#6th Tipping Points Seminar – GPR Human Past

Alcohol consumption as a tipping point of human evolution

December 14, 2023, 4:00pm–6:00pm (Paris time)

Open to all, no registration required– on-line only
Zoom link: https://u-bordeaux-fr.zoom.us/j/81127618987

December 2023 - © Univ. Bordeaux, GPR «Human Past»- Robert Dudley – Melina Abdou

Speakers:

Robert Dudley & **Aleksey Maro** –

University of California, Berkeley, USA

More information

sciences-archeologiques.u-bordeaux.fr/gpr

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GPR HUMAN PAST

Université BORDEAUX MONTAIGNE

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Speakers & Abstracts

Robert Dudley – *University of California, Berkeley, USA*

The Drunken Monkey: Is Alcohol Consumption by Modern Humans an Evolutionary Hangover?

Ethanol derives from the fermentation of simple sugars, and fermentative yeasts are ubiquitous within terrestrial ecosystems. Animals that consume sugar-rich fruits and nectar thus routinely ingest low-level ethanol; the positive psychoactive responses to ethanol among vertebrate fruit-eaters (and modern humans) act to increase net caloric gain during feeding via the aperitif effect.

Early primates (and more recently the great apes) predominantly consumed ripe fruit, suggesting chronic exposure to fermented carbohydrates along with natural selection for the rapid localization and consumption of these calorically rich substrates. Patterns of alcohol use by modern humans may thus reflect ancestral sensory biases associating ethanol consumption with nutritional reward (i.e., the «drunken monkey» hypothesis).

Aleksey Maro – *University of California, Berkeley, USA*

Towards a wild fermentation ecology: ethanol concentrations within chimpanzee-consumed fruit and within floral nectar

Humans are thought to have evolved a taste for alcohol through chronic dietary exposure over evolutionary timescales. We might thus expect chimpanzees, our nearest living relatives, to be exposed to a similar dose in the modern day. Indeed, chimpanzees consume ~10-15% of their body mass in fruit pulp daily, amounting to an equivalent 1-2 standard drinks per day.

Ethanol concentrations in floral nectar are substantially lower than in fruit, possibly a reflection of the vastly larger quantity of nectar consumed by typical pollinators such as honeybees and hummingbirds, relative to their body size. Ethanol is widespread, present to some extent within most fruits and nectaries sampled. This is unsurprising given that an ecological role of ethanol may have originated as early as >100 million years ago with the rise of angiosperms.

Organisers: Priscilla Bayle, Solange Rigaud, Francesco d'Errico – PACEA UMR 5199

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