

HOPE-GM REPORT 2010

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Introduction: Scope of the initiative

Professor T. Matsuzawa, Director of the Primate Research Institute at Kyoto University, invited three distinguished scholars, Professors William McGrew (Cambridge University, UK), Svante Pääbo (Max Planck Institute, Leipzig, GE) and Frans de Waal (Emory University, USA), to participate in a new collaborative initiative titled HOPE-GM (Primate Origins of Human Evolution: From Genes to Mind), funded by JSPS. The HOPE-GM program also included a possibility for seven young scholars to undertake a three-month fellowship at the Centre for International Collaboration of Advanced Studies in Primatology (CICASP) at Kyoto University. Therefore, as one of the invited young scholars I joined the HOPE-GM team in March 12, 2010 for three months, until June 10, 2010.

The initiative aims to promote international collaboration between Japanese and non-Japanese researchers in general, and multi-disciplinarity in research on the primate origins of human evolution in particular. The program is coordinated by Professors Tetsuro Matsuzawa, Ikuma Adachi and Misato Hayashi.

Activities during the fellowship

Scholarly activities at CICASP and PRI, Inuyama

Dates: 12 – 21 March, 25 – 28 March, 4 – 5 April, 12 April – 28 May, 8 – 9 June.

My current post-doctoral research concerns individual variation in behavioural patterns of chimpanzees. Such variation, known as personality, temperament or coping style, has been described in both human and non-human primates along with a great variety of other vertebrate and invertebrate species. However, we know fairly little of the behavioural traits that compose chimpanzee personality. I study chimpanzee personality from a behavioural point of view. This approach differs from the more commonly used top-down approach, which relies on human personality psychology. I aim to identify the relevant personality traits and describe their intercorrelational structure. Further, I am interested in the fitness parameters of personality as well as on their genetic underpinnings. This knowledge is indispensable for understanding the evolution of human personality, illuminating the evolutionary past and the ultimate factors behind personality variation. Understanding parallels in, the evolutionary background of, and the processes behind personality variation gives us a more informed understanding of humans.

1. My main aim was to collate and analyse data on primate personality I have been collecting at four European zoos during my post-doctoral research in Cambridge. Behavioural data on chimpanzee personality are scarce, and thus the initial step in my analyses concerned establishing consistency within, and variability between individuals in certain *a priori* selected behavioural traits that were candidates for personality characteristics. Further, I am interested in the structure of personality traits in chimpanzees, and therefore analysed the data with data reduction tools to reveal the intercorrelational relationships among traits.

As the data are still under further scrutiny and the final results are yet to come, I can only reveal that the initial analyses are promising. Final results on the first phase of the project will be published at the International Primatological Society's conference in Kyoto 12. – 18. 9. 2010.

2. Secondly, I continued working as the primary supervisor of several Masters students (from Utrecht University, the Netherlands). During my fellowship in Japan, I supervised four MSc students in various phases of their projects. One of the resulting Masters theses will be worked directly into a publication, in which I am the first author. I drafted the manuscript while in Japan, and it is currently being finalised in collaboration with Dr. Liesbeth Sterck, Ms. Annette van de Kraats and myself. Another student's MSc thesis will also lead into a publication, and in Japan I guided the experimentation work of this project to meet the qualifications of a publication. I am currently revising the student's analyses.
3. I finalised a manuscript on chimpanzee personality (abstract below), which is an invited contribution to an upcoming book "From Genes to Behaviors", eds A. Weiss, M. Inoue-Murayama, S. Kawamura, and E. Inoue. Published by Springer in 2010.
4. I discussed with Dr. Miho Inoue-Murayama at Kyoto University our shared research interest in nonhuman personality. We indeed have greatly overlapping research aims, which potentially will lead to a collaborative research effort.
5. I attended the weekly seminars of the Department of Behavioral and Brain Sciences on Tuesday afternoons at PRI. Several of the talks gave interesting insights into the cognitive research at PRI. Furthermore, I joined a Scientific Debate (April 28th), organized by Dr. Sachiko Hayakawa, an initiative specifically aimed at encouraging scientific exchange in English between Japanese and non-Japanese researchers.
6. I had a chance to witness the daily cognitive testing of chimpanzees Ai and Ayumu thanks to Professor Matsuzawa's efforts. Furthermore, I visited the impressive facilities of the Research Resource Station (RRS) with Prof. Matsuzawa.
7. I participated the monthly Foreigners Meetings at PRI, which serve as a platform for all foreign researchers and students at PRI to socialise and share information.

**How to measure animal personality and why does it matter?
Integrating the psychological and biological approaches to animal personality**

Sonja E. Koski

ABSTRACT

Consistent individual differences in behaviour and their underlying psychology, known as personality or temperament, are common in human and nonhuman animals. Animal personality is relevant for multiple reasons: It directs attention to an individual as the level of analysis, to mechanisms of how behavioural variation is maintained by evolution, and to consequences of limited behavioural flexibility. It also provides models for the biological bases of human personality and illuminates the similarities and differences in human and nonhuman personality. Animal personality research currently uses multiple concepts and methodologies. In this paper I discuss the 'biological' and 'psychological' approaches to animal personality. I highlight some of the conceptual and methodological differences between these approaches. I argue that despite the apparent differences, they can be integrated with increased inter-disciplinary communication, better methodological clarity and care, and by acknowledging the common future goals. I also propose research directions that are likely to be of interest to both psychological and biological personality researchers, and thus emphasise the benefits of an integrated approach to animal personality.

Key words: animal personality, temperament, rating, coding

Conference participation and presentations

I attended two conferences, in which I presented the following papers:

- Koski SE: Chimpanzee personality measured by observational quantification of behaviour.
HOPE-GM Primate Mind and Society, Kyoto, Japan, 22-23rd March 2010.

Abstract: Personality, or individual differences in behaviour and underlying psychology, has rapidly become an active field of behavioural, psychological and evolutionary research. Animal personality research can be divided into 'psychological' and 'biological' approaches, each employing a different set of questions and methods. Chimpanzee personality has mostly been studied with the psychological approach, which utilises a theoretical framework, trait selection process and evaluation methods used in human personality research. This work has described chimpanzee personality structure as largely similar to that of humans. However, we know little of chimpanzee personality at the behavioural level. I study personality of captive chimpanzees employing the biological approach. The candidate personality traits are selected from a range of naturally occurring behaviours in ecologically meaningful categories. Preliminary results show that behavioural traits are sufficiently repeatable, informative of chimpanzee personality structure and useful in investigations of personality's influence on individual fitness. The results will inform of key personality traits in chimpanzees at the behavioural level and of their structural organisation, both of which are relevant for understanding the foundations of personality. I discuss my research in the theoretical framework of integrating the behavioural and psychological approaches to animal personality

- Koski SE: Dissecting chimpanzee empathy (no abstract published).
Symposium 'The Intersection of Comparative Cognitive Science and Field Science',
Nagoya, 3rd April.



Fig 1. The title slide of my presentation in Kyoto

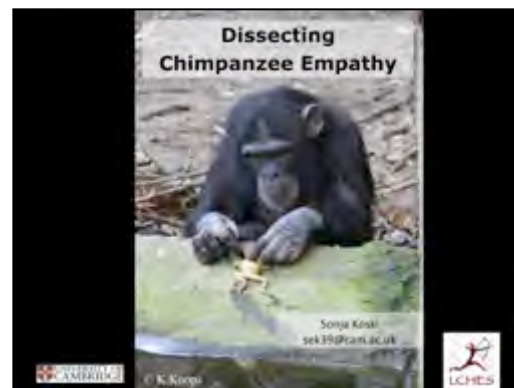


Fig 2. The title slide of my presentation in Nagoya.

Visits to primatological sites elsewhere in Japan

- Visits to Koshima and Yakushima Islands (29 March to 02 April 2010).

I had the great opportunity to visit the key primatology field sites at Koshima and Yakushima islands. We observed several troops of wild macaques in these locations, participated in feeding sweet potatoes and wheat to the Koshima macaques, and witnessed the peaceful coexistence of the macaques and deer at Yakushima while marveling the surrounding beautiful forests. At Koshima we were accompanied by researcher Mr. Suzumura, who gave us insightful information on the 113 monkeys present today on Koshima Island. Our hosts and guides, Yoshiaki Sato and Fumihiro Kano, did an excellent job arranging the visits and accompanying us during the travels.



Wild macaques at Koshima and Yakushima

- Visits to Great Ape Research Institute (GARI) and Chimpanzee sanctuary, Uto (CSU) (5 to 10 April).

I greatly enjoyed visiting GARI to witness the superb facilities and interesting research done by Dr. Hirata and his colleagues. We witnessed experiments at the outdoor

compound lead by Dr. Shinya Yamamoto and Dr. Sana Inoue, as well as face-to-face testing of the chimpanzees by several researchers in Dr. Hirata's team. Furthermore, we were introduced by Etsuko Nogami to the tireless efforts done at CSU by to improve the lives of these ex-laboratory chimpanzees. In this trip our enthusiastic and helpful guides were Yumi Yamanashi and Tadatoshi Ogura.



The amazing face-to-face testing of adult chimpanzees at GARI.

Cultural excursions and experiences

In addition to the scholarly activities and primatological travels, I have greatly enjoyed experiencing Japan as a whole. An important part of this experience has been the visits to important cultural sites as well as to enchanting natural forests and coastal regions, and experiencing the lively modern-day culture and landscapes.

Acknowledgments

I would like to express my sincere thanks first and foremost to Professor Matsuzawa, who invited me to join the program and provided me with such a great opportunity to get to know Japanese research and life. I am deeply grateful for his generosity, welcome and support. Further, at PRI and CICASP our stay was made pleasant and smooth thanks to the help of Prof. Ikuma Adachi and Mami Shikuwa, both of whom also were great friends and company in and out of the office – big thanks to you both. Of course, many more people at PRI contributed to the warm and friendly atmosphere I greatly enjoyed: Prof. Takeshi Furuichi, Prof. Chie Hashimoto, Dr. Sachiko Hayakawa, Mari Hirosawa, Tomoko Imura, Takaaki Kaneko, Fumihiko Kano, Andrew Macintosh, Chris Martin, Takahisa Matsusaka, Tadatoshi Ogura, Gaku Ohashi, Yoshiaki Sato, Reiko Sawada, Prof. Masaki Tomonaga, Makiko Uchikoshi, Yumi Yamanashi and Lira Yu. Extra thanks go to Prof. Mike Huffman for giving us great tips for outdoorsy activities, keeping our bodies and minds nourished by weekly Tiranga nights, and generally being great company. I also thank the organizers of the conference in Kyoto and symposium in Nagoya for a smooth operation and a great initiative.

Our travels around the country gave me a wider view on Japan: the beautiful nature of the Southern islands, brilliant cuisine and, of course, the wild monkeys (along with wild horses and dolphins). Big thanks to all the people who helped us and made us feel so welcome during these travels: Mr. Suzumura and Mr. Kanji at Koshima, Prof. Satoshi Hirata, Shinya Yamamoto, Sana Inoue and co-workers at GARI, Etsuko Nogami and Naruki Morimura at CSU. Finally, big thanks (and a big hand!) to my fellow HOPE-GM juniors who shared this incredible experience and were fabulous friends: Anna Albiach Serrano, Malini Suchak, Kathelijne Koops, Paco Bertolani, Susana Carvalho and Kim Hockings, and the senior invitees Bill McGrew and Frans de Waal.