
ACBE DMP

Plan de gestion de données créé à l'aide de DMP OPIDoR, basé sur le modèle "Science Europe: structured template" fourni par DMP OPIDoR.

Plan Details

Plan title	ACBE DMP	
Deliverable	DMP-1	
Version	First version	
Plan purpose/scope	The goal of this plan (DMP) is to define the modalities by which software and data developed in the ACBE project will be managed.	
Fields of science and technology (from OECD classification)	Computer and information sciences	
Language	eng	
Creation date	2026-09-01	
Last modification date	2026-09-03	
Identifier		
License	Name	Etalab Open License 2.0
	URL	http://spdx.org/licenses/etalab-2.0.json

Project Details

Project title	Artificial cultural belief evolution
Acronym	ACBE

Abstract

Social aspects of human beings have induced their remarkable cognitive capabilities. Cultural evolution is considered to have taken over biological evolution in their development. Yet, current work in artificial intelligence, besides one-to-one dialogues, does not take it into account. We aim at bringing cultural evolution to machines, like artificial intelligence aims to do with intelligence. Hence ACBE is a project of artificial cultural evolution. Although this applies globally to all cultural artifacts, ACBE focuses on knowledge and beliefs, considered as a main driver of agent behaviour. ACBE will provide (a) models of cultural evolution games and agents, (b) a simulator for running experiments according to these models, (c) a framework for formally describing experiments to ensure their reproducibility, (d) experiments demonstrating the benefits of the approach, and (e) artificial cultural evolution awareness-raising initiatives. Numerous experiments simulating cultural evolution have been carried out, but they are designed in a one-shot fashion preventing to reuse and compare them. In particular, they do not isolate explicitly the evolutionary mechanisms of variation, selection and transmission. This prevents them from being easily identified and controlled in experiments and thus from assessing their influence on knowledge quality and diversity. ACBE will design a general model for games and agents involved in cultural evolution experiments (a). It will make explicit these parameters. Such a model should be prone to computer simulation and theoretical analysis. It will be implemented in a simulator (b) which allows agents to play different games and games to be played by heterogeneous agents in the same experiment. There exist no such environment yet. Experiment will be described formally (c) so that they can be easily modified, reproduced and their results compared. This will improve experiment reproducibility and permit searching and globally analysing an experiment repository. ACBE will perform experiments (d) demonstrating the benefits of the proposed approach. These will involve different agent populations and generations, controlling the evolutionary mechanisms intertwined in agents behaviour and involving different games and heterogeneous agents. In particular, we aim at assessing the necessity and relative influence of each evolutionary mechanisms across different games. We also plan to establish the capability of heterogeneous agent populations, including some based on generative artificial intelligence, to evolve shared knowledge and beliefs. Finally, we will promote the proposed approach towards cultural evolution research communities and particularly those from social sciences and the humanities (e). The long-term prospect of ACBE is to understand how artificial systems can find their place in our societies.

Funding

Funder

Funder name French National Research Agency

Identifier <https://ror.org/00rbzpz17>

Identifier type ROR

Grant Identifier

ANR-25-CE23-7134

Funding status

Granted

Start date

2026-04-01

End date

2030-09-30

Partners

Name

INSTITUT NATIONAL DE LA RECHERCHE EN INFORMATIQUE ET AUTOMATIQUE

RNSR identifier

199218244V

Name

INSTITUT NATIONAL DE LA RECHERCHE EN INFORMATIQUE ET AUTOMATIQUE

RNSR identifier

199218244V

Research outputs

Name	Type	Guidance Groups
Experimentally generated data	Dataset	- Inria general (EN) - Guidance provided by Science Europe
ACBE Simulator	Software	Codes and Softwares

Contributors

Name	Affiliation	Roles
EUZENAT Jérôme - https://orcid.org/0000-0002-5014-4411	INSTITUT NATIONAL DE LA RECHERCHE EN INFORMATIQUE ET AUTOMATIQUE - 199218244V	- Contact Person (Experimental results, Simulator) - DMP manager - Project coordinator - Project coordinator

Experimentally generated data

Data description and collection or re-use of existing data

Research output description

Name	Experimentally generated data
Short name	Experimental results
Description	The research output is experimental results that will be obtained through simulation as well as the analysis of these results. These experiments are computer simulations of artificial cultural knowledge and belief evolution. They rely on no input data. This DMP applies to all such experimental results (we will not do one per experiment given the pain it is).
Type	Dataset
Workpackage	WL4
Keywords (free-text)	cultural evolution, cultural knowledge evolution
Language	eng
Issued Date	
Persistent identifier	
May contain personal data?	No
May contain sensible data?	No
May take ethical issues into account?	Yes

Will existing data be reused?

Justification	No existing data is planned to be used so far. Input is randomly generated.
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How new data will be collected or produced?

Name of the method	Computer simulation										
Description	The data is not collected, it is generated through computer simulation.										
Data Nature	Simulation data										
Equipments, technical platforms used	<table> <tr> <td>Title</td><td>Lazy lavender</td></tr> <tr> <td>Identifier</td><td>https://gitlab.inria.fr/moes/lazylav</td></tr> <tr> <td>Identifier type</td><td>URL</td></tr> <tr> <td>Contact</td><td></td></tr> <tr> <td>Data policy</td><td></td></tr> </table>	Title	Lazy lavender	Identifier	https://gitlab.inria.fr/moes/lazylav	Identifier type	URL	Contact		Data policy	
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Identifier type	URL										
Contact											
Data policy											

Documentation and data quality

What metadata and documentation (for example way of organising data) will accompagny the data?

Description

We offer our own way to metadata.
 It will be further improved during the project.
 It is not a standard.
 It is far too complex to explain this in such a form.

What methods will be used to ensure their scientific quality?

Description

Unfortunately we have little support for that, we can only rely on our own carefulness.
 And the time passed filling these form is time I do not spend checking the data.

Legal and ethical requirements, codes of conduct

How will other legal issues, such as intellectual property rights and ownership, be managed? What legislation is applicable?

Description

French law.

What ethical issues and codes of conduct are there, and how will they be taken into account?

Description

No personal data.
 No human, nor animal involvement.
 No commercial perspectives.
 Very unlikely dual usage.
 The data is aimed to be shared widely.

Data processing and analysis

How and with what resources will the data be processed / analyzed?

Description

We usually process data within Python notebooks. We may also use R.

Storage and backup during the research process

How will data be stored and backed up during the research?

Storage needs

We rely on the computer infrastructure of INRIA to store and backup results. Zenodo is also used for large data files.

Estimated volume of data

1

Unit

TB

Measures taken for data security

Data sharing and long-term preservation

How will data be shared?

Modalities of sharing

Our main sharing infrastructure is <https://sake.re> which makes public all our experimental setup and result.

It also permits to maintain data and metadata under git.

This allows for versioning and rerunning.

We also use zenodo for large data files.

Of course I will not describe each file and its characteristics.

Reusability

Data repository/catalogs

Title	Zenodo
Repository ID	https://cat.opidor.fr/index.php/Zenodo
Identifier type	URL
Geo location (country)	CH
PID system	DOI
Available metadata standards	DataCite Metadata Schema, Dublin Core
Title	sake.re
Repository ID	https://sake.re
Identifier type	URL
Data policy	CC-BY
Geo location (country)	FR
Versioning policy	

How will data be long-term preserved? Which data?

Justification

A good justification for long-term preservation is research accountability.

Since our results are published, it should be possible for any other researcher (including ourselves) to access the corresponding data and check or reanalyse it.

Estimated volume of data 1

Unit TB

Start date

End date

Final dispositions

ACBE Simulator

General description of the software

Definition and name of the software

Full name of the software ACBE Simulator

Short name Simulator

Description An integrated **simulator** will enable to identify key parameters of cultural evolution and to straightforwardly experiment in a parametric and extensible way. The first iteration will process games with agents as defined in WL1. The second iteration of the simulator will support agents playing several games at once and different types of agents playing. This will also allow for specific experiment scheduling, such as synchronous playing, which is often used in some types of simulations.

The ability for the same agent to enter different games using the same kind of knowledge and beliefs is a point that will require a specific attention and will constitute a significant advance on the state of the art. The fact that different agents cannot enter the same set of games does not raise problem and will offer the opportunity for new experiments.

The simulator may either:

- be based on our current Lazy lavender software base, or
- be an extension of the GAMA agent-based modelling framework.

Type Software

URL of the site describing the software (or project)

Development start date 2026-04-01

First version release date 2027-10-01

Principal areas of application Computer and information sciences, Other social sciences

Others applications

Software version number

Software typologies Standalone software, application software, simulation tool

Tools and execution environment

Development environment

Name of the software forge	Academic forge		
URL of the software forge			
Source code access mode	Public (open)		
Do you use a Version Control System (VCS)?	Git		
Do you use a continuous integration framework?	None		
What, if any, is the URL of the continuous integration framework?			
Additional information	Nothing is yet decided. It is very likely that we will develop under https://gitlab.inria.fr but it is not decided whether this will be a new repository of a redesign of our Lazy lavender existing simulator.		

Documentation

Additional information	This will be done in due time.
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Runtime environment

Programming languages	<table> <tr> <td>Name of the programming language</td> <td>Java</td> </tr> <tr> <td>Version of the programming language</td> <td></td> </tr> </table>	Name of the programming language	Java	Version of the programming language	
Name of the programming language	Java				
Version of the programming language					
Operating systems	Others UNIX				
Additional information	Dependencies are very dependent of the approach used. However, given that we will rely on knowledge representation, we will depend on libraries for exploiting RDF, OWL and the Alignment API.				

Software preservation

Referencing

Additional information	Nothing is yet decided. We pay a lot of attention to the preservation of the software that we develop (some of them have more than 20 years and still maintained and used). This will facilitate the transfer to software archiving facilities in due time.
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Legal issues

Scientific dissemination