

DR. DRIES DAEMS

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Date of birth: 20.07.1990

Nationality: Belgian

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RESEARCH INTERESTS

- Social complexity
- Urbanism
- Agent-based modelling
- Material studies
- Iron Age to Hellenistic Anatolia
- Human-environment interactions

EDUCATION

- 2014-2018** Ph.D. in Archaeology (University of Leuven) Obtained: 15 May 2018
Dissertation title: *Dynamics of social complexity: Community formation beyond the origin of polis during the Iron Age, Achaemenid, and Hellenistic periods. The case of Düzen Tepe, Sagalassos and southwest Anatolia.*
Supervisor: Prof. dr. Jeroen Poblome (University of Leuven)
- 2011-2012** MA in Archaeology (University of Leuven)
Thesis title: Elite Identity in Late Roman Britain. Material Manifestation and Societal Capacity (Supervisor: Prof. dr. Jeroen Poblome)
- 2008-2011** BA in Archaeology (University of Leuven)
Title: League Coins in Ancient Greece. A Critical Reflection on the *Herakles Drakonopnigon* series (Supervisor: Prof. dr. Johan Van Heesch)

EMPLOYMENT

- 2021 – Current** Assistant Professor in Settlement Archaeology and Digital Archaeology at Middle East Technical University (Ankara)

Guest Assistant Professor at University of Leuven (0.10 FTE)
- 2020 – Current** Substitute Lecturer at University of Leuven (0.10 FTE)
Course: Archaeological Theory, Methods and Practice III: Spatial Analysis in Archaeology
- 2019 – 2020** Postdoctoral researcher (0.5 FTE) with Sagalassos Project on C1 Project *"The role of change in long-term regional development. Approaching the dynamic metabolism of social-ecological systems in the Sagalassos/Ağlasun region."*

Coordinator of Microproject Innovative Digital Learning (0.25 FTE): *"Modelling and Simulation in Archaeology"* at University of Leuven

Substitute Lecturer at University of Leuven (0.10 FTE)
Course: Seminar in Classical Archaeology

2018 – 2019 Postdoctoral researcher at Suna & İnan Kiraç Research Centre for Mediterranean Civilizations (Koç University, Antalya) on “*Polis formation and synoikismos in southwest Anatolia*”.

Substitute Lecturer at University of Leuven (0.10 FTE)
Course: Themes in Classical Archaeology

2014-2018 Ph.D. Researcher with Sagalassos Project at University of Leuven

FELLOWSHIPS, GRANTS AND BURSARIES

2020-2024 Scientific Research Network Grant
Funded by Research Foundation Flanders
Project title: Network for Agent-based modelling of Social-ecological systems in Archaeology (NASA)
Amount: €62,500

2020 Graduate Collaborative Research Awards (co-applicant)
Funded by: Universitas 21
Project title: Let's Work Together: Modelling the emergence of social cooperation and complexity formation
Amount: \$3,550

Bridge Grant
Funded by: yrCSS (Young Researchers of the Complex Systems Society)
Project title: Let's Work Together: Modelling the emergence of social cooperation and complexity formation.
Amount: € 1,000

Microproject Innovative Digital Learning
Funded by: University of Leuven
Project title: Modelling and Simulation in Archaeology
Amount: € 10,000

2019 Idealabs Grant for Interdisciplinary Research Groups (Extension)
Funded by Academic Foundation Leuven
Project title: Sustainability and Resilience in Past & Present Populations
Amount: €1,250

Travel grant for participation in “Winter Workshop on Complex Systems 2020” at Gruyère (Switzerland)
Amount: F200

Bursary for Complex Systems Summer School, Santa Fe Institute
Funded by: Academic Foundation Leuven
Amount: €1,200

Bursary for conference participation at CAA 2019 (Krakow)
Funded by: CAA International
Amount: €480

2018-2019 Postdoc Fellowship for Visiting Scholars
Funded by Tübitak: Scientific and Technological Research Council of Turkey
Amount: 30,000 Turkish Lira (approx. €7,000)

2017-2019 Idealabs Grant for Interdisciplinary Research Groups

Funded by Academic Foundation Leuven
 Project title: Sustainability and Resilience in Past & Present Populations
 Amount: €2,500

2014-2018 Ph.D. Fellowship
 Funded by Research Foundation Flanders
 Project title: Dynamics of social complexity: Community formation beyond the origin of *polis*.
 Amount: Fully funded fellowship

COMPETENCIES AND SKILLS

Technical skills	Languages
<ul style="list-style-type: none"> • Agent-based modelling: Netlogo^{***} • GIS: QGIS^{***} and ArcGis^{**} • Data analysis: R^{***}, Excel^{**}, Python[*] • Network analysis: Visone^{**}, Gephi^{**} • Database management: Neo4j[*], Access^{***}, SQL[*] • Text processing: LaTeX^{**}, Markdown^{***}, Word^{***} 	<ul style="list-style-type: none"> • Dutch: Mother tongue • English: Excellent • French: Good • German: Average • Turkish: Basic • Greek and Latin: Reading

TEACHING EXPERIENCE

2020-2021 Archaeological Theory, Methods and Practice III: Spatial Analysis (3BA) at University of Leuven (Substitute Lecturer)

Themes in Classical Archaeology (2/3 BA) at University of Leuven (Substitute Lecturer)

2019-2020 Seminar in Classical Archaeology (MA) at University of Leuven (Substitute Lecturer)

Workshop at Computer Applications & Quantitative Methods in Archaeology – Netherlands/Flanders Chapter Meeting

"Agent-based modelling: Are computer simulations useful for archaeologists?"

2018-2019 Themes in Classical Archaeology (2/3 BA) at University of Leuven (Substitute Lecturer)

Guest lectures at Middle Eastern Technical University (Ankara) as part of Ph.D. course "Current Approaches in Archaeology"

Topic: Digital archaeology and model thinking: Social complexity in southwest Anatolia.

Workshop at Middle Eastern Technical University (Ankara)

"Digital archaeology and model thinking: Hands-on examples, best practices and tutorials in data science, agent-based modelling, and network analysis."

2017-2018 Archaeological Theory, Methods and Practice I (1BA) at University of Leuven (Assistant Lecturer)

Archaeological Theory, Methods and Practice II (2BA) at University of Leuven (Assistant Lecturer)

Field school (1 BA) at University of Leuven (Assistant Lecturer)

2015-2016 Archaeological Theory, Methods and Practice I (1BA) at University of Leuven (Assistant Lecturer)

Field school (1 BA) at University of Leuven (Assistant Lecturer)

SELECTED PUBLICATIONS

Daems, D., Vandam, R., Cleymans, S., Broothaerts, N., Boogers, B., Matsuo, H., Mirhanoglu, A. (In Press) The social metabolism of past societies. A new approach to environmental changes and societal responses in the territory of Sagalassos (SW Turkey). In: Erdkamp, P., Verboven, K. and Manning, J. (eds.) *Climate and Society in Ancient Worlds. Diversity in Collapse and Resilience*. Palgrave Studies in Ancient Economies. Palgrave.

Daems, D. (Accepted) Between cities and kings. Polis formation in southwest Anatolia during the Hellenistic period. In: Diosono and Maschek (eds.) *Beyond Hybridity and Code-Switching: Material Approaches to Cultural Concurrences in the Late Hellenistic Mediterranean*.

Daems, D. (Accepted) Adaptive cycles in archaeology. Indicators of change and stability in socio-economic systems. In: Poblome, J. and Vandam, R. (eds.) *Once upon a river. Long-term change in the social metabolism of the Aǧlasun Valley*. Leuven University Press.

Daems, D. and P. Talloen (Accepted) Moving in together? Synoikismos and polis formation through push-pull dynamics in Sagalassos and southwest Anatolia. *BASOR*

Daems, D. (2021) *Social Complexity and Complex Systems in Archaeology*. Routledge.

Shaw, J., Coco, E., Wootton, K., **Daems, D.**, Gillreath-Brown, A., Swain, A. and Dunne, H. (2021) Disentangling ecological and taphonomic signals in ancient food webs. *Paleobiology*.

Daems, D. (2020) Social Complexity and Complexity Economics. Studying Socio-Economic Systems at Düzen Tepe and Sagalassos (SW Turkey). In: K. Verboven (Ed.) *Complexity: A New Framework To Interpret Ancient Economy Data*. Palgrave Studies in Ancient Economies, pp. 163-201.

Daems, D. (2020) Reassessing the Origin of Polis in Lycia and Southwest Anatolia. *Adalya* 23, pp. 111-132.

Daems, D. (2019) Building communities. Presenting a model of community formation and organizational complexity in southwestern Anatolia. *Journal of Anthropological Archaeology* 56, 101110.

Daems, D. (2019) On Complex Archaeologies: Conceptualising Social Complexity and its Potential for Archaeology, *Adaptive Behavior*.

Brughmans, T., Hanson, J., Mandich, M., Romanowska, I., Rubio-Campillo, X., Carrignon, S., Collins-Elliott, S., Crawford, K., **Daems, D.**, ... Ritondale, M. (2019) Formal Modelling Approaches to Complexity Science in Roman Studies: a Manifesto. *Theoretical Roman Archaeology Journal*.

Kiekens, A., Rongé, J., Van Eynde, S., Cleymans, S., **Daems, D.**, De Ridder, B., Despeghel, J., Moonen, P., Ovaere, M. and Smeets, N. (2019) How to move towards a

common understanding of progress? A transdisciplinary exercise involving 10 young researchers. *Transdisciplinary Insights*. Leuven.

Daems D., Poblome J. (2017). The Pottery of Late Achaemenid Sagalassos: an overview. *HEROM. Journal on Hellenistic and Roman Material Culture*, 6 (1), 49-62.

Daems D., Braekmans D., Poblome J. (2017). Late Achaemenid and Early Hellenistic Pisidian Material Culture from Düzen Tepe (SW Anatolia). *HEROM. Journal on Hellenistic and Roman Material Culture*, 6 (1), 11-47.

Monsieur P., **Daems D.**, Poblome J. (2017). Hellenistic and Italic amphorae from Sagalassos. *HEROM. Journal on Hellenistic and Roman Material Culture*, 6 (1), 97-118.

Cleymans S., **Daems D.**, De Cupere B., Marinova E., Poblome J. (2017). A Taste of Time. Foodways and Cultural Practices in Late Achaemenid-Early Hellenistic Düzen Tepe (SW Anatolia). *HEROM. Journal on Hellenistic and Roman Material Culture*, 6 (1), 63-95.

Daems D., Poblome J. (2016). Adaptive Cycles in Communities and Landscapes: The Case of Sagalassos and Düzen Tepe During the Classical/Hellenistic Period. *Archaeological Review from Cambridge*, 31 (2), 91-107.

OUTREACH

- 2020** Finalist 'Falling Walls Lab Leuven'
Title: Breaking the walls of past, present and future complexity.
- Lecture at Rozenberg (3rd - 4th year secondary school)
Title: Archaeology and studying life in the ancient world.
- 2018** Lecture at Rozenberg (3rd - 4th year secondary school)
Title: Life in the ancient world.
- 2016** Lecture at Saint-Dymphna College (6th year secondary school)
Title: Sagalassos. The story of an ancient city.
- Lecture for Association of Historians in Geel
Title: Sagalassos. The story of an ancient city.
- 2015** Lecture at Saint-Dymphna College (6th year secondary school)
Title: Sagalassos. The story of an ancient city.

FIELDWORK

- 2014 – Current** Pottery specialist with Sagalassos Archaeological Research Project
Material studies on Iron Age, Achaemenid & Hellenistic pottery of Sagalassos and the study area
- 2014-2015** Site assistant on excavations at Upper Agora and Rock Sanctuary

CONFERENCE AND SEMINAR ORGANISATION

- 2021** Main organizer of workshop "From past to future: Deep-time patterns of sustainability and resilience in socio-ecological systems" at University of Leuven, 11-12 May 2021.

- 2014-2020 Organizing committee of the monthly "Leuven Archaeological Research Seminars" at University of Leuven.
- 2019 Organising committee of "Computer applications & Quantitative Methods in Archaeology Conference (Netherlands-Flanders Chapter)" at Leuven, 23-25 October 2019.
- 2016 Main organiser of *Synoikismos* seminar "Complexity and social-ecological systems" at University of Leuven, 18 February 2016.

CONFERENCE PARTICIPATION AND INVITED TALKS

- 2021 International Conference on Resources and Transformation in Pre-modern Societies 19–21 November 2020, 11 December 2020, 15 January 2021, Bochum.
Conference paper: *Simulating Resource Exploitation Strategies in Iron Age to Hellenistic Communities in Southwest Anatolia*.
- 2020 Procurement of raw materials. Pathways to the Late Neolithic of Central and Western Anatolia. Adam Mickiewicz University, Poznan (Poland)
Invited paper: *Resourceful communities: Strategies of resource exploitation in the area of Sagalassos*.
- 2019 4th IARPotHP Conference: Manufacturers and Markets. The Contributions of Hellenistic Pottery to Economies Large and Small (Athens)
Conference paper: *The Hellenistic Pottery from Sagalassos: A General Framework of Typo-Chronology, Production, Consumption and Distribution*.
- Computer applications & Quantitative Methods in Archaeology Conference (Netherlands/Flanders Local Chapter, Leuven)
Conference paper: *Modelling the origin of polis in Anatolia. From conceptual to computational approaches*.
- Theoretical Archaeology Group Conference (London)
Conference paper: *Conceptual modelling of social complexity trajectories and inequality in urban networks*.
- Computer applications & Quantitative Methods in Archaeology Conference (Krakow)
Conference paper: *Modelling the origin of polis in Anatolia. From conceptual to computational approaches*.
- 2018 Conference on Complex Systems (Thessaloniki)
Conference paper: *Materialising complexity. A conceptual model of material culture, social complexity and mechanisms of change*.
- 24th Annual Meeting of the European Association of Archaeologists (Barcelona)
Conference paper: *Carrying Capacity. A superseded concept or window of opportunities?*
- 19th International Congress of Classical Archaeology (Köln/Bonn)
Conference paper: *Tracing organisation of labour and material production at Sagalassos*.
- Theoretical Roman Archaeology Conference (Edinburgh)

- Conference paper: *Attracting cities: The role of urban attraction poles in a model of community formation and social complexity dynamics.*
- 2017 Conference on Complex Systems (Cancun)
Invited conference paper: *Complexity Matters. Uncovering mechanisms of social complexity in the past.*
- Barcelona Quantification Workshop
Workshop paper: *Counting sherds is complex business. Quantifying micro dynamics in social complexity through material culture.*
- 2016 Conference on Complex Systems (Amsterdam)
Conference paper: *Dynamics of Social Organisation. Use of social practices and adaptive cycles to study past societies.*
- 2015 Second Conference of IARPotHP (Lyon)
Conference paper: *Classical and Hellenistic Sagalassos. The ceramic evidence.*
- IMS workshop (Göttingen)
Workshop paper: *Origin of polis 2.0. A case from SW Anatolia. What can survey data from Sagalassos and environs tell us?*

MANAGEMENT AND ADMINISTRATIVE POSITIONS

- 2020-Current Coordinator of NASA: Network for Agent-based modelling of Social-ecological systems in Archaeology.
- 2014-2020 Administration of Sagalassos Archaeological Research Project
Tasks: General administration & organization archaeological campaigns
Depot manager at Sagalassos excavations (Ağlasun, Turkey)
Archive manager of digital and physical archives of the Sagalassos Project (University of Leuven)
- 2018-Current Program Committee, Department of Archaeology (University of Leuven)
- 2018-2019 Member of sub-faculty council and AP fraction council at Faculty of Arts (University of Leuven)
- 2017-2018 Head representative of Assisting Personnel of Research Unit Archaeology, Art history and Musicology at sub-faculty council and AP fraction council at Faculty of Arts (University of Leuven)

COURSES, WORKSHOPS AND SUMMER SCHOOLS

- 2021 CoMSES Net International Winter School on Agent-Based Modeling of Social-Ecological Systems (Arizona State University, Online)
- 2020 Winter Workshop on Complex Systems (Lausanne)
Academic Presentation and Seminar Skills (University of Leuven)
- 2019 Complex Systems Summer School (Santa Fe Institute, Santa Fe)
Modelling and Simulation in Archaeology (SPOC, Leiden University)
Introduction to Complexity (MOOC, Santa Fe Institute)
Fractals and Scaling (MOOC, Santa Fe Institute)

- 2018 Digital Archaeology Summer School (Barcelona)
Introduction to Model Thinking (MOOC, University of Michigan)
Academic Writing (University of Leuven)
- 2017 Introduction to Python for Data Science (DataCamp)
Introduction to Agent-Based Modelling (MOOC, Santa Fe Institute)
Workshop Agent-Based Modelling with NetLogo (CAA Atlanta)
Fundamental statistical methods with R (Leuven Statistics Centre)
LaTeX Introduction (University of Leuven)
- 2016 Introduction to R (Leuven Statistics Research Centre)
Essential Tools for R (Leuven Statistics Research Centre)
- 2015 Fundamental Statistical Methods (Leuven Statistics Research Centre)
Matlab Part 1: Introduction (Leuven Statistics Research Centre)
Matlab Part 2: Programming (Leuven Statistics Research Centre)
- 2014 Programming for Everybody: Python (MOOC, University of Michigan)

PROFESSIONAL AFFILIATIONS

- Network for Agent-based modelling of Social-ecological systems in Archaeology
- Complex Systems Society
- Young Researchers of the Complex Systems Society
- Pages (Past Global Changes) Early Career Network
- CAA International (Computer Applications & Quantitative Methods in Archaeology)
- CAA Special Interest Group on Scientific Scripting Languages in Archaeology
- European Association of Archaeologists (EAA)
- The International Association for Classical Archaeology
- International Association for Research on Pottery of the Hellenistic Period

REFERENCES

Prof. dr. Jeroen Poblome (University of Leuven): jeroen.poblome@kuleuven.be
Prof. dr. Sander van der Leeuw (Arizona State University): vanderle@asu.edu
Em. Prof. dr. John Bintliff: johnlbintliff@gmail.com