



PhD Research Proposal Form China Scholarship Council (CSC)

A remplir en français ou en anglais en fonction de la langue qui sera utilisée pour la thèse

FIELD

Computational Social Sciences / Cultural Evolution
(eg: Mathematics, Physics, Sociology,)

Thesis subject title: **Cognitive fossils of social emotions: Computational analyses of paintings, music, and literature in Chinese history**

Name of the French doctoral school/Ecole doctorale: ED540

Name of the Research team/Equipe de recherche: Evolution & Social Cognition Team

Website: <https://cognition.ens.fr/en/research/laboratories-teams/evolution-and-social-cognition-esc-873>

Name of the Supervisor/Directeur de thèse: Nicolas Baumard

Email: nbaumard@gmail.com

Lab Language/ Langue de travail: English

Research Proposal Abstract/Présentation du sujet:

Recent computational advances in social cognitive science combined with the ever-increasing availability of digitalized historical material offer a unique opportunity to shed new light on the dynamics of mentalities in history. Face detection algorithms have enabled the automated extraction of emotions; text mining methods have facilitated the quantification of emotions in contemporary material (e.g., newspapers, social media); automatic extraction of melodic information from music scores and audio records have allowed to quantify the emotional content of thousands of contemporary songs. Concomitantly, digital humanity scholars have produced rich and detailed corpora of textual and artistic materials (e.g., literary fictions, paintings, music scores, legal texts). These cultural artefacts are nothing but the remnants of people's past psychologies and can function as cognitive fossils of past mental states, emotions, and preferences. The present project will apply computational tools to extract psychological signals from historical corpora: (1) using face-processing algorithms, we will quantify social emotions in Chinese photos from the early 20th c. on (Safra et al., 2020); (2) using text-mining techniques, we will measure social emotions in literary traditions (Baumard et al., 2018; Martins & Baumard, 2020). Quantifying variations in social emotions in history is a first step towards answering more fundamental questions: Why do social emotions vary across time? Why are there substantial and long-lasting differences across countries? Using instrumental variables and natural experiments derived from exogenous shocks in Chinese history, we will test whether there is a causal relationship between economic fluctuations and the dynamics of social emotions (Baumard et al., 2018).

References:

Baumard, N., Huillery, E., & Zabrocki, L. (2018). *The origins of romantic love and asceticism: How economic prosperity changed human psychology in medieval europe*. Working paper.

Martins, M. D. J. D., & Baumard, N. (2020). The rise of prosociality in fiction preceded democratic revolutions in Early Modern Europe. *Proceedings of the National Academy of Sciences*.

Safra, L., Chevallier, C., Grèzes, J., & Baumard, N. (2020). Tracking historical changes in trustworthiness using machine learning analyses of facial cues in paintings. *Nature communications*, 11(1), 1-7.

Type of PhD :

1.Full PhD

- Joint PhD/cotutelle (leading to a double diploma) : possible
- Regular PhD (leading to a single French diploma) : possible

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Direction des Relations internationales : dri@ens.psl.eu