Utrecht University

CDH Summer School
Tool Criticism for Humanities

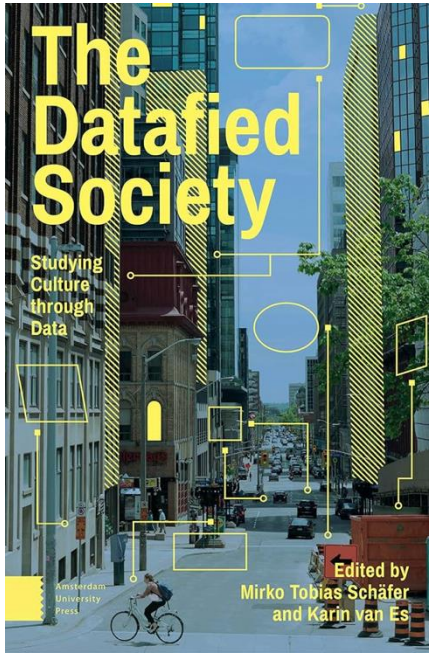
Dr. Karin van Es
Associate professor Media & Culture Studies
Centre for Digital Humanities

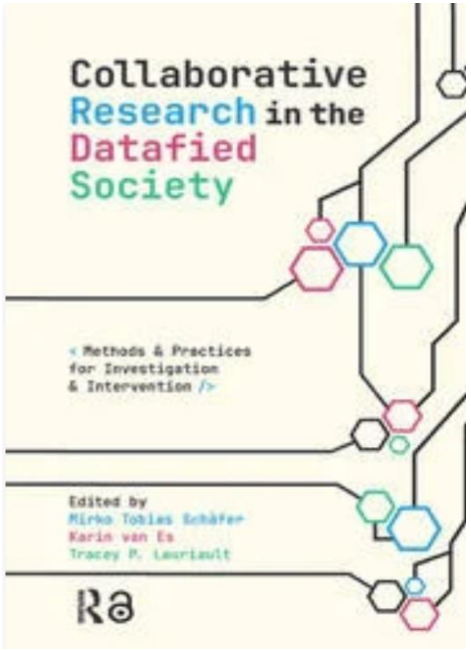
Who am I?

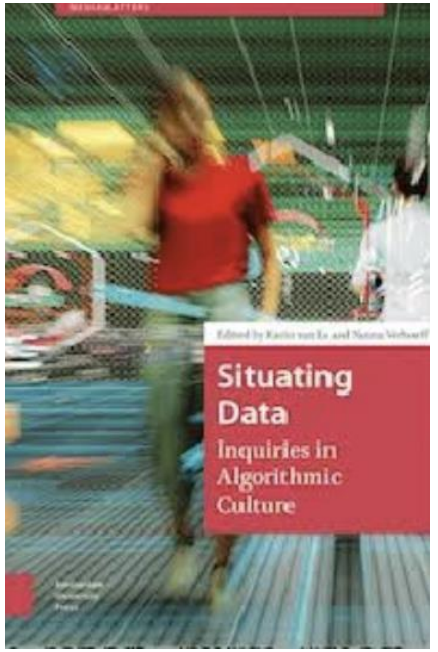
Karin van Es
Datafication and algorithmization of culture and society; streaming video

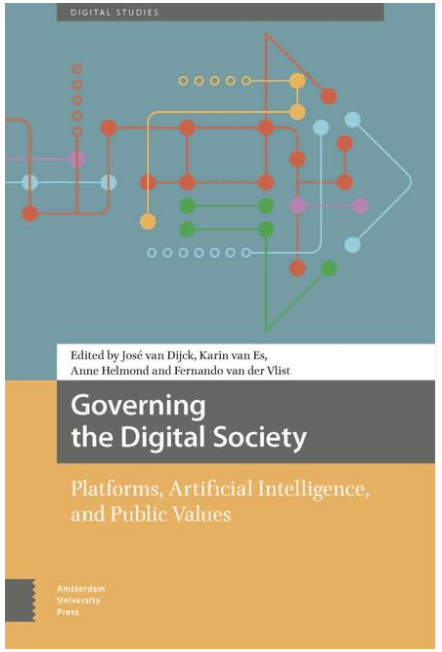
- 2014 PhD on the concept liveness
- Associate professor in Media Studies

- SIG ‘Streaming Video’ (GDS)
- Project Lead GW Data School
  - *Responsible AI and data practices*
  - *Public debate*









Value-driven recommendations

External partner: DPG Media

Identify the relevant values (e.g.. diversity, …) with stakeholders news website NU.nl

- Interviews/workshops
- Interaction data
- A/B test and survey

Implement in design

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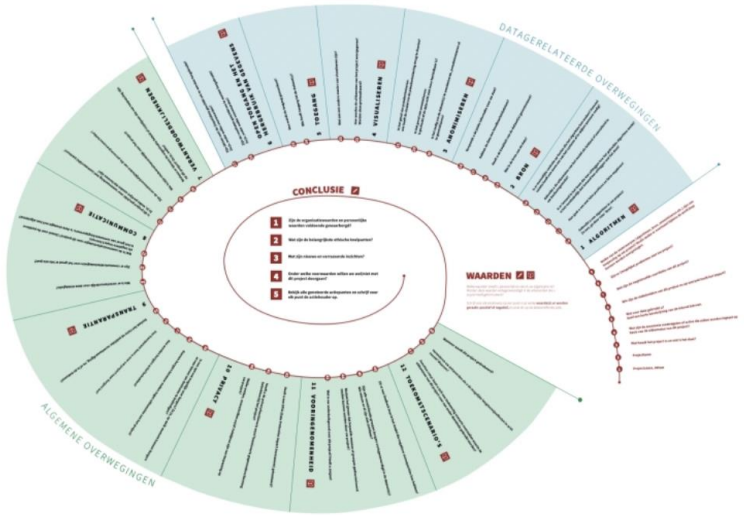
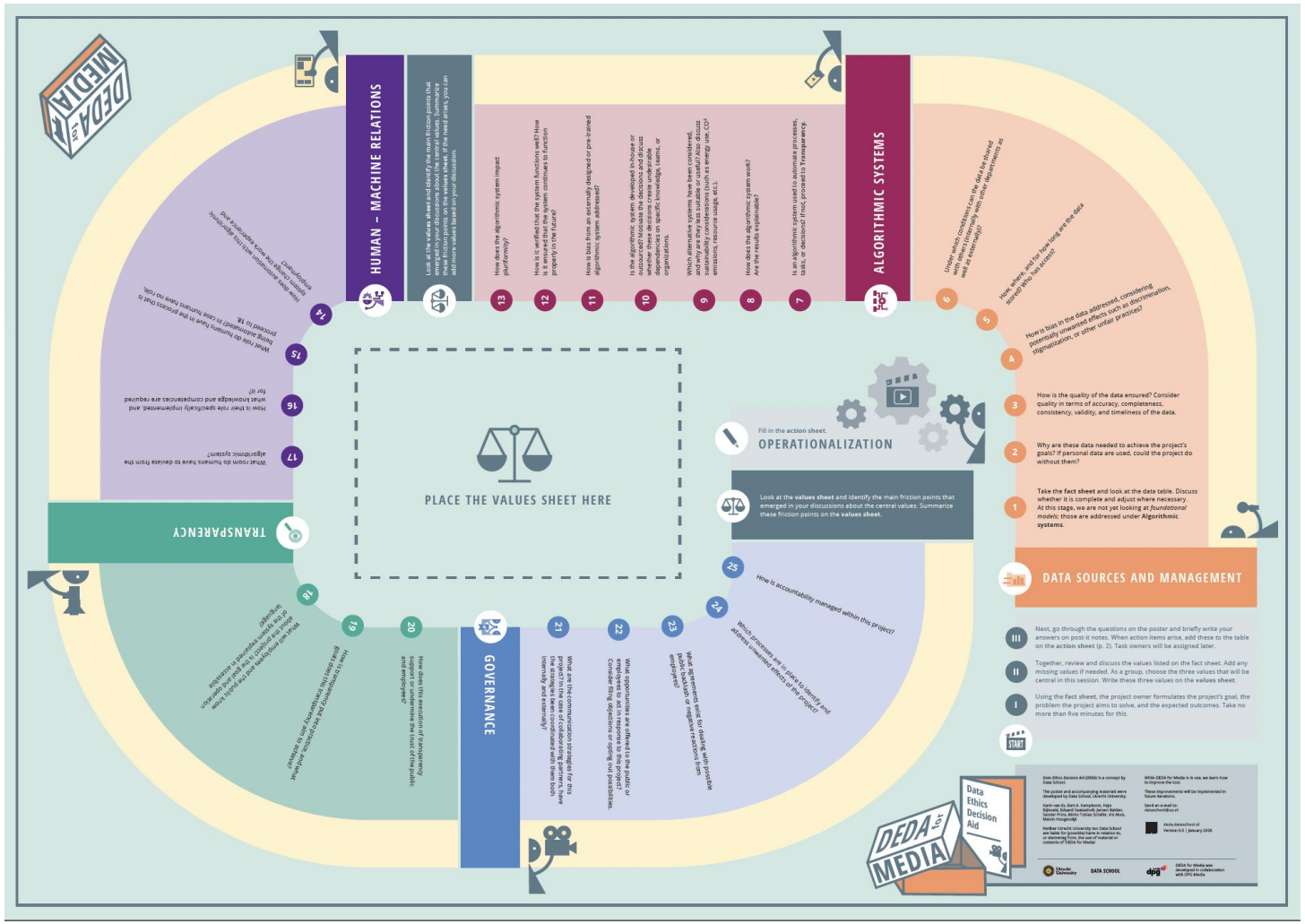
VILLAMEDIA
WEBSITE OVER
JOURNALISTIEK

Lars Pasveer — Thursday, May 22, 2025, 10:25 AM | 0 comments , join the conversation

DPG Media and Utrecht University are working on an ethical roadmap for AI and data projects.



Example of a DEDA step-by-step plan, as previously developed by the Dataschool, part of Utrecht University. A version specifically tailored to media will be available by 2026. | Dataschool



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AI for investigative journalism

External partner: De Groene

Financed by *De Groene Amsterdammer* + AI Labs

PhD candidate works for both organizations

Overlap between work there and research

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Computational turn (Van Es et a. 2021)

- Encounter with the computer – 1950s
- “destabilization and deterritorialization” within the humanities (defining themselves in relation to the digital)

- The “new empirical” – digitization and datafication
- Development and use of tools to facilitate and aid research process; proliferation of easy-to-use tools

What are data?

Rob Kitchin (2014 :1)

"the raw material produced by **abstracting** the world into **categories**, **measures** and other **representational forms** [...] that constitute the building blocks from which information and knowledge are created" (Kitchin 2014: 1)

Yanni Loukissas (2019)

- *Rhetorical* "alleged evidence" (taken up as evidence). Things become data within interpretative acts. BUT not simply an act of naming! Constraints of data - involves *measuring*, *recording* and *capturing world* (= processes of translation).
- *Operational :* Part of sociotechnical systems. Enmeshed in the practices and politics of everyday life

Miriam Posner and Lauren Klein (2017)

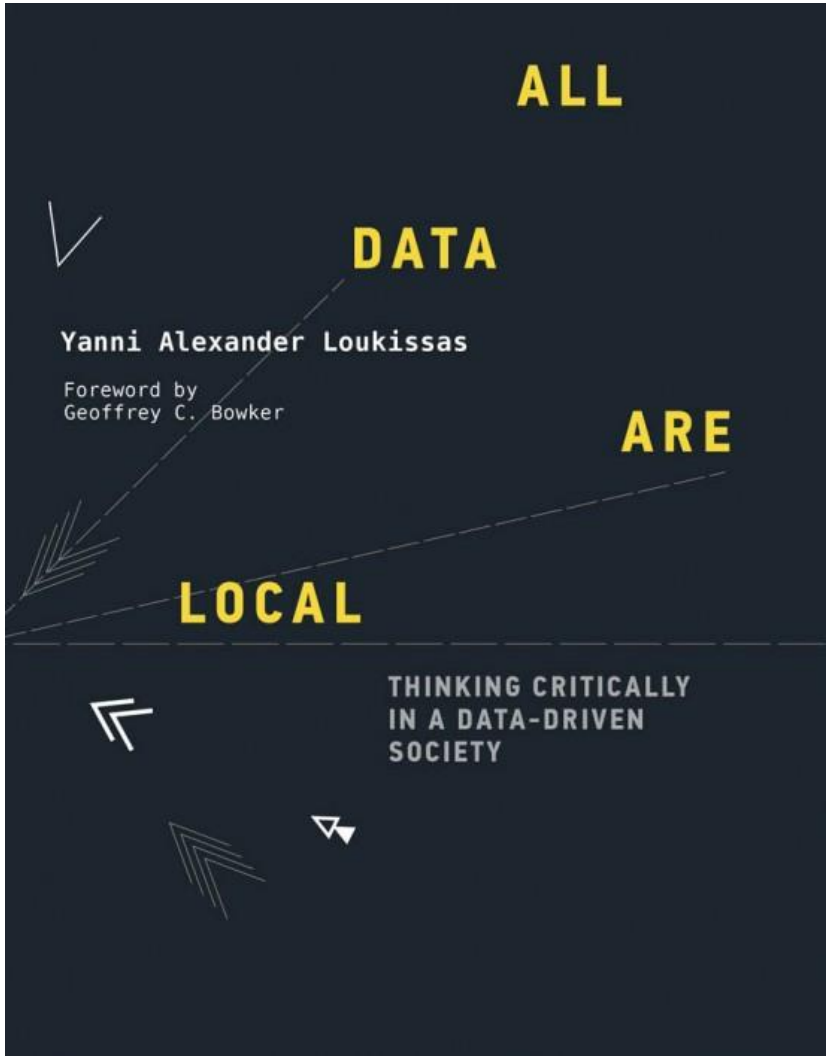
- Rhetorical plus "computationally tractable"

"Data need to be imagined as data to exist and function as such, and the imagination of data entails an interpretive base."

- Lisa Gitelman

- Data is not singular (diverse)
- Data are not universal (inscribed in place)
- Data are never ‘big’ (agglomerations of small)
- Data are more than rhetorical
- Not everything can become data

Loukissas’: data as texts
cultural expressions subject to interpretive examination



Source: https://mitpress.mit.edu/9780262545174/all-data-are-local/

Critical questions for big data (boyd & Crawford 2012)

Big data interplay of
- Technology: computation power and algorithmic accuracy
- Analysis: finding patterns in large data sets
- Mythology: objectivity, accuracy and truth

- Big Data changes the definition of knowledge
- Claims to objectivity and accuracy are misleading
- Bigger data aren't always better data
- Taken out of context, Big Data loses its meaning
- Just because it's accessible doesn't make it ethical
- Limited access to Big Data creates new digital divides

What are algorithms?

de kantelaar

Voor deze techniek moet je even de tijd nemen. Zet je vork recht op de bovenste glazuurlaag en ga door alle lagen heen tot je de bodem bereikt. Als je dit rustig doet, dan heb je in een hap alle lagen van de tompouce op je vork. Doe je het snel, dan is de kans groot dat de volgende hap niet zo netjes wordt.

de splitter

Wil je de heerlijke banketvulling op zowel de onder- als de bovenkant? Haal dan de bovenkant van de tompouce en verdeel de vulling over de onderste en de bovenste laag.

de likker

Je pakt de tompouce met je handen op en begint aan de room te likken, daarna eet je de onder- en bovenkant op.

de prikker

Voor deze techniek moet je even de tijd nemen. Zet je vork recht op de bovenste glazuurlaag en ga door alle lagen heen tot je de bodem bereikt. Als je dit rustig doet, dan heb je in een hap alle lagen van de tompouce op je vork. Doe je het snel, dan is de kans groot dat de volgende hap niet zo netjes wordt.

de verbouwer

Je plakt de bovenste laag met de banketvulling op de omgekeerde onderste laag. Zo kun je een grote hap nemen zonder dat de vulling er tussenuit valt.

Rieder & Rohle (2012)

The ‘digital helpers’ humanists use “rely on sets of assumptions, models, and strategies’ that determine how ‘units of analysis, algorithms, and visualisation procedures’ are defined” (70).

Source Rieder, Bernhard & Theo R.hle. 2012. “Digital Methods: Five Challenges.” In Understanding Digital Humanities, ed. David M. Berry, 67-84. New York: Palgrave Macmillan.

International Journal of Cultural Studies

Impact Factor: **1.8** / 5-Year Impact Factor: **2.4**

Restricted access | Other | First published online November 26, 2010 | Request permissions

Search engines and the production of academic knowledge

José van Dijck View all authors and affiliations

Volume 13, Issue 6 | https://doi.org/10.1177/1367877910376582

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Abstract

• This article argues that search engines in general, and Google Scholar in particular, have become significant co-producers of academic knowledge. Knowledge is not simply conveyed to users, but is co-produced by search engines' ranking systems and profiling systems, none of which are open to the rules of transparency, relevance and privacy in a manner known from library scholarship in the public domain. Inexperienced users tend to trust proprietary engines as neutral mediators of knowledge and are commonly ignorant of how meta-data enable engine operators to interpret collective profiles of groups of searchers. Theorizing search engines as nodal points in networks of distributed power, based on the notions of Manuel Castells, this article urges for an enriched form of information literacy to include a basic understanding of the economic, political and socio-cultural dimensions of search engines. Without a basic understanding of network architecture, the dynamics of network connections and their intersections, it is hard to grasp the social, legal, cultural and economic implications of search engines. •

Excel autocorrect errors still plague genetic research, raising concerns over scientific rigour

Published: August 26, 2021 8.12pm CEST

Shutterstock

Autocorrection, or predictive text, is a common feature of many modern tech tools, from internet searches to messaging apps and word processors. Autocorrection can be a blessing, but when the algorithm makes mistakes it can change the message in dramatic and sometimes hilarious ways.

Our research shows autocorrect errors, particularly in Excel spreadsheets, can also make a mess of gene names in genetic research. We surveyed more than 10,000 papers with Excel gene lists published between 2014 and 2020 and found more than 30% contained at least one gene name mangled by autocorrect.

This research follows our 2016 study that found around 20% of papers contained these errors, so the problem may be getting worse. We believe the lesson for researchers is clear: it's past time to stop using Excel and learn to use more powerful software.

Excel makes incorrect assumptions

Spreadsheets apply predictive text to guess what type of data the user wants. If you type in a phone number starting with zero, it will recognise it as a numeric value and remove the leading zero. If you type "=8/2", the result will appear as "4", but if you type "8/2" it will be recognised as a date.

With scientific data, the simple act of opening a file in Excel with the default settings can corrupt the data due to autocorrection. It's possible to avoid unwanted autocorrection if cells are pre-formatted prior to pasting or importing data, but this and other data hygiene tips aren't widely practised.

In genetics, it was recognised way back in 2004 that Excel was likely to convert about 30 human gene and protein names to dates. These names were things like *MARCH1*, *SEPT1*, *Oct-4*, *jun*, and so on.

Tool Criticism & Critical Digital Humanities

- Software mobilizes concepts and techniques
- Tools are active mediators caught up in the epistemic process (built in assumptions and biases of the tool)

“the critical inquiry into digital tools and how they are used for various purposes within the research process. It reviews the qualities of the tool in light of, for instance, research activities, and it reflects on how the tool affects the user, the research process and output, and its reliance on the user’s training.” (Van Es et al. 2021)

Source: https://www.nomos-elibrary.de/10.5771/1615-634X-2021-1-46/tool-criticism-and-the-computational-turn-a-methodological-moment-in-media-and-communication-studies-volume-69-2021-issue-1?page=1

How would you instruct a computer to conduct a word count?

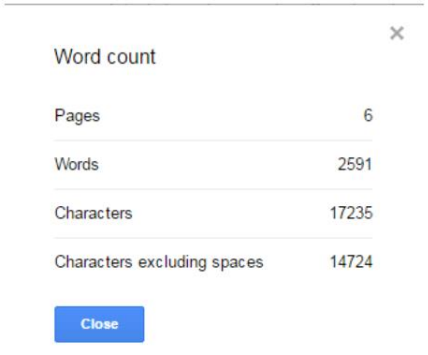
Word count

How many words would you say are in the following:

- ISO 9001:2015—Some programs count these are 3 and some as 2
- And/or—You and I see 2 words, but some counters only see 1
- Jane@xyz.com—Programs can count this as 1, 2, or 3 words, depending on the algorithm
- Numbers like 123.45, $567.89, 89%—Some programs count them as a single word, others as 2, and some even count them as 3
- www.AnyWebsite.com—URLs are generally counted as either 1 or 3 words
- Under_score—The majority count this as 1 word, with some counting it as 2
- a.m.—Some programs count this as 2 words while others count only 1 word
- Wouldn't—Contractions mostly count as 1 word, with a few stragglers counting them as 2

(source: https://prowritingaid.com/art/691/What%E2%80%99s-with-ProWritingAid%E2%80%99s-Word-Count.aspx)

Google Docs:

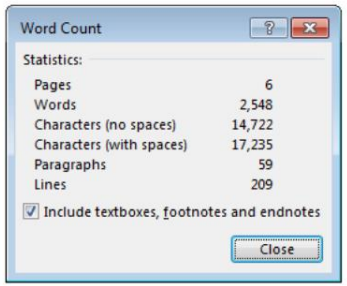


Google's interpretation

Word Online:

Microsoft Word Online

Word Desktop:



Microsoft Word Desktop

Source: https://medium.com/@oldmanpete/the-curious-case-of-google-and-microsoft-disagreeing-on-a-word-count-d6d917cbd71c

< to News

Incorrect quotes in the rectoral speech at the opening of the academic year: reaction from Petra De Sutter

(08-01-2026) On Thursday 8 January 2026 media reports appeared about incorrect quotes in Rector Petra De Sutter's speech at the opening of the academic year. These errors were the result of the use of generative AI.

The Rector would like to convey the following message to all students and staff:

"AI has become indispensable in our daily lives. At Ghent University, we embrace the benefits of AI and want to teach our students and staff to approach it critically. It's easy to be fooled by AI. Most users have probably experienced this before. I deeply regret having fallen into this trap myself. Unfortunately, I can't undo it. This experience is a valuable lesson for me and will undoubtedly further fuel the debate on the use of AI."

“With this message, I want to emphasize to all students and staff to maintain a critical eye when assessing AI-generated output. Use AI responsibly. You, as the user, are and remain solely responsible for what you do with the tools, and it is up to you to verify the reliability and source of the tools' output. Never abandon your critical attitude and continue to hone your AI literacy, because developments are moving at lightning speed.”

More information about Ghent University's policy on generative AI: Generative AI at Ghent University — Ghent University

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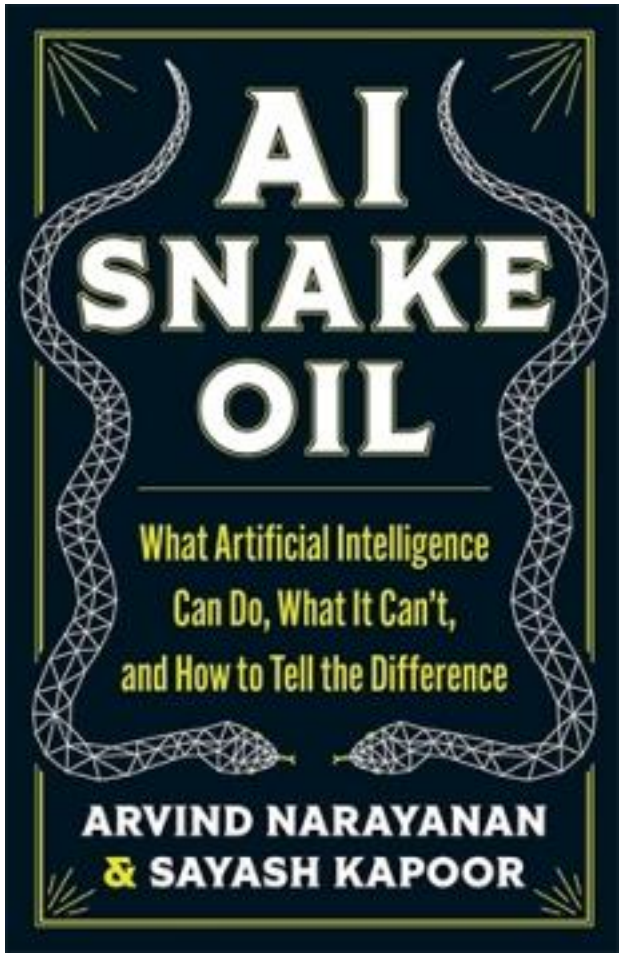
Imagine an alternate universe in which people don't have words for different forms of transportation, only the collective noun "vehicle." They use that word to refer to cars, buses, bikes, spacecraft, and all other ways of getting from place A to place B. Conversations in this world are confusing. There are furious debates about whether or not vehicles are "environmentally friendly," but (even though no one realizes it) one side of the debate is talking about bikes and the other side about trucks. There is a breakthrough in rocketry, but when the media focuses on how vehicles have gotten faster, people call their car dealer (oops, vehicle dealer) to ask when faster models will be available. Meanwhile, fraudsters have capitalized on the fact that consumers don't know what to believe when it comes to vehicle technology, so scams are rampant in the vehicles sector.

Now replace the word "vehicles" with "artificial intelligence," and we have a pretty good description of the world we live in.



Universiteit Utrecht

Generative AI (GenAI) is a form of artificial intelligence that, based on a text provided by the user, a *prompt*, generates a new text that is a **plausible continuation of the** prompt.

Besides text generators, also called Large Language Models (LLMs), there are also Generative AI systems that can generate **images** (Dall-E, Midjourney), **video**, **speech**, or **music**, and vice versa, based on prompts.

Kyle McDonald (2017)

Some major problems with the use of GenAI

- Text generated by GenAI is unreliable. They can contain falsehoods, however plausible they sound.
- What users input, and the feedback they give, can be used as training material
- GenAI is trained on copyright materials and other problematic content
- Bias in training material is reproduced in generated content
- GenAI has a large ecological impact: it uses a massive amount of energy and cooling water, and space for data centers.

- GenAI works so well that parts of the researcher process (like writing or programming) can largely be left go Gen-AI – the human als post-editors (a term from the translation industry)

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BAD EDUCATION

AI IS INVENTING ACADEMIC PAPERS THAT DON'T EXIST — AND THEY'RE BEING CITED IN REAL JOURNALS

The proliferation of references to fake articles threatens to undermine the legitimacy of institutional research across the board

By **MILES KLEE**
DECEMBER 17, 2025

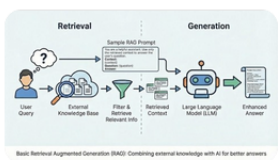
Ben Williamson ✓ • 1st
University of Edinburgh
2mo • Edited • 🌐

Why do "ghost citations" to non-existent papers appear and circulate?

I posted an example I'd found last week on here and on Bluesky, and Aaron Tay has generously spent a good chunk of time looking into it and writing it up as a very detailed post. Well worth reading in full, though the short version is it's a cycle of human, LLM and Google Scholar vulnerabilities reinforcing and amplifying each other. A snip from the conclusion:

"The ghost reference problem is a chronic condition that has become acute. The infection predates GenAI; the technology has simply lowered our immune response while accelerating transmission. The cure lies not in blaming LLMs but in understanding—and shoring up—the structural vulnerabilities in scholarly infrastructure that have allowed ghost references to propagate for far longer than we'd like to admit."

Not sure it explains everything and the obvious influence of LLMs seems a touch downplayed to me - but the first fallacious citation is definitely pre-ChatGPT so it's not *just* a hallucination for sure
https://lnkd.in/eYHsJ-vx



Why Ghost References Still Haunt Us in 2025—And Why It's Not Just About LLMs
aarontay.substack.com

Not a calculator – Celeste Louro

https://theconversation.com/generative-ai-is-not-a-calculator-for-words-5-reasons-why-this-idea-is-misleading-263323

1. Calculators do not hallucinate or persuade

2. Calculators do not pose fundamental ethical dilemmas

3. Calculators do not undermine autonomy

4. Calculators do not have social and linguistic bias

5. Calculators are not ‘everything machines’

Position

- Basic principles of academic integrity do not need adaptation for AI
- Lots of people use AI for all sorts of things, from superficial and administrative work to carrying out steps in the scientific process
- The norms of peer reviewing will determine what is and what is not acceptable
- As long as everybody is transparent about their use of AI, this can be a manageable process. When people aren't transparent, they violate academic integrity. This cannot be verified, but that problem is not new!

--> but *when* do we need to be transparent about AI use? about *what* exactly? and *how*?

Publisher’s policies: SAGE

https://www.sagepub.com/about/sage-policies/corporate-policies/ai-author-guidelines

The distinction between Assistive AI tools and Generative AI tools

For the purposes of these guidelines, we distinguish between **Assistive AI tools** and **Generative AI** tools as follows:

Assistive AI tools

Assistive AI tools make suggestions, corrections, and improvements to content you’ve authored yourself. Tools like Google's Gmail and Microsoft's Outlook and Word have offered to flag spelling or grammatical errors for many years. More recently, these assistive tools have introduced features to proactively make suggestions for the next word or phrase or to suggest better or more concise phrasing to improve clarity. Content that you've crafted on your own, but refined or improved with the help of this kind of Assistive AI tool is considered “AI-assisted”.

Generative AI tools

This term refers to tools such as ChatGPT or Dall-e which produce content, whether in the form of text, images, or translations. Even if you've made significant changes to the content afterwards, if an AI tool was the primary creator of the content, the content would be considered "AI-generated”.

Disclosure

We believe that AI-assisted writing will become more common as AI tools are increasingly embedded within tools such as Microsoft Word and Google Docs. You are not required to disclose the use of assistive AI tools in your submission, but all content, including AI-assisted content, must undergo rigorous human review prior to submission. This is to ensure the content aligns with our standards for quality and authenticity.

You are required to inform us of any AI-generated content appearing in your work (including text, images, or translations) when you submit any form of content to Sage or Corwin, including journal articles, manuscripts and book proposals. This will allow the editorial team to make an informed publishing decision regarding your submission.

Where we identify published articles or content with undisclosed use of generative AI tools for content generation, we will take appropriate corrective action.

Prohibited use

- **Do not** use generative AI to artificially create or modify core research data.
- **Never share any sensitive personal or proprietary information** on an AI platform like ChatGPT as this may expose sensitive information or intellectual property to others. Any information that you share with AI tools like ChatGPT is collected for business purposes.
- **Editors and Reviewers must uphold the confidentiality of the peer review process**. Editors must not share information about submitted manuscripts or peer review reports in generative AI tools such a ChatGPT. Reviewers must not use AI tools, including but not limited to ChatGPT, to generate review reports.

Methodological debates

We reject the use of generative artificial intelligence for reflexive qualitative research

6 Pages • Posted: 29 Oct 2025

Tanisha Jowsey
Bond University

Virginia Braun
Independent - *affiliation not provided to SSRN*

Victoria Clarke
University of the West of England (UWE) - Department of Health and Social Sciences

Deborah Lupton
University of New South Wales (UNSW) - Faculty of Arts and Social Sciences

Michelle Fine
Carleton University, Ottawa, Canada

Date Written: October 20, 2025

1. GenAI as simulated intelligence is incapable of meaning making
2. Qualitative research should remain a distinctly *human* practice
3. The established manifold harms of GenAI, especially to the environment and workers in the Global South

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=5676462

Response to Open Letter that Opposes the Use of Generative AI for Reflexive Qualitative Research

Dr. Susanne Friese.
🔍 Qualitative Research Rebel | 🤖
Pioneering AI Collaborative Qual Analysi...

October 27, 2025

Last week an **open letter** against the use of generative AI for reflexive qualitative research made the round. At the time of writing about 400 qualitative researchers had signed it.

If we accept that reflexive qualitative research is grounded in human subjectivity, then the real task is not to ban external cognitive stimuli, but to ensure that humans remain epistemically and ethically responsible for the interpretive process. Properly used, GenAI does not replace reflexivity; it can act as a catalyst that provokes abductive insight, stimulates critical questioning, and helps researchers surface tensions, contradictions, and silences within their own dataset—always under human evaluation.

https://www.linkedin.com/pulse/response-open-letter-opposes-use-generative-ai-research-friese--idpwe/

I tested AI tools on data analysis — here's how they did (and what to look out for)

2 Replies

Photo: Jakub T. Jankiewicz | CC BY-SA 2.0

TL;DR: If you understand code, or would like to understand code, genAI tools can be a useful tool for data analysis — but results depend heavily on the context you provide, and the likelihood of flawed calculations mean code needs checking. If you don't understand code (and don't want to) — *don't do data analysis with AI.*

ChatGPT used to be notoriously bad at maths. Then it got worse at maths. And the recent launch of its newest model, GPT-5, showed that it's *still* bad at maths. So when it comes to using AI for data analysis, it's going to mess up, right?

What happened when I asked AI tools to perform analysis

To find out how accurate AI tools were when asked to perform calculations with data — and, more importantly, what mistakes to look out for — I uploaded a 10,000-row dataset on companies' gender pay gaps to **ChatGPT, Claude, Google Gemini, and Microsoft Copilot*** and road-tested each platform on a series of questions.

The good news for those hoping to use genAI for data analysis is that these tools *can* perform accurately *on the calculations that they make*.

The bad news is that those aren't always the *right* calculations to answer the question you *thought* you were asking.

How will you know? Only **if you can understand the code** that they used to ask your question.

Put another way, when you use AI to perform data analysis, what you are really doing is asking it to generate **code** to perform data analysis. The measure of success, therefore, is the method it chose to apply, as represented by the code, not the answer resulting from that.

So, instead of making programming obsolete, AI is creating a *new* reason to learn to code.

Source: https://onlinejournalismblog.com/2025/09/16/i-tested-ai-tools-on-data-analysis-heres-how-they-did-and-what-to-look-out-for/

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Sharing science,
shaping tomorrow