

PERSONAL INFORMATION

Giusy Meglio



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Sex F | Date of birth 28/01/1987 | Nationality Italian

EDUCATION AND TRAINING

November 2016 – ongoing

PhD Candidate in Environmental and Evolutionary Biology, curriculum Anthropology

Department of Environmental Biology, Sapienza University of Rome, Piazzale Aldo Moro 5, 00185, Rome, Italy.

My PhD project is aimed to carry out a study investigating the factors that could affect motor planning in a tool use task in human and non-human primates. For this purpose, I am using a comparative and multidisciplinary approach, analyzing the grasping behavior and the kinematic parameters of hand movements.

Project title: “Factors affecting second-order motor planning in humans and non-human primates”

January 2017– ongoing

12 month research fellowship

National Research Council of Italy (CNR), Institute of Cognitive Sciences and Technologies (ISTC), Unit of Cognitive Primatology and Primate Center, Via Ulisse Aldrovandi 2 and 16/b, 00197, Rome, Italy.

I won a fellowship to carry out a study at the Unit of Cognitive Primatology, ISTC, CNR, Rome. I planned an experiment to investigate the factors affecting the second-order motor planning abilities in tufted capuchin monkeys (*Sapajus* spp.). This experiment is part of my PhD project.

Project title: “Factors affecting second-order motor planning in tufted capuchin monkeys (*Sapajus* spp.)”

June 2015 – November 2016 **Research assistant**

Universität Heidelberg, Seminarstraße Street 2, Heidelberg, Germany.

The work was carried out at National Research Council of Italy (CNR), Institute of Cognitive Sciences and Technologies (ISTC), Unit of Cognitive Primatology and Primate Center, Via Ulisse Aldrovandi 2 and 16/b, 00197, Rome, Italy.

The research project is funded by Heidelberg University and it is in collaboration with Unit of Cognitive Primatology, ISTC, CNR, Rome. This project planned to take an interdisciplinary comparative approach to investigate the cognitive prerequisites of self-regulation (i.e. executive functions EF, as working memory, attention shifting and response inhibition) in their relation to innovative tool-use. In particular, the study focuses on the development of early human innovation (pre-schoolers aged 4 years) and possible phylogenetic precursors (tufted capuchin monkeys, *Sapajus* spp.) in a tool-use task, as well as the underlying self-regulatory processes. For this purpose, children and capuchins are presented two same tasks to assess: a) the propensity for innovation during the exploration, b) the capacity of inhibition of motor responses and resolution of problems using previously learned strategies, c) the capacity for innovation in the use of tools. For this study I actively collaborated in reviewing the literature, setting up the experimental paradigm, data collection, data coding, data analysis. The data analysis is still ongoing.

December 2014 – October 2016 Master degree in Ecobiology

Curriculum Biology of ecosystems and conservation, Department of Environmental Biology, Sapienza University of Rome, Piazzale Aldo Moro 5, 00185 Rome, Italy.

Experimental thesis at National Research Council of Italy (CNR), Institute of Cognitive Sciences and Technologies (ISTC), Unit of Cognitive Primatology and Primate Center, Via Ulisse Aldrovandi 2 and 16/b, 00197, Rome, Italy.

I carried out a study about motor planning abilities in tufted capuchin monkeys (*Sapajus* spp.) in two manual tasks with varying complexity. In particular, the study focused on a type of second-order motor planning, called *end-state comfort effect* (ESC-effect), that allows to organize the grasping behavior on forthcoming task demands. The study investigated this effect through two experiments, in which the capuchins had: i) to grasp a dowel and bring its baited end to the mouth (Experiment 1); ii) to grasp a dowel that was positioned horizontally at different orientations and to dislodge an out-of-reach food reward (Experiment 2). In both experiments it has been evaluated: i) the sensitivity to the ESC effect; ii) the interaction between grip choice and manual preference; iii) a learning effect during the test. The results showed that the capuchins was sensitive to the ESC effect in both tasks, but performance differences emerged in relation to hand preference and learning across sessions. I had an active role in all the phases of the study: bibliography research, experimental design planning, stimuli preparation, collection and analysis of data. I presented the results of this study at several national and international conferences. The study was published in the scientific journal "*Behavioural Brain Research*" (<http://dx.doi.org/10.1016/j.bbr.2016.06.010>).

Thesis title: " Second-order motor planning in different manual tasks with varying complexity. A study in tufted capuchin monkeys (*Sapajus* spp.)"

Supervisor: Prof. G. Manzi; Dr. V. Truppa; Dr. Gloria Sabbatini

Final grade: 110/110 *cum laude* (28th October 2016)

June 2007 – December 2013 Bachelor in Biological Sciences

Sapienza University of Rome, Department of Science, Piazzale Aldo Moro 5, 00185, Roma, Italia.

Dissertation at Department of Biology and Biotechnology "Charles Darwin", Sapienza University of Rome.

The language faculty in modern humans is based on an exchange of vocal/acoustic information, therefore it seems reasonable to relate the evolution of language to hearing perception. Thanks to a model perception of different sound frequencies, calibrated on the morphology of the skeletal elements of the middle ear, it was proved that *Homo heidelbergensis* had an acoustic sensitivity similar to *Homo sapiens* and different from that of chimpanzees. This is true regarding a range which corresponds to an acoustic sensitivity compatible with the presence of some form of articulated language already present since the Middle Pleistocene. The recent discovery of a complete chain of the middle ear ossicles from *Paranthropus robustus* was analyzed with other remains of the middle ear from two individuals of *Australopithecus africanus* in order to extend further back in time the study of the evolution of hearing. These studies revealed that the morphology of the middle ear of these hominids was composed by a "mosaic" of features, combining plesiomorphies (in incus and in stapes morphologies) to other more derived traits, mainly regarding the morphology of the malleus, that seems to anticipate the variability observed among the genus *Homo*.

Dissertation Title: "Origins of the language faculty in *Homo sapiens* and other hominids: Reception and perception of sounds based on fossil."

Supervisor: Prof. Giorgio Manzi

Final grade: 101/110

PERSONAL SKILLS

Mother tongue Italian

Other language

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	B2	B2	B2	B2	B2

Communication skills

During my course of studies and research activities I have acquired:

- good social and relational capacities;
- aptitude for teamwork and collaboration;
- good ability to adapt to multicultural environments;
- good oral and written communication skills.

Technical and competences skills

Experience in the administration of tasks aimed at the study of i) motor planning, ii) manual abilities, iii) tool use, iv) innovation on non-human primates.

Proficiency in data entry, graphic elaboration and statistical analysis of behavioral data.

Good knowledge of statistical analysis softwares “IBM SPSS Statistics”, “STATISTICA” e “R”.

Good knowledge of software “Elan – The language Archive –” e “Adobe Premiere”.

Good knowledge of software “SketchUp Make” e “Adobe Photoshop”.

Proficiency in experimental design planning and stimuli preparation.

Proficiency in bibliography research aimed at drafting thesis, abstracts, scientific papers.

Excellent knowledge of WINDOWS operating system.

Excellent knowledge of software packages: Office, Adobe Photoshop, Acrobat Reader.

Proficiency in Internet browsing.

Driving license Category B

ADDITIONAL INFORMATION

Publications

- Bechtel-Kuehne, S., Voigt, B., Lang, L., Pauen, S., Visalberghi, E., Manduca, L., Ventricelli, M., **Meglio G.**, Sabbatini, G. (in prep.). Divergent thinking and innovative tool manufacture in preschool children (*Homo sapiens*) and capuchin monkeys (*Sapajus* spp.).
- **Meglio G.**, Manduca L., Ventricelli M., Bechtel-Kuehne S., Voigt B., Pauen S., Visalberghi E., Sabbatini G. (in prep.). How do capuchin monkeys (*Sapajus* spp.) innovate in a tool-manufacturing task?.
- Sabbatini G., **Meglio G.**, & Truppa, V. (2016). Motor planning in different grasping tasks by capuchin monkeys (*Sapajus* spp.). *Behavioural Brain Research*, 312, 201-211. <http://dx.doi.org/10.1016/j.bbr.2016.06.010>.
- **Meglio G.**, Truppa V., Sabbatini G. (2015). Pianificazione motoria in azioni di prensione nei cebi dai cornetti (*Sapajus* spp.). *Nea Science, Neuroscienze, Psicologia E Riabilitazione*, ISSN 2282-6009, 9, 125-128.
- **Meglio G.**, Truppa V., Sabbatini G. (2015). Motor planning in different grasping contexts by capuchin monkeys (*Sapajus* spp.). *Folia Primatologica*, 86(4), 321. <http://dx.doi.org/10.1159/000435825>.
- **Meglio G.**, Truppa V., Sabbatini G. (2015). Motor planning in different grasping contexts by capuchin monkeys (*Sapajus* spp.). Abstract book of the XXVI Congress of Italian Society of Ethology (SIE), 110.

Conferences

- **Meglio G.**, Manduca L., Ventricelli M., Bechtel-Kuehne S., Voigt B., Pauen S., Visalberghi E., Sabbatini G. (oral communication). How do capuchin monkeys (*Sapajus* spp.) innovate in a tool-manufacturing task?. Scheduled for XXIII National Congress of the Italian Primatological Association (API), Science Museum (MUSE) Trento, September 14-16, 2017.
- Manduca L., **Meglio G.**, Ventricelli M., Bechtel-Kuehne S., Voigt B., Pauen S., Visalberghi E., Sabbatini G. (poster). Innovation in a tool-manufacturing task in capuchin monkeys (*Sapajus* spp.). Scheduled for XXVII Congress of the Italian Society of Ethology (SIE), Natural History Museum, University of Pisa, Calci (Pisa), June 18-21, 2017.
- **Meglio G.**, Truppa V., Sabbatini G. (oral communication). Pianificazione motoria in azioni di prensione nei cibi dai cornetti (*Sapajus* spp.). XII Congress of Congress of Italian Association of Cognitive SciencesAISC (AISC), Palace Gio Francesco Balbi, Genova, Italia, December 10-12, 2015. Selected among the seven best oral communications at the Congress.
- **Meglio G.**, Truppa V., Sabbatini G. (oral communication). Motor planning in different grasping contexts by capuchin monkeys (*Sapajus* spp.). VI Congress of the European Federation for Primatology (EFP), Rome, August 25-28, 2015.
- **Meglio G.**, Truppa V., Sabbatini G. (poster). Motor planning in different grasping contexts by capuchin monkeys (*Sapajus* spp.). XXVI Congress of the Italian Society of Ethology (SIE). Parma, June 24-26, 2015.

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Roma, 28/05/2017

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