



Full Name: Manuel António Pinto Sapage

Nationality: **Portuguese**

Sex: **Male**

Birth Date: **July 15th, 1985**

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Investigation Centre: cE3c — Centre For Ecology, Evolution And Environmental
Changes & Change - Global Change And Sustainability Institute,
Lisbon, Portugal

- Research Group Evolutionary Ecology

Current Condition: PhD Student of the Doctoral Programme in Biodiversity,
Genetics & Evolution (BIODIV)

- Faculty: Faculty of Sciences, University of Lisbon (FCUL)

CURRENT AREAS OF SCIENTIFIC ACTIVITY AND RESEARCH INTERESTS:

Domain of specializations: My specialization is in Conservation Biology and Behavioural Ecology. In my master thesis I studied the breeding behaviour of captive birds. I also have some expertise in the study of animal social information use, mainly mate-choice copying, and computer simulation.

Present research interests: My current research interests are: Behavioural Ecology; Social Information; Cultural Evolution; Gene-Culture Evolution; Sexual Selection; Mate Choice; Habitat Choice; Animal Cognition; Conservation Biology; Ex-Situ Conservation; Mathematical Modelling and Statistical Modelling.

Other skills/activities: I am skilful in the R language and I have also programmed using C. Apart from these computer languages, I have also some basis on how to create models for Bayesian analysis using JAGS and Stan. Apart from my scientific research interests, I am also interested in activities that involves problem-solving, such as puzzles and strategic board games.

ACADEMIC DEGREES:

2023: PhD in Biodiversity, Genetics and Evolution – Thesis Title: “The Role of Spatial Structure in the Process of Mate-Choice Copying”, finished with distinction and praise (distingão e louvor).

2011: M.Sc. in Conservation Biology (Faculty of Sciences, University of Lisbon) – Thesis Title: “Comportamento Reprodutor de Rapinas Diurnas em Cativeiro na Coudelaria de Alter Real e em Vaiamonte” (Reproductive Behaviour of Captive Diurnal Raptors in Alter Stud Farm and Vaiamonte)

2007: College Graduation in Biology - Environmental Biology (Faculty of Sciences, University of Lisbon)

SCIENTIFIC PUBLICATIONS:

Sapage, M., Varela, S.A.M. & Kokko, H. (2021) Social learning by mate-choice copying increases dispersal and reduces local adaptation. *Functional Ecology*, 35(3), 705–716. DOI:10.1111/1365-2435.13735

Sapage, M. & Varela, S.A.M. 2020. Two research avenues for future mate-choice copying studies: a comment on Davies *et al.* *Behavioral Ecology*, 31(6), 1291–1292. DOI:10.1093/beheco/araa075

Carvalho, C., Varela, S.A.M., Bastos, L.F.B., Órfão, I., Beja, V., **Sapage, M.**, Marques, T.A., Knight, A. & Vicente, L. 2019. The Relevance of *In Silico*, *In Vitro* and Non-human

Primate Study-based Approaches to Clinical Research on Major Depressive Disorder. Alternatives to Laboratory Animals 47(3–4): 128–139. DOI: 10.1177/0261192919885578

Borda-de-Água, L., Ascensão, F., **Sapage, M.**, Barrientos, R. & Pereira, H.M. (2019) On the identification of mortality hotspots in linear infrastructures. *Basic and Applied Ecology*, 34: 25–35, . DOI: 10.1016/j.baae.2018.11.001

Santos, M., **Sapage, M.**, Matos, M. and Varela, S. A. M. (2017), Mate-choice copying: A fitness-enhancing behavior that evolves by indirect selection. *Evolution*, 71(6), 1456–1464. doi:10.1111/evo.13235

ORAL COMMUNICATIONS:

Sapage M.*, Varela S.A.M, Matos M, Santos M., Kokko H. & Schlupp I. 15-16 December 2022. Social learning by Mate-Choice Copying Increases Dispersal and the Speed of Range Expansion. XVIII National Meeting of Evolutionary Biology (ENBE) from the Portuguese Association of Evolutionary Biology (APBE). Braga, Portugal.

Sapage M.*, Varela S.A.M, Matos M, Santos M., Kokko H. & Schlupp I. 9-10 December 2022. Social learning by Mate-Choice Copying Increases Dispersal and the Speed of Range Expansion. XIX. Congress of the Portuguese Ethological Society (SPE), Oeiras, Portugal - **Winner of the prize Vitor Almada for Best Student Oral Presentation**

Sapage M.*, Varela S.A.M., Kokko, H. 2-4 May 2019. The Effects of Mate-Choice Copying on Population Dispersal. BIODIV Annual Meeting '19. CIBIO-InBIO, Vairão, Portugal

Sapage M.*, Varela S.A.M., Vicente L. & Schlupp I. 9-10 October 2015. An Evaluation to the Standard Mate-Choice Copying Experimental Protocol. XII Nacional Congress of Ethology, SPE 2015. Lisbon, Portugal

Sapage M.*, Varela S.A.M., Vicente L. & Schlupp I. 19-20 June 2015. An Evaluation to the Standard Mate-Choice Copying Experimental Protocol. cE3c Annual Meeting, 2015. Lisbon, Portugal

Sapage M.*, Varela S.A.M., Vicente L., Wagner R.H., Danchin É. 24-25 October 2013. Habitat Copying predicts highly aggregated colonies in birds. 10th Nacional Congress of Ethology, SPE 2013. Champalimaud Centre for the Unknown. Lisbon, Portugal.

Varela S.A.M.*, **Sapage M.**, Vicente L. & Danchin É. 24-25 October 2013. Does mate-choice copying modulate reproductive investment? 10th Nacional Congress of Ethology, SPE 2013. Champalimaud Centre for the Unknown. Lisbon, Portugal.

Varela S.A.M.*, **Sapage M.**, Vicente L. & Danchin É. 27-29 May 2013. Does mate-choice copying modulate reproductive investment? 3-Day International Conference on Evolutionary Patterns. Gulbenkain Foundation, Lisbon, Portugal. **Invitation.**

* Author Presenting the Work

Review work:

Reviewed one manuscript for Animal Behaviour

POSTER COMMUNICATIONS:

Sapage M., Varela S.A.M., Matos M. & Santos M., 14-15 November 2019. Mate-Choice Copying Can Hamper Range Expansion Through an Environmental Gradient. XV Encontro Nacional de Biologia Evolutiva (The Portuguese Meeting of Evolutionary Biology), CIIMAR, Matosinhos, Portugal – **Winner of the prize for Best Poster**

Sapage M., Varela S.A.M. & Hanna Kokko, 30 July – 4 August 2017. Does Mate-Choice Copying Promote Dispersal In Heterogeneous Environments? Behaviour 2017, a joint meeting of the 35th International Ethological Conference (IEC) and the 2017 Summer Meeting of the Association for the Study of Animal Behaviour (ASAB). Estoril, Portugal

Sapage M., Hanna Kokko & Varela S.A.M., 13-14 October 2016. Modeling mate-choice copying generalization with genotype-by-environment interactions. 13th Nacional Congress of Ethology, SPE 2016. Lisbon, Portugal

Sapage M., Hanna Kokko & Varela S.A.M., 27-28 June 2016. Modeling mate-choice copying generalization with genotype-by-environment interactions. cE3c Annual Meeting, 2016. Lisbon, Portugal

Charrua, A.P., **Sapage M.**, Varela S.A.M. & Vicente L. 9-10 October 2015. Play and Welfare in a Family of Captive White-Handed Gibbons, *Hylobates lar*. XII Nacional Congress of Ethology, SPE 2015. Lisbon, Portugal

Sapage M., Varela S.A.M., Vicente L., Wagner R.H. and Danchin É. 21 December 2012. Testing the "Commodity Selection Hypothesis": can conspecific cues be the key to the evolution of coloniality in birds? VIII National Meeting of Evolutionary Biology. Gulbenkain Foundation, Oeiras, Portugal.

Sapage M., Varela S.A.M., Vicente L., Wagner R.H. and Danchin É. 12-13 April 2012. Testing the "Commodity Selection Hypothesis": can conspecific cues be the key to the

evolution of coloniality in birds? (Ongoing Project) 9th National Congress of Ethology from the Portuguese Society of Ethology. CBA, Faculty of Sciences of the University of Lisbon, Portugal.

LECTURES:

Guest speaker for the lecture entitled “**Empirical and Theoretical Studies of Mate-Choice Copying**” on May 23, 2019, in the University of Saint Joseph, Macao, China.

Guest speaker for the lecture entitled “**How to Study Mate-Choice Copying Using Empirical and Theoretical Methods**” for the discipline of “**Advanced topics in Social Neuroscience**” belonging to the Master course in Cognitive and Behavioural Sciences, on April 11, 2019, in ISPA – Instituto Universitário de Ciências Sociais, Psicológicas e da Vida, Lisbon, Portugal.

Guest speaker for the lecture entitled “**Computational mate choice**” for the discipline of “**Animal Behaviour**” belonging to the 3rd year of the degree in Biology, on November 30, 2012, in the Faculty of Sciences of the University of Lisbon.

COURSES:

Main instructor in the “**Introdução à Linguagem de Programação R**” (Introduction to the R Programming Language), part of the cE3c and NEBFCUL short courses 2017/2018, on October 28–29, in the Faculty of Sciences of the University of Lisbon.

PAST ACTIVITIES:

Period (Day/Month/Year)	Position, Rank or Activity	Institution
07-5-2021 to 31-1-2022	External PhD student, where I worked with zebrafish (<i>Danio rerio</i>) artificial selection and behaviour	Instituto Gulbenkian de Ciência (IGC)
08-3-2020 to 28-5-2020	Visiting Scholar	University of Oklahoma
04-3-2016 to 01-4-2016	Visiting Scholar	University of Zurich
20-5-2014 to 15-11-2014	Visiting Scholar, where I worked with Guppy's (<i>Poecilia reticulata</i>) behaviour	University of Oklahoma
14-4-2014	Certification in the "Laboratory Animal Science Theoretical Course"	Sociedade Portuguesa de Ciências em Animais de Laboratório (SPCAL)

19-8-2013 to 24-8-2013	Participation in the “XIV Congress of the European Society for Evolutionary Biology”	European Society for Evolutionary Biology (ESEB)
25-6-2012 to 29-6-2012	Participation in the advance course "Practical course on Phylogenetics" with a workload of 30 hours.	Centre for Environmental Biology (CBA)
20-2-2012 to 24-2-2012	Participation in the advance course "Practical Course on Phylogeography" with a workload of 30 hours.	Centre for Environmental Biology (CBA)
24-5-2010 to 26-5-2010	Participation in the "Laboratory Animal Science Practical Course" with a workload of 20 hours	Sociedade Portuguesa de Ciências em Animais de Laboratório (SPCAL)
15-9-2009 to 18-9-2009	Participation in the technological training "Sightseeing Tours and Itineraries" (Itinerários e Circuitos Turísticos - Cód. 4327)	Turismo de Portugal
21-9-2009 to 13-10-2009	Participation in the technological training "English Language - Personal Service" (Língua Inglesa - Atendimento Personalizado - Cód.3454)	Turismo de Portugal
19-1-2008 to 20-1-2008	Participation in the course "Knowing the birds by the bones"	Sociedade Portuguesa para o Estudo das Aves (SPEA)
05-6-2008 to 08-6-2008	Participation in the 3rd Course of Identification, Biology and Conservation of Birds of Prey	Associação Transumância e Natureza
27-7-2007 to 31-7-2007	Participation in the Workshop "iSig - Initiation to Geographic information systems"	Faculdade de Ciências da Universidade de Lisboa - Departamento de Geologia
27-8-2007 to 08-9-2007	Field work for the "Conservation of Birds of Prey in Vale do Côa"	Associação Transumância e Natureza (ATN)
22-3-2004 to 01-1-2017	Volunteer, mainly at the animal demonstrations section. Assistance in handling and training animals and cleaning the animals' facilities.	Jardim Zoológico e de Aclimação em Portugal, SA (Lisbon Zoo)
01-9-2009 to 31-8-2011	Responsible for the environmental education hired under the Project “Conservar & Educar” - FALCOARIA DA COUDELARIA DE ALTER (Project In-Alentejo-04-0331-FEDER-000214)	Fundação Alter Real - Coudelaria de Alter

SCIENTIFIC PROJECTS:

2013: Integration in the project "Biodiversidade em ilhas oceânicas: um modelo unificado" (FCT Project PTDC/BIA-BIC/119255/2010) in the task for Mathematical Modelling.

LANGUAGES:			
	Reading:	Writing:	Conversation:
Portuguese	Excellent	Excellent	Excellent
English	Excellent	Excellent	Excellent

Updated May 4th, 2023 by

Manuel Sapage