



Photo: Ioanna Berthoud Papandropoulou

## Archives Jean Piaget | Séminaire interdisciplinaire | 2018

### Biologie, psychologie et évolution

**Mardi 27 février**

**Building cultural knowledge in the forest : how ecological variation influences cognition in wild chimpanzees and what it tells us about human evolution**

par Thibaud Gruber, Department of Zoology, University of Oxford, Swiss Center for Affective Sciences, University of Geneva



Thibaud Gruber is currently a Postdoctoral Fellow of Swiss National Science Foundation at the Department of Zoology of Oxford University, UK, and a Scientific Collaborator at the Swiss Center for Affective Sciences, University of Geneva, Switzerland. Following studies in Biology (Ecole normale supérieure de Lyon) and Cognitive Sciences (Ecole normale supérieure) as a *normalien*, Thibaud Gruber has completed a PhD in Psychology at the University of St Andrews, UK, aiming to bring, according to the title of his thesis, “*a cognitive approach to the study of culture in wild chimpanzees*”. Since then, he has pursued

this aim through various postdoctoral positions in France (Institut Norbert Elias, EHESS), Switzerland (University of Zürich, University of Neuchâtel), supported by the Fyssen Foundation and the European Commission through its Marie Curie Program. His research lies at the border between cognition and behavioural ecology, and his research interests, while mostly centred on the evolution of cultural behaviour in hominids, also include the evolution of language and communication. In the future, he is hoping to join these two streams of research.

### Résumé de la conférence

The influence of environment on phenotypic variation has been central to Piaget’s approach of phenocopy. Similarly, environment has played a central part in the debate on the existence of the question of animal—particularly chimpanzee—culture, often as a way to dismiss the possibility of their existence.





Photo: Ioanna Berthoud Papandropoulou

[résumé de la conférence de T. Gruber, suite]

Today, the debate is no longer on whether chimpanzees have culture or not. Rather, empirical researchers and theorists now attempt to decipher how much chimpanzee cultures compare to human cultures, and the evolutionary relatedness between the two phenomena. In particular, the interaction between social and ecological mechanisms appears crucial. Here, I will use the results of my own research on tool use with the Sonso community of Budongo Forest, Uganda (*Pan troglodytes schweinfurthii*) to provide novel insights on chimpanzee culture and how it compares to human culture. Critically, the Sonso chimpanzees, a community with a leaf-based culture, have proven surprisingly reluctant to learn stick use, a behaviour long classified as universal in chimpanzees. The once particularly favourable environment of the Budongo Forest may have both led to the disappearance of the stick use behaviour in the community, but also provided a buffer against the re-invention of the behaviour. More recent results on the development of a novel tool use behaviour, moss-sponging, suggest that chimpanzees expand their cultural repertoire in the vicinity of what they know already rather through brand new innovations. The emerging picture is that ecological reasons, particularly through their impact on energy balance, can trigger the appearance of novel cultural behaviour, which will then be transmitted through social learning processes. I will also connect this research with other hominines, including bonobos and early human ancestors, to evaluate what features may have changed in our cognitive evolution to make our cultures so much more developed than those of our closest relatives. The Jourdain Hypothesis, based on Molière's character, argues that apes are limited in their ability to represent their cultural knowledge, a determining feature of modern human cultures, potentially explaining their limitations in cumulative behaviour and normative conformity. Future empirical work should focus on how animals mentally represent their cultural knowledge and innovate within the context of their past and current environment to conclusively determine the ways by which humans became unique in their cultural behaviour.

### Lecture proposée

Gruber, T., Zuberbühler, Clément, F., & van Schaik, C. (2015). Apes have culture but may not know that they do. *Frontiers in psychology*, 6, Article 91.