

WRITING POSITIVE CLIMATE FUTURES: ACTIVE LEARNING AND AI IN CLIMATE FICTION WRITING

TAL 2025, SDU
06 November 2025

Prof. Patricia Wolf, Assoc. Prof. Bryan Yazell, Thomas Kaarsted, Line Laursen
Corydon, Szabolcs Dezso Fabian, Christina Tjørntved Hansen

University of Southern Denmark, Climate Elite Center PACA and
Citizen Science Center



Funded by

Interreg



Kofinanziert von
der Europäischen Union
Medfinanziert af
Den Europæiske Union

Deutschland – Danmark



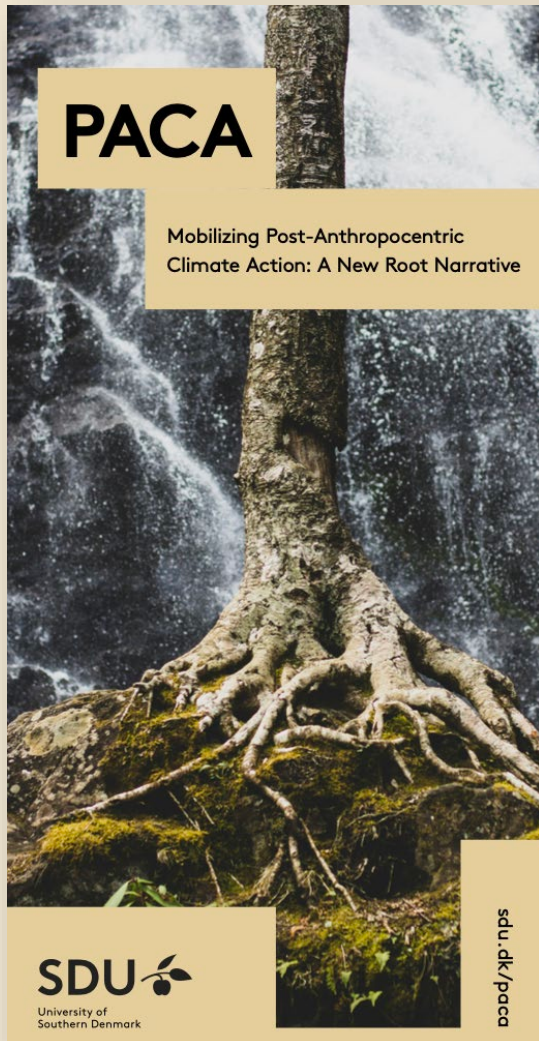
DANMARKS FRIE
FORSKNINGSFOND
INDEPENDENT RESEARCH
FUND DENMARK



Middelfart
Gymnasium & HF



Why it matters



- Youth needs **positive and emotionally** resonant visions to engage in climate action (Ojala et al., 2021; Kurth & Pihkala, 2022)
- The climate narratives in reporting, fictional texts, documentaries and social media discourse are **largely dystopian** (Roquebert & Debucquet 2024)
- **Stories are tools for change** (Zaidi, 2017), but what happens when AI helps writing them?
- **Lack of research** considering gen AI's potential place in assisting young people with imagining compelling future life-worlds

Methodology: CLIMATE FUTURE FICTION

Case Study

→ Research question: How do AI-generated climate futures differ from human-generated ones?



Photo: Jeppe Lomholt Akselbo (SDU Library)

- Participants: **78 Danish high school students** (ages 16–18) from **three** schools.
- Two-phase process:
 - Flash fiction exercises (intuitive future writing).
 - Expansion into full stories—**first** by students, **then** by students using generative AI.
- Stories compared **through thematic and structural** analysis.
- Ensured **validity** via coder triangulation and iterative coding.

Findings: Style and Plot

Style:

- AI stories heavily rely on certain transitional phrases and sentence structures, overuse of em dashes
- Unnaturally formal dialogues
- Similar descriptive phrases, heavy reliance on repeated descriptive patterns and metaphors

	Average across AI-written stories	Average across human-written stories
Noun ratio (total nouns / total words)	0,22	0,19
Verb ratio (total verbs / total words)	0,15	0,15
Adjective ratio (total adjectives / total words)	0,07	0,07
Punctuation (Total punctuations/ total words)	0,19	0,15
Dash count (Total dashes/ total words)	3,51	3,27

AI-written stories (verb count)	Human-written stories (verb count)
Feel (137)	Go (346)
Say (100)	Have (320)
Make (99)	Get (313)
Have (95)	Say (270)
Know (77)	Make (204)
Find (56)	Do (176)
Go (53)	Know (170)
Do (53)	Feel (160)
See (50)	See (149)
Leave (43)	Look (139)

Plot:

- Simple binary conflicts between inside and outside groups
- No plot twists
- Focus on the introspective reflections of the main character
- When environmental details are described, it often felt as if the LLM was checking boxes

Findings: Character construction & structure

Character construction:

- Archetypical outsider heroes, i.e., solitary observers of society.
- Immediately introduced with their age (e.g., “Laura, 23 years old”),
- Linear and predictable character development emerging from a strong focus on interiority and emotional responses rather than action
- Character traits are generally simplified

Structure:

- Follows "realization" arc in which the protagonist encounters distinct evidence of the environmental crisis
- Heavy use of flashbacks
- Heroic journeys in the AI stories almost always results in a positive change

Validation with LLM Claude 3.5 Sonnet

1) Fed with anonymized versions of the stories written by humans and as well as their AI-authored texts, the **LLM was prompted to compare** the two types of text and identify key distinguishing features.

The LLM's evaluation stated that compared to the human stories, those written with AI were “**characterized by mechanical adherence to prompts, repetitive language patterns and lack of narrative sophistication.**”

2) Fed with a random human story and asked it to **assess the probability of it being non-AI written.**

“I would estimate 70-80% probability this is human-generated rather than LLM-generated. The story shows **more sophisticated narrative techniques, natural language patterns, and complex character development** than typical LLM stories. While it shares some surface features with LLM-generated works, its deeper structural and stylistic elements suggest human authorship. The most convincing evidence for human authorship is the organic way the **story unfolds and the unique cultural/historical details that feel researched rather than generated.** The **writing has idiosyncrasies and imperfections** that LLMs typically smooth out in their more formulaic approach.”

Evaluation with the students

Students agreed that the AI stories showed **repetitive patterns** in all dimensions and were more focused on presenting a devastated life-world and an actor reflecting and solving problems in an **over-simplified manner**.

Most importantly, **students classified the AI** climate future life-worlds as **boring and not motivating action** – in stark contrast to the human-written stories, that evoked strong emotions and the desire to act.

in
imagination
we trust

Discussion and conclusion

There is a **discernible environmental life-world narrative that predominates in popular LLMs** (e.g., ChatGPT)

- Narrative identifies humans as the cause and driving force behind climate change while also stressing the human capacity for resiliency and innovation.
- Clear **contrast to science fiction literature**: Climate fiction is there presented as a matter of concern to **inspire feelings of alarmed self-concern** in readers
- Hopeful tenor of the AI-authored stories might appear like a positive development - but the reductive and uninspiring life-worlds generated **severely limit their impact**
- LLMs are designed to reassure users, thus the stories they create are **unsuited to the task of rousing readers to action and societal innovation**

Our findings suggest that attempts at mobilizing youth for climate action should be based on **authentic imaginaries** that should be **of human origin**.

Thank you!! Questions, comments?



FUSION



Funded by

Interreg



Kofinanziert von
der Europäischen Union
Medfinanziert af
Den Europæiske Union

Deutschland – Danmark



DANMARKS FRIE
FORSKNINGSFOND
INDEPENDENT RESEARCH
FUND DENMARK

SDU
Syddansk Universitet

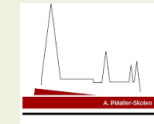
CAU
Christian-Albrechts-Universität zu Kiel



Middelfart
Gymnasium & HF

NORDFYNS
GYMNASIUM

PUS ECK



seit 1307
DOMSCHULE SCHLESWIG

AGS

SDU