

## **Researcher Position in Human Vocal Communication** **Fully funded for one year (2021)**

**Timeframe: 1 year full-time** (January 1 – December 31, 2021)

Note: The successful candidate will take part, free of charge, in the [Bioacoustics Winter School](#) (Jan 4-15), a two-week intensive course in acoustic communication.

### **Research Subject:**

Human nonverbal vocal communication

### **Laboratory:**

Equipe de Neuro-Ethologie Sensorielle ENES ([ENESlab.com](http://ENESlab.com))

Centre de Recherche en Neurosciences de Lyon (CRNL)

University of Lyon / Saint-Etienne

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### **Project Leaders:**

Prof. David REBY ([dreby@me.com](mailto:dreby@me.com)) and Dr. Katarzyna Pisanski ([kasiapisanski@gmail.com](mailto:kasiapisanski@gmail.com))

**Funding:** Researcher position fully funded by the IDEXLYON project as part of the ‘Programme Investissements d’Avenir’ (ANR-16-IDEX-0005) to Professor David Reby.

### **Description of ENES and the Job Position:**

The Sensory Neuro-Ethology Lab (ENES), located at the foothills of the Pilat massif in St Etienne, France, offers a vibrant research environment. We study animal and human behaviour with a focus on bioacoustics and communication. Within ENES, [Prof. David Reby](#) and his group study a range of species, including deer, dogs and humans, with a common thread of uncovering the origins, structure and functions of vocal signals in vertebrates. By identifying animal precursors of key features of human communication and cognition, the research provides essential background for understanding the evolutionary functions of vocal communication in animals, including the *human animal*.

The successful candidate will be involved in several projects examining nonverbal vocal communication in humans and in particular, *nonverbal vocalisations* such as human laughter, screams, roars, and cries. Nonverbal vocalisations are frequently produced by humans across a range of social and interpersonal contexts and show clear parallels with the affective vocalisations of other mammals, including primates. It’s very likely that they predate speech and language. Studying human vocalisations can therefore provide novel insight into the origins and social functions of vocal behaviour. Indeed, form-function analyses reveal that the acoustic structure (*form*) of animal vocalisations maps onto their purported evolved or social *function*, and our recent research suggests this is also true for human vocalisations. For example, babies’ cries that are recorded in a painful context (vaccine) compared to a distressing context (bath) tend to be characterized by relatively more spectral nonlinearities such as deterministic chaos and sub-harmonics that contribute to the cries ‘unpleasant’ harsh quality, and make it hard to ignore or habituate to, and thus function to elicit immediate attention and aid from a caregiver who will be highly motivated to stop the aversive crying.

Additional reading on the topic is provided below in the list of select related publications from the ENES team. We also encourage interested candidates to visit the [ENESlab.com](http://ENESlab.com) website to learn more about the lab’s research axes and most recent publications.

### **Profile of the candidate:**

The position is open to any individual who has completed a master’s or PhD degree. Preference may be given to postdocs and those with a degree in Acoustics, Biology, Animal Behavior, Zoology, Ecology &

Evolution, Statistics, Neuroscience, Cognitive Science, Experimental Psychology, Speech/Language Sciences, Computing, or a related discipline involving the study of sound, cognition or behaviour.

The successful candidate will be responsible for aiding Prof. Reby and Dr. Kasia Pisanski in a number of experimental tasks including:

- Acoustic analysis and resynthesis of voice stimuli (mainly in Praat open-source software)
- Organizing, storing and coding stimulus materials and data
- Designing experimental online platforms to collect data in playback/rating experiments, and conducting these experiments with human participants online (and when permitting, in the lab)
- Data processing and statistical analysis of data (mainly in SPSS or R)
- Participant recruitment
- Voice recording (in the lab, when permitting)

The candidate must have some foundation in bioacoustics and acoustic analysis, particularly useful would be some experience analyzing nonverbal parameters (E.g., f0, formants, nonlinear phenomena) in Praat acoustic analysis software. The candidate should be competent in statistical analysis (e.g., linear mixed modeling) and also have very good writing skills (English). Knowledge of human or animal voice production and perception and animal behavior are additional assets. Seriousness and rigor in the conduct of experimental protocols and an autonomous working capacity will be essential. The researcher will contribute to the joint activities of the ENES laboratory.

### **Application Procedure:**

Please send the following documents in a single pdf file by e-mail to David Reby ([dreby@me.com](mailto:dreby@me.com))

1. A cover letter outlining your motivation to apply and detailing how you fit the requirements above;
2. A current CV, listing relevant experience and containing a list of your publications;
3. Names, email addresses and contact numbers of three referees who would be willing to provide letters of recommendation

Short-listed candidates will be contacted for an online interview (e.g., via WebEx) beginning December 2020. The position is available from January 1 2021, however the start date may be negotiable.

### **Select Related Publications from ENES team:**

- Anikin, A., Bååth, R., & Persson, T. (2018). Human non-linguistic vocal repertoire: Call types and their meaning. *Journal of nonverbal behavior*, 42(1), 53-80.
- Charlton, B. D., & Reby, D. (2016). The evolution of acoustic size exaggeration in terrestrial mammals. *Nature Communications*, 7(1), 1-8.
- Charlton, B. D., Pisanski, K., Raine, J., & Reby, D. (2020). Coding of Static Information in Terrestrial Mammal Vocal Signals. In *Coding Strategies in Vertebrate Acoustic Communication* (pp. 115-136). Springer, Cham.
- Kelly, T., Reby, D., Levréro, F., Keenan, S., Gustafsson, E., Koutseff, A., & Mathevon, N. (2017). Adult human perception of distress in the cries of bonobo, chimpanzee, and human infants. *Biological Journal of the Linnean Society*, 120(4), 919-930.
- Koutseff, A., Reby, D., Martin, O., Levrero, F., Patural, H., & Mathevon, N. (2018). The acoustic space of pain: cries as indicators of distress recovering dynamics in pre-verbal infants. *Bioacoustics*, 27(4), 313-325.
- Pisanski, K. & Bryant, G. (2016). *The evolution of voice perception*. In *Oxford Handbook of Voice Studies* (pp. 269-293). N. Eidsheim & K. Miezal (Eds). Oxford University Press, UK.
- Pisanski, K., Cartei, V., McGettigan, C., Raine, J., & Reby, D. (2016). Voice modulation: a window into the origins of human vocal control?. *Trends in cognitive sciences*, 20(4), 304-318.
- Pisanski, K., Raine, J., & Reby, D. (2020). Individual differences in human voice pitch are preserved from speech to screams, roars and pain cries. *Royal Society open science*, 7(2), 191642.
- Raine, J., Pisanski, K., Bond, R., Simner, J., & Reby, D. (2019). Human roars communicate upper-body strength more effectively than do screams or aggressive and distressed speech. *PloS one*, 14(3), e0213034.
- Raine, J., Pisanski, K., Simner, J., & Reby, D. (2019). Vocal communication of simulated pain. *Bioacoustics*, 28(5), 404-426.
- Reby, D., Levréro, F., Gustafsson, E., & Mathevon, N. (2016). Sex stereotypes influence adults' perception of babies' cries. *BMC psychology*, 4(1), 19.