuality

Kevin Moore, Evelyn Brosius, Scott Ross

The psychological study of personality and evolutionary perspectives have converged in recent years, but much remains to be learned by merging these historically separate approaches. The current research builds on work that studied Dark Triad traits, particularly psychopathy, mating orientation, and reproduction (e.g., Brosius, Ross, & Moore, 2017). More specifically, the current research focuses on how gender is linked to relations among a set of measures linked to psychopathy—a Dark Triad measure (SD3; Jones & Paulhus, 2014), the Big Five Aspect Scales (BFAS; DeYoung, Quilty, & Peterson, 2007), and the Triarchic Psychopathy Measure (TriPM; Patrick, Fowles, & Krueger, 2009). We also examined the impact of gender in how psychopathy measures correlated with mating orientation, as measured by the revised Sociosexual Orientation Inventory (SOI-R; Penke & Asendorpf, 2008), the Intentions Towards Infidelity Scale (ITIS; Jones, Olderbak, & Figueredo, 2011), and self-reports of individual and family reproduction. Data from a Mechanical Turk sample of 272 adults revealed novel findings, particularly on the links between psychopathy and BFAS, facets of psychopathy and Sociosexual Orientation, BFAS and SOI-R measures, as well as a somewhat complicated pattern of differences in inter-correlations depending on gender. The results have important implications, and contribute to the growing body of work linking personality approaches to evolutionary science.

Poster 113. The association between life history strategy and men's overestimation of sexual intent and commitment skepticism

James Moran, Nicholas Kerry, Zachary Airington, Marjorie Prokosch, Damian Murray

Research suggests that men tend to overestimate women's sexual intent and women tend to underestimate men's commitment. These cognitive biases are classified under the cognitive bias of error management theory (Haselton and Buss, 2000). There has yet to be a study that has investigated the relationship between individual's life history strategy and their cognitive biases. These pre-registered studies sought to discover this relationship. It was hypothesized that men who are fast LHS would be more likely to overestimate sexual intent from women because they prioritize current reproduction over future reproduction compared to slow life history strategist men. It was also hypothesized that women who are slow LHS would be more likely to underestimate commitment because they prioritize long-term relationship. The hypotheses were not supported. In study 1, 352 US-resident recruited through MTurk and Tulane University filled out the Mini-K and the Dating Behavior Scale and Commitment Skepticism Scale (Haselton & Buss, 2000; Cyprus et al., 2011). The results revealed a significant relationship between men who are slow LHS and being more skeptical of commitment. In study 2, we measured life history through childhood experiences (Griskevicius et al., 2011) along with the two scales in the first study. 360 MTurk users revealed that slow LHS men overestimate women's sexual intent and are more skeptical of commitment.

Poster 114. *Poster canceled*

Poster 115. Two types of ingroup cooperation, group-based and reciprocity-based psychological mechanisms

Yumi Nakagawa, Kunihiro Yokota, Daisuke Nakanishi

This study tested the validity of adaptive psychological mechanisms to generate human ingroup cooperation behavior in real social groups. From the evolutionary perspective, two types of the mechanism have been proposed, which are the group-based mechanism (cooperation triggered by the belongingness of the same category) and the reciprocity-based mechanism (cooperation triggered by the expectation that ingroup members will cooperate reciprocally). Although ingroup cooperation stemmed from both types of mechanism has been observed in laboratory experiments, a question still remains what factors could prompt each type of mechanism to function and whether ingroup cooperation based on these mechanisms would be observed in real social groups as well. We investigated the hypothesis that cost of cooperation would enhance the reciprocal ingroup cooperation in the laboratory experiment, using Prisoner's Dilemma game in which cost of cooperation was required. The participants (N=38 in Study 1; N=94 in Study 2) were those who regarded themselves as baseball fans. To manipulate reciprocity between participants, they were informed of their group belongings (fan of the same team or not). The results showed that the reciprocity-based cooperation was found in the situation when reciprocity was expected. The boundary conditions of the two types of psychological mechanisms underlying human cooperative behavior are discussed.

Poster 116. Ingroup cooperation and the frequency dependent strategy

Daisuke Nakanishi, Kunihiro Yokota, Junichi Igawa, Yumi, Nakagawa

The purpose of this study is to examine the influence of others' behaviour on the ingroup cooperation in a public goods game where intergroup conflict exists. Yokota & Nakanishi (2012, 2017) revealed by using evolutionally simulation and vignette experiment that in a public goods game consisting of multiple groups, the frequency dependent strategy adjusting their cooperation rate as a function of others' behaviour was adaptive and common. In this study, in a laboratory experiment, participants played repeated public goods games with two other anonymous members. Two three-person groups participated at the same time and the number of collaborators of each group was compared. The group having more contributors was awarded a bonus while the group with fewer contributors was confiscated their resources. There were two conditions: social condition and antisocial condition (whether or not participants being informed of other member's behaviour in the same group). Participants were 90 Japanese undergraduates (48 social, 42 antisocial). The result was that the cooperation rate was higher in the social condition than in the antisocial condition. There was also a sex difference: in the social condition; female participants consistently maintained a high cooperation rate than in the antisocial condition, but male participants gradually decreased in cooperation rate in both conditions.

Poster 117. *Poster canceled*

Poster 118. Oxytocin receptor gene regulates resting-state functional connectivity of attitudinal trust
Kuniyuki Nishina, Tamagawa University, JSPS Research Fellow Miho, Inoue-Murayama Hidehiko, Takahashi Masamichi, Sakagami Tetsuya, Matsuda Toshio, Yamagishi Haruto, Takagishi

The oxytocin receptor gene (OXTR) rs53576, a single nucleotide polymorphism located in chromosome 3, is associated with attitudinal trust (Nishina et al., 2015). In a previous study, we found that left amygdala volume mediates the association between the polymorphism of OXTR rs53576 (GG vs. AG/AA) and attitudinal trust. However, it is unknown which brain function is involved in the association between OXTR rs53576 and attitudinal trust. In the current study, we collected resting-state fMRI data from 206 adults (114 women; 26 to 69 years old) and examined the whether OXTR rs53576 regulates the resting-state functional connectivity of attitudinal trust. We used the Human Connectome Project (HCP) pipeline (Glasser et al, 2016) to analyze them. Results showed that the functional connectivity between left frontal pole (FP) and bilateral anterior cingulate cortex (ACC) is negatively correlated with attitudinal trust in people with GG, but these significant association were not observed in those with AA/AG. The interaction effect of OXTR rs53576 and attitudinal trust on FP-ACC networks was significant even after a multiple comparison correction (FDR, $p < .0001$). These results indicate that FP-ACC networks play a role in regulation of attitudinal trust in GG people.

Poster 119. Do manipulated mood affect altruist detection?

Ryo Oda, Tomomi Tainaka, Noriko Yamagata-Nakashima, Kai Hiraishi

This study investigated the effects of affective state on altruist detection in a zero-acquaintance video presentation paradigm. Several studies have demonstrated that people can correctly estimate the altruism levels of others (e.g., Oda et al., 2009). Although several non-verbal cues of altruism have been reported, the proximate mechanisms used to process these cues have not been assessed. We performed multiple experiments to manipulate the affective states of Japanese participants and asked them to distinguish videotaped altruists from non-altruists using a Faith Game. Following the methods of Oda et al. (2009), participants played the Faith Game as recipients against the videotaped altruists and non-altruists as allocators. During the game, participants were asked to listen to music that induced a positive or a negative mood. A signal detection analysis was conducted to compare detection performance under the two conditions. The results indicated that participants could accurately detect altruists, which supports the results of previous studies. Compared to participants in positive moods ($N = 79$), those in negative moods ($N = 80$) tended to be more hesitant in trusting the videotaped persons. However, the accuracy with which altruism levels were detected did not change with the manipulated mood. An interaction was observed between condition and gender, suggesting that altruism detection by females is subject to emotional influence.

Poster 120. Orbitofrontal Cortex Updates Relationship Value in Response to a Social Partner's Commitment Signals

Yohsuke Ohtsubo, Masahiro Matsunaga, Toshiyuki Himichi, Kohta Suzuki, Eiji Shibata, Reiko Hori, Tomohiro Umemura, Hideki Ohira

People rely on subtle signals to communicate their commitment to their social partners. For example, Yamaguchi et al. (2015) revealed that various pro-relationship behaviors serve as commitment signals. In response to such commitment signals, people increase a feeling of intimacy to the friend. Yamaguchi et al. (2017) also revealed that lonely individuals were less responsive to their friends' commitment signals. A functional magnetic resonance imaging (fMRI) study was conducted to investigate the brain regions responsible for the upregulation of intimacy. Twenty-two undergraduates were asked to imagine that 30 hypothetical events (e.g., their friend treated them a dinner on their birthday) in fact occurred and evaluated how each event would confirm the bond with the friend. Among other regions, the upregulation of relationship quality was positively correlated with the activity in the orbitofrontal cortex (OFC). Moreover, the OFC activity in response to low-cost commitment signals was negatively correlated with loneliness. The OFC is known to be associated with computation of utility of non-social objects. The results suggest that the OFC is also involved in the computation of utility of social partners. A follow-up study corroborated this prediction: Participants who imagined that they received a series of commitment signals from a particular friend increased the valuation of the friend, and this effect was attenuated among lonely individuals.

Poster 121. A comparative experiment on the first-order information and the second-order information in indirect reciprocity

Isamu Okada, Hitoshi Yamamoto, Yoshiki Sato, Satoshi Uchida, Tatsuya Sasaki

Indirect reciprocity is a well-known solution of the evolution of cooperation. Donors in social dilemma games must receive the recipients' reputation information in order to decide their actions. While previous and major insights support that the first-order information (information on the recipient's previous actions) is primary important, some experiments show the effects of the second-order information (information on the recipient's previous recipients). To explore the difference of those information, we have conducted experiments using a self-developed computer-based system with 152 participants. The Fisher-exact tests show that the disclosing rate of the first-order information if the second-order information precedingly disclosed was 'Good' is a significantly higher than the disclosing rate of the first-order information if the second-order information precedingly disclosed was 'Bad'. In contrast to this, it is not significantly difference that the disclosing rate of the second-order information when the first-order information was precedingly disclosed. This tendency is also supported by logistic generalized linear mixed models which explore the relationship of the information disclosure behaviors and cooperative actions. The information of that the recipient's previous recipient is 'Bad' does not have an influence on the donor's cooperation. We must further consider the role of the second-order information in indirect reciprocity.

Poster 122. Do same-sex siblings share similar vocal characteristics? An investigation of vocal traits among kin.

Kieran J. O'Shea, Rebecca Lai, Chengyang Han, David R. Feinberg, Benedict C. Jones, Lisa M. DeBruine

Kinship cues provide socially relevant information that can influence both sexual and prosocial behaviour. While the potential kinship cues of co-residence and facial resemblance have been well-studied, we know relatively little about whether vocal characteristics contain information about human kinship. The human voice is a rich source of information allowing us to differentiate between individuals and form impressions of personality. In this exploratory study, we are interested in understanding which vocal traits are similar between kin. This project forms part of a preliminary investigation looking at the potential for vocal similarity to indicate kinship between genetically related individuals. Using voice recordings from UK same-sex adult sibling and non-sibling pairs, we will analyse monophthong vowels and longer passages to determine whether kinship pairs share similar vocal traits. We will use Praat speech analysing software (Boersma & Weenink, 2013) to analyse the data using measures such as formant and fundamental frequency (F0). It is expected that voice recordings of same-sex siblings will be characterised by greater similarity in vocal features in comparison to same-sex non-sibling pairs.

Poster 123. Positive association between facial and vocal femininity/masculinity in women but not in men

Kamila Pereira, Marco Varella, Karel Kleisner, Ondřej Pavlovič, Jaroslava Valentova

Perception of femininity-masculinity (FM) influences social interactions and mate choice. Studies suggest that FM indicate the owner's underlying quality (health, fertility), and thus influence perception of attractiveness. Indeed, men prefer feminine female faces and voices, and in women, perceived facial and vocal FM correlate, supporting redundancy hypothesis. Women prefer masculine male voices, but mixed results are found for faces, and there are ambiguous results for redundancy of male stimuli. However, most of the current research focuses on isolated cues, especially visual and vocal. Here we examined the cross-modal concordance hypothesis by testing correlations between perceptions of FM based on facial, vocal, and behavioral stimuli. Standardized facial pictures, vocal recordings and behavioral (dance) videos of 38 men and 41 women were rated online by 21 men and 43 women on 100-point scale (0 = very feminine; 100 = very masculine). All participants were Brazilian students, aged 18-35 years, from the University of Sao Paulo. In women, results show that facial and vocal FM correlated positively, suggesting that women's faces and voices offer redundant information about FM. No correlation was found in men. Men's non-concordant cues may be adaptive, showing different qualities by different sensory modalities. Interestingly, in both sexes, dance did not correlate with either facial or vocal stimuli, indicating different messages and distinct process of development.

Poster 124. Disgust-eliciting images produce an attentional blink independent of state- and trait-level disgust

Paola Perone, Joshua Tybur

Navigation through a world abundant in sensory information requires selective attention, which operates by boosting the stimuli that are selected - based on their saliency and/or the current goal and context of the individuals - to further processing, while suppressing the non-selected one. Fear- and disgust-evoking stimuli are perceived as salient and capture selective spatial attention more than neutral stimuli. The current study investigated the temporal characteristic of this attentional bias by using an Emotional Attentional Blink (EAB) task. Moreover, it investigated the influence of the contextual level of disgust on the attentional bias towards disgust-eliciting stimuli by testing the moderating effect of olfactory cues to pathogens (i.e. state-disgust), and of individual differences in disgust sensitivity (i.e. trait-disgust). Participants (N=126) performed the EAB task twice - once while not exposed to an odor, and once while exposed to either a pleasant or a disgust-eliciting odor - and completed the Three Domain Disgust Scale. We found that disgust-eliciting stimuli hold attention longer than fear-evoking and neutral stimuli, and that this bias is not influenced either by individual differences in disgust sensitivity, or by the current state disgust activation. We speculate that visual attention is held longer on disgust- than on fear-evoking stimuli to evaluate the risk associated with them, and that contextual level of disgust does not facilitate this evaluation.

Poster 125. Reconsidering the Anger Recalibration Hypothesis in women

Gryphon Phillips, Ashley Locke, Danielle Lynch, Steven Arnocky

Anger is a fundamental component of human existence. From an evolutionary perspective, anger has been considered as a mechanism that motivates cost-inflicting or benefit-withholding activity in order to incentivize the target of one's anger to prioritise the an angry individual's welfare. One core prediction based upon this theory is that attractive women (who are in a better position to confer benefits) should be more prone to anger. Sell and colleagues found evidence for this in a small sample of women, and this finding has been widely cited but never replicated. Here we present results from four studies using diverse measures of both objective (e.g., facial symmetry, vocal pitch, male-rated facial attractiveness, BMI) and self-perceived attractiveness in relation to anger. None of the data sets supported a positive link between female attractiveness and anger. Moreover, one index of self-perceived attractiveness (upward appearance comparisons) demonstrated the opposite relationship, as did one objective measure of facial attractiveness (facial symmetry). These results suggest that, contrary to Anger Recalibration Theory, less attractive women may be more anger-prone.

Poster 126. Correlates of Behavioral Displays of Aggression during Stereotypical Conflict Situation in Czech Long-term Couples

Denisa Průšová, Silvia Boschetti, Jakub Binter

In a romantic couple's conflict, there are various ways to influence the partner including aggression in verbal or physical form. To test the impact of verbally and physically aggressive behaviors we used a novel method, a relationship drama. Sixty couples ($M_{ageF} \pm SD = 25.2 \pm 5.7$; $M_{ageM} \pm SD = 24.8 \pm 4.6$) re-enacted their typical conflict, expressing natural variety of behaviors in laboratory setting. Open codes were used to code verbal and nonverbal aggressive behavior (e.g., swearing, blackmailing/throwing objects, grabbing). Two standardized measures Control, and Decision-making Scale (CDS) and Dyadic Adjustment Scale (DAS; sub-scales: Consensus, Satisfaction, Cohesion, Affectional Expression) were also used. The difference in perceived relationship satisfaction on sub-scale of Satisfaction (DAS) within the couple was, in men, positively related to the amount of physical threats to female partner. In women, the larger difference on sub-scale of DAS Consensus sub-scale between the two partners positively related to displays of verbal aggression. These "misbehaviors" were probably signs of a frustration, in otherwise functional relationships since we researched long-term couples ($M = 38$ months, $SD = 28.4$), where strategies are more elaborate by everyday tuning. Interestingly, none of the aggressive displays predicted the outcome of the conflict. Thus the results should be further explored on couples with history of domestic violence and dysfunctional communication.

Poster 127. The A-B-G's of male mating: Do men pursue conditional mating strategies?

Marjorie Prokosch, Eric Russell, Raymond McKie, Drake Levere, Sarah Hill

Previous research has revealed that males within various species alternate mating strategies to maximize fitness across different physical and social environments. The current research examined whether human males pursue conditional mating strategies, and if so, which personal and environmental factors impact men's strategy use. We hypothesized that men engage in three conditional strategies – an alpha, beta, or gamma strategy – contingent on their relative dominance and status. We predicted that long-term oriented men would pursue a beta strategy, while short-term oriented men would utilize either an alpha (direct) or gamma (sneaky) strategy, depending on their dominance and desirability in the local mating market. In a pilot study, we recruited 622 men on Amazon mTurk to answer questions that reflected our proposed alpha, beta, and gamma strategies, followed by measures of mating orientation, preferences, and status. Exploratory and confirmatory factor analyses revealed three consistent and distinct factor loading constructs of alpha, beta, and gamma strategy. Further, structural equation modeling revealed that (1) alpha scores predicted greater formidability, status, and attractiveness, (2) beta predicted greater willingness to invest in long-term relationships, and (3) gamma predicted lower status, greater femininity, and higher likelihood of using deception to increase mating opportunities.

Poster 128. 2D-3D Kin Recognition in Human Faces

Tommaso Querci, Iris Holzleitner, Lisa DeBruine

Kin recognition plays a major role in human social behaviour, with an effect on our trustworthiness, cooperation, and partner choice. Maloney and Dal Martello (2006) showed that humans can discriminate between photographs of biological siblings and unrelated couples, finding a high correlation between perceived similarity and judgments of relatedness. Since 3D visualization produces an experience more similar to real life, this study aims to investigate whether third-party kinship judgments are more accurate when faces are presented in 3D rather than in 2D. Pairs of faces were presented on a black background, where 3D faces were animated to move side-to-side. Participants judged whether each couple was blood-related or not for 50 2D face pairs and 50 different 3D face pairs (for each condition 25 related, 25 unrelated). Anticipatory analyses suggest a positive influence of 3D visualization on the perceived relatedness, but not an increased accuracy in discrimination. We also found an unexpected interaction between type of visualization and age difference within a couple. 3D visualization seems to not improve judgements' accuracy, but it does increase the perceived relatedness overall. Further research should investigate whether the stim-type effect is caused by a more attentive exploration of 3D faces. Also, it is to explore the interaction between 3D visualization and age difference.

Poster 129. Ovulatory cycle and female preferences for foreign men

Dora Raos, Josip Skejo, Damjan Franjević, Igor Miklousic

Recent research presented two competing theories on female preferences for outgroup members as preferred sexual partners. One line of research points to an increased female intergroup bias in mating contexts while the other demonstrated preference for strangers near ovulation. The former hypothesises that the bias could stem from the historical danger of sexual coercion, while the latter proposed the preference for strangers might reflect the need for increased genetic diversity. To tease out the effects of both the threat of and potential genetic benefits of outgroup membership, a sample of 111 normally cycling women evaluated a total of 20 images of both Croatian and Spanish men on attractiveness, suitability as long-term and short-term partners along with their physical formability. Their ovulatory cycle phase was assessed by measuring luteinizing hormone (LH) in urine. Independent raters previously evaluated the included images on attractiveness, dominance, strength along with their stereotypical Croatian or Spanish phenotype. The results further enlighten how the preferences across menstrual cycle are influenced by both formability and cues of outgroup membership.

Poster 130. Beyond BMI using CGI: The Development of a 3-Factor array of Computer-Generated Body Stimuli and Use in Mate Preference Research

Simon D. Reeve, Lisa L. M. Welling, Justin K. Mogilski

Human mate preference involves a variety of qualities and attributes presumably selected for to provide an adaptive advantages in our environment. Yet some advantages may bring other costs and environments shift making “ideal” a moving target to study. Rather than focus on a single aspect (e.g., BMI, WHR, Body Fat) technology can open the door to a variety of flexible tools and procedures to broaden our scope (e.g., Brierley et al., 2016; Crossley et al., 2012). The development, validation and then subsequent application of a virtual set of male and female body stimuli are presented. The images rotate 360 degrees in 6 second loops and vary systematically in up to five increments on three dimensions: (1) Body Volume; a percentage increase in the literal volume of the mesh. (2) Body Composition; an aesthetic ratio of muscle vs. fat established from mesh-morphs. (3) Body Shape; from gynoid to android shape (i.e., proportionate WHR and WSR shift). A validation study (n=121), using a 3x3x3 iteration of body types with each figure variant rated on 6 scales suggests factors predominantly alter perception of the body dimensions as intended. Participants also ranked an orthogonal array of 16(+3) variants from a 4x4x4 iteration for Conjoint Analysis (CA) and checked back against the 3x3x3 rating. Some findings from recent/forthcoming experimental studies discussed to illustrate use. E.g., (1) Calorific deprived state (low blood glucose; n=183), (2) Pathogen threat study (milk; n=185).

Poster 131. Selfies for Science: Recommendations for using participant-taken facial photographs in research

Thomas Richardson, Christian Klingenberg, Tucker Gilman

The human face is studied in many fields for a variety of reasons. Typically studies use facial photographs taken under controlled conditions, but this can be time-consuming and some populations are difficult to study this way. An alternative is to use photos from social media/dating sites, but these lack any standardisation. We present a compromise in the form of self-taken facial photographs or selfies. Most people in developed nations now have access to phones with high-quality cameras, opening up the possibility to use selfies to easily collect large amounts of data that is more standardised than internet photos. However, selfies may contain higher levels of random error and/or systematic distortions relative to lab-taken photos. We obtained 2 lab photos and 2 selfies from 86 participants of varying ages, and used Geometric Morphometrics to quantify both systematic and random measurement error in selfies compared to lab photos, including head tilt, camera angle, asymmetry and error in digitisation. Modelling this error allows us to make specific recommendations to minimise selfie error in research, such as averaging multiple selfies. We then develop transforms to reduce systematic distortion in selfies, and linear discriminant analyses with cross-validation show transformed selfies are near indistinguishable from lab photos. We also find participants of a variety of ages can take research quality selfies and discuss study designs where selfies are and aren't appropriate.

Poster 132. Extending Life History Theory to Intra-Individual Variation

George Richardson, Mark H. C. Lai

Life history theory (LHT) has generated important insights into the nature of human variation. However, virtually all studies applying LHT to humans have been restricted to inter-individual differences, suggesting the enormous potential of LHT for shedding light on the structure and causes of change is not well recognized. To better determine (a) how to summarize change in life history strategy, (b) the role of environment in life history strategy development, and (c) leverage LHT in efforts to improve the human condition, researchers will need to examine the extent to which prior findings translate to prediction and explanation intra-individual variation. This presentation reviews questions implied by a shift to intra-individual variation, describes approaches that researchers can use to answer them, and concludes with an illustrative example that applies LHT to recovery from substance use disorders.

Poster 133. Cooperation, third-party punishment, gender and sexual dimorphism

Claudia Rodriguez-Ruiz, José Antonio Muñoz-Reyes, Marta Iglesias-Julios, Santiago Sanchez-Pages, Enrique Turiegano

Third-party punishment (3PP) is a behavior performed at one's own cost in order to penalize a behavior that is not considered fair. It is considered a prosocial behavior, and a possible explanation for human cooperativeness, which makes it very interesting to study from an evolutionary and physiological point of view. 3PP shows sexual dimorphism, being men who punish more harshly. We wanted to study whether sexually dimorphic features related to the levels of sexual hormones during development had an influence on the tendency to perform 3PP, as they are related to other behaviors as well. 511 women and 328 men took part in a Prisoner's Dilemma game. Afterwards, they had to decide whether to penalize another player's behavior, who had defected when he expected the partner to cooperate. We found no differences in cooperation between men and women, but men were indeed more prone to punish than women. We analysed the effect on this behavior of facial dimorphism (a proxy to the levels of testosterone during puberty) and second-to-fourth digit ratio (a proxy to fetal testosterone), controlling for facial fluctuating asymmetry and self-perceived attractiveness, which have been shown to heavily influence behavior. We found that facial dimorphism had a negative effect on 3PP in men, being more masculine men less prone to punish, as expected considering previous associations of masculine traits with antisocial behavior. No effects of these variables were found in women.

Poster 134. Reciprocal exchange and friendship within the classroom

Carlos Rodriguez-Sickert, Víctor Landaeta, Cristián Candia-Castro-Vallejos, César Hidalgo

In order to shed light on the relationship between reciprocal exchange and friendship we implement two different instruments in 48 classrooms (from 3rd to 5th grade) in 14 different public schools from Santiago, Chile. The first instrument involved the implementation of an anonymous dyadic experiment, characterized by potential mutual gains, but threatened by individual opportunistic incentives. During the experiment, all possible pairs combinations within each class had the opportunity to play the game. The second instrument was based on peer-nomination and students were asked to identify their friends. Using the data collected from the experiment, a complete weighted mutual support (or reciprocity) network was elicited for each class. At the level of the dyad, total mutual gains and the equitableness of the distribution of these gains could be computed. Using the data collected from the peer-nomination instrument, each dyad could be characterized as mutual friendship (both students identified the other member of the dyad as their friend), asymmetric (or unrequited) friendship (only one of the students identified the other member of the dyad as their friend) and no friendship (no student identified the other member of the dyad as their friend). We used the dyadic reciprocity measures obtained from the experiment (total gains and equitableness of its distribution) to characterize mutual friendships and unrequited friendships in terms of the nature of their reciprocal exchange.

Poster 135. Sociosexuality and the Big Five Aspects in the Triarchic Psychopathy Model

Scott Ross, Evelyn Brosius, Kevin Moore

The Triarchic Psychopathy Model (TriPM; Patrick, 2010) was proposed by Chris Patrick, following factor analyses of the Psychopathic Personality Inventory (PPI; Lilienfeld & Andrews, 1996) suggesting a three-factor model. In the Triarchic Model, there are three major dimensions: Boldness, Meanness, and Disinhibition. Although a number of studies have examined the construct validity of the TriPM, we used this model to examine psychopathy in terms of sociosexuality and also personality at the mid-level of the Five Factor trait model—the aspects, using the Big Five Aspect Scales (BFAS; DeYoung, Quilty, & Peterson, 2007). In a combined sample of community ($n = 272$) and student ($n = 74$) participants who completed the TriPM, sociosexual tendencies was correlated with Boldness ($r > .40$) and Disinhibition ($r > .31$), but less with Meanness ($r < .20$). This pattern among the Triarchic dimensions was most pronounced for Desire (Boldness and Disinhibition $r = .30$; Meanness $r = .00$). Further, correlates of the TriPM dimensions with the BFAS indicated strong relationships of Boldness with Assertiveness ($r = .80$), Withdrawal ($-.70$), Enthusiasm ($r = .60$), and Intellect ($r = .54$). In contrast, Disinhibition was most related to Politeness ($-.57$) and Industriousness ($-.56$) as well as Withdrawal ($.45$) and Volatility ($.48$). Further, Meanness was most related to both aspects of Agreeableness, Compassion ($-.64$) and Politeness ($-.72$) with other aspects correlating no higher than $.30$ with Meanness.

Poster 136. Prepared social learning: Relative learnability across evolutionarily relevant content and categories

Connair Russell, Annie E. Wertz

The notion of equipotentiality—that all information and associations are learned equally well—has long been challenged in research on animal learning, and more recently researchers have tested preparedness to learn certain types of content in humans. A growing body of research demonstrates preparedness for learning content across a number of domains including dangerous animals, fear, and plant edibility (e.g., Broesch, Barrett & Henrich; 2014; Öhman & Mineka, 2001; Wertz & Wynn, 2014). We look to build upon previous work finding heightened retention of danger and toxicity information in a memory task by directly comparing the learnability of different evolutionarily relevant categories and features. In a method adapted from Barrett, Peterson & Frankenhuis (2016), 4- to 6-year-old children are presented with a series of images and given information about each image. Participants are shown one of three sets of images, either animals, plants, or matched-control entities, and for every item are given binary information about danger, edibility, and seasonality (e.g. “this can/can’t hurt you”). After a distractor task, participants are presented with the images again and asked yes/no questions about the features. It is predicted, in accordance with previous work and evolutionary principles of minimizing costly errors, that participants will show greater recall accuracy for the fitness relevant categories (animal and plant), and features (danger, edibility).

Poster 137. The Effects of Observed Responses to Prosociality on the Elicitation of Elevation

Theodore Samore, Adam Sparks, Colin Holbrook, Daniel Fessler

Elevation is an emotion elicited by witnessing exemplary prosocial behavior. Elevation engenders an uplifting feeling that motivates increased prosociality in the witness of the exemplary behavior. Recently, we presented a functionalist/evolutionary account of elevation wherein this emotion is understood as part of a mechanism that adjusts the actor's prosocial motivation in response to changes in the level of prosociality occurring in the immediate environment. Here, we extend this framework to explore whether the strength of the elicitation of elevation in the face of prosocial actions is sensitive to the payoffs—positive or negative—of that prosocial behavior. For instance, if elevation is sensitive to the payoffs of prosocial actions, elevation could be enhanced by prosocial reactions (in the form of direct or indirect reciprocity) to the original prosocial action. Likewise, exploitative responses to prosocial actions may degrade the potential of said actions to elicit elevation. The answers to these questions potentially illuminate not only the functional logic of elevation, but, more broadly, the potential of different types of social events to initiate or impede cascades of contagious prosociality. We tested for these effects by varying the payoffs of prosocial actions from a video known to induce elevation. Results suggest that while prosocial reactions do not increase elevation, antisocial responses to the original prosocial actions degrade the effect of elevation.

Poster 138. The secret parents and health campaigners want to know: How sensory and social appeals can be used to promote healthy foods

Lelia Samson, Moniek Buijzen

Youth obesity is a global health problem. Traditional interventions aim to inhibit unhealthy eating or to increase healthy eating through utilitarian approaches –ineffective, especially for youngsters. Evolutionary theory predicts the effectiveness of promoting healthy foods through hedonic (taste-related enjoyment of food), palatability (appetite-related visuals signaling food quality) and social appeals (social eating). Grounded in evolutionary theory, this research tests their effectiveness through 2 within-subjects factorial experiments with 2 (Hedonic Appeal) x 2 (Palatability Appeal) x 3 (Social Appeal) x 4 (Message). Hedonic and Palatability Appeals had 2 levels: High and Low. Social Appeal had 3 levels: A Person Alone, Intimate Friends and Large Social Groups. Stimuli were chosen through message selection pilot studies from 294 professional photos. Study 1 (N=?58; 12-18 years old; 54% female) investigated how social cues activated the appetitive motivational system, attracting attention, affect and arousal, thus generating mental resources. Study 2 (N=?165; 12-18 years old; 53% female) examined whether social appeals further directed the attention and the generated mental resources towards processing the specific healthy foods within the images. Attentional self-selection was measured implicitly. Affect and arousal were self-reported using SAM. Visual attentional focus was assessed with a tablemounted eyetracker. Encoding was operationalized via recognition tests.

Poster 139. Physical resemblance between romantic partners and family members

Tamsin Saxton, Catherine Steel, Katie Rowley, Amy Newman, Thom Baguley, Thomas Pollet, Lisa DeBruine

Here we report on three studies that aimed to investigate physical resemblance between romantic partners and family members. Study 1 made use of the established finding that people select partners who resemble their other-sex parent, especially if they are close to that parent, to determine when this preference for parent-similar features is established. It contrasted women's reported closeness to their parents at different developmental phases against those women's preferences in adulthood for partners who resembled their parents (n=145). It found that women's reported closeness to their parents prior to menarche predicted greater dissimilarity between parent and partner eye colour, but the opposite pattern after menarche. Study 2 set out to replicate the findings in a larger dataset (n=800). Study 3 tested whether women select partners who resemble their brothers (n=56). It also investigated whether any perceived similarity depends on whether the brother is younger or older than the woman, given that aversion to siblings arises in particular through maternal perinatal association. We found evidence for perceptual similarity between a woman's brother and partner, and no effect of brother age. Together, the studies indicate that experiences during specific childhood and adolescent developmental periods may have longstanding effects on individual differences in human facial preferences, leading to physical similarities between people's family members and their partners.

Poster 140. Evolutionary Media Psychology: A New Approach in Media Research

Frank Schwab, Clemens Schwender

In the light of evolutionary psychology behavior and experience in dealing with media (e.g. books, tv, internet, smartphones, robots) are not only the result of current learning processes and past own experiences, they are always also a product of human evolution. Evolutionary psychology nowadays uses a wide range of scientific disciplines to generate its hypotheses. It cites findings from paleontology, anthropology, biology, primate research, ethology, neurophysiology, linguistics, psychology and sociology. Of course literary and cultural studies (Eibl, 2009, Boyd et al., 2010), as well as communication and media studies (such as Lee 2006) have to be included when it comes to media research as a field of evolutionary thinking. An evolutionary approach in media research in Germany was first introduced around the year 2000 in academic theses for the communication science and media psychology (Schwender, 2000, Schwab, 2004). In 2007 a special issue of the Journal of Media Psychology (Schwab, 2007) was published and in 2014 a short introductory essay in the Handbook of Media Science (Schröter, 2014) followed. Nevertheless, there is a great lack of further developments and applications of this approach. A broad debate is not yet taking place. This contribution demonstrates that evolutionary media psychology provides hypotheses that can and have to be empirically tested and whose explanatory power has to be compared with other theories and models in the field of media research.

Poster 141. The Negativity Bias in Person Perception: Finding the Beast in the Crowd

Sascha Schwarz, Manfred Hassebrauck

Social interactions pose substantial benefits, but also the risk to contract diseases. As physical attractiveness is a cue to perceived healthiness, we explored if very early in the perception process people of below-average attractiveness will be automatically identified compared to average attractive and people of above-average attractiveness. In four studies, the Beast in the Crowd Task was introduced to the physical attractiveness literature to investigate this attentional bias. In Study 1, 118 women completed the Beast in the Crowd Task. Study 2 was intended to replicate the findings in a sample of 43 women 50 and men. Study 3 and 4 explored the flexibility of the behavioral immune system. In Study 3, the effect of progesterone, which suppresses the physiological immune system, was investigated in a sample of 141 women. Finally, Study 4 explored, if priming infectious diseases and individual differences in proneness to sickness enhances the performance in the Beast in the Crowd Task in a sample of 124 women. The results support the prediction that below-average attractive people are processed more efficiently than above-average attractive people, supporting the negativity bias in person perception. Further, the results show, that female targets are processed superior to male targets, which could be explained post-hoc considering the mate choice literature.

Poster 142. Mate choice through classified ads over the lifespan

Clemens Schwender

If reliable information on the fitness of potential partners is not available, indicators must be used. The signals can be mediated via image, sound or text. In the case of mate choice through classified ads self-descriptions and expectations are formulated, which should make an impression on the target readership. So far, gender differences as well as long-term and short-term differentiation have been considered. For the first time, age as an examination dimension is put into focus in the present study. For example, older women are more likely to emphasize their physical attractiveness when compared to younger women, while men change strategy and increasingly refer to their resources with age. The results are based on a quantitative content analysis of 1,144 personals from the local magazines Tip, Zitty (both based in Berlin) and Kölner. The publications appear both as print editions as well as online. Thus, neither media access (digital gap) nor financial restrictions (wealth gap: an ad costs up to 15 euros) play a crucial role. Content analysis has some advantages when looking at dating ads. It is a non-reactive method that does not affect people's actions. The analysis is based on a non-invasive method, which implies a high validity for the effects of social desirability. Self-portrayals and expectations are formulated in terms of their hoped-for effects rather than reactive interviews.

Poster 143. Sex Differences in Perceptions of Sexual Harassment

Anna Sedlacek, Joy Wyckoff, David Buss

Women tend to perceive potentially sexually harassing behaviors as more harassing than men, but existing research has neglected important situational factors. In Study 1, male and female participants (N=148) evaluated how they would feel if a person of the opposite sex enacted a variety of hypothetical behaviors towards them, ranging in severity of harassment. We used a 2x2 design varying status (graduate vs. undergraduate student) and attractiveness of the harasser. Women were overall more upset and more likely to find each behavior harassing than men. Both genders considered behaviors from higher-status and attractive harassers less upsetting and less harassing. There was an interaction between participant sex and harasser attractiveness: the mitigation of upset and perceived harassment caused by having a more attractive harasser was larger for men than for women. Study 2 (N=299) investigated more specific emotional responses and the effect of participants' previous experience being sexually harassed. Discussion focuses on implications for integrating evolved psychology and cultural influences on perceptions of harassment.

Poster 144. Exploring Variation in The Types of Romantic Relationships

Ayten Yeşim Semchenko, Gülsevım Eysel, Zsófia Csajbók, Jan Havlíček

Previous theory-driven research on mating strategies primarily operationalized two main types of relationships (i.e., long-term/committed and short-term/uncommitted). Nevertheless, it may not capture the full variation in the relationship types and their dimensions. Therefore, a bottom-up approach is necessary. Our aim was to explore the different types of romantic relationships and the dimensions differentiating those types among heterosexual individuals in Turkey, where both conservative and non-conservative individuals can be found. The community sample consisted of 20 female (M(age) = 25.25, SD = 2.07) and 20 male participants (M(age) = 25.35, SD = 2.10) recruited via snowball technique in Ankara. Semi-structured interviews about participants' romantic relationship experiences were conducted. The phenomenological content analysis was performed independently by the two native speaking coders. The different forms of relationships (e.g., suggestive/forced arranged marriages and attempts, open marriage, long-term extra-marital relationships, friends with benefits, fuckbuddy, online relationships, one-night stands, serious relationships, and temporary relationships) were reported. Our qualitative dimension analysis indicated that temporality and commitment are to some extent independent dimensions. Various other dimensions (e.g., exclusivity, friendship, and not/having a future plan) were also found. Future studies are needed to explore the generalizability of these findings.

Poster 145. Mating Motivation Scale

Zeynep Senveli, Graham Albert, Steven Arnocky, Carolyn Hodges-Simeon

One of the primary areas of study within evolutionary psychology is individual differences in mating behavior. Thus far, literature on human mating has focused on the strategies adopted when seeking, attracting, and retaining romantic partners. However, very little research investigates the effort put forth in employing these strategies and to what extent it varies between individuals. Here we define mating motivation as the energy which people allocate towards locating, attracting, and retaining romantic partners. We have developed and tested a new scale to measure mating motivation. The reduced scale includes fourteen items related partner upgrading (e.g., “If I feel that the relationship that I am in will not last, I begin to look for potential romantic partners even while I am still in the current relationship”), mate seeking (e.g., “When I am single, I would consider using matchmaking apps”), and current partner investment (e.g., “I do more than most people my age and sex would do to care for their partner”). Results of an exploratory factor analysis produced a three-factor solution which was consistent with good model fit. We present our set of items, its factor structure of the measure and the internal consistency of our factors. We will also present the results of a confirmatory factor analysis.

Poster 146. Exploring the hook-up app according to genders: Sexual disgust and sociosexuality as predictors for motivation to use Tinder for casual sex

Barış Sevi, Tugce Aral, Arin Korkmaz

Tinder, also known as the “hook-up app” is the leading online dating application. We explored the reasons for using Tinder when seeking opportunities for casual sex. We asked whether sexual disgust sensitivity and sociosexuality predict Tinder use with motivation for casual sex. We also tested if gender moderated this relationship. Results of the data collected from 169 Tinder using Amazon MTurk workers revealed that sexual disgust sensitivity and sociosexuality were predictors of motivation to use Tinder for casual sex. The participants with higher sexual disgust sensitivity reported lower motivation while the participants with higher sociosexuality reported a higher motivation for casual sex in their Tinder usage. While this model explained the motivation for men, a different model explained women's motivation. Sociosexuality mediated the relationship between sexual disgust sensitivity and the motivation to use Tinder for casual sex for women Tinder users. To investigate the gender differences, a second sample of Amazon MTurk workers were collected (N = 271) which revealed that female Tinder users had lower sexual disgust levels compared to non-users, while the same results were not present for males. We infer that this gender difference emerge through the sexual risk-taking differences between genders.

Poster 147. *Poster canceled*

Poster 148. Excavating the Foundations: Cognitive Adaptations for Multiple Moral Domains

Jonathan Sivan, Oliver Curry, Caspar van Lissa

Do humans have cognitive adaptations for detecting violations of rules in multiple moral domains? Previous research using the Wason Selection Task has provided evidence for domain-specific mechanisms for detecting violations of social exchange and hazard precaution rules. The present study investigates whether similar evidence can be found for mechanisms for detecting violations of rules relating to soliciting aid, maintaining coalitions, and navigating hierarchies. Participants (n=887) completed one of seven Wason Selection Tasks – five socio-moral tasks (Exchange, Hazard, Aid, Coalition, and Submission) and two controls (Descriptive and General Deontic). Participants also completed the short-form Moral Foundations Questionnaire (MFQ) as a self-report measure of five corresponding sets of moral values. The study found that, as predicted, performance on all five socio-moral tasks was significantly better than performance on the two control tasks. However, there was no relationship between task performance and corresponding moral values. These results provide initial evidence for cognitive adaptations for detecting violations of rules relating to providing aid, maintaining coalitions, and submitting to authority. We outline how future research might provide additional tests of this theory, and thereby further extend our understanding of the foundations of human socio-moral reasoning.

Poster 149. Confirmation bias in psychology and art history

Espen Sjøberg, Eirik Engelsen, Emma Nilsson, Selma Sanden, Raquel Wilner

Confirmation bias is the tendency to seek evidence that confirms pre-existing beliefs, as opposed to seeking information that could potentially falsify it. A classic test of confirmation bias is the Wason Selection Task, where there is only one correct answer, but the various incorrect answers can reveal bias in reasoning. When different professions are evaluated, the general finding is that natural sciences show less bias compared to social sciences. Art history and behavior analysis have never been formally tested. We conducted a survey to evaluate confirmation bias in second year students of psychology, behavior analysis, biology, and art history (N=116). It was hypothesised that art historian's subjective evaluation of an artist leads to increased confirmation bias, and behavior analysis' resistance towards null-hypothesis testing would also result in increased bias compared to psychology and biology. Results found that all professions performed equally poor, with almost no participants answering correctly. Students of psychology showed the least amount of confirmation bias, art historians the highest, while biology and behavior analysis showed an intermediate amount of bias. Implications for research methodology in all fields are discussed.

Poster 150. Satisfaction and excitement - intermediate relationships and sex differences

Nina Charlotte Sølshnes, Leif Edward Ottesen Kennair, Silberman, Mons Bendixen

Studies in evolutionary psychology (EP) make a major distinction between short-term vs. long-term relationship status. The current study suggests that relationships with low commitment and intermediate duration are both frequent and normal. Sexual strategies theory predicts that there will be sex differences in satisfaction depending on relationship status, where men in general are more satisfied with opportunities for short-term mating than women are. Possibly women in intermediate relationships are less satisfied due to low commitment from partners. Third wave feminism predicts that women in intermediate relationships will be satisfied due to possible exploration of sexuality with greater safety than short-term allows. Participants (N=529) answered questions regarding relationship status, satisfaction and excitement, commitment and quality, and expectancies and sexual behavior. The results are inconsistent with both theories. Both sexes are more satisfied in long-term relationships than short-term. There are no sex differences among singles, inconsistent with both theories. There were no sex differences in the intermediate group. The intermediates had the same levels of satisfaction as the singles, but excitement was similar to those in relationships. The implications of the findings in relation to both evolutionary psychology and third wave feminism, as well as implications for further research on sexual behavior, are discussed.

Poster 151. Applying the sentiment model to study emotional response to exceptional prosociality

Adam Sparks, Daniel Fessler, Colin Holbrook, Theo Samore

An emotion called elevation is implicated in the psychological causal pathway underlying the contagion of prosocial behavior. Critical questions of both general and applied interest are: who is more likely to experience elevation, and why? To investigate individual differences in susceptibility to elevation, we adapted a general evolutionary model of social emotions, the Sentiment Model, which posits that emotions—strategic rapid response mechanisms—are deployed when cues are assessed in light of information encoded in attitudes—expectations about the fitness affordances of other people involved in the emotion-eliciting scenario. We argue that elevation is deployed when cues are assessed as revealing that immediately initiating or escalating prosocial behavior is likely to be fitness-profitable, an assessment that depends on an attitude “idealism-cynicism,” which encodes prior expectations about the prosocial tendencies of others. Consistent with our argument, a meta-analysis of effects from 12 studies shows that a positive relationship between idealistic baseline attitudes and elevation response to video stimuli is present only in specific circumstances: this relationship is strong and robust when the stimulus is clearly prosocial, weak and inconsistent when the stimulus is ambiguous, and null when the stimulus is incongruent.

Poster 152. Skin texture and colour predict perceived health in Asian faces

Ian Stephen, Bernard Tiddeman, Kok Wei Tan

Facial skin texture and colour play an important role in observers’ judgments of apparent health and have been linked to aspects of physiological health, including fitness, immunity and fertility. However, most studies have focused on Caucasian populations. Here, we report two studies that investigate the contribution of skin texture and colour to the apparent health of Malaysian Chinese faces. In Study 1, homogenous skin texture, as measured by wavelet analysis, was found to positively predict ratings of apparent health of 143 Asian faces. In study 2, homogenous skin texture and increased skin yellowness positively predicted rated health of 53 Malaysian Chinese faces. This finding suggests that skin condition serves as an important cue for subjective judgements of health in Malaysian Chinese faces.

Poster 153. Gender and love style are linked to emotional versus sexual jealousy

Andrea Lorena Stravogiannis, Jaroslava Valentova, Hermano Tavares

Jealousy can be classified as sexual or emotional. According to evolutionary psychology, sexual jealousy (SJ) arises when one partner engages sexually with a third person. Emotional jealousy (EJ) arises in the face of suspicion or the formation of an affectionate bond with another person. We hypothesized that gender, attachment and love style influence the type of jealousy (sexual or emotional). Objective: To test possible effect of attachment and love style, and psychiatric disorders on EJ versus SJ in a sample of Brazilian men and women. Methodology: A cross-sectional quantitative study was performed with 88 participants with pathological jealousy, divided into a group with higher sexual than EJ ($n = 23$) and a group with higher emotional than SJ ($n = 65$). We performed an univariate analysis and a logistic regression model. Results: Eros love style exerted a positive influence on the occurrence of EJ. However, it was not found influence by the attachment styles on jealousy type. Both groups presented a high incidence of depressive disorders, suicidal ideas, and anxiety disorders. The group with EJ showed a higher incidence of anxiety symptoms. Conclusion: Hypotheses that gender and love style influence the occurrence of jealousy types was confirmed, but there was no link to attachment style. Regarding Eros, it seems that the self-perception, even if partial, of an inability in the erotic game, could increase the fear of being replaced for a more competent rival.

Poster 154. Honest signals of psychosocial stress in voice

Anna Szala, Katarzyna Pisanski, Aleksander Kobylarek, Luba Jakubowska, Kamil Błaszczński, Amelia Walter, Magda Kasprzyk, Krystyna Łysenko, Irmína Sukiennik, Judyta Nowak, Katarzyna Piątek, Tomasz Frąckowiak, Piotr Sorokowski

Stress is an organism's reaction to a stressor. Psychosocial stress triggers hormonal and physiological changes in the body, that sometimes also manifest behaviorally. Although stress can have adaptive short-term benefits, in the long-term it can lead to serious health problems. Here, we analyzed covariation in voice, polygraph, and hormone measures under experimentally induced psychosocial stress. Participants took part in a highly stressful, staged job interview (Trier Social Stress Test). We controlled for factors that could potentially affect the stress response or its measurement. Psychosocial stress was shown to increase voice pitch and its variability, cortisol levels, and to decrease body temperature and hand movement. Critically, these measures covaried with one another. Thus, the results show that nonverbal vocal cues (e.g. F0 mean and variation) can, to some degree, honestly signal activation of the sympathetic nervous system and hypothalamus-pituitary-adrenal axis, providing new understanding of the way these systems co-function under stress. These results imply two possibilities regarding honest vocal indices of stress. Increased pitch and variability may either be a) a product of adaptive selection operating on the voice to honestly indicate stress, or b) a byproduct of the body's reaction to stress.

Poster 155. Attractiveness of a friend and a romantic partner moderate the sexual interest in opposite-sex friend.

Aleksandra Szymkow

Studies investigating the nature of opposite-sex friendships consistently point to the fact that men experience more sexual attraction to their female friends than women do towards their male friends. Men report greater desire than women to have sexual intercourse with their cross-sex friend independently of whether they are actually single or involved in a romantic relation with other woman. However, a little attention was directed towards potential moderators of this effect. In the present study I turn to investigate the role of attractiveness of both a friend and a romantic partner on the cognitive, affective and behavioral levels of sexual interest Polish participants (Mage= 24.03) who declared to be involved in a romantic relationship (64m, 82f, heterosexual) were asked to think of their closest cross-sex friend who is not their romantic partner and with whom they do not have (or had) a sexual relation. Then the cognitive (e.g., sexual fantasies), affective (e.g., sexual arousal) and behavioral (e.g., sexual signals) levels of sexual interest were assessed as well as the attractiveness of participant's friend and romantic partner (via questionnaire). Along with expectations both the attractiveness of a friend and romantic partner significantly moderated the effect of sex on sexual interest on all investigated levels. Men (but not women) showed the increased levels of sexual interest as attractiveness of a friend increased and attractiveness of a romantic partner decreased.

Poster 156. Social value orientation regulates the function of the right DLPFC on pro-social behavior

Haruto Takagishi, Atsushi Miyazaki, Toru Ishihara, Hiroki Tanaka, Kei Kanari, Kuniyuki Nishina, Takayuki Fujii, Muneyoshi Takahashi, Toshio Yamagishi

The dorsolateral prefrontal cortex (DLPFC) plays a role in pro-social behavior (Yamagishi et al., 2016). In the current study, we collected resting-state fMRI data from 206 adults (114 women; 26 to 69 years old) and examined whether SVO regulates the resting-state functional connectivity of pro-social behavior. To analyze the data, we used the Human Connectome Project (HCP) pipeline (Glasser et al, 2016). All participants played five economic games (a prisoner's dilemma game × 2, a dictator game, a public goods game, and a trust games) and responded to a measure of SVO three times on different days. We standardized behavior within each game and averaged behaviors to determine overall pro-social tendency. We focused on the participants who were classified as pro-self three times (consistent pro-self [n = 38]), and those who were classified as pro-social three times (consistent pro-social [n = 35]). Results showed that functional connectivity between right DLPFC and left DLPFC, left inferior frontal cortex, and left medial prefrontal cortex were positively associated with pro-social behavior in individuals who were classified as consistent-pro-selves, but not in individuals who were classified as consistent pro-socials. These results indicate that the prefrontal networks play a role in pro-selves' pro-social behavior.

Poster 157. Positive Fortune-telling Enhances Men's Financial Risk Taking

Xiaoyue Tan, Jan-Willem Van Prooijen, Paul Van Lange

Fortune telling is a widespread phenomenon, yet little is known about whether people are affected by it, including those who consider themselves non-believers. The present research investigated the power of a positive fortune telling outcome (vs. neutral or vs. negative) on people's financial risk taking. In two online experiments (N1 = 252; N2 = 441), we consistently found positive fortune telling particularly enhanced men's financial risk taking. Additionally, we used a real gambling game in a lab experiment (N = 193) and found positive fortune telling enhanced college students' decision-making for gambling, which seemed more pronounced for males. Furthermore, a meta-analysis of these three studies demonstrated gender was a significant moderator for the fortune telling effect (vs. neutral), with an effect size of 0.33 [0.08, 0.58] for men, but of almost zero (– 0.05 [– 0.30, 0.20]) for women. Thus, positive fortune telling can yield increased financial risk taking in men, but not (or less) so in women.

Poster 158. Creativity Does Not Just Signal Intelligence

John Taylor

In evolutionary psychology, creativity has largely been treated as a proxy for intelligence in mate-seekers. Some evidence contradicts this interpretation, however. We explored the relationship between intelligence and creativity using Facebook profiles that varied in the education level, apparent financial success, and creativity of the individuals depicted. We recruited 384 single, heterosexual men and 328 single, heterosexual women through Mechanical Turk to review a randomly assigned Facebook profile of a stranger of the opposite gender. Participants rated the perceived creativity, intelligence, financial security, and several other significant factors of mate selection. They also identified the three most important traits in selecting a mate, chosen from a list of 18 possible traits. Finally, participants rated self-perceptions of various qualities relevant to mate selection, including creativity, financial security, and ability to solve problems. We found strong evidence of a typical halo effect in assessing the traits of stranger in the Facebook profile, but that there was sufficient evidence to dissociate creativity from intelligence as mate selection criteria. Notably, men indicate creativity is an important criterion more than women, while women indicate intelligence is an important factor more than men. We discuss what creativity may signal that is different from intelligence based upon the gender, financial status, and other inherent traits of the mate-seeker.

Poster 159. Tidiness of Mind: The Evolutionary Embodied Cognitive Consequences of Disgust

John Terrizzi, Jr., Robert Goodman

Humans are goal-directed, purposive organisms. Our goals are evolutionarily prepared and biologically bound (e.g., disease-avoidance). From an evolutionary perspective, the brain is a behavioral multi-tool composed of psychological mechanisms that are solutions to specific adaptive challenges (e.g., infectious disease). Because we live in a messy, ambiguous world, our goals can be conflicted. For example, a situation may contain cues that encourage both an approach (e.g., hunger) and avoidance orientation (e.g., rotten food). Consequently, organisms require a cognitive structure that enables them to quickly and decisively respond to a stimulus. The current project argues that disgust plays an important role in this disambiguation. Disgust is believed to be a solution to the adaptive challenge of infectious disease. Its primary function is to encourage spatiotemporal avoidance of potential contaminants. As a consequence of its embodied cognitive nature, disgust has important implications for the categorization of information. First, the current paper will provide a literature review illustrating disgust's role in cognitive disambiguation (e.g., distinguishing humans from animals, good from evil, self from other, ingroup from outgroup, etc.). Second, empirical data will provide evidence that disgust is associated with intolerance for ambiguity and that for those who are intolerant of ambiguity (i.e., +1 SD), disgust can inhibit the mindful experience.

Poster 160. Consensual but undesired sex: sexual arousal patterns in a sample of students from a sexually liberal, gender-equal culture

Trine Tørseth, Leif Edward Ottesen Kennair, Mons Bendixen

Studies have shown that people engage in consensual undesired sex, but the reasons why remain largely unexplored. There may be underlying sex differences in sexual desire that account for engaging in consensual undesired sex. Furthermore, this difference in sexual desire may be due to different sexual arousal patterns. However, the research on consensual undesired sex has often been conducted within framework of sexual abuse, rather than acknowledging that sexual desire and arousal is a result of complex interplay between partners in a relationship. Seven-hundred forty heterosexual students (66% women) aged between 18 and 30 completed questionnaires on sexual satisfaction and passion about their current or most recent relationship, sexual initiation and rejection, perceptions about their own and partners sexual desire and arousal patterns, sexual awareness, and nonsexual reasons for engaging in sex. Results showed that, as predicted, relative to women, men desire a higher frequency of sex as the relationship duration increases. In addition, women more than men reported having sex for reasons other than sexual desire, such as guilt, intimacy or material gains. In line with our predictions, men more than women experience sexual desire prior to arousal, while women more than men experience sexual desire subsequent to arousal. These findings are supportive of different sexual arousal patterns in men and women.

Poster 161. The Anatomy of Outrage

Dylan Tweed, Max Krasnow

The world is rife with opportunities for mutually beneficial collective action. Among them is the opportunity for in-group members to coordinate their efforts against rivals for social status. Moral outrage shows special design signatures for coordination in this domain by conditioning its activation on violations of intergroup welfare tradeoff (WTR) precedents, ecologically relevant cues of relative group bargaining power and the extent of shared awareness among in-group members, and by motivating the transmission of representations that encourage collective aggression. Though moral outrage is a pervasive phenomenon, there has been no systematic development of a scale for its measurement. In addition to reporting experimental results exploring the collective bargaining function of outrage - one of the most potent phenomena affecting social life - we also introduce a novel outrage inventory comprising theoretically grounded sub-scales. Making use of this scale will allow researchers across the disciplines of psychology, political science, sociology, and economics to understand the components of moral outrage that motivate collective bargaining ranging from campus disputes to national movements.

Poster 162. Sociosexuality and gender in real-life friendship groups

Max van Duijn, Michael Laakasuo, Tamas David-Barrett, Anna Rotkirch

Humans cluster into groups, of which the so-called “sympathy group” of around 15 individuals is crucial for peer sociality. However, friendship groups among non-kin remain surprisingly little studied in human adults, partly due to a lack of data. Evolutionary theory predicts significant gender differences in the composition and function of sympathy groups, usually related to known gender differences in foraging, aggressive behaviour, and defense. Here, we test such theories using unique, original data from a longitudinal study into the formation and success of real-life friendship groups at a European student fraternity. Methods: During their first year, students form single-sex groups, which often provide the basis for a lifelong association. Through surveys over multiple years, we have studied how measures such as childhood background, life goals and sociosexuality relate to group formation and group success among men and women (N=26 groups, mean group size =15). Group success was measured as popularity, a goal for such groups, and as bonding, using the inclusion-of-other-in-self (IOS) scale. Results: Gender differences in group formation were especially prominent with regards to dating status and sociosexual orientation. In our sample, male but not female group formation and success were strongly predicted by dating status and socio-sexuality of the members. We suggest that mate attraction is an important and overlooked feature of human male sympathy groups.

Poster 163. Mate Value Discrepancies and Relationship Satisfaction in Heterosexual and Non-Heterosexual Romantic Relationships

Matthew Vazquez, Aaron Cisneros, Cari Goetz

Previous research studying heterosexual individuals has established two mate value discrepancies (MVDs) that predict relationship satisfaction. Partner-potential partner MVD indexes the proportion of other potential partners in a sample that are farther away from a person's ideal mate preferences than their current mate. Partner-self MVD captures the difference in mate value between partners (Conroy-Beam, Goetz, & Buss, 2016). We hypothesized that these same MVDs would predict relationship satisfaction in individuals with same-sex romantic partners. Men and women in both heterosexual ($n = 800$) and non-heterosexual ($n = 800$) long-term relationships completed a measure of relationship satisfaction and the mate preferences questionnaire used in previous research to calculate the MVDs (Conroy-Beam & Buss, 2017). We replicated the relationship between partner-potential partner MVD and relationship satisfaction in people with both same- and opposite-sex partners. People were more satisfied with their relationship as the number of alternative partners closer to their ideal preferences than their current mate decreased. This study demonstrates that the same mechanisms that influence relationship satisfaction in heterosexual partnerships also function in non-heterosexual partnerships.

Poster 164. Tough love? An evolutionary perspective on female nonmainstream pornography preferences

Maximilian T. P. von Andrian-Werburg, Frank Schwab

Two studies conducted in different European countries ($N \geq 1000$) show, unsurprisingly, that men watch more pornography than women. But, if pornography reception is split up to its different types, sex differences fade for nonmainstream (nm) types like sadomasochism or hardcore. The sexual strategies theory and subsequent research assume that different factors like female cycle, life stressors or short term mating orientation could affect nm pornography preferences and may explain sex differences. In coordination with our research ethics committee, we are conducting a survey ($N_{cur.} = 232$, 151 female, $M_{age} = 24.26$ years, $SD_{age} = 6.17$) to evaluate if the mentioned factors impact female nm pornography preferences. Women in our sample who watch nm pornography ($n = 44$) report to view content with more dominant male actors (5-point intensity scales, $M_m = 3.32$, $SD_m = 1.06$, $M_f = 3.99$, $SD_f = 0.82$, $t = 3.28$, $p < .01$, $d = 0.71$) and less dominant female actors ($M_m = 2.66$, $SD_m = 1.21$, $M_f = 2.05$, $SD_f = 0.90$, $t = 2.68$, $p < .01$, $d = 0.57$) compared to male viewers ($n = 42$). Further, women in their fertile phase ($n = 10$) report to watch nm pornography with less dominant male actors than the other women do ($n = 22$, $M_{fert.} = 3.67$, $SD_{fert.} = 0.79$, $M_{nf.} = 4.29$, $SD_{nf.} = 0.65$, $U = 66$, $p = .02$, $d = 0.86$). Up to now our data yields a tendency that evolutionary adaptations impact female porn preferences. Further results will be presented and an advanced discussion will take place at the conference.

Poster 165. Altruistic behavior in a context of sexual selection: Do we help attractively - dressed women and handsome men more than others?

Iva Vukojević, Iva Sović

Through the lens of evolutionary psychology, altruism is most commonly explained in terms of natural selection and scholars just recently started to determine a relationship between altruism and sexual selection. This particular research, therefore, is focused on determining relationship between altruism and intraspecific and interspecific competition. This research was conducted under natural conditions with the help of two assistant experimenters (a male and a female) who played the roles of interviewers asking random passers-by to fill out a survey and help them with their student research in two experimental situations depending on their outfit. They wore clothes that emphasized preferences of the opposite sex in terms of theory of evolution and sexual selection (evolutionary attractive) or it did the opposite (evolutionary unattractive). Sample size was 249 in total, of whom 105 were male and 144 female participants. Results showed that, in general, men were more willing to help female helpee opposed to the male helpee, and women were more willing to help male helpee opposed to the female helpee. This matches with the interspecific competition. Also, men helped less when male experimenter was dressed evolutionary attractive which supports the hypothesis of intraspecific competition. Only a few hypothesis were confirmed which leads to the conclusion that more research should be conducted to examine these hypothesis more thoroughly.

Poster 166. The role of social information in infants' behavioral responses to plant threats

Aleksandra Włodarczyk, Camille Rioux, Annie Wertz

Infants differentially attend to and learn about ancestrally-recurrent threats such as dangerous animals and angry faces (Barrett & Broesch, 2012; LoBue, 2013). Recent work has shown that infants are sensitive to plant dangers as well. Although they may seem harmless, plants produce toxic chemical defenses that can be dangerous to humans. Accordingly, infants are reluctant to touch benign-looking plants; a behavioral strategy that protects them from potential plant dangers (Wertz & Wynn, 2014). Interestingly, infants treat all plants as potentially dangerous, whether or not the plants look benign or are covered in sharp-looking thorns (Włodarczyk et al., in prep). Here we explore whether additional social information from an adult influences infants' behavioral responses to plants with and without visibly threatening plant features (thorns). Eight- to eighteen-month-old infants (N=50) were presented with 24 stimulus objects in 2 blocks of 12 objects each, including plants, familiar artifacts, and novel artifacts with and without thorns. Half of each stimulus set was presented with additional social information conveyed by an experimenter touching each stimulus object and reacting with either pain or with delight. Infants' latency to touch each object, as well as the frequency and duration of their subsequent touches, were coded. The study results will be discussed in the context of infants' responses to threat.

Poster 167. Beyond the mere presence of others: context and women's perceptions of female faces.

Danielle Wagstaff

Women's perceptions of other women's faces varies with context, one of which is the presence or absence of other individuals. Hill and Buss (2008) showed women's desirability ratings of other women was higher when presented alone than when presented pictured with others. We aimed to expand on this finding in two studies, recruiting 214 female participants. In study 1, we presented masculinised and feminised male faces alongside female faces, manipulating the perceived relationship status of the two. Here, women rated other women much lower in attractiveness if perceived to be in a short-term relationship, and marginally lower in attractiveness if pictured with a feminine male. In study 2, we again presented masculinised and feminised male faces alongside the female faces, while also manipulating the femininity of the female faces. In this study, feminine women were higher in attractiveness when presented alone, while masculine women's attractiveness ratings increased when pictured with a feminine male. In contrast to study 1, women rated faces lowest in attractiveness when pictured with a masculine male. The studies provide further evidence that women's perceptions of other women are dependent not only on the presence of others, but also on the presence of other socially relevant information and priming effects.

Poster 168. Who am I? How childhood unpredictability impacts self-concept consistency

Iris Wang, Joshua Ackerman

Who am I? The answer to this age-old question may lie in the strategies that people follow from birth. Life history theory posits that early childhood environments dictate how organisms invest limited resources. "Fast" strategists often grow up in harsh and unpredictable environments and prioritize early reproduction over somatic investment, whereas "slow" strategists often grow up in stable, predictable environments and prioritize investment in somatic growth. We investigated whether these strategies would influence the structure of self-identity. We hypothesized that given their greater long-term orientation and investment in personal growth, slow strategists would have a clear and stable sense of self, whereas fast strategists would hold an inconsistent self that is dependent on the situation. We also predicted that slow strategists would value consistency, and that feelings of inconsistency would be problematic for their relationship quality. Across four studies, with a combined N = 941 participants, we find support for our hypotheses. Internal meta-analyses showed that people who grew up in unpredictable environments reported more discrepant personalities in different relationship contexts and felt less clear about their self-concepts. Finally, experiencing an inconsistent personality significantly reduced slow strategists' relationship satisfaction, more so than that of fast strategists.

Poster 169. The influence of competition outcome on face preferences in men and women

Lisa L. M. Welling, Jonathon P. Saulter, Andrea G. Smith, Sabrina Gretkierewicz

Evidence suggests that men of relatively higher mate value may be better able to compete for access to higher-quality women and may be considered more attractive by those women. Welling et al. (2013) examined the effects of winning and losing in male–male competition on men’s face preferences. They randomly assigned male participants to either win or lose the first-person shooter video game Counter-Strike: Source against an unseen male confederate without the participant’s knowledge. Unbeknownst to the participant, the confederate could control the outcome through game cheats. They found that, compared to men assigned to the losing condition, men assigned to the winning condition had significantly higher preferences for women’s facial femininity, which is a putative indicator of female mate quality. This study had two major limitations: it used a between-subjects design and it tested men only. Here we replicate Welling et al. (2013) using a within-subjects design and testing both men and women. Participants were randomly allocated to win the first of two sessions and lose the second, or vice versa. As predicted, men preferred female facial femininity more after winning their competitive match compared to after losing. However, there were no corresponding effects in women. These results replicate Welling et al.’s (2013) findings using a within-participant design and further suggest that the influence of same-sex competition on face preferences is exclusive to men.

Poster 170. Seeing what is not there: detecting false positives in art historical analyses of paintings

Raquel Wilner

Art historians sometimes detect an ambiguous image within a picture, such as a hidden face or figure embedded in a painting. The discovery of such ambiguous images often leads to a discussion on what the image means or reveals about the artist, rather than a debate on whether the image is real or merely an illusion. An ambiguous image within a picture can often be explained through pareidolia: the tendency to see patterns where none exist. The evolution of pareidolia is best explained through error management theory: a predisposition to find false positives, such as seeing a face in a cloud or an animal in a shrub, increases the likelihood of responding to real events involving these stimuli. Art historians employ a subjective approach to visual image analysis and could benefit greatly from integrating research on pattern perception from cognitive evolutionary psychology. The identification of ambiguous images within pictures is more likely to be a perceptual artefact rather than a subconsciously planted image by the artist. When applying error management theory and pareidolia in art history, it becomes apparent that many supposed ‘hidden’ images in art are simply perceptual illusions rather than intentionally planted images.

Poster 171. Stereotyping of facial morphs calibrated by body fat in three age groups

Sonja Windhager, Fred L. Bookstein, Katrin Schaefer

Human faces are complex social signaling systems. For a quantitative understanding of our evolutionarily-shaped impression formation it is important to break information down. We demonstrate a rigorous and precise method from the geometric morphometric toolkit to vary facial information as a function of one single variable, body fat percentage (BFP) as expressed in the face. A 71 landmark-semilandmark configuration was digitized on 22 standardized frontal portraits of female Austrian adolescents. After Procrustes superimposition, shape coordinates were regressed on BFP. All photographs were unwarped to the predicted facial shape at the average BFP and at ± 2 SD and ± 5 SD of BFP from that mean, and averaged. These were rated for maturity, dominance, masculinity, attractiveness, and health by 274 Austrian raters (adolescents, young adults, seniors). The ratings systematically and consistently varied with increasing BFP. Response curve shape was highly similar in all age-sex groups, but trait-dependent: flat for maturity, linearly increasing for dominance, flat-rising for masculinity, cap-shaped for health, and an asymmetric cap shape for attractiveness (leaner faces preferred). The calibrated morphs forced the raters to attend to a pre-specified underlying dimension, which permits inferring a causal relationship between BFP and the observed rating behavior. We conclude by exploring consequences of the interplay between BFP stereotyping and the spatial scales of facial cues.

Poster 172. Gossip as a tactic of intrasexual competition

Joy Wyckoff, Kelly Asao, David Buss

We propose that competitive information sharing evolved as an intrasexual competition tactic. According to Sexual Strategies Theory (Buss & Schmitt, 1993), men and women have evolved different psychological mechanisms that underlie short-term and long-term mating strategies and preferences. Individuals' decisions to share information about a competitor should be sensitive to the probability of that information diminishing a competitor's mate value. We predicted that participants would be more likely to share the same information about a competitor when that information conflicted with the potential mate's preferences. In two experiments, we manipulated a potential mate's mating strategy and characteristics of a rival indicative of the rival's mating strategy. In Study 1 (N = 352), men and women rated that they would be more likely to share that a competitor is promiscuous when the potential mate was interested in a long-term mate compared to a short-term mate. Men were more likely than women to report that a competitor took people on cheap first dates when the potential mate was interested in a short-term mate; this effect was weaker for women. Study 2 (N = 164) demonstrated similar findings for ratings of effectiveness of sharing information. Discussion focuses on implications of strategic information sharing as an intrasexual competition tactic.

Poster 173. A preregistered, data-driven test for cross-cultural differences in face-shape preferences
Lingshan Zhang, Iris Holzleitner, Anthony Lee, Hongyi Wang, Chengyang Han, Lisa DeBruine, Benedict Jones

Previous research reporting cross-cultural agreement in facial attractiveness judgments used a theory-driven approach to test specific predictions about responses to experimentally manipulated face-shape characteristics. However, this approach is constrained by the predictions that can be derived from existing theories, potentially biasing impressions of the extent of cross-cultural agreement in face-shape preferences. We directly addressed this problem by comparing Chinese and White UK participants' facial attractiveness judgments using a data-driven, rather than theory-driven, approach. Analyses of the shape principal components along which faces naturally varied suggested that Chinese and White UK participants used face-shape information in different ways when judging attractiveness. In other words, the data-driven approach used in the current study revealed cross-cultural differences in face-shape preferences that were not apparent in studies reliant on theory-driven approaches. Importantly, these differences were most apparent for principal components explaining a large amount of the variance in face shapes.

Poster 174. No evidence that facial width-to-height ratio (fWHR) is associated with women's sexual desire

Weiying Zhang, Amanda Hahn, Ziyi Cai, Anthony Lee, Iris Holzleitner, Lisa DeBruine, Benedict Jones

Facial width-to-height ratio (fWHR) has been linked to many different behavioral tendencies. However, not all of these correlations have replicated well across samples. Arnocky et al. (in press, Archives of Sexual Behavior) recently reported that sexual desire was correlated with fWHR. The current study aimed to replicate this finding in a large sample of women. fWHR was measured from face images of 754 women. Each woman completed the Sexual Desire Inventory, which measures total, dyadic, and solitary sexual desire. Analyses revealed no significant correlations between fWHR and any of our measures of sexual desire. These null results do not support the hypothesis that fWHR is related to women's sexual desire. Additionally, we found no evidence that women's face-shape sexual dimorphism was related to their sociosexual orientation.

Poster 175. Morphological cues of animacy: Sagittal plane symmetry supersedes face and whole-target visibility in predicting the speed of superordinate level classification

Madeleine Zoeller, Erin Horowitz, Tamsin German, Leda Cosmides

Previous work indicates that humans perform rapidly and accurately at a change-detection task when the target item (appearing in one version of a static scene, but not the other) is a human or nonhuman animal. This exceptional performance, labeled the animate advantage, was later characterized as early emerging (children as young as 4 completed the task). The performance of children aged 4-7 did not show a learning effect for this ontological category. The stimuli used in the original animate advantage study often pictured human and nonhuman animals at too great a distance to discern face information. This implies some other cue of the animal is responsible. There are specific evolutionary developments associated with modern instantiations of terrestrial self-propelled animals: 1) bilateral/sagittal plane symmetry, 2) creation of the coelom and complex tissue differentiation, (the torso) 3) cephalization (a head with sensory organs). These mechanisms display visual features that are discernible from a distance and therefore may preferentially recruit attention during a cursory processing of a scene. This hypothesis finds support in the literature from work on animacy and symmetry detection. The present study uses a within-subject response latency task (N=50) and provides preliminary evidence that humans use bilateral symmetry of the head and torso as a morphological cue to an animal's ontological identity as an animate agent.