

TERESA RAIMONDI

PHD IN BIOLOGICAL SCIENCES AND APPLIED BIOTECHNOLOGIES

University of Turin (Italy) – Department of Life Sciences and Systems Biology

Ethology Laboratory, Prof. Marco Gamba

University Address

Home Address
(residence)

Year & nation of birth

E-mail



EDUCATION

- 10/2019 - 07/2023 **PhD in Biological Sciences and Applied Biotechnologies (University of Turin).** Supervisor: Prof. Marco Gamba. Thesis title: “Rhythmic categories in primates vocalizations”. Degree awarded **with honors** (21/07/2023).
- 10/2016 - 04/2019 **Master Degree in Evolution of Animal and Human Behaviour (University of Turin)** – Final grade: **110/110 with honors** and **special mention** (05/04/2019). Supervisor: Prof. Livio Favaro. Thesis title: “Bioacoustic and ecoacoustic monitoring of Eurasian pygmy owl (*Glaucidium passerinum*) in Mont Avic Natural Park.”
- 10/2013 - 07/2016 **Bachelor Degree in Natural Science (University of Turin)** – Final grade: **110/110 with honors** (13/07/2016). Supervisor: Prof. Paolo Peretto. Thesis title: “GnRH neural system: the role in puberty onset and in the regulation of olfactory function”
- 09/2008 - 07/2013 Bilingual **high school** graduation with ESABAC (Scientific orientation) - Liceo Chimico-Biologico “Edouard Bérard”, Aosta. Final grade: 86/100.



SCHOLARSHIPS AND GRANTS

- 07/2020 **CEG** (Società Cooperativa Elettrica Gignod). Borse di studio a studenti meritevoli soci o figli di soci laureati nel 2019. Amount: **1000 €**
- 06/2020 **INPS**, Istituto Nazionale Previdenza Sociale. Borse di Studio per Corsi Universitari di Laurea AA 2017-2018 – Gestione Universitaria delle Prestazioni Creditizie Sociali. Amount: **2000 €**
- 01 - 03/2020 **Erasmus+ Partner Countries** – Coverage of the flight A/R and three months scholarship for research activities at **Comoros** University and **Madagascar** (Maromizaha Research Centre). Amount: **2920 €**

- 10/2019 **Ministerial 3 years scholarship** for a PhD in Biology and Applied Biotechnologies (University of Turin) with the title "Rhythmic categories in primates vocalizations". Amount: **46,029.84 €** + Covid-19 extension: **3835.82 €**
- 09/2019 **Regione Autonoma Valle d'Aosta** – Scholarship for producing a scientifically remarkable thesis concerning Aosta Valley and its territory. Amount: **500 €**
- 05 - 06/2019 **Erasmus Traineeship** – Two months scholarship – Stage at the **University of Turku (Finland)**. Supervisor: Prof. Erkki Korpimäki. Research activities on pygmy owl (*Glaucidium passerinum*) and its prey community: passive acoustic monitoring, habitat analysis, playback experiments, natural cavities census. Amount: **800 €**



CONGRESSES

- 07/2023 **Accepted talk** for the **INTERNATIONAL BIOACOUSTICS CONGRESS 2023** (10/2023) – Sapporo, Japan.
Talk title: "Isochrony and rhythmic interaction in the gibbon song"

PRESENTED TALKS

- 10/2022 **AFRICAN BIOACOUSTICS COMMUNITY CONGRESS 2022** – Skukuza, South Africa.
Talk title: "So far yet so close: categorical rhythms in two singing primate species"
- 09/2022 **XXV CONGRESSO ASSOCIAZIONE PRIMATOLOGI ITALIANI** – Torino, Italy.
Talk title: "Isochrony and rhythmic interaction in ape duetting"
- 09/2019 **XX CONVEGNO ITALIANO DI ORNITOLOGIA** – Napoli, Italy
Talk title: "Passive acoustic monitoring of Strigiformes: the study case of pygmy owl in Mont Avic Natural Park"

ATTENDED CONGRESSES

- 10/2021 **COLLOQUE DE LA SOCIETE FRANCOPHONE DE PRIMATOLOGIE** – Saint-Etienne, France.
- 06/2021 **INTERNATIONAL ECOACOUSTICS CONGRESS** (online) – Urbino, Italy
- 10/2020 **AFRICAN BIOACOUSTICS COMMUNITY CONGRESS 2021** (online) – South Africa
- 10/2019 **X CONVEGNO NAZIONALE DELLA RICERCA NEI PARCHI** – Verona, Italy
- 09/2017 **XIX CONVEGNO ITALIANO DI ORNITOLOGIA** – Torino, Italy



TUTORING AND TEACHING ACTIVITY

- 05/2023 - 08/2023 **Training of Gran Paradiso National Park rangers on acoustic monitoring and use of passive recorders.**
Theoretical overview on acoustic monitoring, setting up and field use of recorders for passive acoustic monitoring, acoustic data management.
- 03/2021 - 02/2022 **Batti il 5!** - Three-year national project to combat educational poverty in Mirafiori suburb (Torino).
Dissemination activities in primary and secondary schools about animal and human sound production and communication, soundscape, and acoustic monitoring in urban

environments. Practical use of recorders and camera traps in an urban environment.

04 - 05/2020 ***The Origins of Music*** – University of Turin – Master in Evolution of Animal and Human Behaviour - Prof. Andrea Ravignani (Visiting Professor).
Students tutoring and teaching support.

09 - 12/2020 **Contratto di prestazione d'opera intellettuale per cicli di esercitazioni di *Zoologia Sistematica*** – University of Turin – Bachelor in Natural Science - Prof. Marco Gamba.
Preparation of teaching materials for the Systematic Zoology laboratory (slides, images, videos, training tests). Organization of practical laboratory activities.

2019 - ongoing **Students tutoring for internships and thesis preparation.**
17 co-tutored theses during PhD (9 Bachelor; 8 Master) in English and Italian.



PUBLICATIONS

Status	APA reference	Journal quartile	Journal 2y IF
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FIELDWORK EXPERIENCE AND SKILLS

05/2023 - ongoing **Altitudinal transects with listening points and passive acoustic monitoring of the alpine bird community (Gran Paradiso National Park).**
Conception of the experimental design for bird community acoustic monitoring; Audiomoths management, software updating and testing; positioning and use of Audiomoths in combination with traditional methods of monitoring of the bird community (listening points); data storing and managing; data analysis.

04-07/2022 **Field manager in the tropical forest of Maromizaha Protected Area (Madagascar).**
Research activity coordination in the Research Centre of Maromizaha; coordination of rangers' work; fieldwork and data collection (acoustic and video recordings, behavioural data); data storing and managing, data analysis, passive acoustic monitoring (Audiomoth and Song Meter Micro recorders); students' tutoring; dissemination events with the local community (reforestation, trees nursery activities, conservation-themed training and discussion events).

01-03/2020 **Field manager in the tropical forest of Maromizaha Protected Area (Madagascar).**
Research activity coordination in the Research Centre of Maromizaha; coordination of rangers' work; fieldwork and data collection (acoustic and video recordings, behavioural data); data storing and managing; data analysis; passive acoustic monitoring (Audiomoth recorders); drone piloting and aerial pictures; students' tutoring.

04-06/2019 **Fieldwork in boreal environment for pygmy owls acoustic monitoring, bird community census, habitat analysis (Turku and Kauhava, Finland).**
Passive acoustic monitoring (Song Meter 4 and Song Meter 2 recorders); GPS' use; bird community census (heard and seen species); playback experiments in the field; owls' catch with traps; habitat composition buffers; natural cavities census with a pole mounted camera.

12/2017 – 05/2018 **Fieldwork in alpine environment for pygmy owls acoustic monitoring, in both diurnal and nocturnal excursions (Aosta Valley, Italy).**
Passive acoustic monitoring (Song Meter 4 recorders); use of semi-directional microphones and recorders; GPS use; playback experiments in the field.

	Raimondi [§] , T., Di Panfilo, G., Pasquali, M., Zarantonello, M., Favaro, L., Savini, T., ... & Ravignani, A. (2023). Isochrony and rhythmic interaction in ape duetting. <i>Proceedings of the Royal Society B</i> , 290(1990), 20222244.	Agricultural and Biological Sciences Q1	5.53
	Cristiano*, W., Raimondi*, T., Valente, D., Torti, V., Ferrario, F., Carugati, F., Miaretsoa, L., Mancini, L., Gamba, M., Giacoma, C. Singing more, singing harsher: occurrence of nonlinear phenomena in a primate song. <i>Animal Cognition</i> , 1-13.	Ecology, Evolution, Behavior and Systematics Q1	2.90
PUBLISHED 2023	De Gregorio*, C., Raimondi* [§] , T., Bevilacqua*, V., Pertosa, C., Valente, D., Carugati, F., ... & Gamba, M. (2023). Isochronous singing in three crested gibbon species (<i>Nomascus</i> spp.). <i>Current Zoology</i> , zoad029.	Agricultural and Biological Sciences - Animal Science and Zoology Q1	2.73
	Baroni, D., Hanzelka, J., Raimondi, T., Gamba, M., Brommer, J. E., & Laaksonen, T. (2023). Passive acoustic survey reveals the abundance of a low-density predator and its dependency on mature forests. <i>Landscape Ecology</i> , 1-16.	Environmental Science – Ecology Q1	5.05
	Ravaglia, D., Ferrario, V., De Gregorio, C., Carugati, F., Raimondi, T., Cristiano, W., Torti, V., Von Hardenberg, A., Ratsimbazafy, J., Valente, D., Giacoma, C., Gamba, M. (2023). There You Are! Automated Detection of Indris' Songs on Features Extracted from Passive Acoustic Recordings. <i>Animals</i> , 13, 241.	Veterinary - General Veterinary Q1	3.23
	Valente, D., Torti, V., De Gregorio, C., Gamba, M., Carugati, F., Miaretsoa, L., Pavoni, F., Raimondi, T., ... & Norscia, I. (2023). First evidence of contagious yawning in a wild lemur. <i>Behavioral Ecology and Sociobiology</i> , 77(1), 1-11.	Agricultural and Biological Sciences - Animal Science and Zoology Q1	2.94
	Valente, D., Miaretsoa, L., Anania, A., Costa, F., Mascaro, A., Raimondi [§] , T., ... & Gamba, M. (2022). Comparative analysis of the vocal repertoires of the indri (<i>Indri indri</i>) and the diademed sifaka (<i>Propithecus diadema</i>). <i>International Journal of Primatology</i> , 1-19.	Agricultural and Biological Sciences - Animal Science and Zoology Q1	2.58
De Gregorio, C., Carugati, F., Valente, D., Raimondi, T., Torti, V., Miaretsoa, L., ... & Giacoma, C. (2022). Notes on a tree: reframing the relevance of primate choruses, duets, and solo songs. <i>Ethology Ecology & Evolution</i> , 34(3), 205-219.	Agricultural and Biological Sciences - Animal Science and Zoology Q2	1.14	
De Gregorio, C., Zanolli, A., Carigati, F., Raimondi, T., Valente, D., Torti, V., ... & Giacoma, C. (2022). Parent-offspring turn-taking dynamics influence parents' song structure and elaboration in a singing primate. <i>Frontiers in Ecology and Evolution</i> , 01-14.	Agricultural and Biological Sciences - Ecology, Evolution, Behavior and Systematics Q1	4.50	
Gamba, M., Torti, V., Gregorio, C. D., Raimondi, T., Miaretsoa, L., Carugati, F., ... & Giacoma, C. (2022). Caractéristiques rythmiques du chant de l'indri et nouvelles perspectives pour une évaluation comparative du rythme chez les primates non humains. <i>Revue de primatologie</i> , (13).	-	-	
Valente, D., Gregorio, C. D., Favaro, L., Friard, O., Miaretsoa, L., Raimondi, T., ... & Gamba, M. (2022). Les lois linguistiques de la brièveté: conformité chez le lémurien chanteur <i>Indri indri</i> . <i>Revue de primatologie</i> , (13).	-	-	
De Gregorio, C., Valente, D., Raimondi, T., Torti, V., Miaretsoa, L., Friard, O., ... & Gamba, M. (2021). Categorical rhythms in a singing primate. <i>Current Biology</i> , 31(20), R1379-R1380.	Agricultural and Biological Sciences – Neuroscience Q1	10.90	
Valente, D., De Gregorio, C., Favaro, L., Friard, O., Miaretsoa, L., Raimondi, T., ... & Gamba, M. (2021). Linguistic laws of brevity: conformity in <i>Indri indri</i> . <i>Animal Cognition</i> , 24(4), 897-906.	Ecology, Evolution, Behavior and Systematics Q1	2.90	
De Gregorio, C., Carugati, F., Estienne, V., Valente, D.,	Agricultural and Biological Sciences	2.73	
PUBLISHED 2021			

Raimondi, T., Torti, V., ... & Giacoma, C. (2021). Born to sing! Song development in a singing primate. *Current Zoology*, 67(6), 597-608.

- Animal Science and Zoology
Q1

ACCEPTED

Lameira, A. R., Hardus, M. E., Ravnigani, A., Raimondi, T., & Gamba, M. (2023). Recursive self-embedded vocal motifs in wild orangutans. *eLife*.

Neuroscience – General
Neuroscience
Q1

8.71

IN REVISION

Zanoli*, A., Raimondi*, T., De Gregorio, C., Valente, D., Carugati, F., Torti, V., Friard, O., Miaretsoa, L., Giacoma, C., Gamba, M. "The song remains the same": not really! Vocal flexibility in the song of the indris. *Animal Cognition*.

Ecology, Evolution, Behavior and Systematics
Q1

2.90

*co-first authorship

§ corresponding author



LANGUAGES

ITALIAN ■■■■■ NATIVE SPEAKER

FRENCH ■■■■■ ESABAC, 2013 – C1

ENGLISH ■■■■■ OSL ERASMUS CERTIFICATE, 2019 - B2- C1
FIRST CERTIFICATE CAMBRIDGE, 2013 – B2



COMPUTER, ANALYSIS AND STATISTICS SKILLS

Skills on *OsX* and *Windows* operating systems. Experience in cloud and remote servers' use. Excellent coding skills in the **R** environment.

Software:

Microsoft Office ■■■■■

Boris and Behatrix ■■■□□

R and R Studio ■■■■■

Audiomoth Softwares ■■■■■

SPSS ■■■□□

QGIS ■■■□□

Python ■■■□□

BaseCamp ■■■■■

Praat ■■■■■

Adobe Photoshop ■■■■■

iZotope RX ■■■■■

STATISTICS AND CODING TECHNIQUES

Data manipulation

Subsetting, filtering, grouping, manipulation of the data with R (*e.g.* acoustic, behavioural, ecological, spatial data).

Data analyses

Sample statistics calculation and univariate and multivariate tests (parametric and non-parametric).

Univariate and multivariate regression modelling (*e.g.* LM, GLM, GLMM): transformation and evaluation of the distribution family of the response variable (*e.g.* normal, beta, gamma, Poisson and customized link functions), use of offsets, check of the assumptions (VIFs, distribution of the residuals...), post-hoc comparisons, effect plots, model selection, and critical interpretation of the results.

Unsupervised and supervised machine learning techniques (*e.g.* cluster analysis, PCA, UMAP, DFA, t-SNE, Random Forest), their performance assessments (*e.g.* ROC curves, confusion matrices) and production of graphic outputs.

Data visualization

Visual data exploration and graphical analyses outputs. Familiarity with a wide range of plot types and their flexible customization, depending on the nature of the data and focus on specific results (*e.g.* boxplots, bar plots, histograms, lollipop plots, scatter plots, waffle plots, alluvial plots, density plots on 2 or 3 dimensions, ternary plots, radar charts, lollipop plots, corrplots...).

SOUND ANALYSES

Sound editing

Manual (*Praat* or *iZotope RX*) and automatized (*Praat*) sound editing, filtering, denoising, temporal and frequency slicing. Use of markers and *Texgrids* (*Praat*) to annotate sounds and automatize the analyses.

Acoustic features extraction

Manual and automatized spectral (*e.g.* pitch, 3rd Octave Bands, formants, f0mean, f0min, f0max, f0Q₅₀, f0 absolute slope) and temporal parameters (*e.g.* onsets extraction and durations of phonation and non-phonation, IOI, cumulative phonation) extraction (*Praat*). Analysis of the rhythmic structure of a signal: tempo, Fourier analysis, rhythmic ratios (also small-integer ratios testing), regularity metrics (*e.g.* isochrony rate, nPVI, burstiness, ugof), synchrony metrics (overlap, lag, phases). Visual representation of rhythmicity of a sound (*e.g.* rhythmic ratios density distribution, binary and ternary plots for IOIs representations, recurrence plots).

Sound visualization

Oscillograms, spectra and spectrograms production and customization (*Praat*, *Seewave R* package, *iZotope RX*).

Acoustic template detection

Choice and use of multiple sound templates to automatically detect specific acoustic signals on survey acoustic files (*e.g.* *MonitoR*).

Ecoacoustics

Handling of large ecoacoustic datasets, their automatized renaming, ecoacoustic indices calculation (*e.g.* *Soundecology*), their analyses, interpretation depending on the specific environment (*e.g.* temperate vs. tropical), and visual representation (on the base of time and space).



OTHER PROFESSIONAL AND VOLUNTEER EXPERIENCE

- 2021 - ongoing Member of the **Italian Primatologists Association**
- 2019 - ongoing Member of the **LIPU (Lega Italiana Protezione Uccelli)**
- 11/2021 - 03/2022 **Crowdfunding for Ideaginger.it** University of Turin campaign: "Salviamo il lemure cantante!"/"Let's save the singing lemur!".
- 10/2020 - 01/2023 **PhD delegate** in the **University Department Council** (Dipartimento di Scienze della Vita e Biologia dei Sistemi, University of Turin)
- 07 - 08/2019 **Management of Fondation Grand Paradis** (Gran Paradiso National Park) **touristic sites**.
Touristic information and scientific divulgation in Cogne, management of museum areas, office and web tasks.
- 2017/2019 Volunteering experience in an environmental **European Life Project (Life15/IT/000897), "Net Pro Net"**, a project that provides for a volunteers' network activation that can contribute to a long period monitoring plan, surveillance and awareness spreading about *Natura 2000* among local communities.
- 09/2017-03/2018 Part-time paid job in **EDISU** (Regional Agency for the Right to Education of Piedmont).
Communication to foreign students, archive management, creation of information and graphic material.

Information pursuant to EU Regulation 2016/679: the above data are required by the provisions in force for the purposes of the procedure for which they are requested and will be used exclusively for that purpose.

Torino, 22/08/2023