

FULL PROGRAMME

DAY ONE		DAY TWO	
10am-10.15	Welcome by President	10am-10.15	Welcome by President
10.15-11.15	Opening Plenary by Dr Fabian Leenderntz	10.15-11.15	Opening Plenary by Brazilian Primate Society
Break 11.15-11.45		Break 11.15-11.45	
11.45-12.45	Workshop: Mental health and wellbeing in primatology: breaking the taboos	11.45-1300	Osman Hill Lecture by Professor Kate Hill
LUNCH 12.45-13.45		LUNCH 13.00-14.00	
13.45-15.00	Annual General Meeting	14.00-15.20	Presentation Session 2
BREAK 15.00-15.30		BREAK 15.20-15.50	
15.30-16.50	Presentation Session 1	15.50-16.15	Poster Presentations
16.50-17.00	Closing Remarks By President	16.15-17.35	Presentation Session 3
18.00-20.00	Quiz!	17.35-1745	Closing remarks by President

DAY ONE**TUESDAY 7th DECEMBER 2021****10.00-10.15 WELCOME ADDRESS BY PRESIDENT****10.15-11.15 - PLENARY SPEAKER****Dr Fabian Leenderntz, Robert Koch Insitut, Berlin***Abstract to Follow***11.15-11.45 – COFFEE BREAK****11.45-12.45 - WORKSHOP: Mental health and wellbeing in primatology: breaking the taboos***Facilitators:*

Steve Unwin (*Orangutan Veterinary Advisory Group, University of Birmingham, Convenor of the PSGB Captive Care subcommittee*)

Susan Cheyne (*Borneo Nature Foundation International, Oxford Brookes University, IUCN SSC PSG Section on Small Apes*)

Jo Setchell (*Department of Anthropology, Durham University, President, PSGB*)

The pandemic is taking a toll on primatologists, in all our roles, causing chronic stress and exhaustion. This leads to a risk of burnout, with a disproportionate effect on people from minoritized groups. The state of mental health in university students and staff was already worrying and has been greatly exacerbated by the isolation of remote working, research delays, heightened insecurity, lay-offs and hiring freezes. The inability to travel, both to habitat countries and within them, has impacted staff recruitment and options for career progression. Field projects have been challenged with a lack of or complete cessation of funding and may have had to significantly modify their work and therefore reporting the account for Covid-19 restrictions. The 'usual' challenges of (field) primatology, including (but not limited to) managing people, and caring for animals (captive and wild) have been hugely intensified by the pandemic, putting people at risk. Fieldwork can place us in conditions of extreme stress, in harsh physical environments and close to people we might not otherwise choose to spend time with, and we may not be able to use our usual coping strategies, or they may be inadequate. Indeed, we may not always be aware of what support structures are available, especially if we are not affiliated with a university or other institute. We aim to raise awareness of this and get people talking about the specific challenges to mental health and wellbeing that may arise in primatology, for the benefit of primatologists and primatology.

12.45-13.45 - LUNCH**13.45-15.00 – ANNUAL GENERAL MEETING – OPEN TO ALL MEMBERS (DIFFERENT ZOOM LINK)**

15.00-15.30 – COFFEE BREAK**15.30-16.50 – PRESENTATION SESSION 1****Behavioural correlates of urinary oxidative stress in male rhesus macaques during the mating season**

Patrick Allsop¹, Zoe E. Melvin¹, Kevin A. Rosenfield², Melissa Emery Thompson³, Dario Maestripieri⁴ & Alexander V. Georgiev¹

¹School of Natural Sciences, Bangor University; ²Department of Anthropology, Pennsylvania State University, USA; ³Department of Anthropology, University of New Mexico, USA; ⁴Department of Comparative Human Development, The University of Chicago

Oxidative stress (OS) is a by-product of cellular metabolism thought to be involved in mediating life-history trade-offs via its putative link to the cost of reproduction. Empirical evidence to date provides mixed support and data from larger bodied social mammals are particularly scarce. Additionally, most studies have used invasive or terminal sampling of OS markers, precluding the examination of intra-individual variation through repeated sampling over time. We collected urine samples (N=306) and behavioural data (576h) from 16 male rhesus macaques (*Macaca mulatta*) on Cayo Santiago in March-July 2015 (mating season). We measured urinary concentrations of 8-OHdG (a marker of DNA oxidative damage) and Total Antioxidant Capacity (a maker of antioxidant protection) to test the cost-of-reproduction hypothesis with the prediction that behavioural measures of competitive and mating effort would be positively associated with oxidative damage and negatively associated with antioxidant protection. We also examined the possible buffering effect of sociality by predicting that grooming time and proximity with other monkeys would be positively associated with total antioxidant capacity. Mixed models revealed that, after accounting for the confounding effects of the time elapsed between sample collection and freezing and male dominance rank, the rate of agonistic interactions won in the preceding months (though not in the current month) were positively associated with oxidative damage. Copulation rates were not related to oxidative damage. Finally, none of the variables considered explained variation in antioxidant protection between or among males. Our results thus suggest that sustained high rates of aggression, as seen in some seasonally reproducing primates, can elevate oxidative stress and that agonistic competition rather than direct copulation effort is the primary source of this particular cost of reproduction in males.

The trade in African primates: Insights from sanctuaries across Africa

Jennifer Botting, Ruby Vise & Jean Fleming

Pan African Sanctuary Alliance

The Pan African Sanctuary Alliance is a network of 23 member sanctuaries across Africa that specialize in providing care to rescued primates and work to protect wild primate populations. While often overlooked,

primate sanctuaries in Africa play a frontline role in tackling the wildlife trade through facilitating confiscations and engage in a range of programs to protect wild primates and their disappearing habitats. Many of these centers have been operating for over 20 years and thus provide an excellent resource to investigate trends over time and across several African countries. Each year, PASA members complete a census, answering standardised questions set by PASA to collect detailed data on animal intake and species, as well as to identify challenges faced by the centers. Over the past five years, PASA sanctuaries have rescued 201 apes, with the vast majority coming from the illegal wildlife trade, and a five-year high of 49 apes rescued between August 2020 and July 2021. In this presentation we will use this census data to examine a number of trends over time, including the numbers of animals confiscated from the wildlife trade, which species are being targeted and where, what effect the pandemic has had on primate trafficking and what resources are needed to better protect African primates. By gathering and sharing these crucial data, PASA members hope to better illuminate the state of the wildlife trade in Africa and highlight areas of key concern for future actions.

Why big brains? A comparison of models for primate brain size evolution

Helen Chambers¹, Sandra Heldstab², Sean O'Hara¹

University of Salford¹, University of Zurich²

Researchers have long been intrigued by those variables thought responsible for the evolution of large brains. Primates have received substantial attention in the literature, principally due to variation in brain and body size, their complex societies and use of extractive foraging techniques. Such attributes make them excellent models for testing brain evolution theories. The social brain hypothesis has garnered substantial support, mostly from studies of primate sociality, where brain size has been found to correlate with many social proxies. Despite this, more recent research has failed to find support for sociality. Instead, it appears there is now emerging evidence suggesting ecology better predicts brain size across several mammalian orders. Thus, in efforts to regain clarity within the field, here, different models of brain evolution were tested and the relative importance of social, ecological and life-history variables were re-assessed in primate lineages. Concurring with recent research, evidence is found for consistent associations between brain size and ecological factors; however, evidence was also found advocating sociality as a selection pressure driving brain size. Life-history associations reveal large-brained primates are counterbalancing the costs associated with expensive brain tissue through extended developmental periods and extended maximum lifespan. Future studies should give careful consideration of the methods chosen for measuring brain size, investigate both whole brain and specific brain regions where possible, and look to integrate multiple variables, thus fully capturing all of the potential factors influencing brain size.

Communication development in semi-wild chimpanzees: a multimodal approach

Emma Doherty

Durham University

Human language is characterised by the integration of multiple signal modalities such as facial expressions and gestures to spoken word, which acts to add important clarity to our communicative interactions. To better understand its evolutionary origins substantial research has been focused on the signalling behaviours of some of our closest living relatives. However, to date, the study of communication in non-human apes has largely concentrated on signal modalities in isolation rather than considering if or how these may be freely combined into the type of multimodal messaging that so typifies human language. Additionally, while developmental research is also critical to truly understand the ultimate mechanisms driving multimodal signalling, this research is lacking in non-human apes. Here we examined the gestural, vocal and facial signalling of semi-wild chimpanzees (*Pan troglodytes*) living at Chimfunshi wildlife orphanage, Zambia. More specifically we aimed assess how age influences their proportionate production as part of single unimodal or freely-combined multimodal signals. We used video recording obtained from 27 young chimpanzees aged between 1 and 12 years during 46h of observation throughout two field periods. Overall, we show that while unimodal signals were produced most often across all individuals, with increasing age the proportionate production of multimodal signals increased significantly in a pattern more resembling that seen in human infants than previously thought. These findings highlight the importance of considering adopting a multimodal approach in the study of primate communication and particularly in developmental research.

16.50-17.00 - CLOSING REMARKS**18.00-20.00 QUIZ. Prizes kindly donated by Cambridge University Press**

Don't forget to check out our amazing raffle: <https://raffall.com/271442/enter-raffle-to-win-psgb-giant-winter-raffle-hosted-by-psgb>

DAY TWO**8th DECEMBER 2021****10.00-10.15 – WELCOME BY PRESIDENT****10.15-11.15 - PLENARY SPEAKER****#PRIMATESARENOPETS: Let's promote awareness on the hazards of primates as household pets worldwide.**

Romari A. Martinez; Vitória Nunes; Tiago Falótico; Vitor Yunes; Dayse Campista; Renata Ferreira.

Communication Task Force of the Brazilian Primatological Society.

Although primate breeding and commerce are thoroughly regulated -even forbidden- around the world, there is still a very active and profitable global pet market, for both legal and illegally obtained primates. Pet primates promote miseducation, perpetuate myths and lore and fuel pet trade. Primate images spread through social media might bring the perception that primates are good household pets, ignoring their biology, behaviour and physiology. The general public needs to know important facts about primates as household pets, to make informed decisions on whether or not they suit their need for animal company and love. The goal of this campaign is to bring specialists' opinions on why primates are not good household pets to the general public through social media platforms. Also, we wish to harbour an idea that would unite primatologists worldwide, stating clearly that breeding solely for commercial purposes or promoting illegal commerce does not benefit primates nor humans. The main format and branding would be similar around the globe, but the specific reasons why primates are not good pets (legal, humanitarian, conservationist, among others) would be channeled through regional analysis, to get the right message to each specific public, according to their culture, laws and traditions. All will lead to an annual primate awareness observance day, that would bring the issue to the trending topics worldwide. The Brazilian Primatological Society is promoting this general initiative through its partner societies around the world, and hopefully it will become an IPS endorsed campaign after the January 2022 general assembly in Quito.

11.15-11.45 – COFFEE BREAK**11.45-13.00 - OSMAN HILL LECTURE****Primate crop foraging, crop damage and conflict narratives**

Catherine M Hill

Department of Social Science, Oxford Brookes University

Studies of primate crop foraging have developed significantly over the last two decades. While macaques, baboons, vervet and tanzania monkeys dominate the crop foraging and crop damage literature it is evident

that many primate species include crop foods in their diets when the opportunity arises. Crop feeding as a response to reduced wild food availability is not well substantiated within the literature, though in a few examples, crop foods appear to be fallback foods during periods of low wild food availability. Other studies demonstrate that animals are incorporating anthropogenic foods within their diets as part of an optimal foraging strategy, and balancing the risks associated with crop foraging against likely benefits of engaging in these activities. Detailed analysis of when, where and why primates damage people's crops provide an opportunity to examine how primates can accommodate to changing dietary opportunities. This information can help identify likely crop foraging 'hotspots' and inform the development of effective, humane, non-lethal crop protection tools. However, understanding why, where or when primates damage crops tells us very little about 'human-primate conflicts' or how to manage or transform these conflicts. At first glance crop foraging (sometimes inaccurately referred to as crop raiding) appears to be about animals acquiring food and people losing crops from animals' foraging activities. However, people's reactions to losses due to wildlife actions are more often about longstanding, unresolved disputes with neighbours, government officials, conservationists, or researchers, rather than about the direct impacts of the animals' presence or actions on human livelihoods and well-being. Unless existing social conflicts are addressed, uptake of technical approaches and tools are likely to be minimal, and conflict narratives may persist irrespective of whether animals continue to impact farmers or not.

13.00-14.00 – LUNCH

Don't forget to check out our amazing raffle: <https://raffall.com/271442/enter-raffle-to-win-psgb-giant-winter-raffle-hosted-by-psgb>

14.00-15.20 - PRESENTATION SESSION 2

Locomotor behaviour of chimpanzees living in the mosaic-savannah environment of Issa Valley, Tanzania

Rhianna Drummond-Clarke¹, Tanya Humle¹, Lauren Sarringhaus², Fiona A. Stewart³, Tracy L. Kivell^{4,4} and Alex K. Piel³

¹School of Anthropology and Conservation, University of Kent, Canterbury UK. ²Department of Evolutionary Anthropology, Duke University, Durham, USA. ³Department of Anthropology, University College London, London, UK. ⁴Department of Human Evolution, Max Planck Institute for Evolutionary Anthropology, Leipzig, Germany.

Habitat type is an important factor influencing the frequency of different locomotor behaviours among extant primates. As such, palaeohabitat reconstructions have played a prominent role in hypotheses on the emergence and evolution of hominin bipedalism. Although chimpanzees (*Pan troglodytes*) live in a variety of habitats ranging from forest to savannah, locomotor studies to date have focused only on forest-dwelling

chimpanzees, limiting our knowledge of the full range of chimpanzee locomotor behaviour and accuracy of referential models for hominin evolution. Chimpanzees (*P. t. schweinfurthii*) of the Issa Valley, western Tanzania, live in a savannah-mosaic habitat consisting of miombo woodland and riparian forest; similar to reconstructed palaeoenvironments of early hominins. Here, we characterise for the first time the locomotor behaviour and substrate-use of chimpanzees living in an open, dry landscape. We quantify the frequency of terrestrial and arboreal locomotor behaviours, in comparison to previously-studied forest-dwelling chimpanzees, and between the riparian forest and miombo woodland, to investigate the influence of vegetation type on locomotor behaviour. We test the hypothesis that chimpanzees will reduce time spent moving in the trees in more open vegetation. Data was collected on 13 adults over 15 consecutive months, noting locomotor mode, activity, vegetation type, and substrate-use of focal individuals every two minutes (N = 2848 locomotor scans). Results show that Issa chimpanzees spent more time moving terrestrially in the woodland compared to the forest, but overall, they are not less arboreal than forest-dwelling chimpanzees. Considering all postural behaviour, Issa chimpanzees increase time spent travelling and reduce resting time to maintain time for feeding (predominantly arboreal) in an open habitat. Our results further demonstrate that Issa chimpanzees are just as arboreal as forest-dwelling chimpanzees, which has implications for the functional significance of arboreal adaptations in early hominins and conservation strategies of savannah-mosaic habitats.

Are there costs of social connectedness to health for wild chacma baboons?

Kawam, Ben ^{1,2}; Huchard, Elise ³; Cowlshaw, Guy ⁴; Carter, Alecia ²

¹Erasmus Mundus Master Programme in Evolutionary Biology (MEME), Department of Ecology and Genetics (Animal Ecology), Uppsala University, Uppsala, Sweden. ² Department of Anthropology, University College London, London, UK. ³ ISEM, Université de Montpellier, CNRS, IRD, EPHE, Montpellier, France. ⁴ The Institute of Zoology, Zoological Society of London, London, UK.

For humans and other animals, socially well-connected individuals are healthier and live longer. However, the mechanisms linking sociality to fitness proxies are poorly understood. One context in which differences in sociality can be associated with variation in health is through agonistic interactions. Notably, individuals vary in terms of how frequently they receive injuries, and how long they take to recover from them (e.g., due to differences in immune function). In the present project, we explored the relationship between sociality and injury, using long-term data collected between 2014 and 2021 in a population of wild chacma baboons (*Papio ursinus*) living in a semi-arid region of Namibia. We observed over 600 injuries across 200 individuals and built social networks with 29,000 grooming bouts. Using indirect and direct measures of sociality, we addressed the following research question: how does social connectedness predict incidence

of injury and healing rate? We predicted that more socially connected individuals would receive fewer injuries, and heal faster. Our analyses suggest that males with higher betweenness scores (i.e., greater indirect connectedness) suffered fewer injuries, but that, in contrast to our predictions, both males and females who received more grooming (i.e. greater direct connectedness) were injured more frequently. We found no clear association between social connectedness and healing rates, however higher ranked females healed more quickly. These results suggest that greater sociality can have costs in addition to benefits in terms of health. More generally, our study highlights that the pathways between social connectedness and health can be better understood by accounting for the multidimensional aspect of sociality.

Of hot springs and lice: Linking hot spring bathing behaviour and ectoparasitism in Japanese macaques

Abdullah Langgeng & Andrew JJ MacIntosh

Primate Research Institute, Graduate School of Science, Kyoto University

Lice present significant health risks to hosts. Generally, they respond to a host's physiology and behaviour, as well as prevailing environmental conditions. Lice appear to be sensitive to temperature change, and heat exposures is thought to reduce louse mobility. Moreover, animals often perform behaviours such as grooming that can be directed at management of louse or louse eggs. Two species of lice are reported to infect Japanese macaques (*Macaca fuscata*), the latter of which perform a conspicuous louse-directed behaviour, whereby they use the first digit and thumb to 'nit-pick' and ingest louse eggs from the base of the hair. One population of Japanese macaques, at the Jigokudani Snow Monkey Park, Nagano, Japan, displays hot spring bathing behaviour (HSBB) during the cold season. To our knowledge, there are no studies about the impacts that HSBB may have on louse infestations. Thus, we tested for a relationship between HSBB and louse infestation, using nit-picking rates as a proxy. We predicted that HSBB would affect the distribution of lice on the body, since the heat of the water may provide an unfavourable microhabitat for them. The study was conducted over two winter seasons between 2019 and 2021. Sixteen adult female macaques (9 bathers and 7 non-bathers) varying by age, reproductive cycle, and rank were selected as subjects. We conducted continuous time focal sampling to determine their nit-picking rates and grooming site preferences. Generalized linear mixed models show that nit-picking rates in submerged versus non-submerged areas differed between bathers and non-bathers, in ways that support the hypothesis that HSBB may impact louse egg distribution and/or detection by groomers. Further tests on louse and louse egg resilience to hot water are now necessary to explore the mechanism behind this phenomenon.

The ontogeny of behavioural responses to pant hoots in chimpanzees

Adrian Soldati^{a,b,c}, Pawel Fedurek^{c,d}, Guillaume Dezecache^{c,e}, Geresomu Muhumuza^c, Klaus Zuberbühler^{a,b,c}, Josep Call^b

^aSchool of Psychology and Neuroscience, University of St Andrews, St Andrews, UK. ^bUniversity of Neuchâtel, Department of Comparative Cognition, Neuchâtel, Switzerland. ^cBudongo Conservation Field Station, Masindi, Uganda. ^dUniversity of Stirling, Faculty of Natural Sciences, University of Stirling, Stirling, UK. ^eUniversité Clermont Auvergne, CNRS, LAPSCO, Clermont-Ferrand, France.

Vocal development in non-human primates has received relatively little empirical attention, especially that of great apes. Our aim was to study the acquisition of communicative competences in a natural setting and to investigate the role of socially mediated learning of vocal behaviours. Because the ontogeny of pant hoots, a complex and long-distance vocalisation used by chimpanzees, is currently poorly understood, we examined the behavioural responses associated with received pant hoots in 13 immature male and female chimpanzees (*Pan troglodytes schweinfurthii*) of the Sonso community of Budongo Forest, Uganda. Specifically, we were interested in how biological and social factors affect the development of responses. We hypothesised that responsiveness to pant hoots is under the effect of ontogeny, varies according to the sex of individuals, and is affected by social factors. Vocal responses occurred rarely in young individuals, however, more subtle responses such as head movement towards the caller were more frequent. We observed that individuals increasingly directed their attention towards received calls as they mature, reaching adult levels when approaching independency from their mother. Immature males were more likely to direct their attention towards calls than immature females and the offspring of more gregarious mothers showed greater responsiveness to received calls. Despite vocal production being exhibited rarely, early infants showed the capacity to produce pant hoots in response. Overall, immature chimpanzees were more likely to respond vocally after visually attending calls and always chorused with their mother when responding to conspecifics' calls. Sex differences in the development of pant hoot responses reflect the different selection pressure exerted on adults and their vocal behaviours. Furthermore, gregarious mothers exposed their offspring to higher levels of vocal and social behaviours of others, thus enhancing learning opportunities. Our study provides evidence for a flexible and socially mediated ontogeny of responses in our closest living relatives.

15.20-15.50 – COFFEE BREAK

15.50-16.15 – POSTER PRESENTATIONS

Chell et al.	Unusual and unexpected behaviours of Coquerel's sifaka (<i>Propithecus coquereli</i>)
Daniels et al.	Primate keepers' responses to best practice guidelines on online primate imagery
Fragkiskos et al.	Does female intrasexual competition drive cycle and swelling duration in chacma baboons
Segaran et al.	Quantifying temporal patterns of spatial use by female orangutans (<i>Pongo pygmaeus morio</i>) in forest fragments
Soeters et al.	Water availability impacts habitat use in chacma baboons (<i>Papio ursinus</i>): implications for early hominin behaviour

Don't forget to check out our amazing raffle: <https://raffall.com/271442/enter-raffle-to-win-psgb-giant-winter-raffle-hosted-by-psgb>

16.15-17.35 – PRESENTATION SESSION 3

Primate selfies and anthrozoonotic diseases: a lack of rule compliance and poor risk perception threatens orangutans.

Andrea Molyneaux^{a,b}, Emma Hankinson^c, Mbra Kaban^a, Magdalena S Svensson^c, Susan M Cheyne^{c,d}, Vincent Nijman^{b,c}.

^a Green Hill, Bukit Lawang, 20774, North Sumatra, Indonesia. ^b Oxford Wildlife Trade Research Group, Oxford Brookes University, Oxford, UK. ^c School of Social Sciences, Oxford Brookes University, OX3 0BP, Oxford, UK.

^d Borneo Nature Foundation, Palangka Raya, 73112, Indonesia

Anthrozoonotic disease transmission between humans and nonhuman primates, particularly great apes, highlights a serious potential threat to the survival of these species. This is particularly the case at tourism sites where risk of disease transmission is increased. We focus on the interaction between tourists and the Critically Endangered Sumatran orangutan (*Pongo abelii*) at Bukit Lawang in the Gunung Leuser National Park, Indonesia, before and after the park was closed due to the threat of Covid-19 in April 2020. Social media platforms offer a novel and convenient method for investigating compliance and we review posts on Instagram to assess risk perceptions and the risk of disease transmission from visitors to the orangutan

population in Bukit Lawang, the main site within Gunung Leuser National Park where tourists come to observe orangutans. We hypothesize that 1) noncompliance with the 10m distance rule will occur, 2) national park closure will be effective in reducing the risk of disease transmission, 3) orangutans will demonstrate habituation and exhibit unnatural positional behaviours and 4) visitors perception of risk to both themselves and the orangutans will be low. Of the 2,229 photographs assessed between November 2019 and July 2020, 279 depicted one or more orangutans. Forty-two of these contained both a human and an orangutan, which all showed inappropriate behaviours (direct contact, feeding orangutans, close proximity <5m) providing direct evidence of noncompliance with the 10m distance rule. Most of these photographs additionally showed orangutans performing abnormal positional behaviours. As expected, our results indicate that closure of the national park was effective in reducing the risk of disease transmission. Tourists do not seem to be aware of the rules or perceive that they pose risks to the orangutans. Increased awareness, education, promotion, and enforcement of rules by all stakeholders, tourism bodies and government officials need to be actioned

Use of NetFACS to describe the repertoire of Barbary macaques' facial behaviour

Claire Pérez¹, Jérôme Micheletta¹, Alexander Mielke², Bridget M. Waller³, Julie Duboscq⁴, Alan Rincon¹

¹Department of Psychology, University of Portsmouth, Portsmouth. ²Primate Models for Behavioural Evolution Lab, University of Oxford. ³Department of Psychology, Nottingham Trent University. ⁴UMR7206 Eco-Anthropology, CNRS-MNHN, Université de Paris

Facial signals are important social communication tools in many species, including primates. Alongside signals such as vocalisations, gestures, and body postures, they allow individuals to navigate their social world by helping anticipate future behaviour in interactional settings. Thorough analyses of the complexity of coordinated movements of facial muscles, reflected by the quantity and quality of their relationships, are necessary to apprehend the face as a communication system, and ultimately investigate the evolution of communication. Macaques communicate extensively through facial expressions, nevertheless, their facial movements are often classified in broad categories and not systematically described in a standardized way. This subjective clustering prevents researchers from exploring the subtleties of the morphology of facial displays, which are often graded and merge into one another. The Macaque Facial Action Coding System (MaqFACS) is an anatomically based objective tool used to describe facial behaviour. However, FACS datasets have features that make traditional statistical models unsuitable for reliable analyses, especially defining and quantifying complexity. Standardized methods of network science are one way to overcome these issues. NetFACS is a statistical package combining FACS and network analysis, where the face is conceptualised as a network of interconnected Action Units (AU: the smallest unit of facial communication).

AUs are represented as nodes, their combinations as edges and these connections can be weighted to indicate the strength and directionality of the link, all visualized in graphs. We FACScoded 600 videos of naturally occurring interactions in 43 semi-free ranging Barbary macaques (*Macaca sylvanus*) in Trentham monkey forest, United-Kingdom. We used MaqFACS to report variability, diversity and subtlety to provide a fine-grained repertoire of Barbary macaques' facial behaviour. We used NetFACS to define and quantify the communicative complexity of the signals. This approach allows us to move away from studying facial displays as stereotyped expressions and report their morphological variability and complexity.

Female kinda baboon sexual signals are less precise indicators of fertility

Megan Petersdorf^{1,2}, Anna H. Weyher³, Michael Heistermann⁴, Alison Govaerts⁵, Jessica L. Gunson¹, James P. Higham¹

¹Department of Anthropology, New York University. ²Evolutionary Anthropology Research Group, Department of Anthropology, Durham University. ³Department of Anthropology, University of Massachusetts Amherst. ⁴Endocrinology Laboratory, German Primate Center, Leibniz Institute for Primate Research. ⁵Department for the Ecology of Animal Societies, Max Planck Institute of Animal Behavior, Konstanz Germany

There is variation in the extent to which primate female sexual signals reliably indicate fertility, which may be related to the predominant mechanisms of sexual selection. More precise signals are often found in species with stronger direct male-male competition and indirect female mate choice, and less precise signals in species with stronger indirect male-male competition and direct female mate choice. We tested this hypothesis in a wild population of Kinda baboons in Zambia, combining data on female signals with hormonally-determined fertile-phases. We predicted that Kinda baboons will exhibit less precise fertility signals as they experience weaker direct and stronger indirect male-male competition. The frequency of copulation calls and proceptive behaviour did not vary with intra-cycle fertility. Sexual swellings were largest in the fertile phase, however, the differences in the mean sexual swelling size across cycle phases were small, raising the question of whether males can perceive this variation. Additionally, there was high variability in the timing of ovulation relative to the day of sexual swelling detumescence across cycles. Our results suggest that female Kinda baboon signals are less precise indicators of fertility across signal modalities. These signals may have evolved as a reproductive strategy to reduce male monopolizability, allowing for more female control over reproduction by direct mate choice.

Hunting behavior in central chimpanzees (*Pan troglodytes troglodytes*) in the wild

Harmonie Klein^{1*}, Gaele Bocksberger¹, Pauline Baas¹, Sarah Bunel¹, Erwan Théleste¹, Simone Pika² and Tobias Deschner¹

¹ Max Planck Institute for Evolutionary Anthropology, Department of Primatology Deutscher Platz 6, 04103 Leipzig Germany · ² University of Osnabrück, Institute of Cognitive Science, Comparative BioCognition, Artilleriestrasse 34, 49076 Osnabrück Germany

Across their distribution range in tropical Africa, chimpanzees (*Pan troglodytes*) frequently hunt and consume mammals. So far, however, hunting behavior in central chimpanzees (*Pan troglodytes troglodytes*) has not yet been investigated. Here, we carried out the first investigation of mammal predation by individuals of the Rekambo chimpanzee community in the Loango National Park, Gabon and compare our findings to patterns reported from other sites. We observed hunting behavior across a period of 23 months (May 2017 - March 2019) and recorded a total of 61 predation events. We found that hunting of mammals is customary in this community, and occurred all year-round. Hunting rates peaked during the dry season, coinciding with a period of high fruit availability at Loango. The chimpanzees hunted nine different species, comprised of monkeys, ungulates and rodents. Several species, such as *Cercocebus torquatus*, *Cercopithecus nictitans* and *Cephalophus silvicultor* had never been reported as chimpanzee prey. Hunting occurred in parties averaging eight individuals and success increased with participant number and participation from dominant males. The results suggest that, similarly to observations of other East African populations (*Pan troglodytes schweinfurthii*: e.g., Mahale, Tanzania; Ngogo, Uganda), hunting in the Rekambo community may not be triggered by a lack of other food resources. In addition, despite the absence of red colobus monkeys (*Piliocolobus* spp.), hunting rates were comparable to sites where this species is present (Gombe and Mahale, Tanzania; Tai, Ivory Coast; Ngogo, Uganda) and higher than at sites where they are also absent (Bossou, Republic of Guinea; Kahuzi-Biega, Democratic Republic of Congo; Budongo, Uganda).

17.35-17.45 – CLOSING REMARKS

OUR CONSERVATION CAUSE FOR THIS YEAR:

Primate Society of Great Britain



Conservation Cause – Proyecto Tití saving cotton-top tamarins and regenerating their Colombian forest



The funds will purchase VHF transmitters and receivers for tracking groups of animals in the **new reserve** of Los Titíes de San Juan – to answer the questions:

- Do ranging patterns change as the restoration areas become more mature
- Do seasonal rainfall patterns affect forest use
- Are seasonal birth patterns similar to those observed in other sites
- Are the same food resources used in San Juan as in Ceibal and how might that influence future forest restoration efforts

THANK YOU TO CAMBRIDGE UNIVERSITY PRESS FOR THE QUIZ PRIZE:



CAMBRIDGE UNIVERSITY PRESS

Don't forget to check out our amazing raffle: <https://raffall.com/271442/enter-raffle-to-win-psgb-giant-winter-raffle-hosted-by-psgb>

All other PSGB news and membership details can be found on: www.psgb.org