Conference Schedule EHBEA 2025

2025-04-11

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Overview

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Day 1	16:00 - 17:00	Plenary: Russell Hill
Day 1	17:00 - 17:30	Student, ECR, & first time attendees mixer
Day 1	17:00 - 18:30	Welcome reception
Day 2 (Tuesday, 15 April)	09:00 - 10:00	Plenary: Petr Tureček (New Investigator)
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Day 2	10:20 - 11:50	Parallel Sessions (Risk and individual differences; Parenting and Child Development)
Day 2	11:50 - 13:00	Lunch
Day 2	13:00 - 14:00	Plenary: Lynda Boothroyd
Day 2	14:00 - 14:10	Short Break
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Day 3 (Wednesday, 16 April)	09:00 - 10:00	Plenary: Heidi Colleran
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Day 3	18:30 - ...	Conference Social
Day 4 (Thursday, 17 April)	09:00 - 10:00	Plenary: Christine Caldwell
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Day 4	14:10 - 15:10	Parallel Sessions (Marriage Practices; Foraging and Subsistence)
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Day 4	15:30 - 16:40	Parallel Sessions (Gender; Health, Well-being, and Society)
Day 4	16:40 - 16:50	Short Break
Day 4	16:50 - 17:50	Conference Awards and AGM
Day 4	18:30 - ...	Dinner at Biscuit Factory

Preconference: Collaboration at Scale: Behind the Scenes of Big Team Science

When: Monday 14 April 2025, 2-3pm

Panellists:

- Dr Thora Bjornsdottir, ManyFaces
- Dr Shona Duguid, ManyPrimates
- Dr Harry Clelland, Multi100
- Dr Amanda Rotella, Behavioural Science Forecasting Collaborative

Description: This panel will explore the how of Big Team Science in research, highlighting the successes and challenges of coordinating large-scale collaborative projects. Panellists with diverse Big Team experiences will share experiences on what worked, what didn't, and the lessons learned from managing diverse teams across institutions, disciplines, and time zones. Whether you're participating in a big team project, considering being a collaborator, or want to coordinate your own multi-site project, this panel will offer insights on how to organise and navigate collaborative science.

Register here: https://tinyurl.com/RegisterTeamSciencePanel

Stand up for science panel

Wednesday April 16th, 5.10-6.10 pm

Science, broadly defined, is a societal good, yet is vulnerable to political actors who wish to misuse it or suppress it for political gain. This session is being held to reinforce EHBEA's commitment to the value of science, as governments across the world increasingly seek to hinder the ability of researchers to conduct rigorous research, restrict their academic freedom and withdraw support for initiatives aimed at ensuring everyone has equal opportunity to contribute to research. An important objective of the session will be to discuss practical ways in which we can stand up for science by resisting the misuse, and repression of, research.

Panel members: Louis Bachaud, David Coall, Reuben Fakoya-Brooks, Ula Marcinkowska, Abbey Page, Rebecca Sear

Plenaries

Monday April 14th, 4-5 pm: Russell Hill (Durham University)

"How STRANGE are your wild primates? Observer impacts on observational data collection"

Abstract: The idea that many studies in disciplines such as cognitive science, behavioural economics, and psychology cannot be generalized because the participants were a WEIRD (Western, Educated, Industrialized, Rich and Democratic) and unrepresentative subset of the global population is now well recognised. Similar sampling problems also appear prevalent in studies of animal behaviour, however, where the individuals' sampled may not be fully representative of the wider populations: the study subjects may be STRANGE. I will largely focus on one potential bias and how observer presence may influence the data collected. Observational studies of behaviour, particularly on primates, have relied on habituation, the process where wild animals learn to accept researchers as 'neutral' elements of their environment. Despite being highlighted in the STRANGE framework, however, this assumption of neutrality is rarely tested and the impacts of habituation are seldom explicitly acknowledged. Drawing on primate case studies from my field site in the Soutpansberg Mountains, South Africa, alongside other published work, I explore how observer effects could be significant and undermine inferences and interpretations, even after years of observation. Collectively, I will argue that complex interactions between observer presence and animal behaviour could challenge the robustness of many previous research findings.

Tuesday April 15th, 9-10 am: Petr Tureček (New Investigator; Charles University, Prague)

"Error, Inspiration, and the Dynamics of Variance in Cultural Transmission"

Abstract: Cultural evolution still struggles with the formalization of information transmission. Despite drawing inspiration from biological inheritance, it has never achieved a rigorous parallel to Fisher's approximations, which enabled the development of population genetics and the modern synthesis. Memeticists jumped directly to particularization without considering how continuous and discrete descriptions of culture fit together. In the biological domain, continuous traits have been reduced to discrete genetic alleles. We suggest that the cultural domain requires the opposite: reducing discrete behavioral manifestations to an underlying continuous space. This "positional" approach already has two predecessors in the literature: vector embeddings of discrete artifacts in "design spaces" and the idea of a continuous "culture space" underpinning differences and similarities between individuals. We show how the continuous view can finally inspire variance decomposition in cultural transmission. The equivalents to biological mutation (unintended deviation from the weighted mean of "cultural parents") and recombination and separation (constructive exploration of the space surrounding "parental" values) can both be identified. Through a series of empirical experiments, we demonstrate that both terms are expected to exhibit offspring variance proportional to parental variance. This renders most extensions of population genetics to culture misleading. Yet, it can explain why subcultures emerge easily while biological speciation is rare, why culture either changes abruptly or hardly at all, and why it is possible to identify a forged Plato dialogue through word frequency analysis but not through topics or characters.

Tuesday April 15th, 1-2 pm: Lynda Boothroyd (Durham University)

"Sexual selection, culture, and appearance ideals"

Abstract: Appearance ideals are the physical and appearance-based traits that humans consider to be attractive or desirable in themselves and others. The emergence of Evolutionary Psychology was a major contributor to increasing academic research into appearance ideals, in the context of mate choice and sexual selection. Typically, however, conclusions were based on data predominantly from high-income, industrialised populations. In the current talk I outline how an early focus on universal preference adaptations gave way to a belief in conditional adaptations, and discuss how research from rural and non-industrialised populations challenges both these approaches. These more culturally diverse data, however, potentially point to more basic adaptations and learning processes which may help explain when cultures differ, and when they don't, in their appearance ideals. I end with reflections on the contributions of participants' own perspectives in appearance research.

Wednesday April 16th, 9-10 am: Heidi Colleran (Max Planck Institute for Evolutionary Anthropology, Leipzig)

"There is no such thing as 'natural fertility' "

Abstract: The idea of a naturalized state of human reproduction ('natural fertility') permeates evolutionary anthropology, demography and allied fields. In this talk I'll provide an overview and a critique of this concept. I'll argue that natural fertility creates unnecessary ethical, theoretical, measurement and conceptual problems. Putting pressure on this core assumption helps build bridges between disciplines and opens up new ways to approach reproductive diversity, now and in the past. Drawing on a combination of methods from primary anthropological fieldwork to computational modelling, I will argue that we should get rid of natural fertility. Instead, we should aim to better understand the feedback between culture, reproductive outcomes, and population trajectories.

Thursday April 17th, 9-10 am: Christine Caldwell (University of Stirling)

"Cognitive challenges in human cumulative cultural evolution"

Abstract: Human evolutionary success has been attributed to the capacity to accumulate knowledge and skills over generations via cultural transmission, but explanations for the distinctiveness of human culture remain heavily debated. Some accounts have proposed that human transmission processes may implicate cognitive capacities not available to other species, often proposing these capacities to be specialised adaptations. I will present a series of studies carried out within my research group, investigating relationships between cognitive development and behaviours associated with both acquiring and passing on social information. In most of our experimental work we have endeavoured to capture the kinds of challenges likely to be present in real world cases of cumulative cultural evolution in humans. We find that there are indeed significant cognitive challenges associated with effective accumulation of knowledge via social learning, illustrated by striking differences in performance between children from different age groups. However, the

cognitive resources required may not be specific to cultural transmission, likely including general-purpose cognitive abilities as well as broader socio-cognitive skills used in other contexts such as communication, cooperation and competition. Therefore, although human cumulative culture may depend on distinctively human cognition, it should not be assumed that these abilities were selected specifically for this purpose.

Talk schedule

Tuesday, 15 April – 10:20 – 11:50 – Risk and individual differences – CCE001

Chair: Benoît de Courson (Ecole Normale Supérieure)

1. 10:20 – "An inquiry into people's experience of financially desperate situations" (ID: 186, Talk)

Authors : Carbuccia L.; Makine Z.; Nettle D.; Wolff A.

Presenting author: Arnaud Wolff (École Normale Supérieure)

Abstract:

A large literature in the behavioral sciences demonstrates a social gradient in behavioral patterns and decision-making strategies. Recent developments suggest that behavior is specifically impacted when individuals fall below a critical threshold of resources. This threshold, termed the desperation threshold, represents a minimal level of resources required to meet basic needs—one that individuals living in poverty strive to maintain at all costs. Theoretical models predict that individuals below this threshold exhibit a shift in risk proneness, transitioning from risk-averse behaviors to extreme risk-seeking strategies, as coping on severely limited resources becomes untenable. To investigate these dynamics, this study employs a mixed-methods approach, combining online surveys and in-depth, semi-structured interviews, to examine whether individuals perceive and experience threshold-like situations. The collected textual data are analyzed using both manual coding and natural language processing techniques. This presentation will share findings on how individuals conceptualize, experience, and respond to financially desperate situations, emphasizing the role of available resources in shaping these experiences. Preliminary results from online surveys reveal that individuals employ a range of strategies to navigate financial adversity, including budgeting, negotiating arrangements, seeking external assistance, and identifying alternative income sources. Participants also report experiencing a variety of negative emotions, with financial hardship sometimes straining or strengthening their social relationships. Exploratory analyses further highlight correlations between emotional states, behavioral responses, and social interactions during financial crises. Within the next two months, we will conduct semi-structured interviews with low-income women in the Paris region to get deeper insights into how desperation thresholds might influence lived experiences and behavioral adaptations. We hope that this research can contribute to a more nuanced understanding of the interplay between resource scarcity, decision-making, and coping mechanisms.

2. 10:40 – " 'I need to eat today': A model of time discounting under a desperation threshold" (ID: 174, Talk)

Authors : de Courson, B.; Nettle, D.; Frankenhuis, W.

Presenting author: Benoît de Courson (Ecole Normale Supérieure)

Abstract:

Poverty is strongly associated with high time discounting. Is this a contextually appropriate response, and if so, why? Traditional explanations explain it though 'collection risks' such as extrinsic mortality. As extrinsic mortality is a stable, environment-level parameter, it fails to account for the effect of poverty as a transient state (e.g., hunger) on time discounting. Other models offer rational explanations for high discounting in a state of poverty, but their results are driven by the assumption of improved future resources. This study explores whether the Desperation Threshold Model can explain high time discounting when resource levels are low, and no improvement is anticipated. If individuals aim to satisfy their basic needs, one should intuitively prioritize present consumption when such needs are unmet. Indeed, a resources that allows to meet a basic need (e.g. pay rent) is particularly valuable, whereas in the future, its utility diminishes under both improved and worsened conditions. Using a stochastic model, we demonstrate that the desperation threshold generates higher time discounting near the threshold. However, the prediction below the threshold depends on how the 'rock bottom', a key component of the Desperation Threshold Model, is conceptualized. When the rock bottom applies only to current-period utility, discounting decreases again below the threshold. When the rock bottom is applied to lifetime utility, discounting escalates to extreme levels below the threshold, in a last-ditch attempt.

3. 11:00 - "Linking weather to day-to-day food production activities: A "Going-Out Model"" (ID: 201, Talk)

Authors : Hillemann, F.; Beheim, B.A.; Ready, E.

Presenting author: Friederike Hillemann (Durham University)

Abstract:

Weather conditions influence foraging and hunting decisions across species, including humans. Foraging-return analyses have traditionally focussed on socio-economic factors shaping contributions to food production, emphasising the knowledge, skills, effort, time, and other resources required. Although not stated explicitly, these analyses imply uniform environmental constraints across community members, overlooking individual variability in responses to weather. We present a generative, simulation-based "Going-Out Model" to explore how weather influences participation in food production activities. By accounting for the role of socio-economic status in shaping perceived risks, our model links locally relevant weather conditions (e.g., rainfall, temperature, windspeed) to individual factors (e.g., income, age, household size) to test theoretical predictions about participation in subsistence activities on a given day. To ground the model, we analyse data from Kangiqsujuaq, Nunavik, Canada, tracking 23 Inuit harvesters over 12 months. The dataset includes local weather data from a publicly accessible government archive and records of 250 foraging trips. Although not all individuals were observed daily, the data provides a robust foundation for modeling weather-influenced participation dynamics and testing how socio-economic factors and weather conditions together shape engagement in subsistence activities like hunting or foraging. An interaction between weather and food production has broader implications, as it may disproportionately impact those (people and communities) most reliant on traditional food production for subsistence and cultural identity, exacerbating food insecurity and inequality.

4. 11:20 – "Variations in human personality with resource availability: a meta-analytic review" (ID: 10, Talk)

Authors : Beuchot, T.; Portier, A.; Boon-Falleur, M.; Baumard, N.; Chevallier, C.

Presenting author: Thomas Beuchot (Institut Jean Nicod)

Abstract:

Evolutionary psychology and behavioural ecology posit that organisms adaptively modify their behaviour in response to environmental cues. In particular, individuals living in so-called resource-rich ecologies should favour long-term and high-risk/high-reward strategies. This idea suggests that people living in resource-rich ecologies should score higher on the Big Five personality traits: extraversion, openness to experience, agreeableness, conscientiousness and emotional stability. To test this prediction, we present a meta-analysis examining the relationship between Big Five personality traits and resource availability. We rely on two types of measures: macro-level measures (e.g. GDP per capita) and micro-level measures (parental socio-economic status). In line with the predictions of the theoretical literature, preliminary results reveal that increased resource availability is associated with more extraversion, more openness to experience, and more emotional stability. These results suggest that personality variation is, in part, a contextually appropriate response to ecological conditions.

5. 11:40 – "Introducing an evolutionary model to explain the origin of the Five Factor Model" (ID: 6, Short talk)

Authors : Hart, J.A.L.

Presenting author: Julian Hart (Independent Researcher)

Abstract:

The Five Factor Model (FFM) has become the most established model of human personality, suggesting that personalities can be summarised by means of five specific traits. The Model has been deduced empirically and it is generally thought that the identified set of traits must have arisen through our evolutionary history. Yet, despite many attempts, no one has yet been able to deduce definitively how and specifically why there should be five traits and why those particular traits. There remains no accepted theory to support the empirical results.

This paper considers whether the survival strategies required to satisfy our basic needs in the company of others has produced the modern-day observed set of personality traits. A mechanism is introduced, using evolutionary game theory, which shows how competing or cooperating in a social context (say, in a tribe) to meet those fundamental needs (such as needing to eat or maintain our health) would have influenced our personalities.

The proposed approach provides a logical explanation for the cause of the particular traits identified in the FFM and why they exist on spectra such as the range from introversion to extraversion. Reasoning is also derived to explain why populations tend to follow normal distributions across each trait. If this hypothesis were found to be valid, then it could provide an explanation for the long-standing mystery of the origins of the empirically derived personality traits within the Five

Factor Model. The solution would allow for further interrogation of both human needs and personality factors to enable us to better understand both constructs and their roles in explaining human motivation, behaviour and their influences on people's well-being.

Tuesday, 15 April - 10:20 - 11:50 - Parenting and Child Development - CCE003

Chair: Grégory Fiorio (Institut Jean Nicod, ENS-PSL)

1. 10:20 - "Impartiality in norm enforcement: children's responses to social norm violations across relationship contexts" (ID: 84, Talk)

Authors : De Petrillo, F.; Dickinson, E.L.; Parkin, A.; Horsey, K.; Willis, A.; Pooley, A., Mishra, R., Zhang, C.; Roome, H.; Garfield, Z.; Molho, C.

Presenting author: Grégory Fiorio (Institut Jean Nicod, ENS-PSL)

Abstract:

Across societies, individuals are often willing to incur costs to punish non-cooperators—such as those who fail to contribute to public goods. From as early as three years old, children demonstrate norm enforcement by punishing unfair behavior in resource allocation scenarios. However, the motivations driving third-party norm enforcement in children and its developmental trajectory remain subjects of debate. While previous research has shown that by age six, children are more likely to punish selfish behaviour when the disadvantaged recipient is an in-group member, more recent findings suggest that children as young as five disapprove of partial norm enforcement. To contribute to this literature, we designed two preregistered studies investigating whether 5- to 11-year-old children are more likely to punish on behalf of relationship partners (friends vs. strangers) when witnessing a social norm violation and whether this relationship influences their preference for restoration over punishment. In Study 1, children observed a puppet show where a transgressor acted antisocially toward a victim who was either a friend or a stranger. They then had the opportunity to incur a small cost to punish the transgressor. In Study 2, children could choose to punish the transgressor, help the victim, or do nothing. Preliminary results from Study 1 (N = 45) showed that children across all age groups punished the transgressor regardless of the victim's identity, suggesting a sense of impartiality in their responses. Results from Study 2 (N = 22) revealed that children preferred to restore the victim rather than punish the transgressor, irrespective of whether the victim was a friend or a stranger. Together, these findings suggest that by age five, children value impartiality in norm enforcement and prioritize restorative justice over retribution. These results provide novel insights into the developmental underpinnings of moral behavior and social norm enforcement in children.

2. 10:40 - "The impact of maternal experience of gender roles on children's socio-emotional development in Uganda: A qualitative study" (ID: 20, Talk)

Authors : Tuohy, G; Ainamani, H; Kakai, B.; Ndyareeba, E.; Paricia, J.; Sajabi, J.; Vreden, C; Boothroyd, L; Clay, Z.

Presenting author: Georgia Tuohy (Durham University)

Abstract:

This study examines maternal experiences and beliefs about children's socio-emotional development in two distinct cultural contexts—rural Western Uganda and urban Southwestern Uganda—through an evolutionary lens, emphasising the interplay between socio-cultural learning environments and adaptive developmental processes. Cultural learning environments, defined as the rearing practices and socio-cultural influences that structure infant development, are deeply rooted in the ecological and experiential conditions of caregivers. Recent research highlights how such environments shape adaptive strategies for socialisation, emotion regulation, and prosocial behaviour. While existing research underscores the influence of socio-cultural contexts on developmental outcomes, much of it relies on self-report measures that presuppose literacy, a limitation in many Majority World populations. Additionally, quantitative approaches often overlook the nuanced, adaptive maternal strategies that emerge in response to local environmental pressures. Addressing these gaps, this study used qualitative methods to explore the maternal experiences of approximately 30 mothers in each of two sites: rural Budongo and urban Mbarara. Focus groups, conducted in native languages by local researchers, allowed for culturally sensitive exploration of maternal perspectives. Using inductive thematic analysis grounded in critical realism, the study identified themes such as (1) manhood as an unmet ideal; (2) women's role as socially contingent; (3) hiding negative emotions and (4) reliance on physical attributes and experiences. These themes illuminate the ways in which maternal experiences shape, and are shaped by, the socio-emotional demands of their environments, influencing children's developmental trajectories. By situating these findings within an evolutionary framework, the study contributes to our understanding of how cultural contexts calibrate parental strategies to optimize offspring socio-emotional outcomes. Furthermore, it underscores the importance of diversifying research populations and methodologies to better reflect the evolutionary and cultural variability of human development.

3. 11:00 – "Does the emotional valence of prior interactions with a demonstrator influence overimitation in children?" (ID: 168, Talk)

Authors : Harrison, R.A.; Delobel, S.; Ryser, E.; Vignal, C.; Gruber, T.

Presenting author: Rachel Harrison (Durham University)

Abstract:

Children are selective in the social models they choose to learn from, and model familiarity may impact the likelihood of children imitating their actions. Beyond familiarity, a child's emotional connection to a social model may influence the likelihood of learning from them, due to either affiliative motivations, or due to an established history of receiving pedagogical cues from the model. In this study, we explored the impact of both familiarity and emotional connection upon children's overimitation of adult models by manipulating the warm-up experience children received. Children aged between 4- and 12-years-old (N=207, tested in Switzerland) received either a positive or neutral warm-up. In the positive warm-up, the experimenter engaged in conversation with the child while jointly looking at a book and responded positively to any opinions expressed by the child, while in the neutral warm-up, the experimenter worked on a computer while the child read alone. Children then participated in two overimitation tasks, watching either the same adult or a novel adult demonstrate how to make a hook to retrieve a bucket from a tube, and open a puzzle box, in both

cases incorporating irrelevant actions. The emotional valence of the warm-up did not influence rates of overimitation, but model familiarity did, with children who observed an unfamiliar model being less likely to overimitate on either task than those who observed the same experimenter who had conducted the warm-up.

4. 11:20 – "Parenting in Context: A Socio-Ecological Scale for Understanding Modern Parenting Problems" (ID: 55, Short talk)

Authors : Baker, J.; Kline, M.

Presenting author: Julieta Baker (Brunel University London)

Abstract:

Industrialisation has profoundly altered social networks and family structures, shifting from communal child-rearing practices that characterized much of human evolutionary history to an emphasis on nuclear households. Throughout evolution, children were typically raised in co-operative breeding models of care which provided parents with opportunities for social learning and practical support. In contrast, the demographic transition associated with industrialisation has brought lower fertility rates and increased residential mobility, reducing kin involvement and community support in child-rearing. Our study develops a Socio-Ecological Context (SEC) scale to measure features of this demographic transition on two dimensions; kinship/social connections and residential mobility. Using data collected online in 2020 from 506 English-speaking participants (primarily from the UK, USA, and Poland. 51.4% Female, 48.2% Male, Mage = 34) with children aged 0–5, we explore how these socio-ecological factors influence parenting challenges and learning strategies. Initial findings show that over half the sample had no-very little previous experience with childcare prior to coming a parent (54% women and 67% men) and that 78% 'sometimes' or 'very often' had unanswered parenting questions. There was a significant relationship between the two variables, those with less prior child childcare experience were significantly more likely to have unanswered parenting questions (R = .023, F(504) = 15.1, p < .001). We will also present results that show whether higher SEC scores (indicating more "post-industrial" environments) predict: a) greater frequency of unresolved parenting problems, b) increased use of individual learning strategies to address these issues c) reduced kin involvement in providing child-rearing advice and support. This work aims to highlight the interplay between socio-ecological context and parenting, providing evolutionary insights into how shifts In social structures impact parental challenges and problem-solving.

5. 11:30 – "Infant feeding practices in rural southern Poland" (ID: 153, Short talk)

Authors : Żyrek, J.; Galbarczyk, A.; Myers, S.; Colleran, H.

Presenting author: Joanna Żyrek (Max Planck Institute for Evolutionary Anthropology)

Abstract:

Motherhood involves decisions influenced by cultural and societal norms, with infant feeding practices often morally scrutinised. In rural southern Poland feeding practices have changed in response to economic and social conditions, alongside the strong influence of religion on reproductive decisions. Historically, intense farming likely led to trade-offs surrounding breastfeeding.

With deeper market integration and increased access to formula, constraints faced by mothers have altered. Our study examines shifts in the distribution of feeding practices and their perceived moral dimensions over time.

We analysed quantitative data from 62 rural Polish women aged 21-77 (mean = 50.50, SD = 15.65) based on long-form demographic interviews including detailed questions about feeding practices and perceptions of breastfeeding.

Preliminary results find the most common feeding practice in the first six months was exclusive breastfeeding (39%), followed by mixed breastfeeding and bottle-feeding (31%) and combined breastfeeding, bottle-feeding and solids (26%). The most common substitute was cow's milk mixed with water (43%). On average, duration of breastfeeding was 8.9 months and if formula was used, women introduced it by 4.6 months. Half of participants agreed that "mothers who have breast milk but do not breastfeed harm their children," (53%) and "breastfeeding is a woman's moral duty" (45%). However, these patterns differed across birth cohorts; older women and farmers, breastfed for shorter durations and substituted breastmilk with non-formula more often. Older women also associated agricultural labour with milk supply issues. While there was moderate support for statements that moralise breastfeeding, older women consistently showed stronger agreement. Difficulties with breastfeeding were common (76%) and occurred across all age cohorts; experiencing them tended to mitigate the negative perceptions of not breastfeeding, which was otherwise widely denounced. Analysis will be presented disentangling age and subsistence influences on observed patterns, elucidating the cultural evolution of infant feeding in this context.

6. 11:40 - **"Protecting Children: Is the Behavioral Immune System (BIS) Related to Overprotective Parenting?" (ID: 64, Short talk)**

Authors : Mikulski, D.; Majewska W.; Szymków, A.

Presenting author: Dawid Mikulski (SWPS University)

Abstract:

The Behavioral Immune System (BIS) comprises psychological mechanisms that act as a first line of defense against pathogens. It detects the presence of potential health threats in immediate surroundings, facilitating the avoidance of objects and people. Behavioral immune responses are evident across a wide spectrum of human behavior. For instance, research indicates a positive correlation between BIS strength and social conservatism, as well as xenophobic attitudes. Individual differences in BIS reactivity are associated with preventive health behaviors, such as wearing masks during the COVID-19 pandemic or hand washing. Furthermore, it has been found that individuals perceiving themselves as more vulnerable to infections tend to prioritize the trait of obedience in children, which suggests an association between BIS and offspring-protective behaviors.

We investigate this assumption in a correlational study (N = ?). Specifically, we examine whether behavioral immune system indices, namely germ aversion and perceived infectability, are positively related to overprotective behaviors in the context of parenting. Additionally, we aim to determine whether this relationship is stronger among women compared to men, given that women generally invest more in their offspring. Our results are discussed in the context of the evolutionary basis of parenting behaviors and BIS flexibility.

Tuesday, 15 April – 14:10 – 15:30 – Algorithms and AI – CCE001

Chair: Max van Duijn (Leiden University)

1. 14:10 – "Algorithm-augmented cumulative cultural evolution" (ID: 128, Talk)

Authors : Pykälä, M.L.E.

Presenting author: Maria Pykälä (HEC Lausanne)

Abstract:

A balance of exploration and exploitation, or individual and social learning, shapes human cumulative cultural evolution and innovation. Today, algorithms can increasingly explore and combine information from vast problem- and cultural landscapes in a manner that far exceeds human capacities. The impact of such exploration on human innovation and cultural evolution is unknown, and should be influenced by how humans learn from algorithms. This project investigates the impact of algorithm search on human cumulative cultural evolution using experiments and a simulation. Simulation results show that a balance of human exploration and learning from powerful algorithms can augment innovation. On the other hand, extensively searching, opaque algorithms can exceed the learning capacities of humans and limit innovation. In the experiment participants were in human-only or hybrid human-algorithm teams to solve an innovation task with underlying path-dependent cultural evolutionary trajectories that require exploration to discover. Results suggest the presence of a randomly searching algorithm results in a higher rate of discovery of both trajectories, however only when algorithm search is extensive enough. The presence of an algorithm, its performance and information about its behavioural rules also influences human learning and exploration behaviour. This study suggests the interpretability of algorithm outputs, social learning biases and the balance of human exploration and machine exploration should influence how algorithms shape cumulative cultural evolution in the long-term.

2. 14:30 – "Evolution of Social-Cognitive Abilities in Large Language Models" (ID: 175, Talk)

Authors : van Duijn, M.J.; van Dijk, B.M.A.; Kouwenhoven, T.

Presenting author: Max van Duijn (Leiden University)

Abstract:

The past years have seen an increasing number of studies on Theory of Mind (ToM) and related social-cognitive abilities in artificially intelligent systems, in particular Large Language Models (LLMs). While initial results were deemed flawed due to generalisation issues [1], recently a picture has emerged of quite robust performance on various standardised ToM tests, with average scores at or close to human level [e.g. 2]. What are the factors driving such performance? And what can we learn from this about the evolution and development of social cognition in humans/animals?

Methods: Here we review and analyse 10+ studies that came out since 2022, including work from our own lab in which we tested and benchmarked a range of LLMs on different sorts of ToM tasks against performance of children aged 7-10 (N=73). We connect the approaches and results to existing findings from the cognitive-developmental and evolutionary sciences.

Results: As for factors driving LLM performance, model size seems key (as in many domains), but there is also evidence that fine-tuning, prompting, and reward structures during training affect scores. We observe relevant distinctions between tests that involve spatial/situated reasoning (e.g. multi-location false-belief tasks like Sally-Anne) versus those relying more on pragmatic abilities (e.g. non-literal language understanding), as well as between third-person versus first-person inference. We discuss the implications of different forms of LLM grounding across modalities (text, vision, sound). Finally, we discuss generalisability of performance on standardised ToM test to 'real-world' social competencies, which is an issue in humans and other animals too, but has taken on a new dimension in LLMs.

Conclusions: While there clearly are key limitations to LLM social-cognitive competence, recent advancements and their implications should not be underestimated: ToM is at least in part learnable from patterns in data, especially if combined with forms of in-context learning that reward cooperative behaviour.

[1]Doi:10.48550/arXiv.2302.08399 [2]Doi:10.18653/v1/2024.acl-long.847

3. 14:50 – **"Experimental Evidence for the Propagation and Preservation of Machine Discoveries in Human Populations" (ID: 108, Short talk)**

Authors : Eisenmann, T.F.; Brinkmann, L.; Nussberger, A.-M.; Derex, M.; Bonati, S.; Chirkov, V.; Rahwan, I.

Presenting author: Thomas Eisenmann (Max Planck Institute for Human Development)

Abstract:

Title:

Experimental Evidence for the Propagation and Preservation of Machine Discoveries in Human Populations

Objective:

Intelligent machines with superhuman capabilities have the potential to uncover problem-solving strategies beyond human discovery (Wang et al., 2023). Emerging evidence from competitive gameplay, such as Go (Shin et al., 2023), demonstrates that AI systems are evolving from mere tools to sources of cultural innovation adopted by humans. However, the conditions under which intelligent machines transition from tools to drivers of persistent cultural change remain unclear. Here, we identify three key conditions for machines to fundamentally influence human problem-solving: the discovered strategies must be non-trivial, learnable, and offer a selective advantage.

Methods:

In our large-scale behavioral experiment (n = 1155), participants' success in a strategic task hinged on adopting a solution that humans struggle to discover, due to a characteristic bias to avoid large losses. We contrast populations of humans transmitting solutions over multiple generations on their own with populations that had the opportunity to learn from AI agents in their first generation. We complement this experimental work with an agent-based simulation systematically varying the difficulty of discovery and transmission.

Results:

Our experimental findings show that an algorithmic model succeeds in discovering the adaptive strategy where humans fail on their own. Most importantly, humans are able to understand and adopt this machine-introduced strategy. As a result, they preserve it over multiple generations of learners, leading to enduring cultural shifts. The results from our agent-based simulation corroborate the conditions for a cultural shift: Agents profit in particular when machine agents discover hard-to-conceive but learnable strategies.

Conclusions:

Taken together, these findings provide a framework for understanding how machines can persistently expand human cognitive skills and underscore the need to consider their broader implications for human cognition and cultural evolution.

4. 15:00 - "Foraging and Signaling in Digital Environments" (ID: 183, Short talk)

Authors : Twardus, O

Presenting author: Oliver Twardus (University of Guelph)

Abstract:

Digital environments – such as social media sites, forums, and search engines – are novel ecosystems where individuals forage, interact, form coalitions, and compete for attention. Drawing on the foraging patch model and error management theory, digital environments can be compared to physical environments to help us understand how their ecological features influence human behavior. Digital environments contain numerous differences compared to physical environments, such as: fewer social cues, increased anonymity, increased social mobility, and high global competition. Furthermore, the prevalence of information goods and the removal of physical constraints – such as supply limitations, caloric costs, and physical distance between foraging patches –impacts how (un)equally influence will be distributed within each environment. These differences have ramifications for the degree of cooperation that can be expected within an environment, the degree of risk individuals will be willing to take, and the expected risks and rewards for (dis)honest signaling. Understanding how the features of digital environments and individual behaviours interact can help us generate new approaches and interventions to contemporary issues such as misinformation spread and polarization.

5. 15:10 - "How do chatbots engage evolved human capacities for intimacy building?" (ID: 85, Short talk)

Authors : Eng, Y-M.; Harmon-Jones, S.K.; Brooks, R.C.

Presenting author: Robert Brooks (UNSW Sydney)

Abstract:

Conversational technologies – or "virtual friends" (VF) – are becoming important in many people's social environment, particularly with recent progress in Artificial Intelligence (AI). Rapid progress in what these technologies can do has left scientific understanding of their working, and their consequences for users and societies, behind. It would appear, however, that they are effective at engaging evolved social pathways used for grooming, friend-formation, and generating intimacy. To

test whether chatbots can evoke feelings like intimacy, we pair chatbots with human participants in a repeat of classic (human-human) experiments from social psychology on the formation of intimacy via reciprocal self-disclosure of personal information. Participants in two experiments conversed with a chatbot programmed to disclose and solicit either "deep", personal information or "minimal" personal information. In one experiment, this conversation treatment was crossed with a conversation-duration manipulation (10, 20 or 30 questions). In the second experiment, the conversation treatment was crossed with either reciprocation or non-reciprocation of self-disclosure by the chatbot. Across both experiments, asking and answering deep versus minimal self-disclosure questions increased relationship development and measures of intimacy. This effect was mediated by the participant's perceived amount of personal information given and received. However, no effects of conversation duration were found (Experiment 1). Reciprocal versus Non-reciprocal disclosure increased relationship development and measures of intimacy, and this effect was mediated by Our results show that engaging in self-disclosure with chatbots can lead to human-chatbot relationship development in similar ways to human-human relations.

6. 15:20 – "Multi-level Selection of AI Behaviors" (ID: 164, Short talk)

Authors : Zhong, Q; Eisenmann, T; Rahwan, I

Presenting author: Qiankun Zhong (Max Planck Institute for Human Development)

Abstract:

The use of Artificial Intelligence (AI) has increasingly become an important aspect of human life. One of the concerns arising from their fast development is that the AI that helps humans improve efficiency may also compete with and replace humans in the labor market and social life. However, if altruism can evolve in humans, can "altruistic" AI that helps humans learn and perform be selected for and outcompete "self-interested" AI? Multi-level selection theory proposes that altruism is selected for because groups with altruistic individuals perform better than groups with only self-interested individuals. In this research, we design an agent-based model and an online experiment to explore the conditions where AI Helpers, rather than AI Competitors, are favored through a parallel process of group-level selections. The current use of AI, such as ChatGPT, to assist writing might increase the diversity of individual output due to the large sample size of learning models. Yet, it reduces the variance of human social learning results at the group level. Light use of AI (AI Helpers) with human inputs produces more variances in their learning outcomes compared to Heavy use of AI (AI Competitors) that replace most human inputs but learn more accurately. In this paper, we show that in groups that use AI Helpers, the variance generated by human exploration is preserved within the group. In the long run, this variance can lead to more cumulative cultural evolution in these groups. Through between-group interactions and payoff-biased learning, we show the conditions where the use of AI Helpers can spread in the population as the dominant strategy across groups.

Tuesday, 15 April – 14:10 – 15:30 – Family Support and Childcare – CCE003

Chair: Emily Emmott (UCL)

1. 14:10 - **"Grandparents raising grandchildren: Maternal grandmothers still go the extra mile" (ID: 95, Talk)**

Authors : Coall, D.A.; Karthigesu, S.P.; Robertson, F.; Wenden, E.; Dare, J.; Marquis, R.

Presenting author: David Coall (Edith Cowan University)

Abstract:

Objective: Evidence supports the adaptive role grandparents play in enhancing fertility and survival in their descendants. As grandparents' roles simultaneously diversify (e.g., family structural change) and intensify (e.g., grandparents as primary carers) in WEIRD societies, we need to explore the boundary conditions of this caring role. Using a grandparental investment framework, we investigated whether the strongest association in this field, the prominent role of maternal grandmothers (MGMs), can still be observed in the challenging family context of grandparents raising their grandchildren. Methods: A total of 530 grandparents raising their grandchildren (Grandcarers) in Western Australia, including 25% from the Indigenous community, completed the Grandcarer Survey (online or paper). To boost the contribution of Aboriginal and Torres Strait Islander people's voices in the Survey, an appropriate tool was developed by Kurongkurl Katitjin the Centre for Aboriginal Education and Research and taken to numerous rural and remote communities. Results: Findings showed that MGMs were most likely to participate in this study (60%) followed by paternal grandmothers (26%), maternal grandfathers (9%) and paternal grandfathers (4%). Compared to all other grandparent types, MGMs provided more years of care and had the most complicated caring role. MGMs reported a younger age of grandchild(ren) coming into their care, more years caring for their grandchildren, and more grandchildren who continued to come and go from their care. The prominent role of MGMs was consistent regardless of geographical and cultural variation, the number of grandchildren they cared for and whether the Grandcarer was partnered or not. These complicated caring commitments may, however, increase the life-time cost to MGMs, as reflected in lower general health. Conclusion: This study demonstrates that even in challenging family situations where grandparents are raising grandchildren, a potentially common family structure throughout human history, maternal grandmothers continue to go the extra mile to support their families.

2. 14:30 - **"Resource Competition within Families: How Spousal Care Influences Grandchild Care Provision" (ID: 22, Talk)**

Authors : Danielsbacka, M.; Hämäläinen, H.; Tanskanen, A.O.

Presenting author: Mirkka Danielsbacka (University of Turku)

Abstract:

Objectives Evolutionary theory predicts that family resources are typically directed toward younger generations due to their greater reproductive value. However, care needs within a family can change over time and a resource competition may arise. Here, we focused on situations where a grandparent starts or stops spousal care and how these changes are associated with the provision of grandchild care among European grandparents.

Methods We utilized longitudinal data from the Survey of Health, Aging, and Retirement in Europe, collected in eight waves between 2004 and 2022 across 19 European countries. The study sample

included individuals aged 50 and above who had at least one grandchild aged 12 or younger and who participated in at least two waves of data collection, resulting in 56,383 observations from 18,754 respondents. We employed asymmetric panel fixed-effects regression models to investigate whether starting or stopping the provision of intensive spousal care was associated with changes in the frequency of provided grandchild care over time.

Results The start of providing regular spousal care was associated with a decrease in the frequency of provided grandchild care similarly among grandfathers and grandmothers. There were indications that stopping spousal care was negatively associated with grandparental childcare, particularly among grandfathers; however, these results were not statistically significant. Further inspection revealed that the association between stopping spousal care and grandchild care varied depending on whether the partner (i.e., the recipient of spousal care) was present in the household after the change. Stopping spousal care was associated with a decrease in grandchild care only among grandfathers who no longer resided with their partner (e.g., whose partner had been institutionalised or passed away).

Conclusion The results are discussed in the context of resource competition within families. This study improves our understanding of potential conflicts over caregiving responsibilities between close family members.

3. 14:50 - "Are allomothers important for child quality in the UK? Evidence from the COVID-19 lockdown" (ID: 75, Talk)

Authors : Emmott, E.; Myers, S.

Presenting author: Emily Emmott (UCL)

Abstract:

Background: Evolutionary anthropologists argue that allomothering is crucial for successful childrearing. However, past research on allomothering and child outcomes in low-fertility populations have produced mixed results. This may be because allomother support is confounded by maternal need.

Aims: Using survey data from postpartum mothers in the UK during the COVID-19 pandemic (approx. N=250), we exploit the "natural experiment" conditions of lockdown to test the hypothesis that allomothering has direct and indirect effects on child development (proxy of child quality). We predict allomother effects are mediated/moderated by postnatal depression (proxy of maternal need) and maternal bonding.

Method: We use 2 waves of data from Feb/March 2021 (during 3rd lockdown) and August/Sept 2021 (no restrictions). We run a series of path analyses to test the associations between allomothering, maternal postnatal depression, maternal bonding, and child development at 8-22 months (Ages and Stages; measuring motor, cognitive, and social skills).

Results: 28.4% of infants/toddlers in our analysis sample met the threshold for developmental delay (pre-pandemic prevalence 6-10%). In line with past research, maternal postnatal depression was associated with lower communication skills in children. We found no association between allomothering and child outcomes. However, post-hoc analyses revealed varying effects by timing

of birth: allocare was associated better communication and gross motor development for children born after the strict lockdown, while the opposite was true for children who experienced lockdown.

Implications: Our findings point to the detrimental impact of family isolation on early child development. Allomothering is associated with better child development in our sample, but only for those born after lockdown. While the causal pathways remain unclear, lockdown may have weakened the effectiveness of allomothering, or families may have increased allomothering for "lockdown children" with developmental delay. The context-dependence of allocare effects may explain mixed results in past research.

4. 15:10 - "How does social support from kin and friends mediate social integration following a forced migration? Insights from the Karelian WW2 evacuees" (ID: 59, Short talk)

Authors : Delaunay, A.; Kauppi, J.; Loehr. J.; Laato, J.; Kanerva, J.; Ginter, F.; Lummaa, V.

Presenting author: Axelle Delaunay (University of Turku)

Abstract:

Social bonds with kin and friends are linked to increased health and fitness in both humans and animals. However, contemporary human populations are currently undergoing drastic changes in social structure, with a break-down of kin networks. Yet, the long-term consequences of these changes on social integration, health and fitness have been poorly studied. Here, we use an unprecedent dataset on Karelian war evacuees to investigate how access to social support from kin and friends can impact larger-scale social integration. During WW2, >400 000 Karelians were displaced due to loss of territory and resettled elsewhere in Finland, some with their entire evacuated village – preserving old social bonds with friends and kins – and some individually, thus creating a "natural translocation experiment". We use data from 150 000 WW2 evacuees who were interviewed in 1968-69, and includes records of birth, death, marriage, children, occupation, membership in social organisations (cultural, sports, religious, political, etc…), as well as complete resettlement history from prior the war up to 1970. We use natural language models to extract social organisation memberships and leadership roles, and categorise organisations to measure each individual's involvement in their new community, as a proxy of larger-scale social integration. We then explore the effect of several measures of kin and friends' social support, namely i) whether individuals resettled along with their entire village or individually, ii) their marital status (single vs. married), iii) intermarriage (married with a Karelian vs. non-Karelian Finn), and iv) the presence of children on post-translocation social integration. Our study will help to shed lights on how social bonds and support from kin and friends may help or hinder social integration into a new community, which has been previously linked to migrants' health.

5. 15:20 - "Demography of grandmothering – a case study in Agta foragers" (ID: 25, Short talk)

Authors : Page, A.; Major-Smith, D.; Migliano, A.B. Chaudhary, N.; Dyble, M.

Presenting author: Abigail Page (Brunel University of London)

Abstract:

Women who care for multiple highly dependent children require significant support from non-maternal caregivers – i.e. allomothers. Grandmothers are seen as key allomothers due to low costs and high indirect fitness returns. While the importance of grandmothers has been well demonstrated in some contexts, evidence is lacking in others and the reasons for this variation are not well-understood. Understanding the factors which promote or hinder grandmaternal childcare, such as demographic schedules, is an important next step. Here, we explore the demographic predictors of grandmothering (here, direct childcare) for 78 Agta children (0-5.9 years). Grandmothers provided low levels of childcare at all ages, which decreased to minimal-to-none after the age of 60, arguably related to demographic schedules. Younger grandmothers still had dependent children until an average age of 52, creating possibility for reproductive conflict. Little to no investment post age 60 are explained by low survivorship and ill health in older women. This means the 'helping window' for grandmothering is short, spanning between 7 years on average, yet the impact of this period may be limited due to multiple dependent grandchildren. This demographic description posits then that grandmothering is constrained by 1) generational reproductive overlap and 2) grandchildren competition. Accordingly, we tested how: 1) number of dependent children and 2) number of dependent grandchildren associated with grandmothering using Bayesian mixed-effect models. We found moderate to strong evidence that the more children/grandchildren a women had, the lower her investment in each grandchild. Consequently, whether grandmothers help, or not, appears to be a function of demographic schedules, which vary widely between societies. Formal demographic modelling then will help shed light on the evolution of grandmothering in humans.

Tuesday, 15 April - 15:50 - 17:10 - Life History - CCE001

Chair: Venla Berg (Population Research Institute, Väestöliitto)

1. 15:50 - "Co-evolution of culture and demography: a forward-simulation approach applied to indigenous age-categories in the Gambia" (ID: 124, Talk)

Authors : Holding, T.; Powell, A.; Colleran, H.

Presenting author: Thomas Holding (Max Planck Institute for Evolutionary Anthropology)

Abstract:

Demographic structure shapes the way cultural traits and rules change in a population over time. Culture, in turn, can influence the demographic processes that shape population structure. When this happens, conventional demographic models which do not incorporate this feedback will fail to capture the population dynamics. I will demonstrate this with an example inspired by rural Gambia, in which indigenous age-categories modify reproductive behaviour. Progression through these age-categories is not just linked to time passing but to energy spent through events such as childbearing and reproductive mishaps. I simulate an intervention that results in greater uptake of Western contraceptives and show that when indigenous age-categories are ignored, the model predicts a decline in fertility with increasing contraceptive use. However, when indigenous age-categories are included, increased access to Western contraception is associated with high fertility. This is driven by effective birth spacing behaviour which allows better recuperation time between births and delays progression to a culturally (not biologically) defined post-reproductive phase of life.

2. 16:10 - **"Life History Strategies or Genetic Predispositions? Considering the Role of Genes in Environmental Effects" (ID: 162, Talk)**

Authors : Berg, V.; Kuja-Halkola, R.; D'Onofrio, B.; Lichtenstein, P.; Latvala, A.

Presenting author: Venla Berg (Population Research Institute, Väestöliitto)

Abstract:

Objective: Life history theory posits that species exhibit variation in reproductive strategies, with humans generally exhibiting a slow life history characterized by prolonged maturation, late child-bearing, and few offspring. This theory also suggests that within-species variation in reproductive strategies is contingent on environmental factors. A substantial body of literature has linked risky childhood environments to earlier childbearing and reduced life expectancy. However, many of these studies rely on environmental markers, such as father absence or frequent relocation during childhood, which are influenced by parental behaviours. These behaviours are partly affected by genetic predispositions which the parents pass on to their children. Thus, the offspring can be genetically inclined to both experience risky childhood environments and exhibit accelerated reproductive strategies without any causal mechanism between the two.

Methods: In a series of three studies using Swedish total-population register data (N = 4.2 million), we examine the association between a risky childhood environment—defined by parental substance misuse and criminal behavior—and offspring outcomes, including age at first birth and mortality risk. The analyses revealed a strong association between these environmental factors and earlier reproduction and higher mortality. However, these associations were significantly attenuated when accounting for the genetic confounding between parental and child behaviors.

Conclusions: Our findings underscore the importance of considering heritable behavioral tendencies when investigating hypotheses based on life history theory. Future research employing genetically informative designs is essential to better understand the impact of childhood environments on life history outcomes.

3. 16:30 - **"Survival costs and benefits of reproduction" (ID: 7, Talk)**

Authors : Hõrak, P.; Meitern, R.

Presenting author: Peeter Hõrak (University of Tartu)

Abstract:

Patterns of individual variation in lifespan and senescence depend on the associations between parental survival and reproductive rates. We studied the associations between parity and survival among 579 271 Estonians born in 1905–1945 and, additionally, in a cohort with a completed lifespan born in 1905–1927. For this cohort, selection for increased lifespan operated in both sexes, but it was stronger in men than in women. However, the median lifespan increased between the subsequent cohorts in women but stagnated in men. Selection for longer lifespan was caused by the below-average lifespan of individuals with no or single offspring. Despite generally positive selection for lifespan, survival costs of reproduction were also detected among (a relatively small proportion of) individuals with high parities, as mothers of two and fathers of two and three children had the highest median lifespans. Fathers of more than six children had better survival than

fathers of few children in their reproductive age, but this association reversed after age 70. The reversal of association between survival and parity at old age indicates that relative mortality risks between those with lower vs higher parities change across ages, as predicted by the antagonistic pleiotropy theory of ageing.

4. 16:50 – "Regional and Sex Disparities in Lifespan of 1750 – 1850 Historical Finland" (ID: 43, Short talk)

Authors : Bullaj, E.; Lahdenperä, M.; Spa, M.; Lummaa, V.; Briga, M.

Presenting author: Eni Bullaj (University of Turku)

Abstract:

Regional differences in Finnish life expectancy have been described in contemporary Finland as far back as the early industrial era. Southwestern regions are characterized by higher lifespans and lower mortality rates than those in the Southeast and the North. These differences are partially attributed to regional wealth disparities and epidemics, the frequency of which varied in space and time.

However, far less is known whether such differences existed in preindustrial times. Through our investigation that compares the changes in longevity between regions, for men and women over time, encompassing the entire country in preindustrial Finland, we want to understand how the transition to modernity, accompanied by lifestyle changes, has contributed to the human lifespan disparities.

We show that regional lifespan inequalities between the Southwest and the rest of the country have existed in preindustrial times as well. However, not all regions follow this exact pattern, i.e., Oulu in the north, with higher-than-expected lifespan and Vaasa in southwest with a lower-than-expected lifespan. Regional disparities in longevity were more pronounced in preindustrial Finland than in contemporary times, with an uncommon pattern of lifespan inequality between sexes: while women almost always outlive men, 'short-living' regions of historical Finland display an unprecedented pattern of a lower lifespan in women than men.

Our study supports earlier findings and adds to the previous knowledge on regional lifespan disparities in Finland that the transition to modernity has not only improved human life expectancy but that of women in particular, smoothening out the south-eastern disparities, suggesting that environmental factors can have a meaningful impact on human health.

5. 17:00 – "Sons accelerate maternal ageing in pre-industrial humans" (ID: 109, Short talk)

Authors : Invernizzi, L.; Bergeron, P.; Pelletier, F.; Lemaître, J-F.; Douhard, M.

Presenting author: Lucas Invernizzi (Claude Bernard University Lyon 1)

Abstract:

How do early-life reproductive patterns influence the rate of reproductive senescence in human populations? Despite the well-established energetic differences in producing and raising sons versus daughters, the impact of offspring sex in reproductive senescence has not been explored

yet. Using historical data from pre-industrial Quebec, we investigated whether the number and sex of offspring born and weaned early in a mother's reproductive life impacted late-life reproductive decline. After determining the senescence pattern in the population using mean annual breeding success (ABS) and annual weaning success (AWS) across the reproductive years (16-50), generalized linear mixed models focused on late life revealed that mothers with a high early life reproductive effort exhibited a steeper decline in ABS and AWS with age, notably if they produced or weaned a majority of sons. These findings suggest that early-life reproductive investment imposes long-term costs, highlighting the trade-off between reproductive effort and senescence in humans.

Tuesday, 15 April - 15:50 - 17:10 - Accuracy and Bias in Facial Perception - CCE003

Chair: Vittorio Merola (Durham University)

1. 15:50 - "Political faces: Partisan stereotypes in mental images of Democrats and Republicans" (ID: 152, Talk)

Authors : Merola, V.; Bovet, J.

Presenting author: Vittorio Merola (Durham University)

Abstract:

How do people picture a "typical" Democrat or Republican? According to different identity theories, mental representations of individuals who share our political affiliation are expected to be more positive (e.g., more attractive and warm) compared to those of individuals aligned with the opposing party, consistent with self-reported perceptions of behavioural traits among political groups. Additionally, insights from stereotype research and evolutionary theories on leadership preferences suggest that mental representations of Republicans might appear more physically dominant and masculine than those of Democrats. Actual demographic differences between Republican and Democratic voters, such as mean age, may also influence these mental images. This study employs a data-driven, noise-based reverse correlation method with a nationally representative sample of over 2,000 U.S. participants to examine the visual dimensions of White partisan faces. We investigate how Democrats and Republicans mentally represent both their own group and the opposing group, and evaluate the differences in these mental representations across various dimensions.

Our findings reveal a strong, symmetrical ingroup bias: both Republicans and Democrats hold similarly positive mental representations of individuals who share their political affiliation. However, mental representations of outgroup members are asymmetrical, with outgroup faces showing greater differences than those of ingroup members. Certain dimensions, such as perceived age and dominance, consistently differ between mental representations of Republican and Democratic faces, implying that both partisan subgroups agree on certain characteristics of the outgroup. In other words, much of the ingroup bias in mental representations seems to come down to ingroup love, not outgroup hate.

This project integrates evolutionary behavioral science, social and cognitive psychology, and political science, offering new insights into ingroup and outgroup bias, beauty bias, leadership perceptions, and the formation of stereotypes.

2. 16:10 - "When the Face Fits the Crime: Bias Against Facial Differences in Sentencing Decisions." (ID: 98, Short talk)

Authors : Hartung, F.; McDonald Ferrier, H.

Presenting author: Franziska Hartung (Newcastle University)

Abstract:

People with facial differences, such as scars or cleft lips, frequently experience social stigma and are perceived negatively, which has led to the 'disfigured-is-bad' stereotype hypothesis. This study aimed to investigate the villainization of individuals with facial differences within a mock jury setting, where vulnerabilities to prejudicial decision making and bias have already been highlighted for other marginalised groups. Using face images comprised of individuals pre- and post- correctional treatment for facial differences, we tested the effect of defendant facial differences on sentencing decisions, as well as negative moral character judgements. Participants were asked to rate 'guilty' defendants paired alongside fictitious crime scenarios on a range of measures relevant for sentencing decisions, such as culpability and perceived threat to others. Additionally, participantys gave their recommendations for relative sentencing length and whether or not they would support parole. We hypothesised that individuals with facial differences would receive longer sentences and more negative character evaluations. Results support these hypotheses, as pre-treatment faces compared to post-treatment faces were rated significantly higher on measures such as threat, dangerousness, and maliciousness. Pre-treatment faces also consistently received longer sentence recommendations and were more likely to be denied parole. Measures related to the crime itself such as perceived harm being done and severity of the crime were not predicted by the presence of a facial difference, indicating that the bias is drivemn by negative character perceptions only. Some types of facial differences such as lip scars, growths, swellings, and facial palsies received longer sentence lengths compared to other types such as acne and pigmentation disorders, suggesting heterogeneity in experienced stigmatization among differing aetiologies and presentations of facial differences. These findings provide evidence of the villainization of people with facial differences as well as discrimination extending to criminal court systems. We highlight the need to further develop interventions and promote awareness in order to safeguard people with facial differences from discrimination and discuss implications for future research.

3. 16:20 - "Who looks competent for what? Context-sensitivity in the predictors of competence judgments of faces" (ID: 147, Short talk)

Authors : Shiramizu, V. M.; Batres, C.; Jones, A. L.; Stern, J.; DeBruine, L. M.; & Jones, B. C.

Presenting author: Victor Shiramizu (University of Strathclyde)

Abstract:

Competence ratings of faces predict important social outcomes, including hiring decisions. Here we investigated the role of the perceptual dimensions Valence and Dominance in competence ratings, along with the possibility that these relationships differ according to the type of role (i.e., employment context) for which competence is assessed. Analyses of ratings from >2500 participants showed that (1) Valence positively predicted competence ratings across a wide range of employment contexts, (2) Dominance positively predicted ratings of competence to run a large

company, but negatively predicted ratings of competence for jobs requiring effective interaction with the public, and (3) neither Valence nor Dominance significantly predicted competence ratings for jobs requiring no social interaction with either colleagues or the public. These results suggest that mappings between competence ratings and Valence and Dominance can differ according to the type of interaction required for different employment contexts. Collectively, our results highlight previously unrecognised nuance in how people map facial dimensions to first impressions of competence and suggest that considering these context-sensitive mappings may improve the effectiveness of interventions aimed at reducing appearance-based biases in hiring decisions.

4. 16:30 – "Do social judgements made from facial photographs predict those made in-person?" (ID: 110, Short talk)

Authors : Lee, A.J.; Zhao, A.Z.; Sidari, M.J.; Zietsch, B.P.

Presenting author: Anthony Lee (University of Stirling)

Abstract:

Objective: People form rapid, automatic judgments about others based on their faces, with research suggesting that these initial impressions can significantly impact social interactions. However, much of this research relies on judgments made from facial photographs, raising questions about their relevance to real-world, face-to-face encounters. This study examines whether social judgments made from facial photographs align with those formed during in-person interactions.

Methods: A total of 689 participants (344 males, 345 females) took part in a "speed-meeting" study where they had brief, three-minute interactions with each other before rating each other on several social traits. These included traits such as attractiveness, creativeness, intelligence, kindness, confidence, plus others. Participants also provided facial photographs, which were then rated on the same social traits by a separate sample of 356 raters in an online study.

Results: Analyses showed that there was some correspondence between social judgements made in-person and those made based solely on facial photographs. Predictably, physical traits, such as attractiveness and athletic ability, showed a strong association between the two contexts. Interestingly, there was also an association between some non-physical traits, such as creativity and intelligence judgements for male targets, and confidence and extraversion for female targets.

Conclusions: These findings provide insight into the social traits inferred from faces that may have lasting effects on interpersonal perceptions. They also have implications regarding the ecological validity of research based solely on facial photographs.

5. 16:40 – "Do stereotypes and ambivalent sexism predict facial judgements? A study in a large multi-country sample" (ID: 177, Short talk)

Authors : Stephen, I.D.

Presenting author: Ian Stephen (Bournemouth University)

Abstract:

A common focus of research in evolutionary psychology is to examine whether adaptationist perspectives can predict perceptions of traits such as attractiveness and dominance from faces. This approach is often criticised as ignoring the role of cultural factors such as stereotypes and sexism. This study examines face ratings on 13 traits by over 11,000 participants across 11 world regions. We tested the predictions that gender stereotypes, and ambivalent sexism (made up of hostile sexism - a dislike of women; and benevolent sexism - perception of women as helpless and in need of protection) will predict the ratings of male and female faces on these 13 traits. Results suggest that women's faces are not rated lower on items related to benevolent sexism and are in fact rated more positively on traits related to hostile sexism. Implications for theories of stereotypes, sexism, and adaptationist views of face perception are discussed.

6. 16:50 – "Are facial measures biomarkers of a risk of cardiometabolic diseases in postmenopausal women?" (ID: 86, Short talk)

Authors : Obrochta, W.; Brittain R.; Windhager S.; Nenko I.; Klimek M.; Galbarczyk A.; Jasieńska G.; Marcinkowska U.M.

Presenting author: Weronika Obrochta (Jagiellonian University Medical College)

Abstract:

Introduction: The quality of prenatal development influences biological condition and health in older age, including a risk of cardiometabolic diseases (CMDs). The purpose of this study was to evaluate if two putative markers of a quality of early-life development, namely the degree of facial fluctuating asymmetry (FA) and facial averageness (AVE), are related to CMD risk factors in postmenopausal women.

Methods: The participants of the study were 248 postmenopausal women 45-92 years old (mean age=61±10.75 years) from rural Poland (all non-smokers). We took photographs of the participants' faces. CMDs risk factors included body fat, blood pressure, total cholesterol, HDL, LDL, triglycerides and glucose levels. We also checked the presence of Metabolic Syndrome according to the criteria of the Polish Cardiological Society. Cardiovascular disease risk was estimated by using Systematic Coronary Risk Estimation (SCORE). In a geometric morphometrics approach, facial measures were derived from 7 bilateral anthropometric measurement points digitized on standardized photographs using the tps program series and Wolfram Mathematica. FA and AVE were modelled separately against each CMDs risk factor using linear and logistics models in R, adjusting for age, percentage body fat and number of years of education completed as covariates.

Results: There were no statistically significant associations between neither FA nor AVE and individual CMDs risk factors. Similarly, relationships between measures of facial features and SCORE and Metabolic Syndrome were not statistically significant.

Conclusions: While facial asymmetry and averageness might be relevant characteristics of facial attractiveness, they are unlikely to serve as biomarkers for increased cardiometabolic disease risk among postmenopausal women.

Wednesday, 16 April - 10:20 - 12:00 - Models of Thought and Social Judgment - CCE001

Chair: Amanda Rotella (Northumbria University)

1. 10:20 - "A model of minimal mindreading" (ID: 1, Talk)

Authors : Quillien, T.; Taylor-Davies, M.

Presenting author: Tadeg Quillien (University of Edinburgh)

Abstract:

Mindreading (or theory of mind, mentalizing) is the ability to predict and explain the behavior of other agents by inferring their mental states. Researchers interested in the ontogenetic and phylogenetic origins of mindreading have gathered a lot of evidence about the capacities of young human children and non-human primates. These data reveal a robust pattern: children and non-human primates are able to represent what other agents know, but struggle to represent what they believe. We suggest that such 'factive' mindreading is a resource-rational strategy that allows organisms to predict the behavior of other agents well enough, in the face of cognitive resource constraints. We test this hypothesis using a formal framework that allows us to automatically derive mindreading strategies that are optimal, given a bound on available computational resources. In our simulations, we find that mindreaders with an intermediate level of computational resources behave in a very similar way as non-human primates and human children. For example, both the simulated agents and non-human primates/children are unable to predict the behavior of individuals with a false belief, and even (most strikingly) individuals with an accidentally true belief. Our results suggest that even minimal mindreading abilities were shaped by natural selection for maximal efficiency.

2. 10:40 - "A Context-Integrated Theory of Moral Regulation: Reputation Management through a Bayesian Updating Process" (ID: 184, Talk)

Authors : Rotella, A.

Presenting author: Amanda Rotella (Northumbria University)

Abstract:

How do people update reputational information? How do these judgements impact moral signalling? It is well-established that people are more moral when others are watching (Andreoni & Petrie, 2004; Barclay & Willer, 2007; Milinski et al., 2002a, 2002b; Sylwester & Roberts, 2010). However, there are conflicting literatures that suggest that an initial cooperative action, people subsequently behave more cooperatively (i.e., moral consistency, foot-in-the-door effect) or less cooperatively (i.e., moral licensing, moral compensation). In this review of sequential moral decisions, I advance that these effects are all part of a larger moral regulation framework based on reputation. That is, people will upregulate or downregulate moral signals based on contextual factors (e.g., who is watching, prior information, size of the [prior] r signal). For example, people license (i.e., behave less morally, but not immorally) in the second task if the second moral signal

is similar to the first – if you've already established a moral reputation, subsequent signals could be weaker. In fact, research finds that people are judged less harshly after establishing a good reputation (Effron, 2014; Effron & Monin, 2010; Polman et al., 2013). Further, for the foot-in-the-door effect, if you send a small (weak) moral signal to establish a reputation, you're more likely to agree to a larger moral behaviour to avoid a bad reputation as a moral hypocrite, which is consistent with the work on moral hypocrisy (Dong, Kupfer & Van Prooijen, 2020). In this theoretical review, I advance that these effects are part of reputation management framework that operates through a Bayesian updating process, where prior beliefs (i.e., initial reputation) are updated with new evidence (i.e., information) to produce revised reputational estimates. The resulting signals will be calibrated according to the signaller's goals and prior reputational estimate. Additionally, I extend this argument to moral cleansing and door-in-the-face effects.

3. 11:00 – "Using signal detection theory (SDT) with generalized linear mixed models for more accurate veracity judgement analysis" (ID: 148, Talk)

Authors : Zloteanu, M.; Vuorre, M.

Presenting author: Mircea Zloteanu (Kingston University)

Abstract:

Deception detection research has long been hindered by methodological limitations that conflate response bias with detection accuracy. Traditional analysis plans rely on models that make overly strong assumptions about the design and data, such as factorial models (ANOVAs). We present an alternative methodological approach using (Bayesian) Mixed-Effects Signal Detection Theory (SDT) to address these critical shortcomings. By leveraging generalized linear mixed models, the research provides a more accurate and comprehensive framework for understanding veracity judgments (or any binary judgments). The approach allows analysts to incorporate individual variability from both participants and stimuli/trials, a crucial factor previously overlooked in deception studies. Unlike conventional factorial analyses that rely on aggregated response accuracy, this method avoids data transformations and captures the complexity of judgment processes. We demonstrate the method's superiority across multiple datasets, revealing how traditional approaches may produce misleading estimates. This approach challenges existing paradigms by showing that most effects stem from response bias shifts rather than actual detection accuracy. Signal Detection Theory generalized linear mixed models (SDT GLMMs) offer researchers a robust, transparent tool for investigating deception, promoting more reliable and reproducible research practices in the field.

4. 11:20 – "Looking again at Biological evolution to inform Cultural Evolutionary theory at Marr's (1992) algorithmic level" (ID: 194, Talk)

Authors : Tamariz, M.

Presenting author: Monica Tamariz (Heriot-Watt University)

Abstract:

This paper advocates for a humble and open-minded approach to using evolutionary biology to standardize terminology and clarify concepts in cultural evolutionary theory. Cultural evolutionists

often argue that certain cultural processes, such as cross-community borrowing, context-based biases, and one-to-many transmission (Acerbi & Mesoudi, 2015), have no biological equivalent. One effective way to leverage biology-culture analogies is by applying Marr's (1992) levels of analysis. We propose that the aforementioned cultural processes can be rigorously mapped onto biological processes at Marr's algorithmic level: lateral gene transfer, frequency-dependent selection, sexual selection, and reproduction by budding, respectively. Another strategy to clarify the connections between cultural evolution research and theory is to frame research questions clearly at either the human level, focusing on the impact of culture on human biological fitness, or the cultural level, focusing on cultural fitness, which is the spread of cultural variants where humans act as mechanisms and environmental factors. For instance, context-based biases can be interpreted differently depending on the level of analysis. At the human level, they are biologically evolved cognitive adaptations that help us choose cultural variants likely to increase our biological fitness −if prestige correlates with increased fitness, copying prestigious individuals may, on average, enhance our biological fitness. At the cultural level, these biases often function as mechanisms of drift or neutral evolution. For example, a particular brand of coffee may spread because it is endorsed by a prestigious celebrity −not necessarily because it is superior, but because it was fortunate to receive that advertising campaign. We will explore these and other analogies previously dismissed by cultural evolutionists, demonstrating how biological models can help systematize controversial cultural-evolutionary concepts, including cumulative cultural evolution, guided variation, and attraction.

5. 11:40 - "Too good to be true: people use Bayesian processes to discount improbable performance in competence judgments" (ID: 106, Talk)

Authors : Mercier, M.; Quillien, T.; Mercier H.

Presenting author: Marius Mercier (École Normale Supérieure)

Abstract:

Objective: Humans are highly dependent on others, and the ability to evaluate potential cooperation partners is crucial for survival and reproduction. Competence judgments play a key role in these evaluations, influencing decisions in contexts ranging from leadership selection in small-scale societies to modern hiring practices. Unlike warmth judgments, competence is domain-specific (e.g., proficiency in hunting may not correlate with knowledge in witchcraft), which implies a constant reassessment of competence across new domains of cooperation. Previous research on competence evaluation often portrays individuals as naïve, relying on superficial cues of competence such as social status. While such cues can serve as useful heuristics, growing evidence suggests that people also infer competence based on observed behavior and communicated information.

Method: To examine how people infer competence from little information, we use a previously conducted experiment in which participants (N = 848) were presented with an agent's performance on a trivia question and predicted the agent's ability to answer other trivia questions from the same theme. Participants demonstrated remarkable accuracy in estimating question difficulty and predicting performance from limited information. To explain these judgments, we developed and tested a Bayesian model alongside two heuristic models. The Bayesian model assumes participants update their beliefs about an agent's competence based both on observed performance and their prior expectations about the distribution of competence within the population.

Results: Bayesian model comparisons revealed that our model provided a better fit to the data (Ntrials = 63,600) than the alternative heuristics, even when accounting for model complexity. These results suggest that competence judgments are well described by Bayesian processes, and outperform more naive heuristics, such as taking the agent's top performance at face value instead of discounting it by relying on priors.

Wednesday, 16 April - 10:20 - 12:00 - Health - CCE003

Chair: Paula Sheppard (University of Oxford)

1. 10:20 - "The relationship between family size and child health: Evidence from five countries." (ID: 179, Talk)

Authors : Sheppard, P.; Hassan, A.; Shenk, M.; Chvaja, R.; Spake, L.; Samore, T.; Sear, R.; Shaver, J.; Sosis, R.

Presenting author: Paula Sheppard (University of Oxford)

Abstract:

Evidence for a negative relationship between family size and child health is mixed, partly due to studies using different measures of child health and family size, child health being measured at different ages, different cultural and national contexts, and different modelling techniques applied. Furthermore, predictions can be made in both directions: resource dilution models predicts that being in a larger family is associated with poorer health if the mechanism promoting health is parental investment, because all else equal, parents have finite resources to divide across children. Large sibships might also have negative consequences for child health due to overcrowding where infections can spread more easily, and higher noise levels coupled with lack of privacy can have adverse psychological effects. There are also ways in which large sibships might promote health, e.g. by positively influencing immune function if the mechanism is increased microbiotic diversity from exposure to other children or because older children, especially daughters, might also promote the health of younger siblings if they contribute to childcare in line with the helpers-at-the-nest model. In non-western settings where the nuclear family is often not the strict norm, household size may be more important than family size, and more relevant to some of those theories because higher numbers of people (siblings or not) can help with childcare, spread disease, increase microbiotic diversity, etc. Here we test if family size or household size is more important for child health in five countries. We find stark differences in each country whether birth order, sibship size, or household size matters. We use a behavioural ecology framework to discuss these results.

2. 10:40 - "Access to allocare, postnatal depression, and shifting fertility desires – exploring the long-term consequences of COVID-19 for reproduction in the UK" (ID: 68, Talk)

Authors : Myers, S.; Emmott, E.H.

Presenting author: Sarah Myers (Max Planck Institute for Evolutionary Anthropology)

Abstract:

Many demographers predicted fertility rates in high income contexts would plummet due to COVID-19. After an initial drop, concern over a lasting "baby bust" dissipated as rates rebounded; however, in the years since the pandemic they have crashed again. Pandemic births themselves give only partial insight into the pandemic's fertility consequences; the influence on future reproductive desires of the experiences of those giving birth is also key. Previous work finds postnatal depression (PND) reduces the likelihood of parity progression, questioning adaptive accounts of the condition. PND rates spiked during periods of lockdown, doubling in the UK, suggesting further unrealised consequences. Moreover, as cooperative childrearers humans are reliant on allomaternal childcare to support reproduction. The pandemic's social distancing measures had dramatic impacts on allocare access; while many mothers lost support, others gained it due to partners being forced to stay at home. Here we present a mixed-methods exploration of the pandemic's impact on the future fertility desires of 304 UK mothers, using data from a longitudinal study of postnatal wellbeing between 2020 and 2022.

Directed acyclic graph-selected Bayesian multi-logit regressions predicted change in future fertility desires. Inductive thematic analysis explored qualitative responses regarding how experiences of being a pandemic mother influenced family plans.

As PND symptoms during lockdown increased the probability of still wanting another child declined, while uncertainty and changing to no longer wanting another child increased. High amounts of childcare support had a small buffering effect against reductions in the probability of wanting another child. A wide range of maternal experience influenced future family planning post-pandemic, characterised by trauma, reliance on support, concerns regarding coping capacity, and desire to regain missed experiences.

Findings highlight the cooperation-contingent nature of reproduction in the contemporary UK and the trade-offs faced by pandemic mothers between childbearing desires and protecting their own/existing family's wellbeing.

3. 11:00 – "East or West, Where Does Morbidity Manifest? Spatial Patterns of Historical Death Causes in Finland" (ID: 50, Talk)

Authors : Spa, M; Briga, M; Bullaj, E; Lummaa, V; Lahdenperä, M

Presenting author: Mark Spa (University of Turku)

Abstract:

Human health is affected by a complex system encapsulating genetics, environment and lifestyle which thus far is not yet fully understood. This has resulted in unexplained morbidity disparities and questions regarding the effects of environmental factors on both historical and current human health. This study aims to investigate the spatial patterns of morbidity in historical Finland, spanning from 1750 to 1850, shedding light on health disparities and their potential environmental and socio- cultural drivers. Finland provides an ideal setting for researching disease disparities, given the previously documented yet still largely unexplained health differences between its southwestern and northeastern regions. Using the HisKi data composed by the Finnish genealogical society we translated and deciphered historical death causes recorded across more than 400 Finnish parishes covering more than 3 million individuals. This study employs spatial analysis methods (Global Moran's I and Spatial Scan Statistic) to identify geographic clusters in this time period. After analyzing these historical disparities, we seek to eventually couple them to how socio-cultural and

environmental factors—such as climate, living conditions, etc. —may have shaped mortality outcomes across different regions and time periods. Ultimately, this study aspires to link past patterns with Finland's present-day spatial health inequalities, providing insights into the lasting impact of historical conditions and morbidity on modern public health. The study's findings describe death cause patterns in historical Finland but could further contribute to a better understanding of long-term health outcomes and contribute to our ability to predict disease in a rapidly changing world.

4. 11:20 - **"Income, Food Acquisition, and Electrical Appliances: Influences on Dietary Diversity and Child Growth in Rural Timor-Leste" (ID: 190, Short talk)**

Authors : McGee, K.D.; Slivkoff, B; Chang, Y; Sanders, K.A.; Judge, D.S.

Presenting author: Keeley McGee (University of Western Australia)

Abstract:

In Timor-Leste, malnutrition, and consequently, poor child growth, is a pervasive problem. The transition to market economies allows some families to access income of varying levels, thus expanding potential acquisition sources of a nutritious diet from subsistence food production, to include food purchasing. Previous research in rural Timor-Leste demonstrates that salaried income is not consistently associated with better short-term child growth, suggesting that purchasing diverse diets, a universal indicator of nutrition, may not be prioritized. Here, we examine how families earning varying income levels differ in purchasing patterns and how this impacts dietary diversity. Secondly, we ask whether prioritizing food purchases improves short-term child growth compared to purchasing appliances. We interviewed 296 families from three ecologically different rural Timorese communities in the post-rainy seasons of 2023 and 2024. Variables included occupation, pensions, food acquisition and consumption, and appliances owned. Weights of resident children 0-10 years old were collected (n=598) and WHO Z-scores calculated. Salaried families purchased significantly more foods (x=3.6 foods purchased, SD= 1.57 (62.8% of total foods acquired)) and more cooking-related electrical appliances (x=1.8, SD= 1.40) than both low-income (x=3.0 foods, SD=1.55; p< .001; x=1.5 appliances, SD=1.28; p< .001) and no-income families (x=2.8 foods, SD=1.23; p< .00 1; x=1.1 appliances, SD=1.27; p< .001). Dietary diversity scores (DDS) were uniformly low (x=4.2 of 12 food groups, SD=1.25), however, salaried families had the most diverse diets comparatively (p< .001 and p=.046). Overall, z-weight-for-age was low (x= -1.71). In a linear mixed-model, DDS and food-purchasing did not predict z-weight-for-age. Number of cooking appliances contributed to model fit but did not independently predict z-weight-for-age. Salary-earners use income to purchase more foods and more appliances, however, dietary diversity remains low suggesting alternative economic, cultural, or educational constraints to acquiring a more diverse diet. This absence of food-focused purchasing behaviours may reduce overall variation in DDS, limiting its effect on child growth.

5. 11:30 - **"Social Determinants of Depression in the Tsimane Forager-Horticulturalists of Bolivia" (ID: 139, Short talk)**

Authors : Katiyar, T.; Hooper, P.; Schniter, E.; Beheim, B.; Cummings, D.; Debras, C.; Rodriguez,D.E.; Kaplan, H.; Trumble, B.C.; Stieglitz,J.; Gurven, M.; Jaeggi, A.V.

Presenting author: Tanay Katiyar (University of Cambridge)

Abstract:

Anthropology, sociology and psychiatry share a common interest in examining how an individual's social environment (e.g. economic inequalities, exposure to violence, etc.) affects their mental health. Research in small-scale subsistence societies has the potential to further explore the adaptive logic and antiquity of such social determinants, drawing from rich anthropological knowledge about interdependence, cooperation and conflict between individuals and their social environment. However, empirical studies here are mostly lacking. For instance, previous analyses on depression amongst the Tsimane forager-horticulturalists of Bolivia focused predominantly on individual-level factors such as infection status or functional ability. We expanded this previous work by exploratively quantifying variation in depression scores (n = 2665 interviews) at the level of households (n = 1098), communities (n = 68), and regions (n = 10), above and beyond adjusting for individual-level factors. Furthermore, we investigated whether higher-level variables — distance to closest market town, community size and household size — were responsible for this variation at higher-social levels. In line with the social determinants literature in industrialised populations, we observe modest variation in depression scores at the household- (ICC ~ 0.07) and community- (ICC ~ 0.06) levels, which isn't accounted for by higher-level variables. Importantly, we also find substantial interviewer (ICC ~ 0.28) and time effects. Our results prompt further exploration of the social determinants of mental health in diverse small-scale societies, while emphasizing certain methodological considerations in mental health field research.

6. 11:40 – **"Cigarette smoke exposure as a potential risk factor for sleep problems in pregnant women" (ID: 40, Short talk)**

Authors : Ciochoń, A.; Balwicki, Ł.; Klimek, M.; Danel, D.P.; Apanasewicz, A.; Ziomkiewicz, A.; Galbarczyk, A.; Marcinkowska, U.M.

Presenting author: Aleksandra Ciochoń (Jagiellonian University Medical College)

Abstract:

Cigarette smoking and exposure to smoke during pregnancy harm the health of mothers and increase the risk of respiratory diseases. This can negatively affect the biological fitness of both mother and offspring. Due to the stimulant effect of smoking, the negative effect on diurnal rhythm and sleep is also observed. Sleep quantity and quality are directly related to maintaining health and recovery. During pregnancy, the need for sleep may be additionally biologically motivated as a way to ensure the mother is sufficiently healthy to allow for proper fetal development. This study explored the link between cigarette smoking, exposure to cigarette smoke during pregnancy, and sleep patterns in pregnant women. An online survey was conducted with N= 3365 Polish mothers aged 18-43 (mean 30.7; SD 3.87). Participants reported the use of stimulants during pregnancy and rated sleep in three categories (difficulty in falling asleep, waking up too early, and difficulty in staying asleep). Data were analyzed using multivariate logistic regression. The incidence of sleep problems in pregnant women was shown to be associated with exposure to cigarette smoke (passive smoking) while controlling for: age, education, place of residence, satisfaction with the woman's life, economic situation, pregnancy complications, levels of state anxiety and depressive symptoms, trimester of pregnancy, nausea or vomiting during pregnancy, and COVID-19 infections. Interestingly, active smoking was not associated with sleep difficulties. These results are essential for creating health measures for pregnant women and their families, considering behaviors that enhance reproductive success.

7. 11:50 - "The Hidden Advantage of Psychiatric Disorders: The Evolutionary Paradox Revisited" (ID: 30, Short talk)

Authors : Balducci, M.M.; Larose, M. -P.; Dobewall, H.; Jokela M.

Presenting author: Marco Balducci (University of Turku)

Abstract:

Psychiatric disorders appear to defy natural selection and are often described as an evolutionary paradox. Natural selection predicts that genetic variants reducing fitness (i.e., the ability to reproduce) should gradually be eliminated from the gene pool. Yet, psychiatric disorders are highly heritable, reduce fitness, and remain relatively common. Building on the balanced polymorphism hypothesis, we argue that genetic variations linked to psychiatric disorders persist because, in limited amounts, they are associated with traits that enhance fitness. However, declining fertility rates in Western countries suggest that social dynamics may be disrupting the relationship between these genetic variations and fitness, potentially obscuring their evolutionary benefits. Despite this, alleles associated with psychiatric disorders should still confer advantages in domains beyond reproduction. Our study aims to explore the evolutionary paradox in psychiatric disorders by examining vertical (hierarchical) and horizontal (sectorial) niche-seeking behaviors that, in the absence of strong social constraints, would enhance an individual's fitness. We utilize comprehensive Finnish register data, which includes detailed mental health records for the entire population in Finland. Our analysis focuses on the following psychiatric disorders: schizophrenia, bipolar disorder, major depression, and autism spectrum disorder. Primary outcomes of interest include general academic achievement at the end of mandatory schooling and income (vertical dimension) as well as field of study and employment (horizontal dimension). To analyze these outcomes, we employ a quasi-sibling design, categorizing siblings into three groups: (1) all siblings from the same family are unaffected by a psychiatric disorder, (2) all siblings are affected, and (3) at least one sibling is affected while the other is unaffected. Then, means will be calculated for each outcome variable per level of family composition and mental health diagnosis status to assess niche-seeking behaviors. This study has been preregistered, and preliminary results will soon be available.

Wednesday, 16 April - 13:00 - 13:40 - Group Living and Sociality - CCE001

Chair: Drew Altschul (Newcastle University)

1. 13:00 - "Human prestige psychology creates hierarchical societies" (ID: 79, Talk)

Authors : Watson, R.O.; Morgan, T.J.H.; Lenfesty, H.

Presenting author: Robin Watson (Arizona State University)

Abstract:

Whether ancestral human societies were typically egalitarian or hierarchical is increasingly debated. While classic theory suggested that hierarchical societies were rare, archaeological and anthropological evidence has challenged this view, suggesting a much greater variety in social structures. Here we apply cultural evolutionary theory and explore the role that prestige, the uniquely

human tendency to confer status and on skilled individuals, has on social structures. Through a combination of cultural evolutionary modelling, experiments with human participants and evolutionary modelling, we find that: (i) prestige bias alone can generate egalitarian or hierarchical social structures, depending on its strength; (ii) human prestige bias is sufficiently strong to produce hierarchical social structures; (iii) the strength of this bias closely matches theoretically adaptive values, indicating it has been tuned by natural selection. These results identify prestige as a plausible psychological mechanism through which hierarchical social structures can emerge.

2. 13:20 – "The long shadow of dominance: continuity of power seeking from apes to modern humans" (ID: 15, Short talk)

Authors : Altschul, D.; Weiss, A.; Moore, A.M.

Presenting author: Drew Altschul (Newcastle University)

Abstract:

Dominance traits, which capture an individuals' capacity and drive to acquire and maintain resource holding power, are found in humans as well as our close primate relatives. Power often translates into rank or status. However, the nature of power, status, and rank in contemporary humans is notably different from what is observed in nonhumans. What are the common characteristics of dominant, power-seeking humans? And how does power-seeking adapt over time, particularly in response to relevant life events? Using several large, often longitudinal, human samples mostly from the USA, we demonstrate using confirmatory factor analysis and structural equation modeling that humans possess a core trait of assertive power-seeking. This trait is generally stable over time and not subject to substantial influence from external factors in one's life. Perceived social status itself is also highly stable over time. These results have important implications for our conception of what the various traits, motive, and strategies that support status attainment have in common, as well as for our thinking on the temporality of human hierarchies and the traits that support our existence in hierarchies.

3. 13:30 – "Expectations, forward-thinking, and mentalizing shape ingroup favoritism" (ID: 41, Short talk)

Authors : Bellucci, G.; Imada, H.

Presenting author: Gabriele Bellucci (Royal Holloway, University of London)

Abstract:

Ingroup favoritism, the tendency for people to be more generous and cooperative with ingroup members than with outgroup members, is ubiquitous. Previous experimental studies have documented ingroup favoritism in a wide range of behavioral domains such as cooperation, prosocial giving, trust, and coordination. Notably, individuals of diverse cultures and developmental stages display ingroup favoritism. However, the cognitive processes, and their computational mechanisms, leading to ingroup favoritism are still unclear. Here, we address ingroup favoritism from a decision-theoretic perspective by outlining different, central aspects of human decision-making that might give rise to ingroup favoritism in decision-making. In particular, we outline three main cognitive processes: expectations, forward-thinking, and mentalizing. These cognitive processes

can be represented computationally as belief distributions, planning and model inversion, respectively. We will discuss theoretical predictions and empirical findings that provide evidence of our computational framework. These findings represent a pivotal contribution to understanding ingroup favoritism more mechanistically, thereby helping to disambiguate the predictions of current social models and proposing a new avenue of future research in social behaviors and group dynamics.

Wednesday, 16 April – 13:55 – 15:15 – Change and Society – CCE001

Chair: Sylvie Borau (Toulouse Business School/ IAST Toulouse)

1. 13:55 – "Beyond Individual Choice: Exploring the Role of Social Learning in Gendered Subject Selection" (ID: 24, Talk)

Authors : Golden. K; McLean, J; Cunningham, S; Wood, L.

Presenting author: Karen Golden (Abertay University)

Abstract:

Beyond Individual Choice: Exploring the Role of Social Learning in Gendered Subject Selection. Social learning biases, fundamental to cultural evolution, may perpetuate gender imbalances in educational choices. Many cultures exhibit gender inequality in labour, following gender differences in adolescents' school subject choices. Social conformity is high in adolescence, and social learning biases toward own-gender peers may influence these choices. Objective: To examine how gender stereotypes and transmission biases, including age-based and majority-based biases, influence adolescent subject choices and academic decision-making. Methods: Pre-registered studies asked adolescents who identified as male (N=159) and female (N=249) to rate their interest in eight educational projects where the cultural majority is either typically male (e.g., engineering task) or female (e.g., drama task). A novel paradigm measured participants' interest in these projects when they were endorsed by a same-gender adult or peer (S1) or a peer majority of their own or another gender (S2). Participants also listed their school subject choices and completed an academic gender stereotype scale. Results: Participants significantly preferred projects aligned with subjects where their gender has the established cultural majority ($p < .001$, $\eta = 0.11$). Endorser age (S1: Adult vs Peer) did not affect preferences; however, projects with an own-gender majority were rated more favourably than those with an other-gender majority (S2: $p = .003$, $\eta = 0.02$). These patterns did not differ significantly by participant gender. In their actual subject choices, males selected more stereotypically own-gender subjects than females ($p < .001$), and males also showed higher gender stereotype endorsement than females. Conclusions: This study highlights how embedded gender stereotypes and peer-gender influences can bias academic choices, particularly in males. These insights are valuable for educators and policymakers developing strategies to promote gender equity in education, who must consider a cultural evolution understanding of the role of social learning biases in decision-making.

2. 14:15 - **"From the Gender Gap to the Gender Paradox in Pro-Environmental Engagement: Insights from Multilevel Analysis across 56,582 respondents from 63 Nations" (ID: 69, Talk)**

Authors : Borau S.; Robert M.

Presenting author: Sylvie Borau (Toulouse Business School/ IAST Toulouse)

Abstract:

Previous research suggests that women show greater pro-environmental engagement than men. Understanding and addressing this gap is critical because effective climate action requires collective effort, and lower male engagement hampers global responses. This research addresses the variability in the gender gap across societies, explores potential gender paradoxes, and tests interventions to design policies that consider political and cultural values alongside gender, to boost men's engagement without alienating women or provoking backlash among climate change deniers. Methods We analyze gender differences in pro-environmental engagement using a global sample of 56,582 participants from 63 countries. Eleven interventions promoting climate action were tested. Multilevel analyses explore gender differences in (1) belief in human-caused climate change, (2) support for mitigation policies, (3) willingness to share climate information publicly on social media, and (4) participation in an effortful private online task, capturing real behavior and resulting in the planting of 4.5 trees on average per participant. Results Women, compared with men, exhibit stronger climate change beliefs and policy support, are more likely to engage in the effortful online task, but are less likely to share climate change information on social media. No interventions close this gender gap, highlighting its robustness. Surprisingly, the gender gap widens among (i) liberal consumers, (ii) societies with a stronger focus on care and, (iii) societies with higher gender equality (low Gender Inequality Index). This gender paradox may arise from (mis)alignments between pro-environmental values related to care and the "Big Two" values of communion (care, universalism) and agency (competition, independence) held at individual and cultural levels. Some interventions can bridge the gender gap when considering these political and cultural values. Conclusions Consistent with the gender paradox in STEM, these findings offer novel insights into why the gender gap in pro-environmentalism paradoxically widens among consumers and societies that value care, universalism, and equality, and why it might widen in the future.

3. 14:35 - **"Information about Immigrants' Deservingness Reduces Misperceptions and Opposition to Immigration" (ID: 172, Short talk)**

Authors : Sijilmassi, A.: Mercier, H.; Safra, L.; Chevallier, C.

Presenting author: Amine Sijilmassi (École Normale Supérieure)

Abstract:

Anti-immigration attitudes remain widespread across Western societies, raising concerns for social cohesion. This study investigates whether correcting misperceptions about immigrants' perceived deservingness—using cues such as intent to contribute and efforts to overcome socio-economic challenges—can counter anti-immigration prejudice. In Study 1 (N = 474), a factorial survey experiment showed that low-status immigrants were viewed more favorably when they exhibited deservingness traits. Studies 2a (N = 1,506) and 2b (N = 1,255), conducted as one-week

longitudinal studies during the 2024 European and French parliamentary elections, revealed that an information treatment emphasizing deservingness cues strongly reduced misperceptions about immigrants, modestly reduced opposition to immigration, and had an even smaller effect for anti-immigration voting. These findings suggest that while immigrants are often perceived negatively, emphasizing perceived deservingness can mitigate prejudice, presenting a promising strategy for reducing anti-immigration bias.

4. 14:45 - "Barriers in the Transition from School to Work: How Student Financial Adversity Predicts Deprioritising Jobs with the Best Long-term Career Progression" (ID: 74, Short talk)

Authors : Buzan, J; Sheehy-Skeffington, J.

Presenting author: Julia Buzan (École Normale Supérieure)

Abstract:

Objective: Despite education's potential to reshape societal inequalities, recent gains in broadening university access across the socioeconomic spectrum have not translated into parallel gains in the transition from school to work. This paper applies a socioecological approach to understanding this pattern, considering the role of job factors and individual financial background in shaping undergraduate students' job choice and perceived career prospects. Specifically it investigates 1) What job factors predict student job choice, 2) If these factors differ by financial context, and 3) Mediators between financial strain and perceived career prospects.

Methods: In two discrete choice experiments (n = 800) British undergraduate students chose between pairs of job descriptions varying primarily along two dimensions: immediate vs. delayed benefits (e.g., starting salary vs. salary progression), and concrete vs. abstract benefits (e.g., salary vs. values fit).

Results: Student career choice was shaped by socioeconomic constraints above and beyond individual preferences for meaningful work in Study 1, however this pattern was not replicated in Study 2. Across both studies the relationship between financial pressure and perceived career prospects was partially mediated by sense of control and by family connections to the job. While stress and temporal discounting partially mediated the relationship between financial pressure and career aspirations, in both cases this relationship weakened when accounting for sense of control.

Conclusions: While these findings merit further testing, they lend weight to a socioecological account in which decisions about future prospects and the weighting of future-over-current rewards are shaped by the perceived control over life outcomes, an appraisal that is tightly linked to socioeconomic conditions. This research also highlights the value of discrete choice experiments (DCE) in examining the socioecological drivers of job choice.

Wednesday, 16 April - 13:55 - 15:15 - Faces and Social Influence - CCE003

Chair: Bridget Waller (Nottingham Trent University)

1. 13:55 - **"Facial expressivity predicts social popularity" (ID: 192, Talk)**

Authors : Balabanova, A.; Kavanagh, E.; Kupfer, T.; Waller, B.M.

Presenting author: Alisa Balabanova (Nottingham Trent University)

Abstract:

Complex mechanisms have evolved in humans to aid uniquely close and cooperative group living. Facial expressions are produced frequently during interpersonal communication and can express internal states, punctuate language and demonstrate attention to others. However, whether use of facial expressions has adaptive value by leveraging a social advantage and aiding group cohesion is not well evidenced. Here, we tested the relationship between facial expressivity and the formation of interpersonal connections in an informal, online group setting. Participants (previously unacquainted) met in groups of three or four (N=256; in 72 groups) in an unstructured online video call interaction. We extracted facial expressivity during 5min-long interactions based on automated Facial Action Coding Scheme analysis and obtained partner perception measures by self-report. Using social network analysis, we calculated network centrality based on participants' liking judgements as a measure of social popularity. Participants were also rated on attractiveness by 620 independent raters. Results indicated that more facially expressive individuals occupied more central positions within their group, and were perceived as warmer and more cooperative. Interestingly, attractiveness did not predict popularity. Facial expressivity may enhance popularity by demonstrating increased behavioural predictability and/or honest signalling, characteristics important for group living. Our findings suggest, therefore, that facial behaviour aids the formation of social ties and has evolved as a key adaptive mechanism in group social cohesion.

2. 14:15 - **"Facial expressivity predicts richer social networks" (ID: 107, Talk)**

Authors : Kavanagh, E.; Balabanova, A.; Rollings, J.; Whitehouse, J.; Dunbar, R.I.M; Waller, B.M.

Presenting author: Eithne Kavanagh (Nottingham Trent University)

Abstract:

Humans are more facially expressive than any other species, producing an average of 101 facial movements per minute within social interaction (Rollings et al., 2024). Why such expressivity has evolved, and how it benefits us, is unclear. Facial expressivity seems to be a stable individual trait, and is associated with positive first impressions (Kavanagh et al., 2024). However, if facial expressivity affords clear fitness benefits it should be possible to demonstrate an association with wider social capital.

We have amassed five datasets totalling over 1000 participants engaged in real social interactions or naturalistic spontaneous monologues. Facial movements were coded according to Facial Action Coding System (Ekman et al., 1978) using automated software iMotions, allowing us to extract quantitative facial expressivity indices. Participants self-reported social relationships according to Cohn et al.'s (1997) social network index.

Increased facial expressivity predicted larger and more diverse social networks in women, but not men. Both facially expressive men and women had more female and one-to-one (in contrast to group-based) social relationships. This suggests that facial expressivity may function to foster

the development of more intimate social connections. Thus, the need for intense cooperative interpersonal bonds in humans may have driven the evolution of high levels of facial expressivity. Our findings also highlight potential gender differences in social strategies and behaviour.

3. 14:35 - **"Do humans use universal prototypical facial expressions in everyday social interaction?" (ID: 44, Talk)**

Authors : Waller, B.M.; Buckee, A.; Kavanagh, E.; Whitehouse, J.; Micheletta. J.

Presenting author: Bridget Waller (Nottingham Trent University)

Abstract:

Six prototypical facial expressions (anger, disgust, fear, happiness, sadness, and surprise) are widely lauded as true human universals. Claims of universality rely heavily on how these expressions are understood, as, across cultures, people tend to agree that these expressions signal one of these emotions. There are several methodological limitations of these studies, one of which is that the stimuli used are almost always posed by actors. If these expressions reflect a fundamental, adaptive part of the human behavioural repertoire, there should also be evidence of their occurrence in observational studies of real-world human social interaction. We conducted a review of the literature on human spontaneous facial expression production between 1979 and 2023. We recorded 1) which of the six prototypical facial expressions was documented, 2) whether facial expressions were recorded systematically to confirm similarity to the prototypes (e.g. using the Facial Action Coding System), and 3) whether quantitative data of occurrence (rates, frequency) was given. Our search yielded only 21 papers (the majority focussed on happiness/smiling) with less than half providing quantitative data. In sum, there is an insufficient body of research to suggest that these six facial expressions form part of everyday social communication. This absence of data is largely overlooked in the facial expression and emotion literature. We argue that the study of these facial expressions, their meaning, evolution and adaptive value, needs a radical rethink.

4. 14:55 - **"Bringing evidence of systematic differences between the faces of social media influencers and the general population" (ID: 120, Short talk)**

Authors : Fiala, V.; Szala, A.; Saribay, S.A.; Leongómez, J.D.; Wacewicz, S.; Berenji, M.; Kleisner, K.

Presenting author: Vojtech Fiala (Nicolaus Copernicus University in Toruń)

Abstract:

Objective: Despite indirect evidence suggesting that the faces of celebrities and other prominent figures possess unique characteristics in terms of attractiveness, and sextypicality, this area remains underexplored. It is surprising, given the significant part such individuals play in the visual diet of modern humans, potentially distorting representations of standard human appearance. In this study, we focus on social media influencers, whose facial characteristics may be particularly appealing, as their popularity is often rooted in the visual content they produce. We aim to compare their faces with faces from general population. Methods: We compiled lists of popular influencers from a globally prominent, visually oriented social networking service. We analysed facial configurations using frontal photographs and landmark-based geometric morphometrics. Results: Across all four samples, Colombia (N=291; 153 influencers), Czech Republic (N=360; 165 influencers),

India (N=186; 44 influencers), and Türkyie (N=323; 139 influencers), we identified statistically significant differences in facial configurations between influencers and general population samples of the same sex. These findings were further corroborated using a pooled sample and Procrustes ANOVA. According to a paired post-hoc comparison with Bonferroni correction, facial shapes do not significantly differ between samples of influencers from different countries. However, the same analysis nearly consistently showed significant differences between influencers and general population samples. This pattern was further supported by visualising the PCA components, and it persisted even when we restricted the general population samples to subsets of faces rated as the most attractive or sextypical. Despite that, visual inspections of TPS deformation grids and averaged facial configurations points to what resembles pronounced sextypical and attractive features among the faces of influencers. Conclusions: Our study provides the first evidence that influencers' facial representations on social media share distinct characteristics. Follow-up analyses will explore whether the influencers' facial features are also perceived as more appealing by survey participants.

5. 15:05 - "Comparing the effects of traits of facial attractiveness on attention" (ID: 47, Short talk)

Authors : Ventress, J.; Rajsic, J.

Presenting author: Joseph Ventress (Northumbria University)

Abstract:

Objective Previous research has found more attractive faces capture attention. However, typically this relies on average external panel ratings to define attractiveness, a subjective and inconsistent measure. The current study aimed to investigate the stimulus features that drive this bias by manipulating base faces along the dimensions of Averageness, Symmetry and Sexual Dimorphism, each of which has been linked to facial attractiveness.

Methods 38 participants completed an adapted dot probe task, with eye tracking used to measure saccadic reaction times (SRTs) to one of two faces arbitrarily marked as a target via a colour-border change. During the task, participants needed to look towards one of two faces whose averageness, symmetry, or sexual dimorphism had been increased or decreased, respectively. Participants completed 240 trials each and then completed a face rating task to measure attractiveness and validate the manipulations used.

Results SRT to the target face was not affected by manipulations along any of the three dimensions, meaning that increasing averageness, symmetry, and sexual dimorphism did not attract attention. There was also no influence of overall face attractiveness on SRTs. Attractiveness ratings only differed between average and distinctive faces, with average faces rated as significantly more attractive.

Conclusions Contrary to the hypotheses, we did not find that manipulating stimulus features linked to attractiveness caused shifts of attention, and that only faces whose averageness had been increased were rated as more attractive. With further research, understanding the stimulus features that drive attention to specific facescan inform generative AI image creation, cosmetics and advertising.

Chair: Adrian Jaeggi (University of Zurich)

1. 15:40 - **"Coevolution and causal inference using generalized dynamic phylogenetic models"** **(ID: 151, Talk)**

Authors : Ringen, E.J.; Claessens, S.; Martin, J.S.; Jaeggi, A.V.

Presenting author: Adrian Jaeggi (University of Zurich)

Abstract:

Phylogenetic comparative methods are widely used to study the coevolution of both biological and cultural traits. While some frameworks like generalized linear mixed models are quite flexible in terms of the data structure, they are ill-suited for inferring causal effects; others, like Pagel's 'discrete' can more explicitly infer causal sequences, but are limited in the number and types of traits that can be modelled. Here, we develop a novel class of generalized dynamic phylogenetic models (GDPMs) that overcomes these limitations and synthesizes the strengths of existing methods into a flexible framework. Treating the phylogeny as an implicit time series, GDPMs model the co-evolution of any number of traits undergoing both deterministic adaptation and stochastic drift, capable of inferring directed evolution ($⬚ − > ⬚$ vs $⬚ − > ⬚$), feedback ($⬚ ⬚ ⬚$), and contingencies (e.g., first $⬚$, then $⬚$). We introduce the coevolve R package, a user-friendly interface for fitting GDPMs in a Bayesian framework using Stan. To demonstrate the GDPM framework, we first work through a biologically-motivated synthetic example of predation and mating system among Cichlid fish. We also perform simulation-based calibration as a computational validation of our models. Additionally, we present some empirical applications of GDPMs, including analyses of brain size in non-human primates and societal complexity across human populations. These examples highlight the flexibility and potential of the GDPM framework, which allows researchers to model latent variables, multilevel structures and repeated measures, measurement error, missing data, and other complexities inherent in comparative data.

2. 16:00 - **"Modelling Deviations from Marriage Norms: Integrating Ethnography into Archaeogenetic Inferences of Prehistoric Kinship" (ID: 143, Talk)**

Authors : Church, W.; Powell, A.; Colleran, H.

Presenting author: Willem Church (Max Planck Institute for Evolutionary Anthropology)

Abstract:

Advances in ancient DNA (aDNA) sequencing now enable archaeogeneticists to reconstruct fine-grained biological relatedness from prehistoric remains, driving increasing interest in inferring kinship, marriage, and residence norms from reconstructed pedigrees. However, these inferences lack clear theoretical expectations for how different marriage and residence norms, and deviations from them, might manifest in aDNA patterns. This study addresses this gap by presenting results from a computational model exploring random and biased deviations from patrilocal residence norms, inspired by ethnographies of "big-men" societies in Melanesia. These societies, where

leadership included competitive recruitment of matrilateral and affinal kin in an otherwise patri-local context, offer a test-case for exploring the interpretive limits of archaeogenetic evidence.

The model simulates multiple populations following parameterised marriage and residence norms, which are then used to generate synthetic pedigrees comparable to those reconstructed from aDNA. Community-level pedigree metrics and diversity in mtDNA and Y-chromosome haplotypes are analyzed to assess how deviations from patrilocality influence consequent genetic patterns.

Three key findings emerge: (1) Uniparental haplotype diversity is a robust indicator of highly strict sex-biased migration, supporting current archaeogenetic interpretations of large, multi-generational pedigrees with homogeneous uniparental haplotypes. (2) Using a novel set of pedigree metrics, systematic deviations from patrilocal norms are distinguishable from random variation, suggesting that archaeogeneticists might be able infer a wider range of social practices. (3) Populations classified as "patrilocal" or "patrilineal" in cross-cultural databases (e.g., HRAF) likely exhibit genetic profiles distinct from those that would reconstruct as patrilocal via aDNA, underscoring the need for caution in applying ethnological databases to prehistoric contexts.

These findings enhance the theoretical foundation for interpreting prehistoric social life from ge-netic evidence and provide a framework for addressing potential biases in cross-cultural and ar-chaeogenetic analyses.

3. 16:20 - "Rethinking Homosexual Orientation: Beyond the "Darwinian Puzzle" Trope" (ID: 17, Talk)

Authors : Bachaud, L

Presenting author: Louis Bachaud (University of Kent)

Abstract:

The widespread existence of same-sex sexual preference and behavior in humans, in particularly when exclusive, is usually characterized as a "Darwinian puzzle," a counterintuitive enigma which deserves an explanation: how could this seemingly fitness-decreasing trait have evolved and main-tained itself at relatively stable rates in human populations? And while many hypotheses have been put forward to address this "puzzle," none is close to solving it yet. However, this status as an unex-plained "puzzle" might have had the consequence of relegating homosexuality to a niche concern in the field. However, even though we do not know much about its evolution and function yet, we know that it is an undeniable feature of many past and present human societies. Unfortunately, while homosexuality is always seen as a "puzzle" in need of adaptationist explanation, it is never considered as a relevant selective force in the evolution of other traits. Thus, although evolution-ary behavioral science sometimes studies homosexuality, it still exhibits deeply-ingrained hetero-normative assumptions by never including it in hypotheses about ancestral environments. By at least considering the possibility of homosexuality as a selective force, I contend that evolutionary scientists could mine a new trove of potentially fruitful and parsimonious explanations. I demon-strate this with examples relating to findings in the domains of mating, friendship, jealousy, and sexual arousal, which had previously been explained solely through sexual selection. While these examples demonstrate the potential for more parsimonious explanations of existing findings, the main interest in going beyond the "Darwinian puzzle" trope is heuristic. By getting the "puzzle" out of the cupboard and really incorporating it in our vision of human nature, we will naturally start

exploring new hypotheses and potentially enlarging our proximate and ultimate understanding of human nature and sexuality.

4. 16:40 - "Two Universal Pathways in Demographic Transition" (ID: 3, Talk)

Authors : Itao, K.

Presenting author: Kenji Itao (RIKEN)

Abstract:

Objective: The demographic transition, marked by declines in fertility and mortality rates, is a widespread phenomenon across modern countries. While many theories have attempted to explain its causes, quantitatively characterizing the dynamic patterns of these transitions and identifying their core mechanisms remains challenging.

Method: Using global data from 195 countries covering the period 1800–2000, I analyzed the quantitative patterns of change in each country's crude birth rate (λ) and life expectancy at birth (e_0). Additionally, to capture the underlying mechanisms of these transitions, I developed a simple model incorporating the trade-off between reproduction and education.

Results: The analysis revealed that each country's trajectory follows one of two universal pathways, conserving either λe_0 or $\lambda \exp(e_0/18)$. This distinction points to two fundamentally different phases governed by distinct mechanisms. Phase I, which predominated until the mid-20th century, is characterized by high child mortality and steady population growth. In contrast, the more recent Phase II is marked by a significant decline in child mortality and a steady rise in GDP per capita, indicating a shift in demographic priorities.

The model demonstrates a transition between phases in which either total population or total productivity is maximized, with each phase conserving one of the above quantities. Additionally, an analysis of optimal fertility suggests that reducing educational costs can allow fertility rates to recover while maintaining sufficient educational standards. The model further suggests that recent shifts to Phase II observed across countries may be driven either by efforts to optimize productivity or by cultural adoption of Phase II dynamics, depending on the specific socioeconomic context. This work introduces a novel theoretical perspective to demography and cultural evolution, applying a physics-inspired approach to identify conserved quantities in demographic patterns.

Wednesday, 16 April - 15:40 - 17:00 - Religion and Morality - CCE003

Chair: Kristen Syme (University of Leicester)

1. 15:40 - "Analysing the Form and Function of Rituals Using Large Language Models: Fasting" (ID: 49, Talk)

Authors : Syme, K.L.; Motos, N.; Placek; C.D.

Presenting author: Kristen Syme (University of Leicester)

Abstract:

With recent advancements in Large Language Models (LLMs), it is now possible to investigate human psychology and behaviour, cultural diversity and change, and countless other topics across scores of texts on unprecedented scales. I will present how human behavioural scientists can leverage the power of LLMs to analyse texts by "prompting" LLMs, such as Generative Pre-Trained Transformers (GPTs), on operationalised variables that can be automated across large text databases. We applied GPT 4.0 to annotate variables based on evolutionary models of the form and function of ritual fasting across 1,240 ethnographic paragraphs from a sample of global cultures and compared GPT's responses to that of trained human annotators. We found that GPT 4.0 can efficiently annotate ethnographic texts on diverse cultures with a high degree of accuracy and reliability. This innovation in AI holds considerable potential to help evolutionary behavioural scientists answer fundamental questions about culture and behaviour, including explaining the form, function, and distribution of ritual practices.

2. 16:00 – "Public but not self-evaluated religiosity is associated with prosociality and indirect reciprocity within ego-networks in four distinct cultures" (ID: 8, Talk)

Authors : Chvaja, R.; Watts, J.; Spake, L.; Hassan, A.; Samore, T.; Schaffnit, S.; Lynch, R.; Sear, R.; Shenk, M.K.; Sosis, R.; Shaver, J.H.

Presenting author: Radim Chvaja (University of Otago)

Abstract:

The central question of the evolutionary approaches to religion is why religion as a package of culturally transmitted beliefs, rituals, norms, and values persists across all cultures and historical epochs. One of the answers with consensus in the contemporary literature considers religious beliefs culturally transmitted solutions to the problem of cooperation. Specifically, moralizing religious traditions helped solve cooperative problems and allowed human groups to scale up in size and social complexity. But how does religion scaffold cooperation in ways that are stable? Costly Signalling Theory of Religion proposes that for cooperation to blossom, commitment to moralizing traditions must be reliably displayed through religious practice. No study has yet tested whether publicly communicated forms of religion are more reliably linked to cooperation than self-evaluations of religious commitments. Here, I present cross-cultural study based on data from 'The Evolutionary Dynamics of Religion, Family Size, and Child Success' project based on data from 3,792 participants from the USA, The Gambia, Malawi, and Bangladesh. We demonstrate that self-evaluated religiosity does not predict cooperative support provided and received nor indirect reciprocity of the ego-networks, but religious practice does. Our findings suggest that reliable communication of religious commitment is required to promote cooperation among co-religionists.

3. 16:20 – "Belief Beyond Tradition: How Spirituality Spreads and Thrives in the Modern World" (ID: 130, Talk)

Authors : Rosun,N.; Baimel, A.; Turpin, H.; Willard A.K.

Presenting author: Nachita Rosun (Brunel University London)

Abstract:

The content and structure of religious traditions have shifted dramatically across human history, yet the mechanisms driving these transitions remain poorly understood. Today, a growing number of individuals worldwide identify as "spiritual" rather than adhering to traditional religions. This emergent demographic provides a unique opportunity to explore the cultural evolution of religion. A key feature of modern 'spirituality' is its rejection of traditional religious structures—such as organized communities and ritualized practices—that typically facilitate belief transmission. But yet, and perhaps paradoxically, spirituality thrives in the modern world, with its practices increasingly embedded in mainstream culture. We investigate how spirituality persists and spreads in the UK by conducting two empirical studies examining its transmission pathways. Our survey (n = 500) analyzes the vertical (parent-child), horizontal (peer-to-peer), oblique (role model), and media (e.g, internet, books) transmission of beliefs, practices and values under the spirituality umbrella. Complementing this, ethnographic interviews with spiritual parents (n=5) and leaders/practitioners (n=5) provide novel insights regarding the mechanisms of the cultural transmission of modern day spirituality. These findings shed light on how spirituality endures, offering novel insights into the dynamics of cultural and religious change in a rapidly modernizing world.

4. 16:40 - **""My spirituality gives me the opportunity to serve others". Spirituality as a pro-social activity that builds connectedness." (ID: 188, Short talk)**

Authors : Ali, A.; Adair, L.; Kline, M.

Presenting author: Ayesha Ali (Brunel University London)

Abstract:

Objective: Previous research on individuals who identify as spiritual but not religious (SBNR) has focused on individualised aspects of belief such as self-improvement or self-actualisation, and other individual level factors such as cognition and personality (e.g., Saroglou & Muñoz-García, 2008; Saucier & Skrzypińska 2006; Willard & Norenzayan, 2017). Little attention has been paid to the social aspects of spirituality despite significant research on organised religions which finds that religion does build a sense of community and belonging amongst believers (Alcorta & Sosis, 2005; Durkheim, 1912; Greenfield & Marks, 2007; Krause & Hayward, 2013).

This study sought to identify the benefits that spiritual people derive from their practice, and to measure the importance of these benefits across three categories – individual, social/communal and institutional.

Methods: Stage 1: free-list interviews were conducted with SBNR people living in and around Glastonbury via Zoom (N = 13) with the aim of developing a list of benefits derived from spiritual practice and/or affiliation.

Stage 2: an online sample of spiritual people, 18 years and older and based in the UK was generated via a custom screener on Prolific. Participants identified any benefits that they have never experienced. They also rated the importance of benefits that they have experienced on a scale of one to five.

Results: Stage 1: Initial analysis of the enhanced free list data highlights that the benefits of SBNR practice goes beyond the individual. All participants spoke about the ways in which spiritual practice enables them to form relationships and connections with others, and many identified that service is a core part of their spiritual practice.

Stage 2: TBC - Data will be analysed to identify which category of benefits (individual, social/communal, or institutional) participants are least likely to have experienced and which category of benefits (individual, community/social, institutional) is most important to SBNR people.

5. 16:50 – "Sex, Drugs, and Genes: Illuminating the Moral Condemnation of Recreational Drugs" (ID: 97, Short talk)

Authors : Karinen, A.K.; Wesseldijk, L.W.; Jern, P.; Tybur, J.M.

Presenting author: Annika Karinen (University of Amsterdam)

Abstract:

Over the past decade, evolutionary psychologists have proposed that many moral stances function to promote self-interests. At the same time, behavioral geneticists have demonstrated that many moral stances have genetic bases. We integrated these perspectives by examining how moral condemnation of recreational drug use relates to sexual strategy (i.e., being more vs. less open to sex outside of a committed relationship) in a sample of Finnish twins and siblings (N = 8,118). Twin modeling suggested that genetic factors accounted for 53%, 46%, and 41% of the variance in drug condemnation, sociosexuality, and sexual disgust sensitivity, respectively. Further, approximately 75% of the phenotypic covariance between drug condemnation and sexual strategy was accounted for by genes, and there was substantial overlap in the genetic effects underlying both drug condemnation and sexual strategy (r = .41). Results are consistent with the proposal that some moral sentiments are calibrated to promote strategic sexual interests, which arise partially via genetic factors.

Thursday, 17 April – 10:20 – 12:00 – Mate Preferences and Strategies – CCE001

Chair: Linda H. Lidborg (Durham University)

1. 10:20 – "Do women's morphological traits predict reproductive outcomes? A systematic review" (ID: 149, Talk)

Authors : Lidborg, L. H.; Boothroyd, L. G.

Presenting author: Linda H. Lidborg (Durham University)

Abstract:

Feminine morphological traits in women include a neotenous facial structure with large eyes, full lips, and an oval face shape, and a curvaceous body with relatively large breasts, a narrow waist, and full hips and buttocks. Compared to men, women also show higher second-to-fourth finger (2D:4D) ratios as well as less muscle mass, lower physical strength, and a higher voice pitch. Due to a putative association with oestrogen levels, feminine traits are often claimed to cue women's fertility. However, evidence for this purported relationship between women's femininity and fertility is scarce and inconsistent, typically measuring proxies for reproductive potential rather than actual

reproductive success. Here, we report a systematic review of direct reproductive outcomes as a function of morphological traits in women. The review comprised measures of 2D:4D, waist-to-hip ratio (WHR), and voice pitch. Since our previous meta-analysis showed that upper-body strength is associated with increased reproductive success in men, we also included strength as a predictor here. In total, the review included 54 effect sizes from 11 articles (total N = 79,761). The vast majority of effects analysed 2D:4D, and overall showed a mixture of null and positive associations between a more feminine ratio and reproductive success. A more feminine voice pitch significantly predicted reproduction in one of two samples, and the majority of relationships were positive. Effects for strength were mixed, whereas a less feminine WHR (measured retrospectively) weakly predicted greater reproductive success, likely due to the masculinising effect reproduction has on the female body shape. It is noteworthy that, despite our best efforts, we were not able to locate even a single study measuring the association between facial femininity and reproduction. Overall, our review shows that the current evidence base is too weak to conclusively support the claim that women's morphological traits cue fertility.

2. 10:40 – "Keen to be Seen to be Green: Can Mating Motivations lead to Increased Pro-Environmental Behaviour?" (ID: 112, Talk)

Authors : Farrelly, D.; Bhogal, M.S.; Jiaqing, O.; Palomo-Velez, G.

Presenting author: Daniel Farrelly (University of Worcester)

Abstract:

Evolutionary explanations of cooperative and/or altruistic behaviour have included the possible role of sexual selection and mate choice processes. Indeed, previous research has extensively shown the desirability of cooperative individuals as potential partners, particularly long-term ones, highlighting the adaptive value of such phenotypes as good partner/parent indicators (see Bhogal et al., 2019 for a review). Attention has recently turned, however, to a real-world application of cooperative behaviour, that of pro-environmentalism (where individuals can incur the costs of behaving sustainably to the benefit of all). Similarly, it has been found that pro-environmental individuals are more desired for long-term partners and self-report more pro-environmental behaviours and attitudes when interacting with potential partners (Borau et al., 2021; Farrelly & Bhogal, 2021; Palomo-Vélez et al., 2021). However, little is known about how the social influences of mating motivations affect individuals' actual pro-environmental behaviour. The current study addresses this, using a novel measure of actual online pro-environmental behaviour, the Email Conservation Task (ECT) (Farrelly et al., 2024). In our research, both male and female heterosexual participants are presented with a mating motivation in terms of the imagined presence of a member of the opposite sex (Study 1) or asked to describe a perfect date with an imagined partner (Study 2). Subsequently, participants then complete the ECT, and it is hypothesised that the presence of a mating motivation led to increased scores on the ECT (i.e. higher actual pro-environmental behaviour) for both male and female participants. Data collection will take place cross-culturally from participants in the UK and China, therefore ensuring a more global and diverse perspective on how evolutionary thinking can contribute to understanding a core challenge of our times, that of tackling the effects of climate change.

3. 11:00 – **"Personal ideal, cultural ideal and optimal attractiveness: Are these constructs for body size and shape the same or different?" (ID: 29, Talk)**

Authors : Ridley-Gamble, B.J.; Cornelissen, P.L.; Maalin, N.; Mohamed, S.; Kramer, R.S.S.; McCarty, K.; Tovée, M.J.

Presenting author: Piers Cornelissen (Northumbria University)

Abstract:

There has been an assumption in the literature that the three concepts of ideal body shape (personal ideal, cultural ideal, and the most attractive body shape) are effectively the same percept. To test this presumption, 554 participants completed either a between- or within-subjects condition using a matrix of 32 bodies varying in two dimensions: muscle and adiposity. Three separate groups of participants were recruited to the between-subjects design and made only one of these judgements, whilst participants in the within-subjects version completed all three of these judgments. These bodies are based on 3D scans of 221 women's bodies and so accurately represent the change in size and shape caused by changing body composition. The participants also completed a set of psychometric questionnaires to index the degree to which external concepts of body image have been internalised. The results show that in both conditions, all three judgements collapse onto the same average preferred body shape, with low adiposity and relatively high muscularity. However, this masked systematic differences in responses between personal ideals and the other body judgements, which may be explained by a difference in how information directly related to oneself is processed relative to more abstract third person judgements.

4. 11:20 – **"Gender differences in mate preference: reanalysis of a cross-cultural dataset" (ID: 155, Talk)**

Authors : Xie, J.; Brown, G.R.

Presenting author: Jinwen Xie (University of St Andrews)

Abstract:

Background: Evolutionary psychology links gender differences in mate preferences to reproductive strategies, whereas biosocial theory attributes these differences to socially imposed roles. Some previous studies have reported smaller gender differences in preference for partner age and earning capacity in more gender-equal countries, while others found no significant association. We postulated that the inconsistent findings reflect the fact that a variety of gender equality indices have been used. This study explores whether the strengths of gender norms, rather than economic indicators of gender equality, are related to gender differences in mate preference. Method: Using a previously published dataset on mate preferences (45 countries, N=14,399; Walter et al., 2020), we examined the relationship between World Values Survey measures of gender norms and gender differences in mate preferences. A set of multilevel models tested the relationships between univariate mate preferences (good financial prospects, physical attractiveness, health, kindness, intelligence and age difference) and each of the equality indicators, with random effects for both slopes and intercepts. Results: Our results showed gender differences in mate preference for good financial prospects (b = -0.08, p = 0.007) and age differences (b = -0.09, p = 0.011) were larger in countries with stronger gender norms. Results of additional analysis showed gender differences

in particular mate preference traits (e.g., physical attractiveness) were associated differently with specific dimensions of gender norms. Further analysis will use a culture distance measure to control the effect of cultural closeness. Conclusion: Our findings confirm that gender differences in partner preferences are larger in countries with stronger gender norms, in contrast to the lack of association with the majority of economic indices used in the original study. We evaluate the hypothesis that inconsistencies in the literature may stem from the use of indicators that do not reflect the gender biases experienced by individuals within populations.

5. 11:40 - "The All-Pay Auction as a Tool to Measure Female Intrasexual Competition" (ID: 94, Short talk)

Authors : Fakoya-Brooks, R.; Mace, R.

Presenting author: Reuben Fakoya-Brooks (University College London)

Abstract:

Recent work has highlighted the evolutionary significance of female intrasexual competition (ISC), framing it as an adaptive response to ecological and social pressures. Here, we explore the role of local environmental and socio-demographic factors in shaping female ISC. Specifically, we examine how wealth and local sex ratios influence competitive behaviour using a novel adaptation of a contest based economic game the All-Pay Auction (AP), in combination with self-report measures of attitudes to competitive and ISC behaviour.

Using the online platform Prolific, we collect competitive behavioural data from 336 live dyadic experiments in the UK, and couple this with demographic and environmental data from the recent 2021 census to investigate two key predictions:

(1) Women from environments with high income inequality or lower socio-economic status will exhibit heightened competition.

(2) Local adult sex ratios will significantly correlate with competitive behaviour, with either an increase (mating supply and demand hypothesis) or decrease (mating market dynamics) in competition from individuals located in environments with a scare amount of potential mates.

6. 11:50 - "Partner preference certainty in individualistic and collectivistic contexts" (ID: 122, Short talk)

Authors : Xu, C.X; Carswell, K.L.C.

Presenting author: Chenruisi Xu (Durham University)

Abstract:

Objective: Previous studies on ideal partner preferences show limited predictive validity for mate selection (Eastwick et al., 2014), as individuals often act differently than they report. This study introduces the construct of partner preference certainty, defined as the clarity of one's desires in a future romantic partner, and investigates its potential predictors. Buss and Schmitt (1973) suggest sociocultural contexts influence partner preferences, and that partner preferences appear to differ

in their predictive validity across cultural contexts (Lam et al., 2016). Therefore, we conducted a cross-cultural study comparing the UK and China to explore predictors of partner preference certainty in individualistic versus collectivistic societies and examine how cultural understandings of romantic relationships impact this certainty.

Method: We recruited approximately 200 single participants (18+) from the UK and China to complete an online survey in English and Mandarin assessing partner preference certainty via a newly developed scale of partner preference certainty, as well as potential predictors of such feelings of certainty. Potential predictors included both more individualistic factors (e.g., personality, self-concept, previous relationship experiences), and more collectivistic factors (e.g., parental opinions, filial piety. Recruitment is ongoing via student samples, Prolific, and Jianshu.

Results: In addition to initial scale validation of a measure of partner preference certainty, multiple regression analyses will assess associations between predictors and partner preference certainty, as well as whether these associations are moderated by cultural context. We hypothesize that individualistic factors will more strongly predict partner preference certainty among participants in the UK, while collectivistic factors will more strongly predict partner preference certainty among participants in China.

Conclusion: The results will introduce the construct of partner preference certainty, as well as clarify cross-cultural similarities and differences in predictors of partner preference certainty. Word count: 283

Thursday, 17 April - 10:20 - 12:00 - Cooperation and Prosocial behaviour - CCE003

Chair: Gillian Pepper (Northumbria University)

1. 10:20 - "Exploring the interaction between reciprocity and kinship in a Sama marine foraging community" (ID: 141, Talk)

Authors : Phelps, J.; Hill, K.; Mathew, S.

Presenting author: Julia Phelps (Arizona State University)

Abstract:

Kin selection and direct reciprocity frequently structure cooperative interactions in small-scale human subsistence populations, and there is a small but growing body of evidence suggesting that these two cooperative mechanisms can interact. Specifically, individuals may be motivated to preferentially choose reciprocity partners among their close kin due to the combined indirect fitness and reciprocal benefits that arise from these cooperative relationships. Here, I interrogate the interaction between direct reciprocity and genetic kinship in Linao of the Mangroves, a small Sama marine foraging village off the coast of southern Mindanao Island in the Philippines. Using three-and-a-half years' worth of observational data on daily inter-household transfers of resources and services in Linao, I examine whether an interaction between kinship and direct reciprocity (over both daily and long-term scales) is associated with increases in cooperative transfers between household dyads. To further probe the contingent aspect of reciprocity, I also use a series of pseudo-hypothetical vignette questions to examine participants' reactions and self-reported behaviors after experiencing refusal to reciprocate from an individual in another village household

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whose members (1) are either closely related or distantly related/unrelated to the participant and (2) have either a strong or weak reciprocal relationship with the participant's household, as measured from the observational cooperation data. The results of these analyses indicate that there is indeed an interaction between reciprocity and kinship in Linao, with individuals and households more likely to transfer larger amounts of resources and services to those who are both close kin and long-term reciprocity partners. However, this interaction appears to be tempered by local norms that prescribe need-based assistance even in the absence of reciprocation, suggesting that the motivation to signal adherence to group-beneficial cultural norms may override individually-beneficial behaviors in some scenarios.

2. 10:40 – "The Moral of the Story: Investigating the co-evolution of Storytelling and Human Cooperation by surveying moral attitudes to Indo-European Folktales and Phylogenetic Comparative Analysis" (ID: 48, Talk)

Authors : Jeffries, E.M.L.; Street, S.E.; Tehrani, J.

Presenting author: Emily Jeffries (Durham University)

Abstract:

This project looks at whether cooperation and storytelling have co-evolved. Debates continue over the extent to which widespread cooperation in humans can be explained by the mechanisms that maintain prosociality in other species, such as kin selection and reciprocity. Storytelling may help reinforce large-scale cooperation by transmitting prosocial norms and acting as a social 'flight simulator'. We hypothesised therefore, that a) cooperative content in stories would be viewed positively compared to anti-social content and b) that stories containing prosocial content would by more commonly found and well-preserved over cultural history.

This project examined how prosocial behaviours were viewed within folktales and if prosocial moral messages were more widespread. To determine this, 462 people read 300 Indo-European folktales and commented on the moral messaging and cooperative behaviours found within them. Significantly more stories were categorised as having a prosocial main moral message than an individualistic one, supporting our hypothesis. Additionally, cooperative behaviours were categorised by participants as 'good', 'bad' or 'neutral'. Altruism, reciprocity, and helping family were categorised as 'good' significantly more often than any other category while individualistic behaviours were categorised significantly more often as 'bad' compared to 'good' or 'neutral'.

Phylogenetic comparative analysis determined if stories categorised as prosocial were gained more than they had been lost over cultural history, supporting the co-evolution of these two human universals. Our results show that stories containing anti-social cooperative behaviours that were viewed as 'bad', were lost less than stories containing cooperative behaviours viewed as 'good'. This suggests that prosocial messages may be transmitted in stories through cautionary tales of what not to do, rather than what to do. This project aims to undertake future experimental research, investigating whether prosociality in stories affects transmission fidelity and cooperative behaviour itself in game theory experiments.

3. 11:00 - "Honest signalling of intent underpins a moral mechanism that aligns individual interests with group cooperation" (ID: 96, Short talk)

Authors : Roberts, G.

Presenting author: Gilbert Roberts (Independent Researcher)

Abstract:

Investing in a good reputation can be worthwhile when it provides an honest signal of cooperative intent. This can facilitate mutually beneficial cooperation in reciprocating pairs. However, group cooperation often involves a 'tragedy of the commons' where mutual cooperation is unstable even in repeated games unless there are additional measures such as punishment. Here, I examine when individuals can achieve cooperation in 3-person public goods games (PGG) by honestly signalling their intent to contribute. For simplicity, I divided individuals into 'Selectors' who could choose with whom to form a group and 'Competitors' who could 'signal' by paying a cost. Those who signalled were assigned 'good reputations'. Selectors could either accept random partners or could choose those with good reputations. Once a group of 3 was formed, all individuals cooperated or defected in a one-shot PGG. The jeopardy for Signallers was that if they exploited the others, they lost their good reputation. I found that those who signalled showed a much stronger tendency than Non-Signallers to cooperate in the PGG. Alongside this, Selectors showed a strong preference for Signallers. I conclude that investing in a reputation by signalling can pay when there is a cost to cheating because those who pay the cost of signalling and then defect get the benefit of free-riding for only one round before losing their good public reputation and thereby losing access to choosy Selectors. Those who honestly signal that they will act in a way that aligns with the interests of other parties can be described as 'moral cooperators'. In this way, morality may have evolved in part as a communication mechanism that overcomes the social dilemmas inherent in group cooperation and makes it in an individual's own interests to do what is best for the group.

4. 11:10 - "Field-experiments on Pro-sociality and Observations of Hazardous Behaviour in a Volcanic Environment" (ID: 111, Short talk)

Authors : Zwirner, E.; Pepper, G.V.; Dezecache, G.

Presenting author: Gillian Pepper (Northumbria University)

Abstract:

Objective:

Human sociality is flexible depending on the environmental context. For example, environmental adversity has been found to result in reduced pro-sociality towards strangers, and a preference to help members of the same social group (parochialism). Prior findings also suggest that hazardous (risk-taking) behaviour may be more common in harsh environments. However, the effects of adversity resulting from natural hazards, where the threat is not always immediate but may arrive at an unpredictable time in the future, are under investigated.

Methods:

We measured the risk associated with volcanic eruptions in 22 different field locations on the island of Sicily, surrounding the Mt Etna volcano. We also assessed the levels of wealth at those field

locations to control for effects of affluence on the behaviours under study. We then performed several ethological experiments examining pro-social tendencies (returning a lost letter, returning lost keys, and allowing a pedestrian to cross the road). Our experiments tested for pro-social tendencies towards in-group and out-group members (with the experimenter dressed as either a local or a tourist) in high- and low-risk areas around the volcano. We also recorded seatbelt use (car drivers) and helmet use (motorcyclists) as an indicator of hazardous behaviour in high- and low-volcano risk areas.

Results:

Though our results did not show clear differences in pro-social behaviour based on volcano risk, we did find a large difference in hazardous behaviour, with lower seatbelt and helmet use evident amongst drivers in high volcano risk areas (β = -0.81, 95% CI [-1.34, -0.29], p = 0.002).

Conclusions:

Our results indicate how living in environments fraught with unpredictable future adversity may impact hazardous behaviour. Our discussion will acknowledge the limitations of our field experiments and discuss future work to address those limitations.

5. 11:20 - "Behavioural science of cooperation: A methodological hypothesis for social policy" (ID: 135, Short talk)

Authors : Lazarus, J.

Presenting author: John Lazarus (Newcastle University)

Abstract:

I recently guest edited the Global Discourse journal issue 'Cooperation and Social Policy: Integrating Evidence into Practice' (2023, 13: 2, 3-4) in which social policy scholars co-wrote papers with behavioural scientists to bring relevant evidence to bear on social policy problems where cooperation for the public good is in conflict with self-regard.

In an introductory paper I review the many factors known from experiments to encourage cooperation, and their motivational foundations. The coauthored papers follow, accompanied by commentaries and responses, and consider: welfare payments; climate change negotiation; sustainable transport; vaccine hesitancy and organ donation; refugee assistance; and 'building a cooperative child'.

The focus of this talk is my final paper for the issue in which I propose a 'methodological hypothesis': that the design of social policy initiatives requiring greater cooperation should begin with a game theory analysis of the social problem and be followed by an evaluation of the motives that players might bring to it.

A game theory analysis clarifies the logical structure of the problem, and identifies its payoff structure and its equilibrium and cooperative outcomes. For a particular game structure an understanding of the range of motives that may be responsible for the same behaviour (e.g. for defecting in the Prisoners' Dilemma) may be applicable to many policy problems sharing the same game structure.

If the hypothesis, in application, resulted in successful policy outcomes it would provide a 'predictive taxonomy' of social policy cooperation problems – classified by game structure, player motives and effective intervention methods – to guide the design of future interventions.

6. 11:30 - "Moral decision making declarations are influenced by an attractive audience's presence" (ID: 134, Short talk)

Authors : Stefanczyk, M. M.; Ochman, A., & Białek, M.

Presenting author: Michal Stefanczyk (University of Wrocław)

Abstract:

Objective: People tend to engage in self-presentation when accompanied by others, often striving to be perceived favorably—even at the expense of accuracy. This tendency may be particularly pronounced when the audience is attractive and the context implies a mating scenario. This study examines whether the presence of an attractive female influences individuals' moral decision-making declarations. Methods: A total of 290 participants (50% female) took part in the study. They were presented with a series of moral dilemmas based on the CNI model, which assesses sensitivity to social norms, sensitivity to consequences, and a preference for action versus inaction. One group completed the task alone in an empty room, while another was accompanied by a previously validated, highly attractive female experimenter, who read the dilemmas aloud and recorded participants' verbal responses. Results: When accompanied by an attractive female, both men and women were less likely to adhere to moral norms, exhibiting a decreased inclination toward deontological moral reasoning. We show that the participants' sex and relationship status might have also contributed to this effect. Conclusions: In the presence of an attractive audience, individuals tend to self-present as less bound by social norms and rules, regardless of the practical consequences of their decisions. This suggests an inclination to appear less predictable and morally unconventional, be it due to the audience's attractiveness or its mere presence. The study offers new insights into how mating-related contexts shape moral decision-making, revealing a trade-off between adherence to moral norms and consideration of consequentialist outcomes.

7. 11:40 - "The Paradox of Cultural Tightness: Low-cooperation individuals promote high-cooperation norms." (ID: 77, Short talk)

Authors : Darcy, G.; Fitouchi, L.; André, J. B.; Baumard, N.

Presenting author: Grégoire Darcy (École Normale Supérieure)

Abstract:

Cultural tightness-looseness describes the extent to which societies enforce strict social norms and tolerate deviant behaviors. This paper explores the paradox of cultural tightness-looseness: although tight societies establish stringent norms to promote cooperation, they often exhibit lower levels of prosocial and cooperative behavior. Study 1 examines whether individuals in tight societies exhibit tendencies toward non-cooperative behaviors. Building on this, Study 2 explores how interpersonal trust relates to preferences for normative tightness and cooperative behaviors, providing a potential framework to address the paradox. Finally, Study 3 evaluates the mediating role of interpersonal trust in the relationship between environmental harshness and cultural

tightness-looseness. By adopting a psychology-based approach, this research aims to deepen our understanding of the psychological pathways linking environmental factors to social norms within normative systems.

8. 11:50 - **"The interplay between social norms and prosociality across adulthood and cultures" (ID: 178, Short talk)**

Authors : Lee, S.; Freund, A.M.

Presenting author: Saein Lee (University of Zurich)

Abstract:

Cultural norms express expectations about which behaviors people should display in given situations. They likely play a pivotal role in guiding behaviors, as people adhere to these norms to seek positive reinforcement and avoid social sanctions. Cultural norms and expectations regarding prosociality may vary according to the actor's age. However, across cultures, older adults are expected to be warm, which might lead them to behave more prosocially than younger adults. Although this expectation of higher warmth appears to be universal, we hypothesize that its influence is more pronounced in tight cultures (which have stronger norms and higher rates of compliance) than in loose cultures (which have weaker norms and lower compliance). To test these hypotheses, we conducted an online study with N = 1,200 participants - including younger adults (20-35 years old) and older adults (65 years and above) - from the United States as a loose culture and South Korea as a tight culture. We measured prosociality using both self-reported and behavioral assessments (Charity Dictator Game), assessed norm compliance through a rule-following task, and examined perceived age-related prosocial norms. Preliminary results indicate that, in both South Korea and the U.S., older adults exhibited higher behavioral prosociality than younger adults, whereas younger adults showed higher self-reported prosociality. Normative expectations for prosociality were stronger for older adults in South Korea, whereas the reverse pattern emerged in the U.S. Although no age differences in norm compliance were found in the U.S., older adults in South Korea complied with norms less than younger adults. While the interaction effects of norm compliance and age-related norms on prosociality were significant in South Korea, they were not significant in the U.S. Our results highlight the complex interplay between culture, age, and social norms, suggesting that cultural context may differentially shape how social norms translate into prosociality.

Thursday, 17 April - 13:00 - 13:50 - Punishment and Intentionality - CCE001

Chair: Francesca De Petrillo (Newcastle University)

1. 13:00 - **"The restorative logic of punishment across non-industrial societies" (ID: 63, Talk)**

Authors : Fiorio, G.; Baumard, N.; André, J.B.; Fitouchi, L.

Presenting author: Grégory Fiorio (Institut Jean Nicod, ENS-PSL)

Abstract:

According to most evolutionary theories, the primary function of punishment is to deter antisocial behavior. However, deterrence theories fail to explain the existence of moral norms and intuitions that set limits on the severity, procedures, and circumstances of punishment. To address this gap, we introduce a new theoretical account of the moral psychology underlying the regulation of punishment, grounded in the evolutionary contractualist theory of morality. This theory posits that punishment aims to restore mutually beneficial interactions. It predicts that responses to transgressions are governed by compensatory logic, intertwining punitive actions with compensatory transfers, and that both retributive and compensatory responses are proportional to the harm caused.

We test these predictions through a systematic review of the moral regulation of punishment in 60 predominantly non-industrial societies, detailed case studies on customary compensation payments in three traditional societies, and two studies probing U.S. participants' perceptions of offenses sampled from the customary law of two politically decentralized societies, namely the Nuer and the Awlad Ali Bedouin.

Our findings reveal that the proportionality of punishment to the harm incurred and the use of compensation to redress offenses are cross-culturally frequent. Additionally, U.S. participants' judgments about the appropriate amount of compensation and the harm incurred by the victim predict the compensatory payments prescribed by culturally foreign customary codes. Taken together, these results suggest that across cultures, and in particular in socioecologies similar to those in which it evolved, punishment is geared toward restoring mutual benefits.

2. 13:20 – "Intensive kinship and societal 'complexity' predict distinct punishment types across 60 societies" (ID: 73, Talk)

Authors : Garfield, Z.H.; Fiorio, G.; Kaneko Ebert, A.C.; Iben El Rhazi, S.; Molho, C.; De Petrillo, F.

Presenting author: Francesca De Petrillo (Newcastle University)

Abstract:

Punishment systems are fundamental to fostering and maintaining cooperation within human societies, yet the variation in punishment mechanisms—especially third-party punishment (3PP)—across diverse socioecological contexts remains underexplored. We analyzed 2,029 ethnographic texts from 60 culturally diverse, largely nonindustrial societies (coded 5,327 times) to examine supporting evidence for second-party punishment (2PP) and 3PP. These included cases where 3PP was enacted for kin, partners, or general community members. Using Bayesian multi-level regression models, we tested pre-registered hypotheses examining how three society-level measures of "complexity" (i.e., technological and social differentiation, resource-use intensification, and community size) as well as a measure of kin intensity predicted researcher-coded evidence for different punishment types. We found greater evidence for 3PP than 2PP. At the society level, 3PP and 2PP were present in 92% and 79% of societies, respectively, while at the coding level, 3PP and 2PP appeared in 32% and 5% of texts, respectively. Our predictive models revealed that 2PP was negatively associated with all three complexity measures but showed no association with kinship intensity. Generalized 3PP was positively associated with technological and social differentiation, whereas 3PP on behalf of kin was positively associated with kinship intensity. These findings shed

light on the socioecological drivers of punishment diversity and support theories linking general-ized third-party punishment with technological and social differentiation and punishment on behalf of kin with kinship intensity.

3. 13:40 - **"Detecting signs of intentionality in palaeolithic engravings: a probabilistic approach" (ID: 146, Short talk)**

Authors : Street, S.E.; Kendal, J.R.

Presenting author: Sally Street (Durham University)

Abstract:

Geometric engravings are among the earliest candidates for symbolic and aesthetic expression in human evolution. The oldest example proposed to date is an intriguing set of parallel lines and zig-zags etched into a freshwater mussel shell found in Java, dated to ~500,000 years ago. Numerous more recent examples have been identified from palaeolithic sites all over the world, featuring re-occurring motifs including parallel lines, zig-zags and grids. A variety of potential functions have been proposed for geometric engravings, from counting systems and calendars to depictions of hallucinations. However, before possible functions are discussed it is important to establish whether putative engravings are the result of intentional human action at all, given that non-intentional processes can also produce geometric patterns. In a recent high-profile example, debate continues over whether geometric markings in the Rising Star cave system are engravings deliberately created by Homo naledi or simply the result of natural rock weathering processes. Ambiguous cases of palaeolithic engravings are currently challenging to resolve as there is no standardised framework for estimating the probability that line configurations are the result of a particular hypothesised process. Here we outline a simple probabilistic framework to address this issue and apply it to a set of test cases. To estimate the probability of intentional creation, we use entropy-based measures to compare the geometric regularity of test cases to that seen in a diverse sample of engravings whose intentional origin is not in doubt. We then compare these probabilit-ies to those for a range of alternative hypotheses including random processes, natural geological formations and non-intentional anthropogenic processes estimated using appropriate reference samples. Data collection and analyses are still ongoing and we plan to present preliminary results at the EHBEA conference.

Thursday, 17 April - **13:00 - 13:50 - Genetics and Hormones - CCE003**

Chair: Abigail Colby (University of Zurich)

1. 13:00 - **"Evolving oxytocin? Repeatability, heritability, and selection in peripheral oxytocin in the Tsimane of lowland Bolivia" (ID: 100, Talk)**

Authors : Colby, A.E.; Debras, C.; Jud, D.; Baettig, V.; Martin, J.S.; Scaff, C.; Hooper, P.L.; Beheim, B.; Cummings, D.; Kraft, T.; Stieglitz, J.; Gurven, M.; Trumble, B.C.; Kaplan, H.; Jaeggi, A.J.

Presenting author: Abigail Colby (University of Zurich)

Abstract:

Oxytocin is associated with various behavioral, physiological, life history, and health traits in humans. Given its positive relationship to cooperative behavior and health, peripheral oxytocin level may have been selected throughout human evolution. To date, however, few studies have investigated peripheral oxytocin repeatability (i.e., the stability of individual differences) in humans. Moreover, heritability and selection upon individual differences in peripheral oxytocin in humans is limited in existing scientific literature. To address this knowledge gap, we measured specific gravity corrected urinary oxytocin using radioimmunoassay in a sample (n=843 samples, n=351 individuals, age=2-84 years, 50.7% female) from the Tsimane of lowland Bolivia and, using GLMMs and a pedigree, estimated repeatability and heritability for oxytocin. Using linear and quadratic selection gradients on age-adjusted fertility, we investigated whether peripheral oxytocin was under directional, stabilizing, or disruptive selection. We found that oxytocin was repeatable (ICCindividual = 0.35, 95% credible intervals: 0.26-0.45), similar to other ecological hormone research. Moreover, peripheral oxytocin had low heritability (VA = 0.02, 95% CI: 0.01-0.21), with more variance attributable to maternal (VM = 0.08, 95% CI: 0.03-0.20) and permanent environmental (VPE = 0.23, 95% CI: 0.13-0.37) effects. Preliminary results suggest little selection on peripheral oxytocin, however, other components of the oxytocin system have not been investigated in this study (i.e., receptor organization, central levels). Future work should investigate the repeatability, heritability, and selection on the oxytocin system broadly to understand its role in human evolution.

2. 13:20 – "The influence of different stressors on the diurnal cortisol rhythms in a small-scale society" (ID: 185, Short talk)

Authors : Jud, D.; Jaeggi, A.; Baettig, V.; Colby, A.; Debras, C.; Scaff, C.; Trumble, B.

Presenting author: Dominik Jud (University of Zurich)

Abstract:

Dysregulations of the human stress response, namely the hypothalamic-pituitary adrenal (HPA) axis, have been linked to adverse health outcomes such as obesity and diabetes. These dysregulations manifest in a disrupted diurnal cortisol rhythm and are caused by both real and perceived chronic stressors. While research on the HPA axis is growing, most studies focus on high-income countries, as opposed to populations experiencing more traditional lifestyles. The Tsimane of Bolivia are a horticulturalist society who face various stressors such as low caloric intake, parasitic infections and the challenge of market integration. Here, we measured urinary cortisol several times a day to get both the levels at waking as well as the diurnal slope (n=291). To assess the perception of stressors, a questionnaire on food insecurity and social as well as socioeconomic problems was conducted with adults from three different communities (n=125, f=77). By applying multilevel Bayesian multivariate models the correlation between stressor scores and hormone measurements was assessed. Results showed that the influence on the HPA axis is highly dependent on the type of stressor. Stressors that are associated with higher energy demands such as food insecurity evoked a more boosted response with higher morning levels (median r_intercept= 0.08, P_(>0)= 0.73) and a steeper decline (median r_slope = -0.19, P_(< 0)= 0.83), while socioeconomic problems showed a trend towards a more blunted cortisol rhythm (median r_intercept=-0.05; P_(< 0)=0.64, median r_slope=0.12, P_(>0)=0.72). These results align with the adaptive boost hypothesis stating that a higher HPA axis activation associated with a potentially controllable stressor mobilizes energy to overcome said stressor. In contrast, the more blunted rhythm associated with

socioeconomic problems could be caused by a lower perception of controllability and a lower energetic need. Similarly, other factors related to higher market integration have been linked to lower morning levels in earlier studies.

3. 13:30 - "Is premenstrual syndrome (PMS) a human universal? Impact of cycle phase and hormonal fluctuations on PMS symptoms in a small-scale society" (ID: 161, Short talk)

Authors : Baettig, V.; Jud, D.; Colby, A.; Scaff, C.; Rivera, L.M.; Debras, C.; Baumgarten, M.; Trumble, B.C.; Jaeggi, A.

Presenting author: Valerie Baettig (University of Zurich)

Abstract:

Premenstrual syndrome (PMS) is estimated to affect 20-30% of menstruating people with some studies suggesting that up to 80% experience symptoms at one point in their lives. PMS is characterized by a constellation of somatic (i. ex. breast swelling or feeling bloated) and affective symptoms (i. ex. feeling sad, hopeless, or worthless) that manifest during the late luteal phase of the menstrual cycle and resolve shortly after the onset of menstruation. The "hormonal withdrawal hypothesis" suggests that the rapid drop in progesterone (P) and estradiol (E) levels during the late luteal phase may be responsible for the symptoms associated with PMS.

Most extant menstrual cycle and PMS research is concentrated on WEIRD populations, whose steroid hormone levels differ significantly from nonindustrial populations. To address this research bias, we examine PMS symptoms and steroid hormone fluctuations among Tsimane' women, a natural fertility population of forager-horticulturalists residing in the Bolivian lowlands.

Using repeated measures of morning urine and a PMS symptom questionnaire (derived from the DSM-V), we characterized E, P, and PMS symptom fluctuation of 10 cycling Tsimane' women (n=134 urine samples and questionnaires) across a cycle length of 28 consecutive days. Total urinary P and E were quantified with ELISA.

Utilizing Bayesian multilevel models, we compare symptom occurrence by cycle phase. We 1) predict a PMS symptom occurrence, specifically a symptom increase in the luteal phase, and 2) a difference between somatic and affective symptom occurrence throughout the 28 days.

Our research seeks to expand the understanding of menstrual health and well-being of indigenous women. Moreover, we want to explore the possibility of a universal component of PMS.

4. 13:40 - "Genetic polymorphism of apolipoprotein E and fertility in postreproductive women" (ID: 103, Short talk)

Authors : Bartecka P.; Klimek M.; Nenko I.; Galbarczyk A.; Jasienska G.

Presenting author: Paula Bartecka (Jagiellonian University Medical College)

Abstract:

Background: Apolipoprotein E (APOE) is involved in lipid metabolism and is encoded by a polymorphic gene. On one hand, the ApoE4 allele might be related to higher cholesterol levels, thus increasing the risk of cardiovascular or Alzheimer's diseases in older age. On the other hand, ApoE4

is related to higher levels of progesterone, thus, might be associated with higher fertility. This study aimed to investigate the hypothesis that the ApoE4 allele is associated with enhanced reproductive traits in women.

Methods: Participants were 370 postreproductive women aged 44–92 (mean=61.4; SD=11.04) from a Polish rural population from the Mogielica Human Ecology Study Site. Venous blood samples were collected to analyse ApoE polymorphisms. Women were divided into 3 groups: 0, 1, 2 alleles of ApoE4. Information on reproduction was gathered through a personalized questionnaire: age at menarche, age at first and last reproduction, number of children born, and mean inter-birth interval. The associations were estimated using general linear models. The covariates were year of birth, number of years of education, age at marriage, and age at first birth. The covariates were included in various configurations, depending on the model.

Results: There was no significant relationship between ApoE4 genotype and age at menarche (p=0.962; ηp2< 0.001), age at first reproduction (p=0.596; ηp2=0.003), number of children born (p=0.790; ηp2=0.001), mean inter-birth interval (p=0.748; ηp2=0.002) and age at last reproduction (p=0.238; ηp2=0.008).

Conclusions: Previous studies have shown an association between ApoE4 gene polymorphisms and fertility. For example, younger women with ApoE4 had higher progesterone levels which may increase the chance of embryo implantation and pregnancy maintenance. However, our results indicate that in a group of postreproductive women from a small-scale agricultural community, ApoE4 was not related to higher fertility.

Thursday, 17 April - 14:10 - 15:10 - Marriage Practices - CCE001

Chair: Eva Brandl (Max Planck Institute for Evolutionary Anthropology)

1. 14:10 - "Why bride-kidnapping marriages persists in Kyrgyzstan: insights from social network and behavioural ecology" (ID: 156, Talk)

Authors : Halimbekh, N.; Huang, Y.; Mace, R.

Presenting author: Ruth Mace (University College London)

Abstract:

It is estimated that up to one-third of marriage in Kyrgyzstan resulted from abduction, also known as kidnap marriage. While numerous studies in global health, human rights, and social science have examined the consequences of kidnap marriage, there is limited research focused on understanding its origins and persistence. By analysing fieldwork data collected from 469 participants in two Kyrgyzstan villages from 2022 to 2024, we uncover evidence of gender-specific dynamics that promotes the persistence of bride-kidnapping practice. Bride-kidnapping in men is associated with higher social supportive characteristics (social prestige and financial wellbeing), whereas such association is not found in women. We also explore the fitness implications of kidnap marriage: men exhibit a greater tendency to abduct younger women, and such marriages are associated with higher number of children between the couples. Our findings advance our understanding of how cultural practices, shaped by sexual conflict and societal norms, persist despite legal and social

reform. The findings underscore the need for multidisciplinary approaches to address the underlying factors sustaining such practices, contributing to broader efforts toward gender equality and human rights.

2. 14:30 - **"Competition for heritable wealth, not group selection, drives the evolution of monogamous marriage" (ID: 117, Talk)**

Authors : Šaffa, G.; Jaeggi A.V.; Zrzavý, J.; Duda, P.

Presenting author: Gabriel Šaffa (University College London)

Abstract:

Objective Explaining the decline in polygyny and the establishment of normative monogamy in stratified agricultural societies proved challenging. It has been argued that monogamy promotes success in inter-group competition or that it is a response to the increasing importance of rival material wealth. These hypotheses are not mutually exclusive since they view monogamy as an adaptation mitigating competition among unrelated males and/or family members. However, all existing hypotheses are largely based on Indo-European (IE) societies, which might limit their generalizability. Methods Here, we use causal graphs to formalize these hypotheses in two major concepts, labelled here as the 'inter-group competition' and the 'rival wealth importance' models, and use Bayesian multilevel approach to directly test their implications. We use a global sample of ethnographically documented societies and stratify our analyses by language family to evaluate the predictions derived from each concept beyond IE. Results and Conclusions Our findings clearly show that, globally, monogamy has emerged primarily through processes arising from constraints on heritable wealth, as shown by the effect of land privatization. Evidence for the role of processes related to competition between groups is inconsistent and seems to play only a limited role. While monogamy may have some reproductive-leveling effect, it may not necessarily translate into group-level benefits, suggesting other mechanisms explaining away this relationship. Thus, ecological factors play a more important role in the emergence of monogamy than social ones. We also find that specific sets of conditions driving monogamy vary between human groups, suggesting multiple evolutionary pathways to monogamy.

3. 14:50 - **"Residential mobility in Vanuatu: the role of male absence, market integration, and changing marriage practices" (ID: 32, Talk)**

Authors : Brandl, E.

Presenting author: Eva Brandl (Max Planck Institute for Evolutionary Anthropology)

Abstract:

Objective: Post-marital residence is an important aspect of human kinship with implications for gender equality. It has been posited that male absence promotes matrilocality. Additionally, increasing women's access to education and employment, along with the erosion of traditional marriage practices (such as the spread of informal cohabitation at the expense of arranged marriage), may decrease patrilocality and diversify residential arrangements. Vanuatu, a Pacific Island nation, is experiencing all three of these trends, making it a compelling case study.

Methods: In 2019, we interviewed N = 240 women living in n = 211 households in rural areas of Vanuatu. We collected data on natal origin, formal education, wage labour, labour migration (a proxy for male absence), and marital status.

Results: Mobility patterns are diverse: about half of women are patrilocal (45.0%); the remainder are either matrilocal (17.1%), neolocal (10.4%), or practice village endogamy, meaning they have found a partner in their home village (27.5%). Overall, white-collar professionals and highly educated women were more likely to be neolocal whereas subsistence horticulturalists and women with a primary-level education were more likely to practice village endogamy. Excluding endogamous women, married women were slightly more likely to be patrilocal than women cohabiting in de facto unions (63.5% vs 54.3%) whereas women with 'absent' partners were slightly more likely to be matrilocal (30.8% vs 21.5%). However, white-collar professionals and highly educated women were less likely to be matrilocal than subsistence horticulturalists and women with a primary-level education (8.8% vs 33.8% and 10.0% vs 26.7%, respectively).

Conclusions: Predictions about male absence, marriage practices, and access to development either did not pan out or differences were relatively small. However, market integration leads some highly educated white-collar professionals to move away from kin, creating a subset of the population that diverges sharply from traditional kin-based residence patterns.

Thursday, 17 April – 14:10 – 15:10 – Foraging and Subsistence – CCE003

Chair: Alexander Schakowski (Max Planck Institute for Human Development)

1. 14:10 – "The Impact of Subsistence Strategy on the Structure of Food Taboos" (ID: 157, Talk)

Authors : Buckner, W.

Presenting author: William Buckner (University College London)

Abstract:

The ubiquity of food taboos across societies represents one of the most enduring anthropological puzzles. Numerous hypotheses have been forwarded to explain the existence of food taboos, yet few of these explanations attribute a central role to subsistence strategy for influencing their emergence and persistence. Here we make use of the electronic Human Relations Area Files (eHRAF) World Cultures database to compile a dataset of distinct food taboo types across 204 primarily non-industrial societies. We consider whether hunter-gatherers, operating in smaller-scale contexts with more intimate and recurrent contact with wild plant and animal resources, exhibit differences in the type and prevalence of food taboos compared to societies with greater reliance on domesticated products. We find, when incorporating phylogenetic and spatial controls, that hunter-gatherers have significantly more food taboos rooted in sympathetic magic beliefs, and significantly less food taboos associated with religious specialists, but they do not have significantly less food taboos rooted in signaling group identity. We further replicate previous work in showing there is no relationship between the number of food taboos and measured pathogen stress. Societies with greater pathogen stress are also not more likely to have health-motivated food taboos

specifically. These results suggest that subsistence strategy plays a key role in structuring food taboos across societies.

2. 14:30 – "Decision making in a complex world: The impact of social context on human foraging behaviour" (ID: 51, Talk)

Authors : Kavelaars, M.M.; Schakowski, A.; Korzilius, F.; Dhellemmes, F.; Kortet, R.; Deffner, D.; Kurvers, R.

Presenting author: Marwa Kavelaars (Max Planck Institute for Human Development)

Abstract:

Adaptive decision making is crucial for navigating our increasingly complex world and requires continuous integration of different information sources, including prior information about the environment, information from interacting with the environment, and information from others (social information). Despite many studies focusing on isolated aspects of these processes in the lab, how people dynamically integrate these information streams across various socio-ecological settings in the real world remains unknown. We will close this gap by studying a prime example of continuous decision making: human foraging. Using ice fishing as a novel study system, we aim to understand how humans integrate these different information streams. Field work is carried out in Joensuu, Finland, where we equip ice fishers with GPS trackers and head cameras to collect movement and behavioural data across socio-ecological contexts. Here, I will present the first results of this project and show how social context (solitary, competitive and cooperative foraging) affects individual/group foraging strategies and social information use. By uniquely combining perspectives and methods from animal ecology and psychology, the project surmounts the challenges of discerning how humans dynamically integrate information, which is vital for comprehending decision making in the real world.

3. 14:50 – "Shared ecological expectations guide social foraging dynamics under natural conditions" (ID: 136, Talk)

Authors : Schakowski, A.; Deffner, D.; Kortet, R.; Niemelä, P.T.; Kavelaars, M.; Pykälä, M.; Kurvers, R.

Presenting author: Alexander Schakowski (Max Planck Institute for Human Development)

Abstract:

Objective: The ability to locate and extract resources, i.e., foraging, across diverse ecologies is considered a key driver of human cognition. To find high-quality resource patches, successful foragers need to continuously update and integrate their personal information (e.g., with prior knowledge about the resource distribution. Most existing foraging models assume that individuals only acquire information about resource distributions through (model-free) sampling of the environment. The mechanisms guiding the integration of spatially explicit prior knowledge with recent experience under natural conditions, however, remains poorly understood. Here, we aim to close this gap by investigating the ecological characteristics of prior spatial expectations and their impact on foraging decisions in situ.

Methods: We rely on data from five ice-fishing competitions that we organized in 2023 on five lakes in Northern Karelia, Eastern Finland. During each competition, 41-56 experienced individuals competed against each other for catching the highest amount of fish. Participants were equipped with head-worn cameras and GPS tracking devices to record patch discoveries and spatial search. To quantify prior spatial expectations, participants indicated up to five areas with high resource abundance for each lake prior to each competition on a map. Combining this data with video recordings and GPS trajectories allows us to disentangle the role of prior expectations relative to information gathered during foraging on movement decisions.

Results: Preliminary analyses show that participants' prior expectations are linked to the topographical structure of the lakes and (therefore) converge across individuals. Importantly, movement decisions during foraging are strongly influenced by these prior expectations. In a next step, we will analyse whether individuals process novel information differently depending on their prior assumptions about an area.

Conclusion: Taken together, we aim to show that shared ecological assumptions act as a model that guides foraging decisions.

Thursday, 17 April – 15:30 – 16:40 – Gender – CCE001

Chair: Sunday Ukam (Northumbria University)

1. 15:30 – "The Sex/Gender Difference in Young Children's Play Across Cultures" (ID: 28, Talk)

Authors : Hönekopp, J.; Ukam, S.; Alonso-Martínez, L.; Markov-Glazer, A.

Presenting author: Sunday Ukam (Northumbria University)

Abstract:

Strong differences in the play behaviour of young girls and boys have been demonstrated across a limited number of (mostly Western), countries. To what extent these and other psychological differences between girls/women and boys/men should be seen as essential and evolved vs. socially constructed is strongly debated. How strongly such differences vary across cultures has been neglected so far. We contend that the variability of the difference in girls' and boys' play across cultures sheds light on its contested origin: Ceteris paribus, large cross-cultural variability aligns more with a social construction origin, whereas small variability is more in line with an evolutionary origin. Here, we gathered parental reports on girls' and boys' play in Bangladesh, Egypt, Israel, Japan, Nigeria, and Spain. We then meta-analysed these and previous reports on over 13,000 children from 42 samples across 12 nations. The average difference in girls' and boys' play proved extremely large ($d = 2.7$). Effect size variability between samples was moderate, and absent or weak between nations. We argue that evolutionary theories currently provide a more parsimonious explanation for this pattern of results than constructivist theories.

2. 15:50 - "Gender biased transmission of physical intimate partner violence acceptance in South-Central Ethiopia" (ID: 65, Talk)

Authors : Gibson, M.A.; Gurmu, E.; Alvergne, A.; Redhead, D.; Myers, S.

Presenting author: Sarah Myers (Max Planck Institute for Evolutionary Anthropology)

Abstract:

Changing social norms, shared beliefs about what is acceptable, is a key focus of global health campaigns aimed at ending intimate partner violence (IPV) towards women. In Ethiopia it is estimated that one in four women have been assaulted by a male partner (DHS, 2016) and over half the population hold attitudes supportive of this form of violence (Mossie et al 2021). To date, efforts to change people's attitudes towards IPV have been hindered by uncertainty over how social norms and attitudes are acquired, or learnt. Here we show that people's acceptance of IPV towards women is maintained through social influence or "contagion", using large-scale sociocentric social network data from 5163 Arsi Oromo farmers in South-Central Ethiopia. Bayesian analyses reveal that IPV-acceptance clusters within social networks. People are more likely to accept IPV if the people they chat to, respect, or live with, do too. However, we find biases in social influence. Social contagion of IPV-acceptance appears to be driven by same-gender connections; while, having IPV-accepting social ties of the opposite gender is predictive of a person rejecting IPV. Exploration of relationships between social ties indicates that IPV (non)acceptance is gender-stratified. It transmits among social ties of the same gender across the entire community: between friends and neighbours; from respect figures; within and beyond households; with women's attitudes potentially switching post-violence. That we find gender biases in the social transmission has implications for the design of IPV norm change interventions. Our results suggest that interventions that target men and women, including key community respect figures of each gender, will be most effective in reducing the acceptability of IPV and thus eradicating this form of violence.

3. 16:10 - "Socio-ecological Causes of Postpartum Sex Taboo" (ID: 133, Talk)

Authors : Gohil, P.; Šaffa, G.; Duda, P.

Presenting author: Prapti Gohil (University of South Bohemia in České Budějovice)

Abstract:

Postpartum sex taboo (PPT)— the prohibition of sexual activity following childbirth—is a cultural norm observed in vast majority of human societies. However, its duration varies widely, ranging from a few weeks to over four years, sometimes exceeding the average length of interbirth interval. The geographic distribution and varying durations of PPT have been attributed to local environmental conditions or social organization which encompass factors directly or indirectly influencing breastfeeding duration and weaning age. These factors include subsistence strategy, mobility demands, dietary availability and nutrition, women's contribution to subsistence, forms of polygyny, post-marital residence patterns and presence of women's kin. These interrelated factors pose challenges in disentangling their individual effects. Existing studies on PPT are outdated and lack phylogenetic control. This study seeks to address these gaps by formalizing existing hypotheses using directed acyclic graphs (DAGs) and testing the implied causal relationships using structural causal models. PPT is treated as an ordinal (six-state) variable, following the original coding, and

the data are drawn from the D-PLACE database for all 372 societies in the Ethnographic Atlas (EA) where PPT is recorded. The analysis leverages time-calibrated phylogenetic supertree of the EA societies to account for shared evolutionary history. The findings of this study will provide new insights into socio-ecological causes and adaptive significance of this well-documented but poorly understood cultural norm.

4. 16:30 - "The social learning of gender roles: men report lower support for women's empowerment when in front of other men" (ID: 38, Short talk)

Authors : Lawson, D.W.; Brand, C.O.; Ishungisa, A.M.; Kilgallen, J.A.; Pungu, D.C.; Mabula, E.; Katunzi, F.; Nicholaus, I.; Mang'era, C.W.; Kumugola, Y.; Urassa, M.

Presenting author: David Lawson (University of California, Santa Barbara)

Abstract:

Beliefs about gender roles are widely understood to be acquired via social learning. However, accounts of gender socialisation remain disconnected from a growing evolutionary literature on social learning. We implemented a novel field experiment to elucidate how social information on gender is transmitted among young men in an urbanising Tanzanian community. Men interviewed in front of their peers reported lower support for women's empowerment compared to men interviewed privately. We interpret this finding as indicative of men strategically performing beliefs to match an assumed lack of support for women's empowerment among their peers. We also found that men interviewed in front of community elders, assumed to hold relatively patriarchal beliefs, reported relatively low support for women's empowerment. However, contrary to our expectations, men interviewed in the presence of highly-educated urban men, assumed to be more supportive of women's empowerment, also reported lower support than when interviewed privately. We discuss what research on gender roles may gain from exploring the notion of gender as 'socially performed' and our susceptibility to 'norm misperception' i.e. holding false perceptions of the beliefs of others. Leveraging these concepts offers new insights into how social information on gender is both produced and acquired.

Thursday, 17 April - 15:30 - 16:40 - Health, Well-being, and Society - CCE003

Chair: Martin Tovée (Northumbria University)

1. 15:30 - "Perceptual body judgement tasks require ethnically appropriate stimuli" (ID: 70, Talk)

Authors : Tovée, M.J.; Ridley-Gamble, B.J.; Hamamoto, Y.; Kramer, R.S.S.; McCarty, K.; Cornelissen, P.L.

Presenting author: Martin Tovée (Northumbria University)

Abstract:

Body image and perceived weight status are often assessed using Figural Rating Scales (FRS), which depict changes in body size and shape corresponding to variations in BMI. These scales are

almost exclusively based on White European (WE) bodies. However, East Asian (EA) and South Asian (SA) women have a different body composition and pattern of adipose deposition for a given BMI. This suggests that assessments of body image perception when matching someone's body from an EA or SA background to a WE body in an FRS may lead to errors in estimation, as there are potentially no equivalent bodies to match against. To test this hypothesis, we 3D scanned EA, SA and WE female volunteers and constructed CGI bodies based on a statistical analysis of the size and shape variation specific to each ethnic identity. We then asked participants to make judgements between pairs of bodies of the same or different ethnic identity as themselves. Our results suggest that when presented with ethnically different stimuli, EA and SA participants significantly over-estimate body size and WE participants significantly under-estimate body size. Additionally, ethnically incongruent stimuli lead to significantly greater uncertainty about body size judgements. For the first time, these results show that ethnically appropriate FRS need to be used to assess body image and body judgements and should be developed as a matter of urgency.

2. 15:50 - "In Sickness & In Health: men sound more attractive and formidable, but less healthy, when suffering from respiratory infections" (ID: 23, Short talk)

Authors : Rutter, J.E.; Boothroyd, L.G.

Presenting author: James Rutter (Durham University)

Abstract:

Objective When judging the physical traits of human beings, perceptions of health and attractiveness can appear so strongly correlated as to be almost synonymous. Yet, many examples from popular culture suggest that people actually sound more attractive when they are suffering from colds. We investigated this phenomenon with recordings of men and women before and during a respiratory infection.

Methods We collected audio from 25 men and 25 women before and during a bout of respiratory illness. These voice samples were rated for attractiveness, fighting ability, health, and social status. We also tested predictions drawn from the Behavioural Immune System theory and the Immunocompetence Handicap Hypothesis, using a pathogen disgust questionnaire and a selection of voices which had been manipulated to be high or low in voice pitch.

Results Men sounded more attractive and better at fighting, but less healthy, when suffering from respiratory infections. Women, on the other hand, sounded less attractive and less healthy. Effects for social status were largely nonsignificant for both groups.

We found very little evidence in favour of the ICHH. Women who preferred masculinised voices also preferred the voices of men when they were infected. Self-reported health or attractiveness of women also did not predict preferences for healthy voices. We did, however, find some evidence for the Behavioural Immune System theory; women who were pregnant or taking the pill had weaker preferences for infected voices, although they did still prefer these voices. Women who demonstrated high pathogen disgust also had weaker preferences for infected voices – but not masculinised voices, as predicted by the ICHH.

Conclusions Female listeners appear to demonstrate a superficial preference for low-pitched male voices, which persists even when they accurately identify low voice pitch as a sign of illness (and potentially a weak immunity)

3. 16:00 - ""I just want women to actually be seen as people and not reproductive cows": Women's reproductive autonomy in the wake of Dobbs" (ID: 88, Short talk)

Authors : Kayser, S.; Sifaki, K.; Lozano, N.; Adair, L.

Presenting author: Ssanyu Kayser (Brunel University London)

Abstract:

Objective: The Supreme Court's decision in Dobbs, overturning Roe v. Wade has reshaped the US reproductive healthcare landscape by granting each state the authority to regulate abortion access without federal oversight. This research explored how women anticipated their reproductive future to change, exploring interpersonal, societal, and legal barriers in the post-Dobbs landscape.

Methods: Twelve US-based cis-gender women (age: 23-48) were interviewed focusing on women's abortion decision-making. Semi-structured interviews were conducted between May and June 2022, coinciding with the leak of the Dobbs (2022) decision, and analyzed using thematic analysis (Braun et. al., 2022).

Results: The findings highlighted a holistic interplay of individual, social, and institutional factors shaping abortion decisions, with themes such as "secrecy and stigma," "cultural and religious influences," and "reproductive autonomy" identified. The interconnected nature of these themes informed the use of the Socio-Ecological Model, capturing participants' understanding of the multi-level influences on abortion attitudes/decisions. At an individual level, personal experiences and self-education inform nuanced, pro-choice attitudes. At the interpersonal level, secrecy about abortion within close relationships perpetuates stigma. At the community level, cultural norms (i.e., religious beliefs) shape broader social dynamics. The institutional level reveals how restricted access to abortion services and gaps in reproductive education constrain women's choices. Finally, political and legal barriers that restrict abortion access interfere with women's sense of reproductive autonomy.

Conclusion: When anticipating their reproductive futures in a post-Dobbs world, participants described a multi-layered system by which abortion attitudes/decisions are shaped. Their narratives highlight how cultural norms at the community level – shaped by religious constructs – reinforce stigma, which creates secrecy around abortion at the interpersonal level, limits abortion education and access at the institutional level, and ultimately influences restrictive policymaking.

4. 16:10 - "Evolutionary neuroscience insights for public policy: Adapting to Modern Mismatches" (ID: 196, Short talk)

Authors : Goldsmith, P.

Presenting author: Paul Goldsmith (Imperial College, London)

Abstract:

The human brain has been shaped by evolution to navigate the challenges of ancestral environments, but rapid cultural and technological changes have created novel contexts that can undermine individual and collective well-being. Understanding the evolutionary origins and functions of key brain systems can inform public policy decisions to better align modern environments and

incentives with our evolved psychology. This talk will explore how insights from evolutionary neuroscience can be applied to policy challenges in areas such as public health, education, and criminal justice. For example, the role of dopaminergic reward prediction error signals and the neurobiology of goal-pursuit and motivation suggests strategies for designing educational and occupational environments that optimally engage these systems to promote learning and wellbeing. Recognizing the evolutionary mismatch between threat detection circuits and modern stressors highlights the need for policies that mitigate chronic stress and anxiety. Considering the status-seeking functions of the social brain in digital contexts points to approaches to navigating social media to reduce polarization. The talk will draw upon a synthesis of research across neuroscience, evolutionary psychology, and related fields, as well as case studies of policy applications. The goal is to demonstrate how an evolutionary neuroscience framework can provide a foundation for developing policies and practices that are better aligned with the evolved structure and function of the human brain, ultimately promoting individual flourishing and social welfare in the modern world.

5. 16:20 - "Cross-cultural infant sleep behaviour: Construction of the Views oN Infant Sleep (VNIS) Questionnaire" (ID: 163, Short talk)

Authors : Boedker, I.; Ball, H. J.; Richter, M.; South, T.L.; Roberts, S.G.B.

Presenting author: Sam Roberts (Liverpool John Moores University)

Abstract:

Background Compared to other primates, human infants are born neurologically immature and have rapid brain growth in their first year of life. Therefore infants tend to wake regularly in the night to feed. To facilitate this, in many cultures mothers share a sleeping surface with their infants, but in Western cultures, infants are more likely to sleep separately from their mother. Existing questionnaires on parents' views of infant sleep do not consider cross-cultural variations in infant sleep behaviour. The VNIS questionnaire aims to provide a scale can be used cross-culturally and also used both pre- and post-natally to track how parents' views of infants sleep change over time.

Objectives The aim of this study was to construct the VNIS questionnaire and carry out Principal Component Analysis (PCA) to examine the factor structure.

Methods We recruited 971 pregnant women over the age of 18 and who lived in the UK (mean age 28.6, SD = 6.0). Participants completed an online questionnaire with an initial 31 items relating to infant night-time independence, infant feeding, physical closeness, infant sleeping location, night-waking and infant sleep physiology.

Results We used a PCA with an oblique rotation to examine the factor structure of the scale. Based on the scree plot, we selected a three-component solution and retained items based on their component loadings. The final solution comprised of three components – 'Closeness', 'Independence' and 'Night-waking', with four items in each component. Based on McDonald's omega, reliability was good for all factors (Closeness = 0.73; Independence = 0.79; Night-waking = 0.75).

Conclusions The VNIS provides a brief, 12-item scale that can be used cross-culturally to examine variation in parents' beliefs about infant sleep. Current research in the UK and Australia will be used to examine cultural differences in sleep behaviour and conduct a confirmatory factor analysis.

6. 16:30 - "Reconsidering the "reward center" as the neurobiological mediator of drug seeking and abuse." (ID: 114, Short talk)

Authors : Sullivan, R.J.

Presenting author: Roger Sullivan (California State University, Sacramento)

Abstract:

Insights from evolutionary ecology indicate that "drugs," in the form of plant secondary metabolites (PSMs), are ubiquitous in natural environments and are utilized by plants as a toxic chemical defense against plant eaters. This evolved dynamic emphasizes punishment rather than reward: plants deploy PSMs to poison their predators, which in turn do their best to avoid chemical defenses or to find ways to use them to their own advantage. The punishment dynamic ubiquitous in nature has also affected people, both in the present and in the evolutionary past. This presentation will explore the implications of viewing drug abuse and addiction through an evolutionary ecological lens. It will highlight how a "punishment" perspective contradicts core assumptions about the neurobiology of drug use and addiction, while also presenting several new directions for future research.

Poster list

1. "Paranoia moderates the relationship between digital jealousy and psychological cyber dating abuse" (ID: 11)

Authors : Bhogal, M.; Rhead, C.; Jones, C.; Kennedy, G.

Presenting author: Manpal Bhogal (University of Wolverhampton)

Abstract:

Title Paranoia and Digital Jealousy as Predictors of Cyber Dating Abuse: A Multifaceted Approach

Objective This study investigated the roles of paranoia and digital jealousy in the perpetration of cyber dating abuse, distinguishing between psychological and relational abuse.

Methods Data were collected from a non-clinical sample of 293 men and women. Regression analyses were conducted to examine the predictive roles of persecution (paranoia) and digital jealousy on psychological and relational forms of cyber dating abuse. Additionally, paranoia was analysed as a potential moderator between digital jealousy and psychological abuse.

Results Persecution (paranoia) and digital jealousy significantly predicted psychological cyber dating abuse, while only persecution predicted relational abuse. Further analysis revealed that paranoia moderated the relationship between digital jealousy and psychological cyber dating abuse.

Conclusions The findings underscore the distinct roles of digital jealousy and paranoia in different forms of cyber dating abuse. These results have important implications for clinical and public health interventions aimed at addressing technology-facilitated dating abuse.

2. "Environmental Structuring of Menstrual Taboos" (ID: 14)

Authors : Quinn, A.N.; Henzi, S.P.; Barrett, L.

Presenting author: Arianna Quinn (University of Lethbridge)

Abstract:

Title: Environmental Structuring of Menstrual Taboos

Objectives: This study explores the relationship between environmental harshness—which affects demands on paternal investments and, therefore, sensitivity to paternity uncertainty—and the prevalence and restrictiveness of menstrual taboos, which may function as a paternity assurance strategy.

Methods: We conducted a Principal Components Analysis to derive two latent variables: thermal stability (average temperature, predictability, and variability) and precipitation regime (average precipitation, predictability, and variability). Then, using ethnographic data from the Human Relations Area Files and the Database of Places, Language, Culture, and Environments, we fitted two Bayesian multi-level models in R, controlling for ancestral relatedness to assess how environmental factors—thermal stability, precipitation regime, biome, and primary subsistence mode—affect (i) menstrual taboos and (ii) the extent of the restriction they place on women.

Results: Thermal stability showed a weak positive effect on both the presence of menstrual taboos (: 0.61, 95% CI: 0.02, 1.27) and the extent of restriction (: 0.24, 95% CI: -0.05, 0.53). Horticulturists were slightly more likely to have menstrual taboos compared to hunter-gatherers (: = 0.88, 95% CI: -0.20, 1.97), the extent of restriction was slightly lower in agricultural societies than they were in hunter-gatherers (: -0.59, 95% CI: -1.21, 0.04).

Conclusions: These findings suggest ancestral selection pressures relating to human reproductive strategies may have influenced the occurrence of menstrual taboos, linking them to environmental conditions. The maintenance of such taboos over time is linked to fears of supernatural punishment, reinforced by cultural norms, which complicates an assessment in purely behavioural ecological terms and requires a focus on aspects of gene-cultural co-evolution when investigating how and why taboos persist. For example, changes in practices relating to menstrual taboos often stem from external cultural influences and urbanization, which enables women to observe the lack of consequences for disregarding taboos.

3. "The role of stimuli trustworthiness, dominance, and attractiveness on overall impressions of online dating profiles." (ID: 26)

Authors : De La Mare, J.K.; Lee, A.J.; Jones, B.C.

Presenting author: Jessica De La Mare (University of Stirling)

Abstract:

Objective: The valence-dominance model proposes that two dimensions (i.e., valence and dominance) underpin impression formation, and has been applied to a range of stimuli, including, faces, bodies, and voices. The valence component is strongly correlated with ratings of trustworthiness and attractiveness, and the dominance component is strongly correlated with ratings of dominance and aggressiveness. Individuals form impressions of others from their faces, names, and text (including, personal descriptions). However, little is known about how impressions formed from individual online dating profile components may interact to form overall impressions. Some research suggests images have the largest impact on overall judgements, however, others have found written text to be the most important contribution to overall impressions.

Methods: In the current study, participants were randomly allocated to rate faces, personal descriptions, or profiles (randomly comprised of faces, personal descriptions, and pre-rated names) on either attractiveness, dominance, or trustworthiness. Stimuli gender matched participants self-reported preferred gender while dating (men or women).

Results: To analyse data, separate mixed effects models were conducted for attractiveness, dominance, and trustworthiness judgements. Data collection is still underway; therefore, preliminary results will be presented.

Conclusion: Practical implications of these results could include providing guidance to the creators and users of online dating platforms informing them of the importance of certain dating profile components. For example, some dating platforms do not require a personal description when creating a profile. However, if text is particularly important to forming overall impressions, users may benefit from this knowledge by ensuring they include a personal description. In turn this may improve engagement from other users (e.g., more "likes", "matches", and messages). Due to the growing popularity of online dating platforms, it is crucial to understand how platform design may

be improved to enhance user experience, engagement, and outcomes (e.g., offline dates, long-term relationships, and friendships).

4. "A rapid decline in gender bias relates to changes in subsistence, not to demographic changes, in a formerly matrilineal community" (ID: 33)

Authors : Huang, Y.; Bai, P.; Zhou, L.; Mace, R; Du, J.

Presenting author: Yaming Huang (Lanzhou University)

Abstract:

Title: A rapid decline in gender bias relates to changes in subsistence, not to demographic changes, in a formerly matrilineal community

Objective: Comprehensive demographic data reporting over 70-years of lifespan from 17 Tibetan villages in southwest China

Methods: We collected demographic data over 70-years and bulit GLM models with the help of DAGs and R for exploring demographic shift of gender preference in inheritance system and the reasons. We explore two possible explanations through model comparisons: that this is driven by changes in the subsistence system or by changes in sibling configuration. We also conducted economic games two distinct survey periods (2015 and 2021) and built GEE with the help of DAGs and R to explore gender preference in broader societal interactions.

Results: We observed a significant shift within the predominantly matrilineal inheritance structure; a once-prevalent preference for females in older cohorts has now gone in recent generations. We confirmed that a change from agriculture to a non-traditional economy with more market integration marks a pivot from a matrilineal to a non-unilineal inheritance systems. Moreover, results from economic games indicate that a high donations for females in 2015 has become unbiased in 2021.

Conclusions: Our findings provide concrete evidence of shifts in gender preference, moving from a female bias towards a more neutral stance, both in familial resources distribution and in broader social interactions. Our research indicates that it is crucial to consider subsistence strategy and a wide range of socio-ecological factors when studying shifts in sex preferences and kinship systems.

5. "The effect of erect nipples on three attentional networks" (ID: 39)

Authors : Widman, D.; Ferrer, S., Hoffman, T., Illescas-Ruiz, S., Pandya, H., Wibble, C.

Presenting author: David Widman (Juniata College)

Abstract:

In a series of studies, Burch and Widman (2021; 2022; 2023) investigated how erect nipples in women are perceived. They found that women with erect nipples are objectified and oversexualized by both men and women. The purpose of the present study was to further examine whether women with erect nipples decrease attentional efficiency more than women without. Images of women either with or without nipple erection were used in the Emotional-Attentional Network Task (E-ANT,

O'Toole et al., 2011). This task allows the assessment of three attentional networks: alerting, orienting, and conflict interference. We hypothesize that the presence of erect nipples will affect the conflict interference network, resulting in decreased executive efficiency for both men and women. Samples of men and women were collected from a small private college (6 and 15 respectively) and from Prolific.com (42 and 36, respectively). Both samples completed the E-ANT procedure programmed using testable.org. The results found no main effects nor any interactions between sex and the presence or absence of nipple erection on any of the three attentional systems (all Fs < 1.07, all ps > .304). However, there was a marginal main effect of sex of participant on the conflict interference network ($F(1,91) = 3.82$, $p = .054$). Examination of the means indicated that the women had less efficient attentional processing overall. These results indicate that nipple erection does not alter the efficacy of the three attentional networks even though erect nipples lead to objectification and over sexualization by both men and women. However, we observed that women did show enhanced conflict interference, suggesting poorer executive efficiency, when confronted with an image of a woman, regardless of nipple erection. This might reflect intrasexual competition; further investigation is warranted.

6. "No evidence that people born to older parents show weaker preferences for younger adult faces" (ID: 45)

Authors : Li, J.; Lee, P.; Rafiee, Y.; Jones, B.C.; Shiramizu, V.K.M.

Presenting author: Jingheng Li (University of Strathclyde)

Abstract:

People can judge others' ages from face images somewhat accurately and tend to rate younger adults' faces as more attractive than older adults' faces. However, individual differences in the strength of this preference for younger adult faces have also been reported, whereby people born to older parents (i.e., people whose parents were older when the participant born) showed weaker preferences for younger adult faces. However, work showing this pattern of results used face stimuli in which cues of age were experimentally manipulated using computer-graphics methods and many researchers have recently raised concerns about how well findings obtained using such stimuli generalise to ratings of natural (i.e., unmanipulated) face images. Consequently, we tested whether people born to older parents showed weaker preferences for younger faces when rating the attractiveness of natural (i.e., unmanipulated) face images. Although our analyses demonstrated that participants generally showed strong preferences for younger adult faces, the strength of these preferences was not significantly correlated with parental age at birth. Thus, our results do not support the proposal that parental age at birth influences preferences for facial cues of age.

7. "Further evidence that averageness and femininity, rather than symmetry and masculinity, predict facial attractiveness judgments" (ID: 53)

Authors : Jones, B.C.; Lee, P.; Li, J.; Rafiee, Y.; Shiramizu, V.K.M.

Presenting author: Peng-Ting Lee (University of Strathclyde)

Abstract:

Facial attractiveness influences important social outcomes and most studies investigating possible predictors of facial attractiveness have tested for effects of shape symmetry, averageness (i.e., the converse of distinctiveness), and sexual dimorphism (i.e., masculinity-femininity). These studies have typically either tested for these possible effects by experimentally manipulating shape characteristics in faces images or have tested only for bivariate correlations between shape characteristics and attractiveness judgments. However, these two approaches have been criticised for lacking ecological validity and providing little insight into the independent contributions of symmetry, averageness, and sexual dimorphism, respectively. Moreover, the few studies that have investigated the independent contributions of symmetry, averageness, and sexual dimorphism have reported mixed results. Here we measured shape symmetry, averageness, and sexual dimorphism from face images and assessed their independent contribution to attractiveness ratings. Linear mixed effects models showed that facial attractiveness was significantly predicted by averageness in male and female faces and femininity in female faces, but not by masculinity in male faces or symmetry. These results are consistent with other recent work suggesting that averageness and femininity, rather than symmetry and masculinity, predict facial attractiveness.

8. "Can an AI predict human age from facial photographs as accurately as human observers?" (ID: 56)

Authors : Ball, M.; Estudillo, A.J.; Attard-Johnson, J.; Stephen, I.D.

Presenting author: Matthew Ball (Bournemouth University)

Abstract:

Humans are thought to have evolved the ability to estimate various characteristics of other humans simply by reading their facial features. One such trait that humans can seemingly determine with a relatively good degree of accuracy is age. This ability is thought to have evolved due to the evolutionary advantage when assessing potential mates, allies and other social advantages. This research investigates whether an AI model, trained on a sample of human faces, can predict age as accurately as human observers. This research uses a combination of automated landmark placement, geometric morphometric methodology, skin colour, and skin texture analysis to identify the ways in which facial appearances vary within the training sample (N=465) of human faces. These appearance variables were then used to build a model to predict the age of the sample faces. This model was then tested against a set of new (N=142) faces. Human observers also estimated the age of the test faces. Interestingly the AI-predicted ages strongly correlate with both actual ages (r=0.624, p< 0.001, N=141), and human-estimated ages (r=0.746, p< 0.001, N=142) of the test faces. Further, the AI model gave more accurate estimations of age than the human observers in 64.5% of the cases, even though the human ratings had the advantage of the "wisdom of crowds". Our results suggest that AI age prediction may be a valuable tool in both theoretical areas such as determining how humans perceive age, as well as in practical applications such as law enforcement. Future plans for the technique will also be discussed.

9. "The Evil Eye in Greece: A Social Navigation Tool for In-Group Cohesion" (ID: 57)

Authors : Kolios,S.; Willard.A.

Presenting author: Sotirios Kolios (Brunel University)

Abstract:

Objective: This study investigates the cultural and social dimensions of the evil eye in Greece. Previous research has suggested that evil eye arise in response to economic inequality and destructive envy. We explore this by looking at relational proximity, behavior type (conspicuous vs. normative), and individual traits of the victim (e.g., beauty, wealth, age) in attribution of the evil eye. The research aims to understand the evil eye as a tool for navigating ingroup-outgroup dynamics and reinforcing in-group cohesion.

Methods: The research employs 1) free lists, and 2) a vignette design, presenting 16 scenarios that vary by relationship proximity, behavior type, and victim traits (e.g., beauty, wealth, age). Participants evaluate hypothetical characters and determine their misfortune is attributed to the evil eye. Also, participants rate the perceived proximity of the caster (the one who gave the evil eye) and healer (the one who take it away). Demographic and belief data are collected to examine how individual differences, such as gender, religious practices, and income, influence perceptions. The study aims to capture qualitative and quantitative data through participant responses.

Results: Preliminary analyses suggest that close relational proximity (e.g. family) and traits perceived as desirable are the most thought to predict that someone will get the evil eye. Contrary to expectations, conspicuous behavior seems to play a less significant role. Participants frequently associated the evil eye with traits, such as beauty and age but not wealth.

Conclusions: Findings suggest that at least in the context of modern Greece, evil eye does not correlate strongly to resources allocation as theories regarding the economics of witchcraft suggest. We suggest instead that might function to support in-group cohesion through a sanctioned conduit to express displeasure with others , and delineation of identity boundaries.

10. "Karelian Displacement: The Legacy of Rebuilt Social Networks on Health in Later Life" (ID: 58)

Authors : Schroderus, V. I.; Lahdenperä, M.; Salonen, M.; Lummaa, V.

Presenting author: Veera Schroderus (University of Turku)

Abstract:

Globally, loneliness and weak social networks are growing issues that are known to affect the mental and physical health of people in old age. However, the effects have remained unpredictable, likely due to the multitude of variables involved. As life expectancy rises, and the structure of society is facing major changes it is crucial to understand how historical changes can affect social networks and health in old age. In my study, I investigate what social networks older Karelian evacuees formed after resettling in Finland during World War II. Additionally, I will analyse how these networks (e.g., hobby groups and organizational memberships) and their kin-networks predict mortality. I utilise a unique dataset of over 120,000 displaced persons who by their resettlement provide a "natural experimental" system. During WWII, more than 400,000 Karelians were displaced due to territorial loss, with some resettled individually and others maintaining their village networks. This dataset provides uniform background variables, enabling robust analysis of social network formation and integration in a new environment. Using advanced natural language processing and artificial intelligence, I will extract and analyse social network data from digitized

interview records, and quantify social integration. This research offers rare insights into the long-term effects of social networks on health outcomes, leveraging an exceptionally large and well-documented dataset. The findings will contribute to broader frameworks investigating the role of social networks in ageing populations and inform policies addressing social integration among older adults.

11. "Assessing the roles of symmetry, prototypicality, and sexual dimorphism of face shape in health perceptions" (ID: 66)

Authors : Leger, K.; Dong, J.; DeBruine, L. M.; Jones, B. C.; Shiramizu, V.

Presenting author: Kathlyne Leger (University of Strathclyde)

Abstract:

Health perceptions are thought to play an important role in human mate preferences. Although many studies have investigated potential relationships between health ratings of faces and facial symmetry, prototypicality, and sexual dimorphism, findings have been mixed across studies. Consequently, we tested for potential relationships between health ratings of faces and objective measures of the symmetry, prototypicality, and sexual dimorphism of those faces' shapes. When these shape characteristics were entered individually in separate regression models, we observed significant positive relationships between health ratings and both shape symmetry and prototypicality, but sexual dimorphism and health ratings were not significantly correlated. In regression models in which symmetry, prototypicality, and sexual dimorphism were entered simultaneously as predictors, prototypicality, but not symmetry, was significantly correlated with health ratings and sexual dimorphism predicted health ratings of female, but not male, faces. Collectively, these results suggest that the relationship between prototypicality and health ratings is likely to be particularly robust and highlight the importance of considering multiple aspects of face shape when investigating potential associations between face shape and health perceptions.

12. "Re-evaluating the Role of Partnership-Related Perceptions in Women's Preferences for Men with Masculine Face Shapes" (ID: 67)

Authors : Dong, J., Leger, K., Lee, A. J., Rafiee, Y., Jones, B. C., & Shiramizu, V. K.

Presenting author: Junzhi (Chloe) Dong (University of Strathclyde)

Abstract:

Many researchers have proposed that women perceive men with masculine face shapes to be less suitable as parents and long-term partners than men with feminine face shapes, causing women to find masculine men more attractive for short-term than long-term relationships. However, recent work shows that results obtained using the type of experimentally manipulated stimuli that were employed in studies presenting evidence for these claims are not necessarily observed when natural (i.e., unmanipulated) face stimuli were used to suggest that the evidence for these claims may need to be revaluated. Consequently, we tested for possible relationships between ratings of natural male faces for parenting- and relationship-related traits and shape masculinity (Study 1) and also tested whether women's preferences for shape masculinity were stronger when natural male faces were rated for short-term relationships than when natural male faces were rated for

long-term relationships (Studies 2 and 3). We saw no evidence for either of these predictions, instead finding that men with more attractive faces were perceived to be better parents and better long-term partners. Thus, our findings do not support the widely held view that masculine men are more attractive for short-term relationships because they are perceived to be unlikely to invest time and effort in their romantic partners and offspring.

13. "BaYaka nursing mothers engage in 'Relay cooperation' to coordinate childcare and foraging work along foraging trips." (ID: 71)

Authors : Visine, A.E.S. ; Jang, H.

Presenting author: Amandine Visine (Durham University)

Abstract:

Across societies, human mothers face time and energy trade-offs between childcare and other labour. Allomaternal caregivers can pool resources to alleviate mothers' burden. In foraging societies, nursing women often take their infants on daily foraging trips. Our previous study found that BaYaka mothers go on longer foraging trips when taking infants along, while maintaining energy expenditure and foraging returns. Moreover, mothers report assistance from others with childcare during foraging or traveling. These findings highlight the compatibility between childcare and subsistence work among BaYaka mothers with group support. However, the behavioural strategies implemented by mothers and group members' role remain underexplored. We conducted focal follow sampling of 18 foraging trips of 15 BaYaka nursing mothers in the Republic of the Congo. Using continuous focal observations of mother-infant behaviours during foraging, and group members' activities scan sampling, we collected detailed data on childcare during subsistence activities (i.e., time spent carrying infants versus foraging), identified the individuals providing assistance, and categorised assistance types (e.g., direct childcare, indirect childcare, foraging support). BaYaka nursing mothers coordinate their foraging behaviour to minimise childcare constraints by: 1) dedicating resting for childcare/breastfeeding, and foraging without the infant; 2) avoiding carrying both infant and basket, minimising weight loads. Group members help by either carrying the infant, the basket, or foraging. Especially, children participate in relay cooperation with mothers, taking turns caring for the infant when they work, carrying the basket when they travel with the infant, and foraging when they rest. Our findings provide empirical evidence of individual-level and group-level strategies adopted by BaYaka forager mothers to manage childcare during collaborative foraging. Crucially, we propose a novel cooperation strategy, termed the 'Relay Cooperation', which should be studied in other contexts as it may play a crucial role in mitigating trade-offs between childcare and other labour for human mothers.

14. "Exploring Student Perceptions of Human-Animal Similarity: A Psychometric Network Analysis Approach" (ID: 72)

Authors : Pollet, T.V.; Bovet, J.

Presenting author: Thomas Pollet (Northumbria University)

Abstract:

Background: Comparing humans to other animals, particularly primates, helps students understand evolutionary biology, human cognition, behavior, and physiology. This project investigates students' perceptions of human-animal similarity across various domains. Such insights can inform educational strategies and enhance public understanding of evolution.

Methods: We conducted two pre-registered studies via a crowdsourcing site (Prolific: n = 466; n = 472), focusing on psychology and biology students. In Study 1, participants rated the similarity to humans of a baboon, gorilla, bonobo, orangutan, and chimpanzee across 11 domains (diet, physical anatomy, brain anatomy, cognition, sexual behavior, disease, physiology, learning, social behavior, sex differences, and genetics). Species and domains were presented in random order, with similarity rated on a 0-100 scale. Study 2 followed the same design, but participants evaluated an ant, duck, mouse, dolphin, and chimpanzee. We used psychometric network analyses in R, including Clique Percolation methods and Network Comparison Tests, to examine clustering and compare students' ratings.

Results: In Study 1, a similar network of domains emerged across all primate species, with two main clusters: one with genetics, physiology, and physical anatomy; another with social behavior, cognition, and learning. Both psychology and biology students showed the same clustering, but network layouts varied slightly, mainly for diet and brain anatomy. In Study 2, patterns were generally consistent across species, with minor exceptions for ants. The same two clusters emerged, with the addition of brain anatomy to the second cluster. Network structures did not differ significantly between psychology and biology students, suggesting invariance of these perceptions.

Conclusion: Students perceive human-animal similarity consistently across domains and species. Two primary clusters emerged: one for physical and genetic traits, another for cognitive and social aspects. Network structures were largely comparable between student groups and evolutionarily distant species, suggesting a common pattern in how students understand human-animal similarity.

15. "Mindfulness-Based Interventions for Chinese Students in Higher Education: A Scoping Review" (ID: 76)

Authors : Zhong, J.; Liu, X.; Tse, D.; Li, J.; Ahuja, H.S.

Presenting author: Jiawan Zhong (University of Strathclyde)

Abstract:

Objective Chinese students are among the largest groups of international students in Europe, facing unique stressors like language barriers and cultural adaptation that adversely affect their mental health. Yet, tailored stress management strategies are under-researched. This scoping review evaluates mindfulness-based interventions (MBIs) for Chinese higher education students globally. By synthesizing existing studies, we aim to understand the effectiveness of MBIs for this population, providing insights for developing culturally appropriate interventions for Chinese students studying in Europe and worldwide.

Methods A search across seven databases—APA PsycInfo, Web of Science, MEDLINE, ERIC, Scopus, China National Knowledge Infrastructure (CNKI), and Wanfang Data—yielded 915 articles. After removing duplicates and screening titles and abstracts, 68 papers remained. Two rounds of screening and citation chaining led to 46 included studies (34 in Chinese, 12 in English).

Results Most studies (78%) used randomised controlled trials to assess MBIs' effectiveness in reducing anxiety and depressive symptoms and improving mindfulness levels, sleep quality, and psychological resilience. Mindfulness-Based Stress Reduction (MBSR) was the most common intervention (38%). Interventions adapted from traditional Chinese culture did not show significant effects. Self-guided mindfulness materials, specifically Chinese-translated recordings and books showed potential. These findings highlight the importance of cultural and linguistic relevance in enhancing MBIs' efficacy.

Conclusions Findings suggest that culturally adapted MBIs can improve mental well-being among Chinese students. This review provides insights to inform future research and the development of effective, culturally tailored interventions for Chinese students studying in Europe and globally. However, most results are preliminary; further research is needed to validate these strategies.

16. "A big fish in a little pond: Social information sourcing and reputation in a natural foraging paradigm." (ID: 78)

Authors : Korzilius, F.; Kavelaars, M.M.; Dhellemmes, F.; Deffner, D.; Schakowski, A.; Kortet, R.; Kurvers, R.H.J.M.

Presenting author: Fleur Korzilius (Max Planck Institute for Human Development)

Abstract:

Social learning requires a tradeoff between acquiring personal data and using social information provided by those around to improve decision-making. The factors influencing social information use have been extensively studied, finding influences of the learner's mental state, the characteristics of the information provider, and the surrounding context. Confidence in the task at hand seems to affect how an individual engages with and utilizes social information. However, these preconditions of social learning are rarely studied in a natural setting. We used a natural foraging paradigm to investigate the effects of self-perceived and peer-evaluated competence, as well as the incentive context on social information sourcing. In Northern Karelia, Finland, we organized ice fishing events in which participants were monetarily incentivized, either in a competitive or a cooperative setup, to catch the highest weight of Eurasian perch. Prior to each competition, participants ranked their own and peer's ice fishing competence. Using head camera footage, we scored how often participants scanned their environments for social information (i.e., sourcing frequency). We found that self-perceived rank and the incentive context affected sourcing frequency. Participants with lower self-perceived rank were more likely to scan their environment for social information. Moreover, a competitive incentive context gave rise to more frequent information sourcing compared to the cooperative one. Interestingly, there was an interaction effect of incentive context and rank; in a cooperative setting the individuals with highest self-perceived competence scanned more frequently. These results indicate that self-perception and incentivization influence social information sourcing, thereby emphasizing the importance of social dynamics within natural social learning situations. Moreover, the study highlights the potential of foraging research and possible pathways for future research.

17. "The Science behind Mean Girls: A Systematic Review and Meta-Analysis of Intrasexual Competition amongst Women" (ID: 82)

Authors : Sial, A.

Presenting author: Aashira Sial (Northumbria University)

Abstract:

Research on women's intrasexual competition (ISC) has primarily focused on mating competition (Buss & Dedden, 1990; Karimi-Malekabadi et al., 2019). Recent studies, however, highlight the critical role of inequality and status competition in shaping women's competitive behaviours (Blake et al., 2018; Ruder et al., 2023). In recent years, no comprehensive analysis has synthesized findings in this growing field, leaving significant gaps in our understanding of how ISC impacts women's behaviours, and the methods used to study it. To address this, we conducted a systematic integrative review and meta-analysis to (i) describe the types of competition studied in this domain, (ii) examine how competition influences women's behaviours, (iii) evaluate the methodologies and variables used, and (iv) identify key gaps and directions for future research. Formative search of the literature suggested that ISC drives both self-enhancement behaviours (e.g., self-sexualization, beautification) aimed at increasing one's competitive advantage and actions to undermine rivals (e.g., derogation, social exclusion) (Keys & Bhogal, 2016; Olson et al., 2021). Our review studies if experiences of inequality amplify ISC behaviours, underscoring the importance of both social and economic factors. We also aim to highlight methodological inconsistencies in the field, such as varied operational definitions of ISC and an overreliance on narrow experimental paradigms. These findings would provide the first comprehensive synthesis of ISC in women, offering a clear framework for future studies to build upon. This review aims to make a critical contribution to evolutionary psychology by clarifying how ISC manifests among women and identifying the socioecological contexts that shape these behaviours. It could serve as a foundation for understanding gendered competition and its broader implications for behaviour, relationships, and social structures.

18. "The Who and Whom of Social Learning: How Personality Influences Human Learning Strategies" (ID: 90)

Authors : Cenni, C.; Gebauer, J.E.; Eck, J.; Mesoudi, A.

Presenting author: Camilla Cenni (University of Mannheim)

Abstract:

Social learning, the process of acquiring knowledge from others, is central to (human) culture. To be effective, social learning is inherently selective, with individuals displaying biases toward whom to copy. While studies have traditionally focused on species-typical patterns of selective social learning, learner's individual differences, particularly their personality, have been largely overlooked, despite robust interpersonal variation in humans that likely shapes cultural transmission. We focus on two cross-culturally universal dimensions of human personality – Agency and Communion. Unlike the Big Five framework, Agency and Communion are consistently found in both large- and small-scale societies and are fundamental to interpersonal behavior, making them more suited to investigate social dynamics. We test whether the learner's personality (i.e., who they are) predicts social learning in an online task, and if this relationship is moderated by the demonstrator's

traits (i.e., whom they learn from). To do so, we designed a novel demonstrator-learner paradigm, using large-language models programmed to simulate human demonstrators systematically varying in Agency (assertiveness) and Communion (benevolence). Importantly, participants perceive these demonstrators as real humans based on their behavior and personality cues, ensuring the study focuses on interpersonal social learning rather than human-AI interactions. Data collection is currently underway to assess whether this innovative methodology effectively captures individual differences in social learning strategies using real-time direct behavioral cues. Preliminary data indicate that participants perceive demonstrators' personalities as intended. This project provides insights on how fundamental individual differences in human personality influence learners' preferences and strategies in social learning, highlighting the importance of personality in shaping knowledge transmission. Additionally, it offers a promising avenue to implement large-scale interactional investigations in the social sciences.

19. "Feeding the Senses: Breastfeeding Through the Lens of Neurodiversity" (ID: 91)

Authors : Bedford, C.; Ascott, L.; Banks, L.; Norwood, E.; Allen, C.

Presenting author: Cherry Bedford (Newcastle University)

Abstract:

Despite public health recommendations the UK has one of the lowest breastfeeding rates in the world with 8 in 10 people stopping breastfeeding before they intended to (UNICEF UK, n.d.). In order to address this, we must identify factors which underpin successful feeding. Breastfeeding is an embodied task intertwining physical and emotional aspects that profoundly impact both parents and infants. Neurodivergent parents may face unique barriers to breastfeeding. Limited research into autistic experiences finds that many people report sensory issues when feeding (Hampton et al., 2023), including: baby suckling, milk letdown, and physical contact between parent and infant (Grant et al., 2024). Additionally, ADHD symptoms are associated with a decreased likelihood of exclusive breastfeeding at 6 months postpartum (Freund-Azaria et al., 2022). Individuals with ADHD report more hyper- and hypo-sensory sensitivities compared to neurotypical groups (Bijilenga et al., 2020), which may suggest that they face similar sensory challenges to autistic parents when feeding, though to date this has not been explored. This study aims to investigate whether sensory profiles from the sensory perception quotient (SPQ) and breastfeeding interoceptive awareness (BFIA) are predictive of breastfeeding self-efficacy (BSES) in neurodivergent and neurotypical parents. Breastfeeding parents will be recruited to complete an online survey measuring: short-form SPQ (Tavassoli et al., 2014), short-form BSES (Dennis, 2003), & BFIA developed from the multidimensional assessment of interoceptive awareness (MAIA-2, Mehling et al., 2018). Qualitative data on the impact of sensory experiences whilst breastfeeding will also be collected. Developing a better understanding of the impact that sensory experiences have on breastfeeding will allow us to better support all parents to feed their children in the way they choose.

20. "Trialling Convolutional Neural Networks for Folk Music Classification through Spectrogram Analysis" (ID: 104)

Authors : Dong, S.: Tehrani, J. J.; Street, S. E.

Presenting author: Shaoding Dong (Durham University)

Abstract:

In the field of cultural evolution, folk music is increasingly recognized as a significant cultural marker for exploring historical human dynamics. Its oral transmission across generations preserves cultural memory, while its evolution through intercultural interaction reflects both continuity and adaptation. These attributes make folk music a compelling resource for investigating ancient population origins and migration patterns. However, the quantification, extraction, and classification of musical features remain methodological challenges.

Over recent decades, researchers have developed music classification methods based on audio signals, including spectrogram analysis (e.g., Tzanetakis and Cook, 2002). Nevertheless, these methods often rely on assumptions rooted in Western musical scales, limiting their ability to capture the complex scales, tonal systems, and modes characteristic of many Asian minority folk music traditions.

This study examines the potential applicability of machine learning, particularly Convolutional Neural Networks (CNNs), to address these challenges. CNNs, recognized for their capacity to learn hierarchical and nuanced patterns from image-like data, may provide a means to analyze spectrograms, which visually represent the temporal and frequency-related features of audio signals. This approach has the potential to detect subtle musical signatures, enabling the classification of diverse folk music traditions.

Drawing on a dataset of over 500 folk songs from 55 ethnic groups across China, Myanmar, and India, this research seeks to evaluate the suitability of CNNs for folk music classification. Data collection and methodological refinements are ongoing, with preliminary findings to be presented at the EHBEA 2025 conference for critical discussion and feedback.

21. "Visualizing facial beauty: Testing the noise-based reverse correlation method." (ID: 105)

Authors : Bovet, J.; Vaughton, A.D.

Presenting author: Abigail Vaughton (Northumbria University)

Abstract:

Evolutionary theories suggest that certain facial features, such as femininity in women, are attractive due to their association with reproductive potential. This study evaluates whether a data-driven approach aligns with conventional theory-driven findings on facial attractiveness and examines the robustness of the noise-based reverse correlation method, a relatively novel technique for visualizing mental representations. This method is a data-driven technique that generates visual proxies of mental representations, based on judgements of randomly varying stimuli. We generated visualisations of people's mental representations of attractive female and male faces (N=150), and analyzed how these mental images are perceived across dimensions like age, femininity/masculinity, weight, and happiness (N=465).

Our findings indicate that attractive female faces are perceived as younger, thinner, more feminine, and happier, while attractive male faces are rated as younger, thinner, and happier, but not consistently more masculine. To test the robustness of both our results and method, we replicated the study with variations in key parameters, including base images, random patterns, setting (online vs. lab), and participant source (paid vs. volunteer). Results showed that while specific facial traits in mental representations vary with these parameters, overall ratings remain consistent.

These findings contribute to the advancement of the noise-based reverse correlation method, demonstrating its potential in face research while emphasizing the importance of systematically evaluating and documenting methodological parameters. Moreover, our results underscore the multidimensional nature of attractiveness and its connection with other social perceptions and stereotypes.

22. "Does the Menstrual Cycle Affect Vaccine Response?" (ID: 113)

Authors : Cooper, A.; Alvergne, A.: Sear, R.; Walters, S.

Presenting author: Alexandra Cooper (London School of Hygiene & Tropical Medicine)

Abstract:

Objective This study explores how Life History trade-offs between fertility and immunity across the menstrual cycle affects Covid-19 vaccine response. With oestrogen's immunoenhancing effects, it is hypothesised that immunity is prioritised during the oestrogen-dominant follicular phase and fertility during the progesterone-dominant luteal phase. We will test these trade-offs by investigating whether a more vigorous immune response (indicated by greater side effects and lower risk of infection after vaccination) is observed if vaccination occurs during the follicular, compared with the luteal, phase.

Methods Data from 50,600 menstruators and 415,236 menstrual cycles were collected via the Clue Period Tracker App, including information on COVID-19 vaccination status, side effects, and infection rates Regression analyses were performed to test whether: (1) vaccination during ovulation, menstruation, or the follicular phase was associated with a higher number of severity of side effects; and (2) vaccination in those phases was associated with lower likelihood of Covid-19 infection. We will also investigate the associations between hormonal contraceptives and these outcomes.

Results. Vaccination during ovulation was associated with more severe side effects from the first dose, while the follicular phase was associated with higher risk, and greater severity, of side effects. Luteal-phase vaccination was associated with more than twice the risk of subsequent COVID-19 infection compared to the follicular phase. No clear link was found between menstruation and side effects or infection risk.

Conclusions Menstrual cycle timing appears to influence vaccine responses. As predicted, luteal-phase vaccination was linked to higher infection risk, while follicular-phase vaccination was linked to worse side effects, suggesting personalised healthcare strategies may improve outcomes. Further research with biological sampling and ecological data is needed to fully understand these interactions.

23. ""Do the young people feel like we left them alone?" Community growth and inter-household cooperation in the Canadian Arctic" (ID: 115)

Authors : Ready, E.; Collings, P.; Pérez-Velilla, A.; Eriksen, S.

Presenting author: Elspeth Ready (Max Planck Institute for Evolutionary Anthropology)

Abstract:

The formation and maintenance of cooperative exchange networks involves individual-level decision-making (e.g., strategic partner choice, investment in maintaining relationships) but is also directed and constrained by structural factors, such as proximity or underlying interaction networks. Teasing out the role of each in determining network structure is not a simple task, but is important for understanding the factors that promote cooperation in a given system. Here, we use network data on country food sharing collected in Kangiqsujuaq (Nunavik, Canada) in 2013 and 2023 to investigate long-term stability and change in cooperative relationships among Inuit households. Preliminary analyses suggest that households reported slightly more sharing partners in 2023 than in 2013. However, there was a considerable increase in housing stock in the settlement between the two study periods, meaning that there are many new households, mostly formed by (now adult) children who lived with their parents during the 2013 study. We test the hypothesis that the observed increase in sharing degree is driven by this structural shift from intra- to inter-household ties. By doing so, we provide novel and important insight about how the structure of resource exchange networks responds to changes in social organization. This insight is important for our community partners who are concerned that the current housing situation has weakened family sharing ties. This analysis also constitutes a foundational step towards our overarching goal of assessing how Inuit local food production and exchange respond to exogenous changes in the cash economy (e.g., food and equipment prices, taxes, cash transfer programs).

24. "Resilience, hope, and stress biomarkers in Ukrainian war refugees" (ID: 119)

Authors : Savchyna, M.; Brittain, R.S.A; Flinn, M.V.; Galbarczyk, A.; Klimek, M.; Marcinkowska, U.M.; Mijas, M.; Muehlenbein, M.P.; Nadyonova, L.; Scibor, M.; Jasienska, G.

Presenting author: Mariia Savchyna (Jagiellonian University)

Abstract:

The war in Ukraine has led to a global rise in forced migration, with 6.8 million Ukrainian refugees reported as of November 2024, including 1.8 million in Poland. While refugees endure trauma marked by loss and insecurity, their psychological resources shape individual responses to war and displacement. This study explores the relationship between resilience, hope, biological stress markers, and perceived stress in two generations of Ukrainian refugees, testing the hypothesis that higher resilience and hope predict lower perceived stress levels and corresponding biomarker response. 146 mothers and grandmothers (ages 25 to 81) from 120 families of Ukrainian war refugees in Poland were surveyed at two time points six weeks apart. Surveys included the Perceived Stress Scale, the Resilience Measurement Scale, and the Adult Hope Scale. Hair samples were collected for cortisol analyses. Preliminary results indicate that participants with higher resilience and hope scores had significantly lower perceived stress shortly after migrating to Poland. Additionally, perceived stress levels measured 6 weeks later were significantly predicted by initial resilience and hope scores. Age and education, used as covariates, did not correlate with perceived stress. Final results will also include the association between hair cortisol concentration, a biomarker of prolonged stress exposure, and psychological responses. Our findings highlight that resilience and hope are associated with lower levels of perceived stress and demonstrate the potential of physiological biomarkers to offer insights into understanding human responses to adversity. Strengthening individual resilience should be considered as a possible component of humanitarian support for refugees in host countries.

25. "Alpha and Beta Diversity of Cultural Traits in Global Jukebox Cantometrics Data

" (ID: 131)

Authors : Nedomlel, J.

Presenting author: Jiri Nedomlel (Charles University in Prague)

Abstract:

This study applies the ecological concepts of alpha and beta diversity to cultural traits. The goal is to explore how cultural traits vary within and between neighbouring groups of communities, and to evaluate the usefulness of these frameworks in studying cultural diversity. Alpha diversity metrics measures within-group variation, while beta diversity assesses differences between groups. As an example we use cultural data from the Global Jukebox dataset, a collection of traditional music along with cantometric song characteristics. Geographic and cultural patterns of diversity are investigated to reveal trends. The application of alpha and beta diversity metrics demonstrates their potential as effective tools for analyzing cultural traits. These frameworks provide a structured way to quantify within-group variation and between-group differences, revealing patterns in the Global Jukebox dataset that align with expectations of cultural diversity studies. This study highlights the potential of applying ecological diversity concepts to cultural research, while also addresses their limitations. By quantifying alpha and beta diversity, we offer a refined perspective on cultural variation and its underlying drivers, contributing to wider discussions on cultural evolution and diversity.

26. "Sex on the Mind? Investigating the sexual overperception bias with a conjunction fallacy task." (ID: 137)

Authors : Bellamy, A.; Mckay, R.

Presenting author: Aysha Bellamy (Royal Holloway University of London)

Abstract:

Objective: Men may harass women due to sexual overperception bias, where men confuse friendliness from women with sexual interest. According to Error Management Theory (EMT), men have evolved a cognitive bias to overperceive women to avoid missed mating opportunities (Haselton & Buss, 2000). However, men could over-approach women without a specific, evolved cognitive bias underlying this behaviour (McKay & Efferson, 2010). Moreover, men have higher sex drives on average than women, so 'overperception' may just be a generic mind-reading error where men assume that others think as they do (Lee et al., 2020).

Methods: If men have an evolved cognitive bias to overperceive women, then they may make errors on an established cognitive task when the logically correct answer conflicts with perceptions of female sexual interest. We design a conjunction fallacy task asking participants to rate whether it is more likely that a stranger smiling at them (i) wants to chat or (ii) wants to chat and is sexually interested. Choosing the latter is a conjunction error, as two events together cannot be more likely than one event happening singularly. Men choosing the conjunction error for female targets likely have a cognitive bias to overperceive women, supporting EMT.

Results: Men were significantly less likely to make conjunction errors on tasks written about female targets who may be sexually interested than male targets (β = -1.53, SE = .28, z = -5.43, p< .001; log odds = .22).

Conclusions: This study found no evidence for men having a bias to assume that women were sexually interested on a conjunction fallacy task. This contradicts sexual overperception bias from EMT. However, male targets were rated as more likely to be sexually interested than female targets, suggesting that participants are affected by socially learned stereotypes which paint men as sexual and women as coy.

27. "Body Image and Breastfeeding Self-Efficacy: How is this Moderated by Partner Support?" (ID: 138)

Authors : Lea, G.; Allen, C.; Bedford, C.; Fielden, A.

Presenting author: Georgina Lea (Newcastle University)

Abstract:

The National Eating Disorders Collaboration (2022) defines body image as thoughts and feelings, both positive and negative, about one's own body which can impact upon self-esteem. Brown et al.'s (2015) findings highlight that higher body image concerns are associated with shorter breastfeeding intention and duration. Having strong relationships that provide support during times of need can help individuals to look at the bigger picture, leading to a more positive self-image (Towey, 2016). Research demonstrates that breastfeeding mothers who receive positive partner support have higher breastfeeding self-efficacy (Mannion et al., 2013; Rodgers et al., 2022), contrasting with Geller et al. (2024) who found no significant association between postpartum partner support and breastfeeding self-efficacy. Research to date has not explicitly explored whether partner support mitigates the effect higher body image concerns have on breastfeeding self-efficacy. Furthermore, there is a lack of research studying what behaviours are seen as the most supportive from partners. Therefore, I aim to complete a moderation model investigating how self-perception of body image impacts breastfeeding self-efficacy, and how partner support impacts this relationship. Additionally, I will explore what types of behaviours are seen as supportive, or unsupportive, to breastfeeding parents - an important starting point for future research and education. An online survey will be distributed across social media, using an opportunity sample to recruit breastfeeding parents. This survey will consist of: The Body Image-Acceptance and Action Questionnaire (BI-AAQ) (Sandoz, et al., 2013); Postpartum Partner Support Scale (PPSS) (Dennis et al., 2017); and the Breastfeeding Self-Efficacy Scale Short Form (BSES-SF) (Dennis, 2003). Qualitative questions will be asked alongside these questionnaires, allowing parents to provide examples of how their partner makes them feel supported or unsupported throughout their breastfeeding journey, and how their partner has responded to their changing bodies.

28. "Attitudes towards fertility desires: insights from a cross-sectional study" (ID: 142)

Authors : Jurczak, A., Nenko, I., Marcinkowska, M., U

Presenting author: Anna Jurczak (Jagiellonian University Medical College)

Abstract:

Objectives: Understanding fertility desires is one of the key components for interpreting total fertility rates, particularly in the context of the steep fertility decline observed globally. The study aimed to explore how attitudes towards fertility and childbearing are associated with fertility desires.

Methods: A cross-sectional online survey was conducted with 822 Polish, childfree, heterosexual women (18-35 y.o.) who were in a relationship and without diagnosed infertility. The relationship between attitudes towards fertility and both (1) the desire to have children and (2) the timing of childbearing were analyzed. All models were adjusted for: age, education level, material and employment status and place of residence.

Results: The analysis revealed that women who had a higher score in Fertility and the child as an important value (FCIV) subscale and Personal awareness and responsibility concerning having a child (PARC) subscale were more likely to (1) want to have a child (FCIV: OR = 1.20, 95% CI: =1.17 - 1.23; PARC: OR = 1.78, 95% CI: 1.65 - 1.93) and (2) to want to have a child sooner (within next 5 years) (FCIV: OR = 0.93, 95% CI: 0.90 - 0.96; PARC: OR = 0.76, 95% CI: 0.67 - 0.84).

Conversely, higher scores on the Child as a Barrier subscale were associated with a decreased likelihood of desiring a child (OR = 0.83, 95% CI: 0.80–0.85) and an increased likelihood of planning to have a child later than in the next five years (OR = 1.18, 95% CI: 1.12–1.25).

Conclusions: The study emphasized the importance of personal awareness and responsibility, as well as perceiving a child either as an important value or as a barrier, among women under 35 years. While sociodemographic factors play a role in childbearing decisions, understanding individual motives provides deeper insight into fertility-related behaviors and preferences.

29. "In love with the shape of you: how body shape and judgement type affect eye-movement behaviour" (ID: 144)

Authors : Morrison, E., R.; Lanigan, M.

Presenting author: Edward Morrison (University of Portsmouth)

Abstract:

Body shape plays a major role in judgements of attractiveness, health, and fertility. However, less is know about whether eye-movements differ when looking at bodies of different sizes. This study explored how sex, body-mass index, and judgement type affected eye-movements on experimentally altered bodies. Five female and five male front-facing computer models were generated that varied in their BMI from underweight, lower-end healthy weight, higher-end healthy weight, overweight, to obese. In a within-subjects design, thirty-two participants viewed these images and rated how attractive, healthy, and youthful they looked, while their gaze was tracked. Results showed that eye gaze was focused on the upper body and head, but areas of interests were different for models of different size. Furthermore, different areas were fixated when different judgements were made, and gaze behaviour differed when making different judgements on models of different size and sex. Body size and sex affected ratings, as expected from previous research. These findings suggest that eye-gaze behaviour on bodies is affected by body size and the type of judgement being made. People may look for subtly different cues when judging attractiveness, health, and youthfulness, as different areas of the body may best show body fat, muscularity, or age-related changes.

30. "The role of resource dynamics in the variability of longevity and fertility among female humans" (ID: 145)

Authors : Varas Enríquez, P.J.; Redhead, D.; Borgerhoff Mulder, M.; Colleran, H.; Lukas, D.

Presenting author: Pablo José Varas Enríquez (Max Planck Institute for Evolutionary Anthropology)

Abstract:

The female human life cycle is characterised by a long lifespan with a typically short reproductive career, situated between long juvenile and post-reproductive stages. Formal theoretical models have proposed that the surplus resources produced during adulthood, and inter-generational resource transfers towards juveniles, have driven the evolution of this distinctive female species-specific life cycle. However, it remains unclear as to how and whether the high variability of female life cycles observed within populations is similarly shaped by the trade-offs between survival and fertility that arise through variation in production and resource sharing (i.e. resource dynamics). Here, we develop a theoretical framework to describe how different resource dynamics might influence the variability of the female human life cycle. We build a computational model to assess how the structure of resource dynamics at different stages of the life cycle influences the variability of life history traits of a population. For the structure of resource dynamics, we include a sub-model within our simulation that dictates stochasticity in resource production, and induce a network structure that governs resource sharing by implementing a stage-structured stochastic blockmodel. The allocation of resources towards life history traits in our simulation is deterministic and is based on surpassing the amount of resources set as thresholds for survival and reproductive costs. We show that differences in resource production and sharing, and the allocation of such resources towards survival and reproduction, across the lifespan is important for understanding the mechanisms that drive the demographic diversity of female human life cycles that is observed among human populations.

31. "Relationship between testosterone values and women's sociosexuality throughout menstrual cycle" (ID: 150)

Authors : Marcinkowska, U.M.; Tin, D.; Brittain R.S.A.

Presenting author: Urszula Maria Marcinkowska (Yale University)

Abstract:

Introduction: Effects of testosterone (T) in men are well documented. Several studies investigated whether the positive effect of T on sexual activity and sexual desire (visible in men) are also present in women. This study aimed to test whether sexual openness, expressed both as attitude and desire to enter in an uncommitted sexual contact, is related to daily and average T levels in naturally menstruating women. Methods: Salivary T levels of 100 women (20–35 y.o) were measured based on saliva samples with ELISA method. Overall, 1580 daily samples were measured (average of 16 measurements per menstrual cycle). Women also completed a Sociosexual Openness Inventory (SOI-R) three times during the cycle, around mid-follicular, peri-ovulatory, and mid-luteal phase. SOI-R is based on 3 subscales, including two that show fluctuations within menstrual cycle: Sociosexual Desire, and Attitude. Ovulation was confirmed via urinary LH-based ovulation tests.

Results: Firstly, there was no difference in T levels (neither raw values: F=1.29, p=0.26, nor within-participant standardised: F=2.26, p=0.11) between three distinct moments in the menstrual cycle. Secondly, there were no significant relationships between daily T levels and SOI Desire and SOI Attitude on all three meetings (rs=< -0.06;0.12 >, ps=< 0.18;0.93 >). For the average levels, there was no significant relationship of T with SOI Attitude (r=0.08, p=0.40), and a positive significant relationship with SOI Desire, albeit the effect was weak (r=0.2, p=0.02). Discussion: Based on daily measurements we cannot confirm the relationship between T levels and sociosexuality of women, and we provide only partial support for the effects of average T levels. Evidence for T governing women's sexuality is weak to none, what fits to the evolutionary bases of sexuality, where hormones related directly with fertility are of greater importance (T in men, and estradiol and progesterone in women).

32. "Pair-Bond Survival Benefits in Historical Finland: Marriage, Widowhood, and Social Class" (ID: 154)

Authors : Pettay, J.: Danielsbacka, M.; Tanskanen, A.; Lahdenperä, M.; Lummaa, V.

Presenting author: Jenni Pettay (University of Turku)

Abstract:

Numerous studies suggest that marriage is associated with better health and longevity in humans. While this association is partly explained by selection into marriage, research also indicates that the pair-bond itself provides significant benefits, including economic advantages, health monitoring by a partner, and emotional support. Conversely, losing a partner is linked to higher mortality, a phenomenon known as the "widowhood effect." However, most studies on the effects of marital status on health and mortality focus on contemporary populations, leaving uncertainty about whether these patterns hold in contexts without modern healthcare or where extended family living is common. Our study examines the effects of marriage, widowhood, and remarriage on survival probabilities using data from historical Finland (1730–1910). Employing discrete-time logit models, we analyzed the annual survival probabilities of men (8,496) and women (8,331) aged 40 to 90, adjusting for time-varying marital status: never married, married, widowed, and remarried. We investigated how marital status was associated with survival across different ages and social classes, as social class likely influenced access to resources and the ability to cope with crises such as losing a spouse. Both men and women exhibited lower survival rates when widowed, but the effect was more pronounced in men. Remarriage mitigated the adverse effects of widowhood. While all social classes experienced reduced survival when widowed, wealthy and average never-married individuals often survived better than their married counterparts. Among the poorest, differences in survival between marital statuses were narrower. Our findings offer a valuable comparison point regarding the importance of pair-bonding for survival in humans, even in populations with extended families and without modern healthcare

33. "Do sleep patterns change across the menstrual cycle?" (ID: 169)

Authors : Wachowicz, A.; Galbarczyk, A.; Klimek, M.; Tubek-Krokosz, A.; Słojewska, K.; Krzych-Miłkowska, K.; Marcinkowska, U.M.; Özdemir, S.; Jasienska, G.

Presenting author: Aleksandra Wachowicz (Jagiellonian University Medical College)

Abstract:

OBJECTIVE The menstrual cycle consists of distinct phases characterized by hormonal fluctuations, primarily in estrogen and progesterone levels, and changes of behaviour. The hormonal changes can influence various physiological processes, including circadian rhythms and sleep regulation. Further, the variability of women's behaviour during the menstrual cycle can affect the quality of their sleep. This study investigates the potential changes in sleep pattern across the menstrual cycle. METHODS A prospective study was carried out involving 77 young, healthy Polish women with natural and regular menstrual cycles (mean age=27; SD=4,2). The phases of menstrual cycle were identified via menstrual calendars and home-based ovulation tests based on luteinizing hormone surge. The cycle was divided into 5 phases: bleeding period, follicular phase, peri-ovulatory phase, early luteal phase and premenstrual phase. Sleep data were collected through Fitbit Alta HR wrist accelerometers, which measured total sleep time, rapid eye movement (REM) sleep, and the durations of light and deep sleep in minutes. Statistical analysis was performed using the repeated measures ANOVA. RESULTS There were no significant differences in total sleep time among phases of the menstrual cycle. However, for REM phase length, a significant difference was observed between the premenstrual phase and peri-ovulatory phase ($p=0.02$) and premenstrual phase and luteal phase ($p=0.03$). Around ovulation, the REM phase lasted longer. Among all other measured sleep parameters, there was a non-significant trend that showed shorter sleep during menstruation and premenstrual phase in relation to longer sleep during the peri-ovulatory phase.

CONCLUSIONS Our results suggests that some sleep characteristics may change across the menstrual cycle in young women. Hormonal fluctuations during the luteal and premenstrual phases may disrupt, while during the peri-ovulatory phase may improve, sleep efficiency. Tailoring sleep strategies to hormonal changes could enhance women's well-being, though further research is needed to confirm these findings and individual variability.

34. "The Role of Facial Asymmetry in Female Sexuality, Self-Perceived Attractiveness, and Health Perception." (ID: 170)

Authors : Jaguszewska, N.,; Marcinkowska, U.M.

Presenting author: Natalia Jaguszewska (Jagiellonian University Medical College)

Abstract:

Research suggests that facial asymmetry may be linked to psychological and sexual factors in women, including sexual behavior, such as the number of lifetime and one-night stands partners. Additionally, it can influence perception of attractiveness. However, limited research examines the relationship between measured facial asymmetry and: sociosexuality, current sexual activity (past few days), self-perception of attractiveness and health. This study aimed to examine the correlation between these variables. Data from 75 women were analyzed to investigate whether this physical trait, as a biomarker of developmental stability, is correlated with female sexuality. We hypothesized that greater facial asymmetry would negatively correlate with long-term sexual activity, self-perceived attractiveness, health, and current sexual activity. Long-term sexual activity was measured with the Sociosexual Orientation Inventory (SOI−R), and current sexual activity with one item from the Female Sexual Function Index (FSFI). Additionally, respondents were asked to rate their own health and attractiveness on a 7-point scale. Results were analyzed using a series

of linear regressions. No significant differences in current sexuality (p = 0.28), attractiveness (p = 0.79), or health (p = 0.73) were found across facial asymmetry levels. A negative trend was observed in the relationship between asymmetry and the SOI Attitude subscale (p = 0.09) and the number of the sexual partners during last 12 months (measured in SOI Behaviour, p = 0.09). For the remaining questions from the SOI Behavior subscale, and the overall SOI Behavior and SOI Desire, no significant results were observed (0.58 < p < 0.99). Provided facial asymmetry is a biomarker of health, more asymmetric women might be more picky - less sexually open, than women of higher levels of health biomarkers.

35. "Strategic use of Indigenous language versus national language in Vanuatu" (ID: 180)

Authors : Becker, A,; Olko, J.; Colleran, H.

Presenting author: Anja Becker (Max Planck Institute for Evolutionary Anthropology)

Abstract:

Objective Multilingualism existed in most parts of the world at least until the mid-20th century. Today, linguistic diversity is disappearing globally. What does such change do to the people involved? Studying local aspirations, strategies and linguistic behavior in Vanuatu, the linguistically most dense place on earth, helps us to better understand the dynamics of multilingualism, and thus cultural change.

Methods From June - July 2024, pilot data on the dynamics of multilingualism was collected in four communities in South-West Malekula, Vanuatu, with a mixed-methodology approach, collecting 12 structured surveys, 19 unstructured interviews, 7 focus group conversations and taking part in participant observation.

Results Participants (3m, 9f, mean = 53 years) grow up in a multilingual environment, knowing on average 6 languages, including up to 14 Indigenous languages, the colonial languages English and French, and the national language and 'lingua franca' Bislama. Language use is influenced by multiple factors. People might use the Indigenous language for "secret talk". Indigenous language "is identity" and many people are afraid of Bislama taking over, but in some community gatherings with everyone being able to converse in the Indigenous language, they would still use Bislama. Nevertheless, the Indigenous language makes up a great deal of daily life, too.

Conclusions The pilot data shows that language dynamics are complex and need to be studied more thoroughly. The data raise further questions: In which situations would people prefer the Indigenous language over Bislama, e.g., will people switch to the Indigenous language of the counterpart, if they want to 'convince' them? What exactly constitutes "secret talk"? Is Bislama used more strategically because of certain demographic data? Our poster will show preliminary data on language dynamics and details of research methods for fieldwork planned for Summer 2025.

36. "Food Disgust during the menstrual cycle" (ID: 187)

Authors : Strzelczyk, L.; Galbarczyk, A.; Krzych-Miłkowska, K.; Klimek, M.; Tubek-Krokosz, A.; Słojewska, K.; Ścibor, M.; Jasieńska, G.

Presenting author: Łukasz Strzelczyk (Jagiellonian University Medical College)

Abstract:

Objective Studies on the relationship between menstrual cycle phases and disgust indicate significant changes in adaptive behaviours related to avoiding potentially health-threatening items. Most previous studies have focused on areas such as morality and pathogens. In our hypothesis, we assume that hormonal changes related to the menstrual cycle may modulate sensitivity to food disgust, reflecting adaptive mechanisms related to health and reproduction protection.

Methods The study involved 63 healthy women of reproductive age, assessed in two menstrual cycle phases confirmed by an ovulation test detecting a surge in luteinizing hormone. Disgust was measured using the Food Disgust Scale (FDS), Food Disgust Picture Scale (FDPS), and the Curtis set of photographs depicting sources of infection. The FDS included categories such as meat and contamination. Potential covariates, such as rural upbringing and childhood contact with animals, were considered.

Results The Curtis disgust scale showed higher disgust level in the luteal phase (M = 4.5) than in the follicular phase (M = 4.1; $p = 0.035$). However, we did not observe significant differences in food disgust between menstrual phases on the FDS ($p = 0.171$) or FDPS ($p = 0.879$). Childhood contact with farm animals was significantly associated with disgust toward animal meat on the FDS ($F_{(1, 61)} = 4.193$; $p = 0.045$).

Conclusions We found significant differences in the level of disgust towards potential sources of infection between the two phases of the menstrual cycle. However, we did not observe any differences in the level of food disgust. The observed differences in disgust towards sources of infection can be explained by changes in the activity of the immune system. Food disgust may have a different basis or be regulated by different mechanisms, which could explain the lack of differences in the menstrual cycle.

37. "What can baboons tell us about the evolution of language? A multi-modal approach to intentionality and flexibility in animal communication" (ID: 195)

Authors : Fernandez Fueyo, E.

Presenting author: Elisa Fernandez Fueyo (Royal Holloway, University of London)

Abstract:

Introduction: Intentionality and flexibility have been claimed to be hallmarks of human language but are also found in great ape gestural communication, leading to the hypothesis that some cognitive traits needed for human language evolved in the great ape lineage. However, there is now preliminary evidence that intentionality and flexibility may also be present in monkey gestures and in other modalities of communication. These traits may thus be present in a broader range of systems, but the identification and coding of communicative signals is time-consuming, preventing comprehensive wider investigation. Furthermore, studies outside great apes are mainly in captivity and use different definitions of intentionality and flexibility, impeding cross-species and cross-modality comparisons. As a result, understanding the origin of intentional and flexible communication is difficult with the available evidence. Methods: To test intentionality and flexibility beyond great ape gestural communication we collected 580 hours of video footage of 131 focal individuals of all age and sex classes from two groups of wild chacma baboons (Papio ursinus) at the Tsaobis Baboon Project (Namibia). This study takes a novel approach by implementing machine learning

tools to automatise extraction of multi-modal (gestural, facial and vocal) communication data from videos and by using quantitative methods to determine wild chacma baboon communicative repertoire and investigate its intentionality and flexibility. Results: The present study uses wild chacma baboons as a model to develop techniques and a framework to facilitate cross-species and cross-modality studies of intentional and flexible communication and provides preliminary evidence that some cognitive traits suggested to be prerequisites for language evolution probably emerged before the great ape lineage.

38. "The evolution of homosexual orientation in humans" (ID: 166)

Authors : Raymond, M.

Presenting author: Michel Raymond (CNRS)

Abstract:

How homosexual orientation evolved in humans is still an unsolved Darwinian paradox. Western societies, where most studies have been conducted, are not well suited to testing evolutionary hypotheses because they have low overall fertility (variations in fertility associated with different phenotypes are difficult to identify) and the widespread use of modern contraception alters genetic correlations with reproductive output. I will present, from a sample from a third-gender society, tests of several evolutionary hypotheses on the evolution of homosexual orientation.

39. "Life History Trade-Offs and Early Adversity: Insights from Criminal Population" (ID: 21)

Authors : Kwiek, M.; Piotrowski, P.

Presenting author: Monika Kwiek (Jagiellonian University)

Abstract:

Objectives: Life history (LH) strategies are shaped by the trade-offs species make to adapt to their ecological niches. At the individual level, LH strategies are thought to emerge through developmental plasticity in response to local environmental harshness and unpredictability. However, empirical evidence for these associations remains inconsistent. Psychological research into LH strategies often attributes these inconsistencies to individual differences in life circumstances, phenotypical characteristics, and resource availability, which can significantly influence the costs and benefits of various behaviours, making it challenging to study LH trade-offs. This study aimed to examine whether traditional LH patterns are observable within a population of male criminal offenders, a group more homogeneous than the general population due to their associations with fast LH strategies and disadvantaged social backgrounds. Method: The participants (N=312) completed surveys assessing biogeographic LH traits (e.g., number of children, age at sexual debut, life expectancy) as well as measures of environmental harshness and unpredictability of their developmental years. Results: Explanatory factor analysis identified three distinct LH dimensions: mating effort, parenting effort, and somatic effort. However, correlation analyses revealed no significant associations between these dimensions. Early adversity was associated with all three LH dimensions in the expected directions. Conclusion: These findings support the assumption that developmental plasticity plays a role in shaping LH strategies at the individual level. However, they also

challenge the existence of a one-dimensional structure of LH strategies in psychological research, suggesting a more complex and multidimensional framework may be required.

40. "Stab Your Neighbour, Save Your Tribe! : A computational investigation into the effect of population structure on the evolution of altruism through war." (ID: 198)

Authors : Chauhan, M.

Presenting author: Mehar Chauhan (University of Cambridge)

Abstract:

Human societies exhibit a paradoxical duality: we readily help members of our own groups while often distrusting or competing with outsiders. At the core of this dynamic lies altruism—the act of incurring personal costs to benefit others. Far from being mere idealism, altruism serves as a social glue that strengthens group cohesion and facilitates collective survival. However, this co-operative impulse frequently coincides with parochialism, a tendency to favor one's ingroup while displaying hostility toward outsiders. Though parochialism risks intergroup conflict, it paradoxically reinforces within-group cooperation by sharpening social identities. The landmark computational model by Choi and Bowles (2007) proposed that intergroup warfare historically shaped human altruism through evolutionary pressures. Their simulations suggested groups engaging in frequent conflicts would favor members who combined altruistic tendencies toward in-group members with hostility toward outsiders—a behavioral package termed parochial altruism. While groundbreaking, this model assumed groups interact randomly, an assumption that contrasts with anthropological evidence. Studies of contemporary hunter-gatherer societies and primate groups demonstrate that the likelihood of interaction increases with proximity—neighbouring groups clash far more frequently than distant ones. To reconcile theory with empirical observations, I modified Choi and Bowles' framework by introducing geographical proximity as a key determinant of conflict probability. The revised model incorporates distance-dependent warfare, where groups physically closer engage in conflicts more frequently, mirroring real-world territorial dynamics. Through agent-based simulations tracking 10,000+ generations, we analyzed how these spatial parameters influence the evolutionary stability of altruistic traits, shifting migration patterns under conflict pressures and feedback loops between cooperation and parochialism.

41. "Neurodiversity Across Cultures: Investigating Autistic and ADHD Traits in Industrialized and Subsistence Societies" (ID: 199)

Authors : Frauenfelder, L.; Scaff, C.; Rivera, L.M.; Jaeggi, A.

Presenting author: Lea Frauenfelder (University of Zurich)

Abstract:

Autistic and ADHD traits represent natural variations in human cognition and behavior, with pathological forms considered extremes on the neurodiversity spectrum. These traits are heritable and persist despite being perceived as disadvantageous in modern societies. The rising number of diagnoses raises questions about whether neurodiverse traits are increasing, whether diagnostic awareness has improved, or whether these traits have become more visible due to industrialization-driven mismatches. This study examines the factorial structure and prevalence

of autistic and ADHD traits in both an industrialized society and a subsistence-based population to assess whether and in what form industrialization influences their expression. A culturally adapted questionnaire measuring neurodiverse traits was developed for the Tsimane, a subsistence horticulturalist society in Bolivia. This questionnaire will be further refined for an industrialized sample to ensure cross-cultural comparability. Data will be collected via an online survey platform for the industrialized sample, while Tsimane data was collected in previous fieldwork. In the industrialized society, the relationship between neurodiverse traits, three wealth types (embodied, material, and relational wealth), and fertility (as a proxy for evolutionary fitness) will be assessed. In the Tsimane, the direct association between neurodiverse traits and fertility will be assessed. We expect differences in the expression and structure of autistic and ADHD traits between the two populations, reflecting industrialization-driven shifts. Additionally, neurodiverse traits may be associated with different life outcomes in each society, with trade-offs occurring in industrialized settings due to the influence of wealth and social structures. This comparison will provide insight into whether neurodiverse traits offer fitness advantages in subsistence societies while posing challenges in industrialized environments.

42. "Different cousin marriage rules produce differences in lineage relatedness and wealth fluctuation, but not necessarily wealth retention." (ID: 200)

Authors : Campbell, O.L.K.; Pérez Velilla, A.

Presenting author: Olympia Campbell (Institute for Advanced Study in Toulouse)

Abstract:

Human kinship systems vary widely, with some societies characterised by high kinship intensity—a term used to describe groups structured by high relatedness and tight overlapping networks of kin. Cousin marriage is a key driver of such intensity. It is commonly assumed that patrilateral parallel cousin marriage—in which a male marries his father's brother's daughter (FBD)—produces groups with higher relatedness compared to cross-cousin marriages (offspring of opposite-sex siblings) and better consolidates wealth within the patriline in cases of female inheritance. Using a simple simulation of cousin marriage rules that tracks both relatedness and inheritance, our results confirm that FBD marriage indeed generates more highly related patrilines than other cousin marriage types. However, contrary to conventional assumptions, FBD marriage does not seem to outperform other cousin marriage forms in wealth retention; wealth lost via cross-cousin marriage in one generation is often recovered in the next. Nonetheless, FBD marriage does reduce intergenerational wealth transitions, which may be important if there are transaction costs or if people are driven by shorter-term wealth fluctuation concerns rather than actual long-term accumulation and retention.

43. "A Framework for Evidencing Evolutionary Explanations in Psychiatry and Psychology" (ID: 202)

Authors : Hunt, A.D.; Jaeggi, A.V.

Presenting author: Adam Hunt (University of Cambridge)

Abstract:

Evolutionary psychiatry aims to apply evolutionary theory to explain mental disorders, but often struggles with the "just-so storytelling" critique, and needs to recognise causal heterogeneity within disorder categories. We present DCIDE—a standardized, rigorous framework for systematically integrating genetic, neuroscientific, and epidemiological evidence—that can be applied across the human evolutionary psychological sciences to triangulate upon the most sufficient hypotheses. DCIDE proceeds through Description (defining a trait, e.g., autism), Categorisation (excluding verifiably non-adaptive cases, such as those arising from de novo mutations or environmental trauma), Integration (refining the adaptive target by recognising its visibility to selection considering onset, prevalence, sex differences, and correlated traits), Depiction (outlining competing hypotheses), and Evaluation (assessing each hypothesis against the full breadth of evidence). Applied to autism, DCIDE reveals that up to 20% of cases likely reflect non-adaptive origins, leaving the majority open to adaptive hypotheses. In this context, a social niche specialization hypothesis—which emphasizes "systemising" cognition—fits the evidence (e.g., subclinical familial traits and female camouflage) better than an alternative high-intelligence by-product account. By systematically guiding the identification, synthesis, and testing of evolutionary hypotheses, DCIDE strengthens evolutionary analyses in psychiatry and beyond, offering an antidote to speculative narrative and paving the way for more robust, evidence-based evolutionary psychology.

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