

Thomas A. Püschel

Post-Doctoral Researcher, Ecology and Evolutionary Biology, University of Reading
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Education

University of Manchester, PhD in Adaptive Organismal Biology 2014-2018

Dissertation: *Morpho-functional analyses of the primate skeleton: Applying 3D geometric morphometrics, finite element analysis and phylogenetic comparative methods to assess ecomorphological questions in extant and extinct anthropoids.*

Supervisor: Prof. William Sellers

Co-supervisor: Prof. Christian Peter Klingenberg

Hull York Medical School, MSc in Human Evolution with Distinction 2012-2013

Dissertation: *Biomechanical modelling of human femora: A comparison between agriculturalists and hunter-gatherers using finite element analysis, geometric morphometrics and beam theory.*

Supervisor: Prof. Paul O'Higgins

Universidad de Chile, BSc in Biological Anthropology with Distinction 2007-2011

Dissertation: *Artificial skull deformation in the San Pedro de Atacama oases : a geometric morphometric approach.*

Supervisor: Prof. Germán Manríquez

Work experience

School of Biological Sciences, University of Reading, UK

Post-Doctoral Researcher - Ecology and Evolutionary Biology 2021-present

School of Anthropology and Museum Ethnography, University of Oxford, UK

Research Affiliate - Institute of Human Sciences 2021-present

School of Anthropology and Museum Ethnography, University of Oxford, UK

Post-doctoral Research Fellow - Leverhulme Early Career Fellowship 2018-2021

St Antony's College, Oxford, UK

College Advisor, Senior Common Room Member 2018-2021

University of Manchester, UK

Post-Doctoral Research Officer 2017-2018

Scholarships

1. *Becas Chile PhD scholarship* (2014-2018), Chilean National Commission for Scientific and Technological Research. 2014-2018

2. *Becas Chile Master scholarship* (2012-2013), Chilean National Commission for Scientific and Technological Research. 2012-2013
3. *ECOS-CONICYT scholarship* for an Internship at the Musée de l'Homme, Muséum d'Histoire Naturelle, Paris, France. 2012

Grants and awards

1. *SYNTHESSYS+ Transnational Access (BE-TAF-8207)*. To fund a research stay at the Royal Museum for Central Africa, Tervuren, Belgium. 2020
2. *Award for Excellence 2020, School of Anthropology and Museum Ethnography, University of Oxford*. In recognition of my exceptional contribution to the department. 2020
3. *The Boise Trust Fund Research Award*. Department of Zoology of the University of Oxford. 2019
4. *The Boise Trust Fund Research Award*. Department of Zoology of the University of Oxford. 2018
5. *Leverhulme Early Career Fellowship (ECF-2018-264)*. Postdoctoral fellowship. 2018-2021
6. *SYNTHESSYS+ Transnational Access (BE-TAF-4459)* To fund a research stay at the Royal Museum for Central Africa, Tervuren, Belgium. 2015

Selected lectures and public presentations for the period 2018-2021

1. **Püschel, T. A.** Primate Virtual Ecomorphology: Combining geometric morphometrics, biomechanics and phylogenetic comparative methods. Dmanisi Paleoanthropology Field School (April 2021). Dmanisi, Georgia.
2. **Püschel, T. A.,** Marcé-Nogué, J. Virtual symposium: Macroevolution of form and function in the mammalian locomotor system, Museum für Naturkunde (March 2021), Berlin, Germany.
3. **Püschel, T. A.** Primate evolutionary morphology: Assessing ecomorphological questions in extant and extinct anthropoids. Oxford Palaeoclub, University of Oxford (January 2021). Oxford, UK.
4. **Püschel, T. A.** Paleontología virtual un conjunto de herramientas emergente para análisis morfo-funcionales en contextos evolutivos. Plenary speaker at the XIII Chilean Anatomy Society (October 2020). Santiago, Chile.
5. **Püschel, T. A.** Adaptive radiation and evolution of Neotropical primates. Departmental seminar series, School of Anthropology and Museum Ethnography, University of Oxford (February 2019). Oxford, UK.
6. **Püschel, T. A.** What's with the long face? Analysing craniofacial diversification in baboons (genus *Papio*). Primate conversations seminar series, Institute of Cognitive and Evolutionary Anthropology, University of Oxford (February 2019). Oxford, UK.
7. **Püschel, T. A.** Analysing craniofacial diversification in baboons (genus *Papio*) using macroevolutionary approaches and habitat suitability models. Seminario Nuevas fronteras en el estudio de la evolución humana: El proyecto PPPG (Paleo-Primate Project Gorongosa) en el Parque Nacional Gorongosa, Mozambique (December 2018). Santiago, Chile.

Selected conference presentations for the period 2018-2021

1. **Püschel, T. A.**, Marcé-Nogué, J., Gladman, J., Patel, B. A., Almécija, S., & Sellers, W. I. Elucidating *Paralouatta*'s semi-terrestriality using the virtual morpho-functional toolbox *American Association of Physical Anthropology* (April 2020), Los Angeles, USA.
2. **Püschel, T. A.**, Bobe, R., Martinez, F. A Macro-Evolutionary Perspective on Papionini Craniofacial Diversification. *European Federation of Primatology 2019 & the Primate Society of Great Britain: "Our Primate Heritage, Our Primate Legacy* (September 2019), Oxford, UK.
3. Marcé-Nogué, J., **Püschel, T. A.**, De Esteban-Trivigno, S., Fortuny, J., & Kaiser, T. M. Mandibular Biomechanics as a Key Factor to Understand Dietary Adaptations in Mammals. *International Congress of Vertebrate Morphology*. (July 2019), Prague, Czechia.
4. Manríquez G, **Püschel, T. A.** , Toro-Ibacache V. Antropología virtual y morfometría geométrica: Nuevos enfoques para analizar la dieta en contextos arqueológicos. Congreso Chileno de Arqueología (December 2018), Santiago, Chile.
5. Marcé-Nogué, J., Daasch, A., **Püschel, T. A.**, & Kaiser, T. M. (2018). Chewing biomechanics in early Homininis: An approach to detect evolutionary change in the ecomorphological. *American Association of Physical Anthropology* (April 2018), New Orleans, USA.

Academic service

ORGANISED CONFERENCES

1. 4th International Meeting of Early-stage Researchers in Palaeontology. Cuenca, Spain. 11-14 June 2019.
2. European Federation of Primatology 2019 & the Primate Society of Great Britain: 'Our Primate Heritage, Our Primate Legacy'. Oxford, UK. 8-11 September 2019.

AD-HOC REVIEWER

Science Advances, Proceedings of the Royal Society B: Biological Sciences, Scientific Reports (2), Journal of Human Evolution (4), The Anatomical Record, PeerJ (3), Journal of Evolutionary Biology, American Journal of Primatology, Journal of Paleontology, Mammalian Biology, Journal of Zoological Systematics and Evolutionary Research, Animals (3), Development Genes and Evolution, International Journal of Tropical Biology and Conservation, Revista Colombiana de Entomología.

Peer-reviewed publications

JOURNAL ARTICLES

1. Morley, J., Bucchi, A., Lorenzo, C., & **Püschel, T. A.** (2022). [Characterizing the body morphology of the first metacarpal in the Homininae using 3D geometric morphometrics](#). *American Journal of Biological Anthropology*, (In press), 1–12.
2. Núñez-Cortés, R., Cruz-Montecinos, C., Torres-Castro, R., Tapia, C., **Püschel, T. A.**, & Pérez-Alenda, S. (2021). [Effects of cognitive and mental health factors on the outcomes following carpal tunnel release: A systematic review and meta-analysis](#). *Archives of Physical Medicine and Rehabilitation*, (In press).
3. Coatham, S. J., Sellers, W. I., & **Püschel, T. A.** (2021). [Convex hull estimation of mammalian body segment parameters](#). *Royal Society Open Science*, 8(6), 210836.
4. Püschel, H. P., Bertrand, O. C., O'Reilly, J. E., Bobe, R., & **Püschel, T. A.** (2021). [Divergence-time estimates for hominins provide insight into encephalization and body mass trends in human evolution](#). *Nature Ecology & Evolution*, 1–12.
5. Bucchi, A., **Püschel, T. A.**, Lorenzo, C., & Marcé-Nogué, J. (2020). [Finite element analysis of the proximal phalanx of the thumb in Hominoidea during simulated stone tool use](#). *Comptes Rendus Palevol*, 19(2), 26–39.
6. **Püschel, T. A.**, Marcé-Nogué, J., Gladman, J., Patel, B. A., Almécija, S., & Sellers, W. I. (2020). [Getting its feet on the ground: Elucidating Paralouatta's semi-terrestriality using the virtual morpho-functional toolbox](#). *Frontiers in Earth Science*, 8.
7. Marcé-Nogué, J., **Püschel, T. A.**, Daasch, A., & Kaiser, T. M. (2020). [Broad-scale morpho-functional traits of the mandible suggest no hard food adaptation in the hominin lineage](#). *Scientific Reports*, 10(1), 1–11.
8. **Püschel, T. A.**, Marcé-Nogué, J., Chamberlain, A. T., Yoxall, A., & Sellers, W. I. (2020). [The biomechanical importance of the scaphoid-centrale fusion during simulated knuckle-walking and its implications for human locomotor evolution](#). *Scientific Reports*, 10(1), 1–7.
9. **Püschel, T. A.**, Friess, M., & Manríquez, G. (2020). [Morphological consequences of artificial cranial deformation: Modularity and integration](#). *PLOS ONE*, 15(1), e0227362.
10. **Püschel T. A.**, Marcé-Nogué J., Gladman J. T., Bobe R., & Sellers W. I. (2018). [Inferring locomotor behaviours in Miocene New World monkeys using finite element analysis, geometric morphometrics and machine-learning classification techniques applied to talar morphology](#). *Journal of The Royal Society Interface*, 15(146), 20180520.
11. Benítez, H. A., Lemic, D., **Püschel, T. A.**, Virić Gašparić, H., Kos, T., Barić, B., Pajač Živković, I. (2018). [Fluctuating asymmetry indicates levels of disturbance between agricultural productions: An example in Croatian population of *Pterostichus melas melas* \(Coleoptera: Carabidae\)](#). *Zoologischer Anzeiger*, 276, 42–49.
12. **Püschel, T. A.**, Marcé-Nogué, J., Kaiser, T. M., Brocklehurst, R. J., & Sellers, W. I. (n.d.). [Analyzing the sclerocarpus adaptations of the Pitheciidae mandible](#). *American Journal of Primatology*, 0(0), e22759.
13. **Püschel, T. A.**, Gladman, J. T., Bobe, R., & Sellers, W. I. (2017). [The evolution of the platyrrhine talus: A comparative analysis of the phenetic affinities of the Miocene](#)

- platyrrhines with their modern relatives. *Journal of Human Evolution*, 111, 179–201.
14. Marcé-Nogué, J., **Püschel, T. A.**, & Kaiser, T. M. (2017). [A biomechanical approach to understand the ecomorphological relationship between primate mandibles and diet](#). *Scientific Reports*, 7(1), 8364.
 15. Püschel, H. P., **Püschel, T. A.**, & Rubilar-Rogers, D. (2017). [Taxonomic Comments of a Glossotherium Specimen from the Pleistocene of Central Chile](#). *Boletín Del Museo Nacional de Historia Natural, Chile*, 66(2), 223–262.
 16. Marcé-Nogué, J., Esteban-Trivigno, S. D., **Püschel, T. A.**, & Fortuny, J. (2017). [The intervals method: A new approach to analyse finite element outputs using multivariate statistics](#). *PeerJ*, 5, e3793.
 17. **Püschel, T. A.**, & Sellers, W. I. (2016). [Standing on the shoulders of apes: Analyzing the form and function of the hominoid scapula using geometric morphometrics and finite element analysis](#). *American Journal of Physical Anthropology*, 159(2), 325–341.
 18. Bucchi, A., **Püschel, T. A.**, & Manríquez, G. (2016). [Artificial Cranial Modification in San Pedro de Atacama and the Loa Basin: A Quantitative Approach to Its Role as a Marker of Social Identity](#). *Revista Chilena de Antropología*, 34(2), 19–30.
 19. Benítez, H. A., Vargas, H. A., & **Püschel, T. A.** (2015). [Left–right asymmetry and morphological consequences of a host shift in the oligophagous Neotropical moth *Macaria mirthae* \(Lepidoptera: Geometridae\)](#). *Journal of Insect Conservation*, 1–10.
 20. **Püschel, T. A.** (2014). [Modularidad e Integración Morfológica en Cráneos Humanos: Un Enfoque Morfométrico Geométrico](#). *International Journal of Morphology*, 32(1), 299–304.
 21. **Püschel, T. A.**, & Benítez, H. A. (2014). [Femoral Functional Adaptation: A Comparison Between Hunter Gatherers and Agriculturalists Using Geometric Morphometrics](#). *International Journal of Morphology*, 32(2), 627–633.
 22. Benítez, H. A., **Püschel, T.A.**, Lemic, D., Čačija, M., Kozina, A., & Bažok, R. (2014). [Ecomorphological Variation of the Wireworm Cephalic Capsule: Studying the Interaction of Environment and Geometric Shape](#). *PLOS ONE*, 9(7), e102059.
 23. Benítez, H. A., Lemic, D., Bažok, R., Bravi, R., Buketa, M., & **Püschel, T.A.** (2014). [Morphological integration and modularity in *Diabrotica virgifera virgifera* LeConte \(Coleoptera: Chrysomelidae\) hind wings](#). *Zoologischer Anzeiger - A Journal of Comparative Zoology*, 253(6), 461–468.
 24. Benítez, H. A., & **Püschel, T. A.** (2014). [Modelando la Varianza de la Forma: Morfometría Geométrica Aplicaciones en Biología Evolutiva](#). *International Journal of Morphology*, 32(3), 998–1008.
 25. **Püschel, T. A.**, Espejo, J., Sanzana, M.-J., & Benítez, H. A. (2014). [Analysing the Floral Elements of the Lost Tree of Easter Island: A Morphometric Comparison between the Remaining Ex-Situ Lines of the Endemic Extinct Species *Sophora toromiro*](#). *PLOS ONE*, 9(12), e115548.

BOOK CHAPTERS

1. Manríquez, G., **Püschel, T. A.**, Flores, S., González, T., Moraga, M., & Rothhammer, F. (2016). [Origen y evolución de la población chilena: El punto de vista biológico](#). In F.

Fallabela, M. Uribe, C. Aldunate, & J. Hidalgo (Eds.), *Prehistoria en Chile: Desde sus Primeros Habitantes hasta los Incas*. Editorial Universitaria.

UNDER REVIEW

1. Bobe, R., Aldeias, V., Alemseged, Z., Archer, W., Aumaitre, G., Bamford, M. K., . . . , **Püschel, T. A.**, . . . , Carvalho, S. (Under review). [The first Miocene fossils from coastal woodlands in the southern East African Rift](#). *iScience*.
2. Bucchi, A., **Püschel, T. A.**, Profico, A., & Lorenzo, C. (2020). [Modularity of the Wrist in Extant Hominids](#). *Journal of Morphology*.