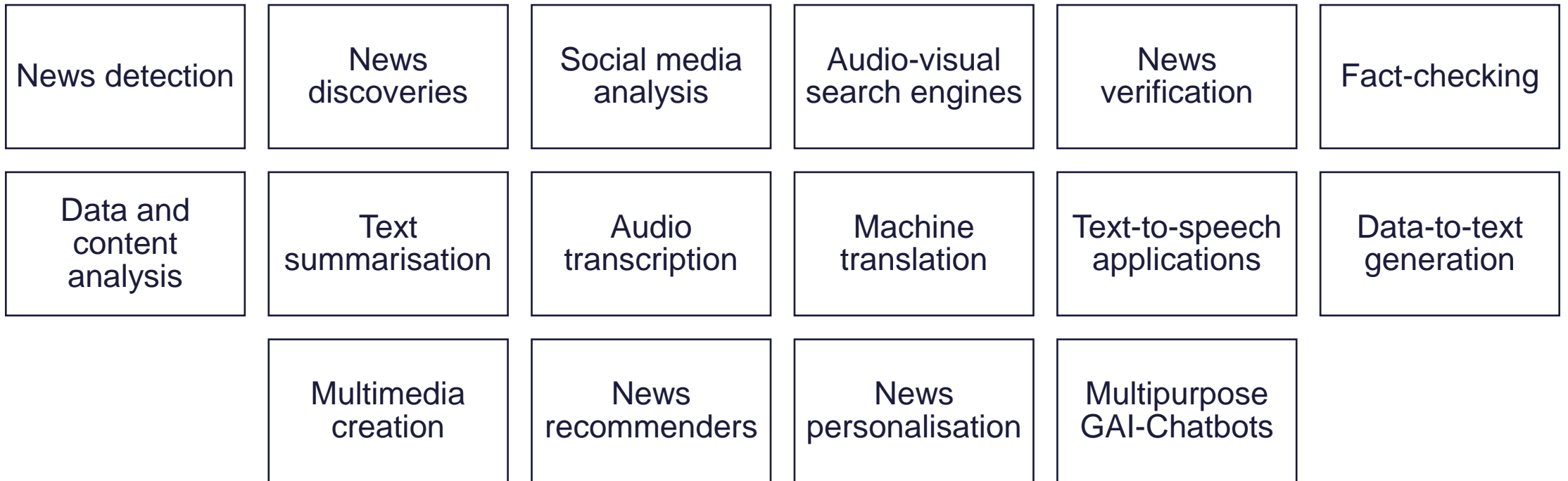




# An increasingly widespread use of AI systems in journalism over the past 5 years



# Exploring the sociotechnical imaginaries

**What are the social representations in the professional discourses that contribute to shaping the use or non-use of AI in journalism? What are the specificities in fact-checking as a (sub-)genre)? Is ChatGPT a game changer?**

- Headlines analysis in context (lead, image)
- Identification of the dominant narratives (challenges and opportunities)
- Identification of the most challenging applications of AI (news production, fact-checking, social media...)
- Attitudes towards AI technology (human sentiment analysis based on linguistic features)
- Variation according to the type of publication (blog, online news, specialised online news, professional or educational organisation)

# A corpus-based method focusing on headlines

Continuation of a study on **headlines** published between 2010 and 2017 on “news automation” (the first wave of AI integration in journalism). Most **visible** elements: **sharing on social media + results from search engines + front page website.**

Dierickx, L. (2018). Between fear and confidence: The dual relationship between journalists and news automation. *Journal of Applied Linguistics & Professional Practice*, 15(3).

## **CORPUS COLLECTION (FR/EN – complementary strategies to cover a broad field)**

### **January 9 to 19, 2023, via the Google News and Startpage News search engines**

(algorithm OR AI OR robot OR automated OR intelligence OR 'news automation' OR 'automated news') AND 'journalism'  
(algorithme OR IA OR robot OR automatisé OR intelligence OR automatisaion) AND journalisme.

### **From August 1 to 15, 2023, via the Google News search engine**

(algorithm OR AI OR robot OR automated OR intelligence OR 'news automation' OR 'automated news')

(ChatGPT or “Generative AI”) AND journalism

“fact-checking” AND (IA OR Generative OR automated)

(IA OR ChatGPT OR “intelligence artificielle” OR “robot” OR “generative”) AND (journalisme

OR médias OR journalistes)

“fact-checking” AND (IA OR “intelligence artificielle”)

## Validation and annotation

Duplicates were removed, and articles out of the scope were excluded.  
Corpus collection, validation and annotation = manual human process.

**Lexical:** term used (AI, Robot, Algorithm, Technical term, Other)

**Syntactic:** Affirmative, Exclamative, Interrogative, Negative, Non-verbal, Imperative

**Semantic:** Informative, Incentive, Referential (AI), Thematic (specifics), Connotation (positive, negative, neutral)

**Pragmatic:** use of the language in context, on the relationships between AI applications (general, news production, platforms, fact-checking, generative AI) and challenges (threat, use/tool, augmentation, human-machine relationship, future, professional identity, jobs, ethics) + impact of metaphors

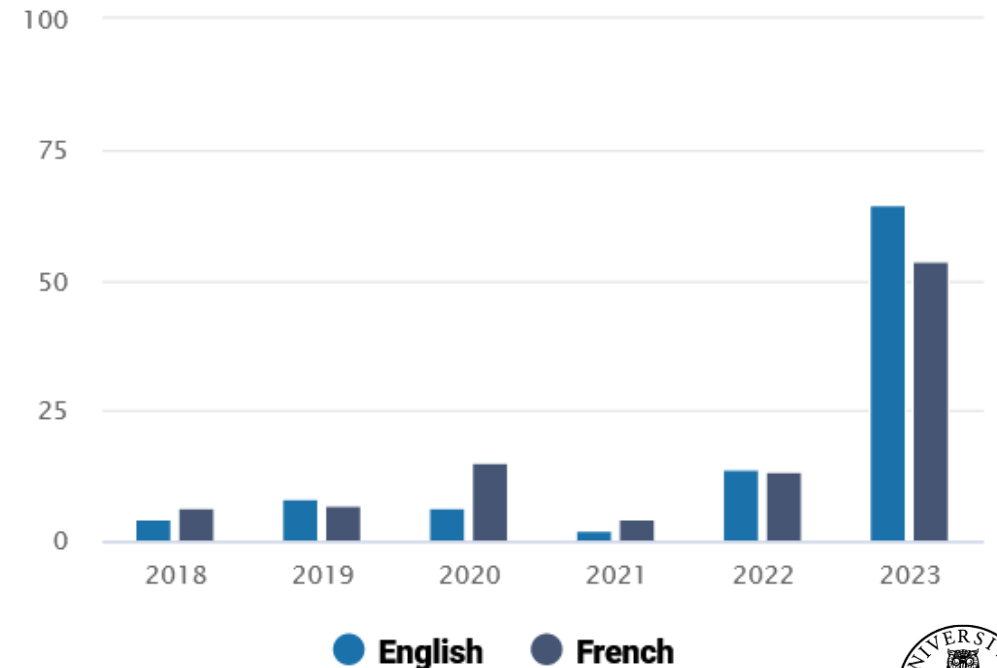
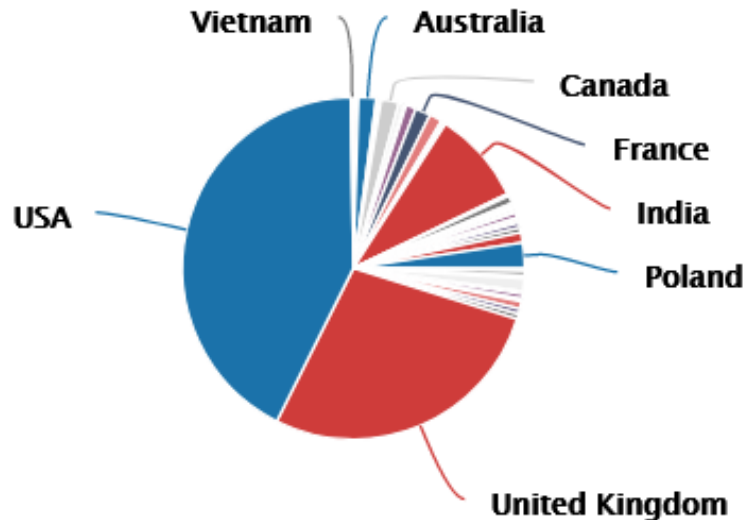
**Semiotic:** relationships with the broader context (images, lead – other elements in sharing on social media and search results)



# Corpus distribution (English)

420 headlines (+ lead + images) collected in English / 2018 to 2023 (January-July)

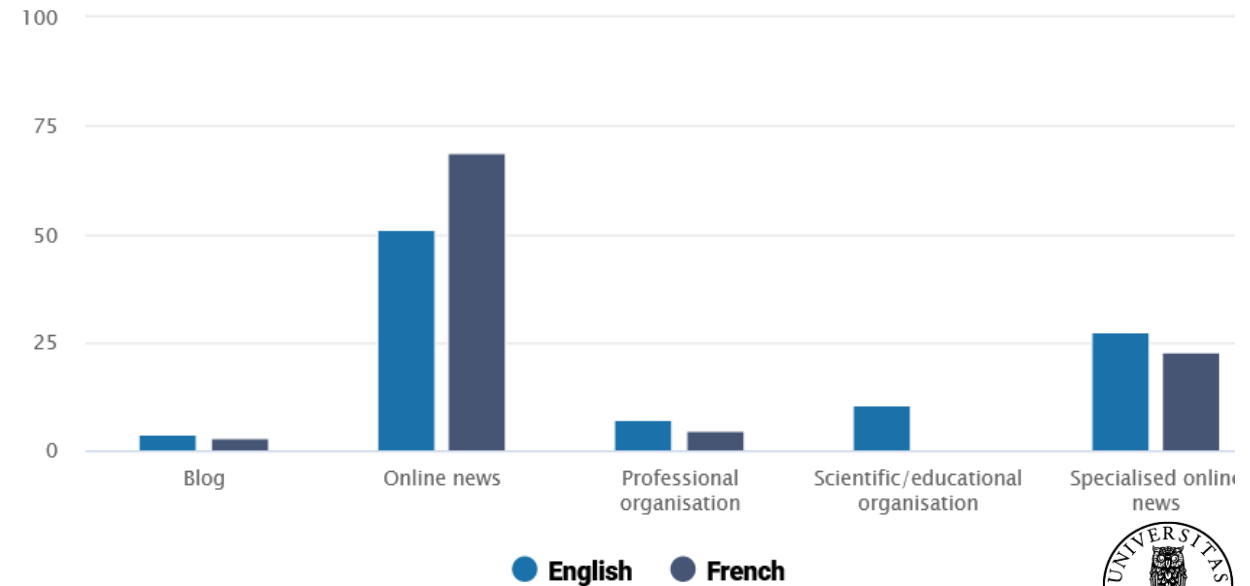
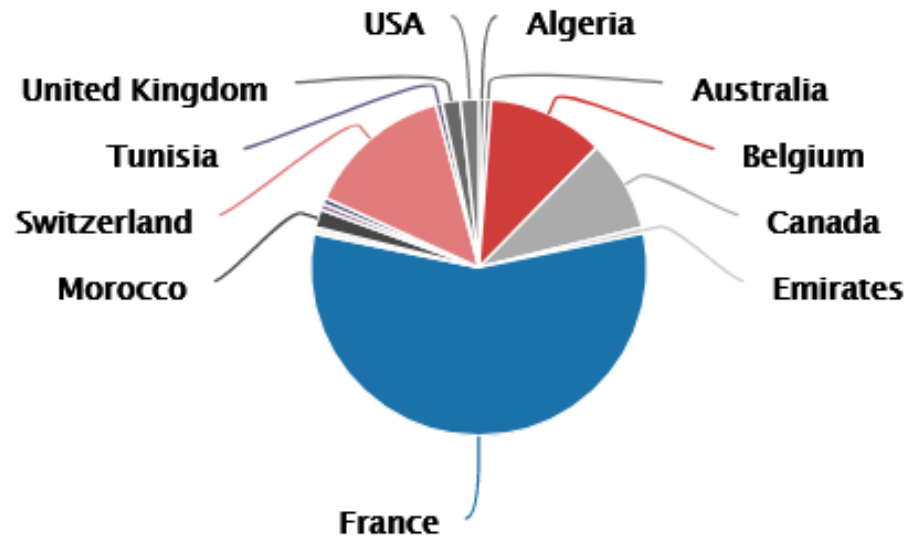
- 27.62% from the United Kingdom (73.38% from Europe = 35.24%)
- 42.38% from the US (96.22% from North America = 44.05%)
- 8.81% from India (68.51% from Asia = 12.86%)
- 64.29% published in 2023 (“ChatGPT effect”)



# Corpus distribution (French)

**170 headlines (+ lead + images) collected in French / 2018 to 2023 (January-July)**

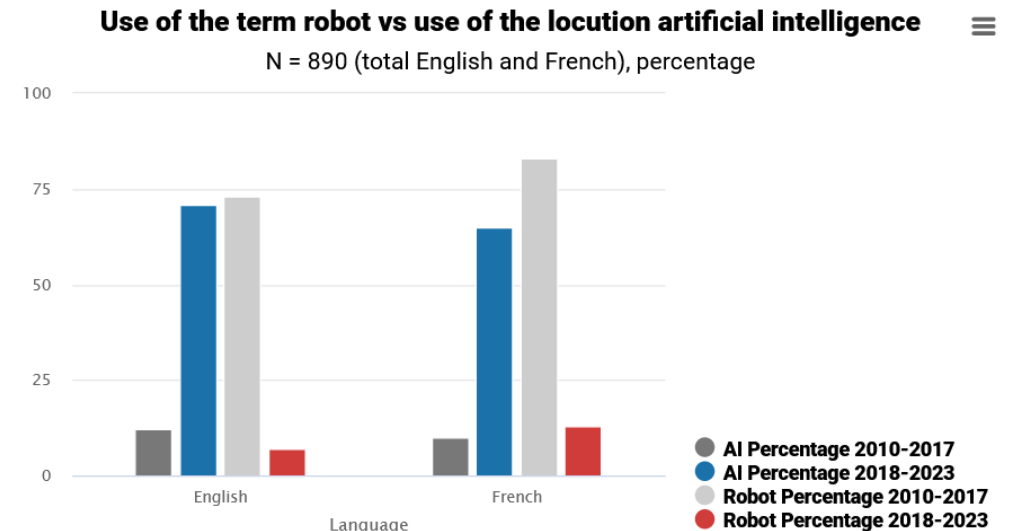
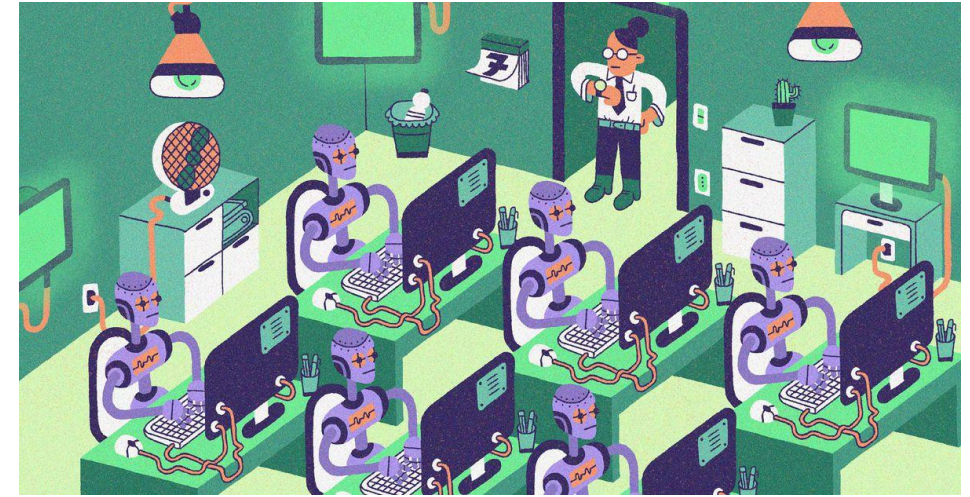
- 56.47% from France (67.60% from Europe = 83.53%)
- 14.12% from Switzerland (16.90% from Europe)
- 11.18% from Belgium (13.38% from Europe)
- 53.53% published in 2023 (“ChatGPT effect”)



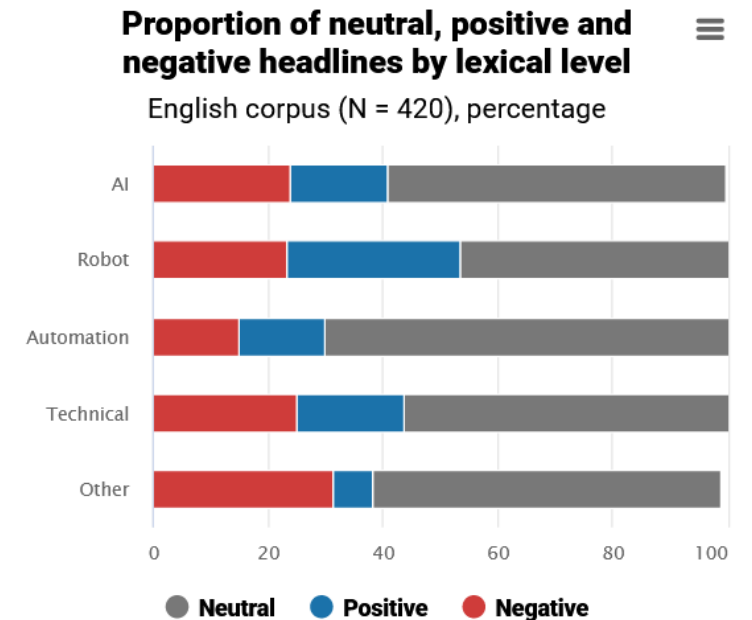
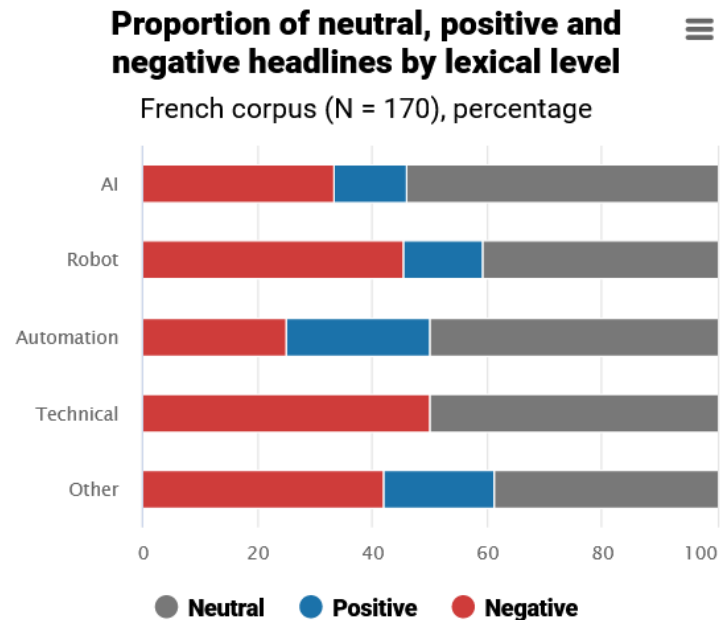
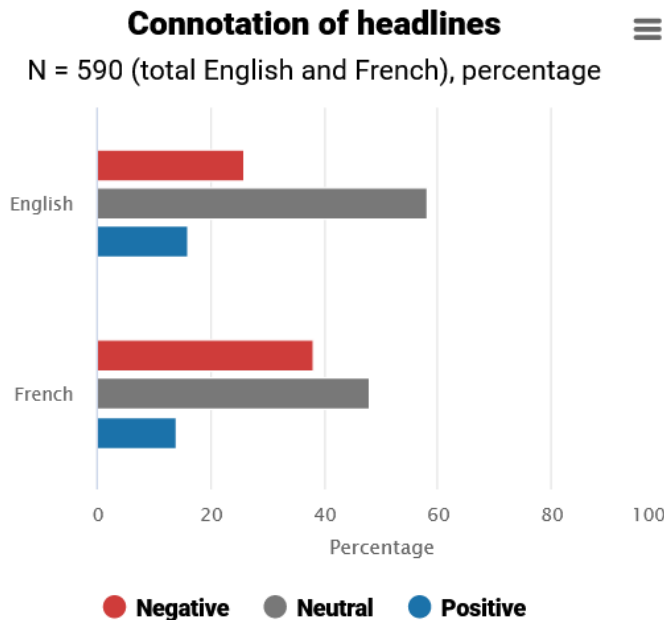


# The end of the robot metaphor?

- The end of the robot metaphor on the lexical level: from 73,7% in English (2010-2017) to 7% (2018-2023), from 77.6% in French to 13%
- The image is still used to illustrate papers: 16.7% in EN and 15.8% in FR
- Images: 16.6% humans, 11.7% human-machine
- Human-machine relationship: 19.66% (pragmatic level)
- Artificial intelligence is the standard term used (71% in EN, 65% in FR), followed in 2023 by “chatbot” and “ChatGPT”



# No impact of the lexicon on the connotation but ChatGPT induces a more negative position ("Other")



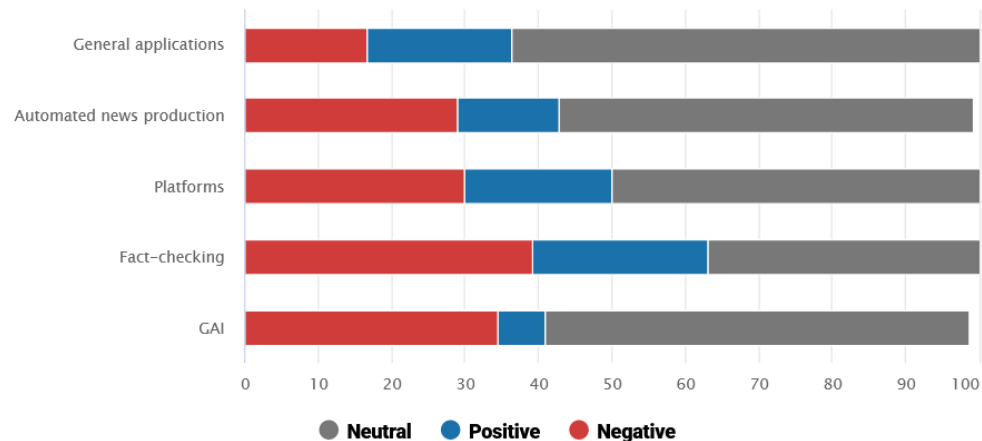
21% ChatGPT in EN and 23.5% in FR

# Concerns on generative AI and fact-checking

- Generative AI is based on biased data and creates “artificial hallucinations” (reliability, risks for misinformation)
- GenAI used to create information disorders (fake and manipulated content)
- Difficulty to detect GenAI content, weakness of technology in this area
- Also related to the weakness of automated fact-checking, technological scepticism

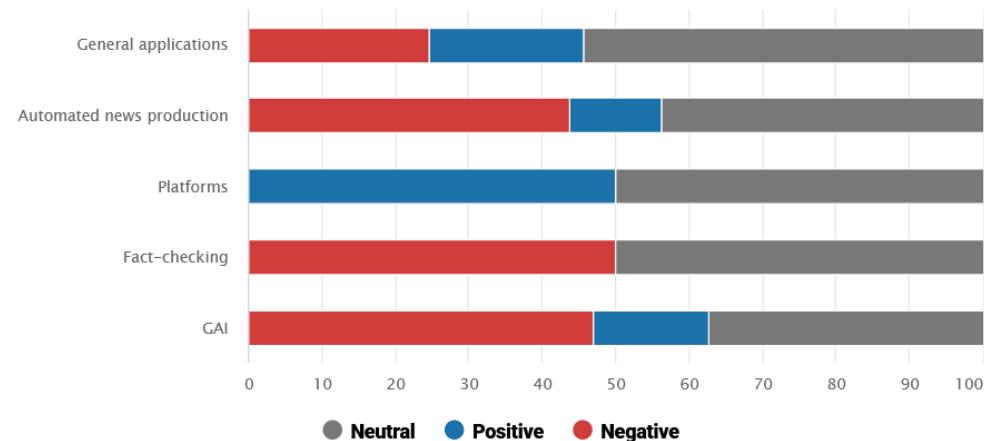
**Proportion of neutral, positive and negative headlines by topic**

English corpus (N = 420), percentage



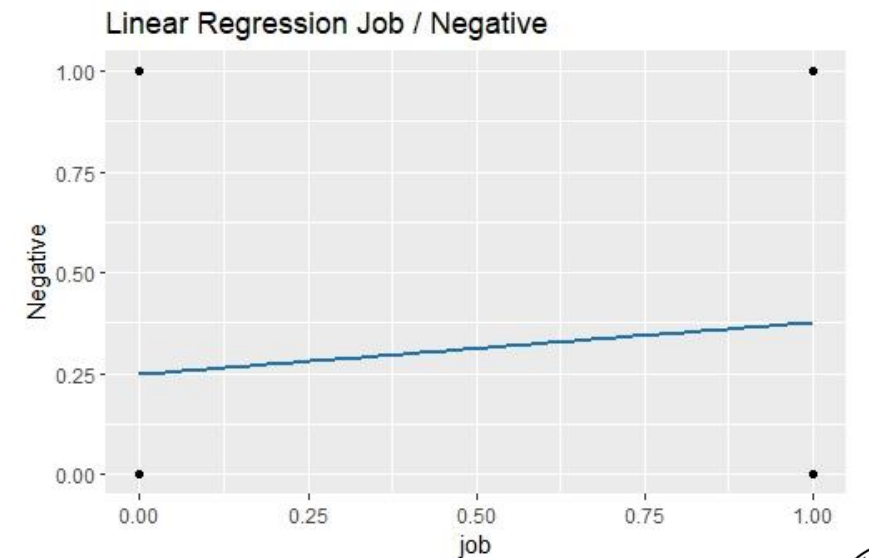
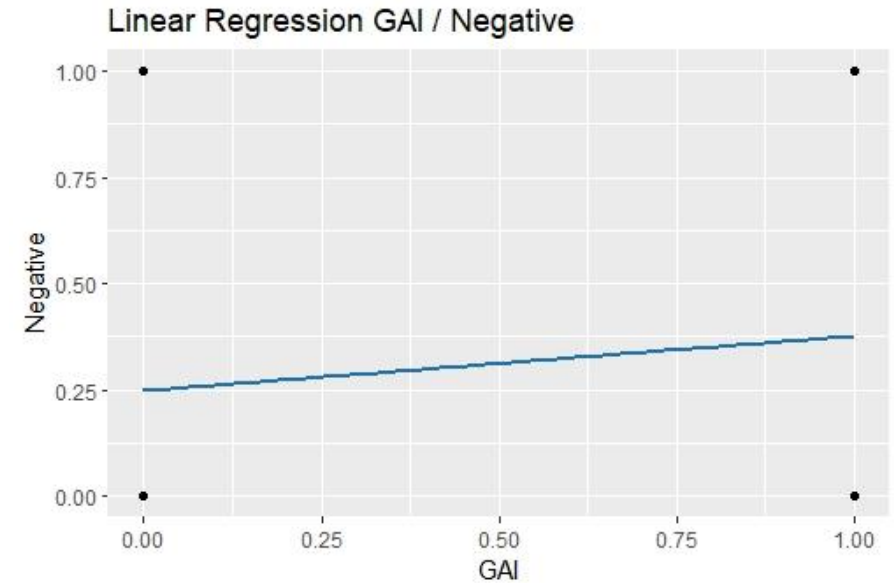
**Proportion of neutral, positive and negative headlines by topic**

French corpus (N = 170), percentage



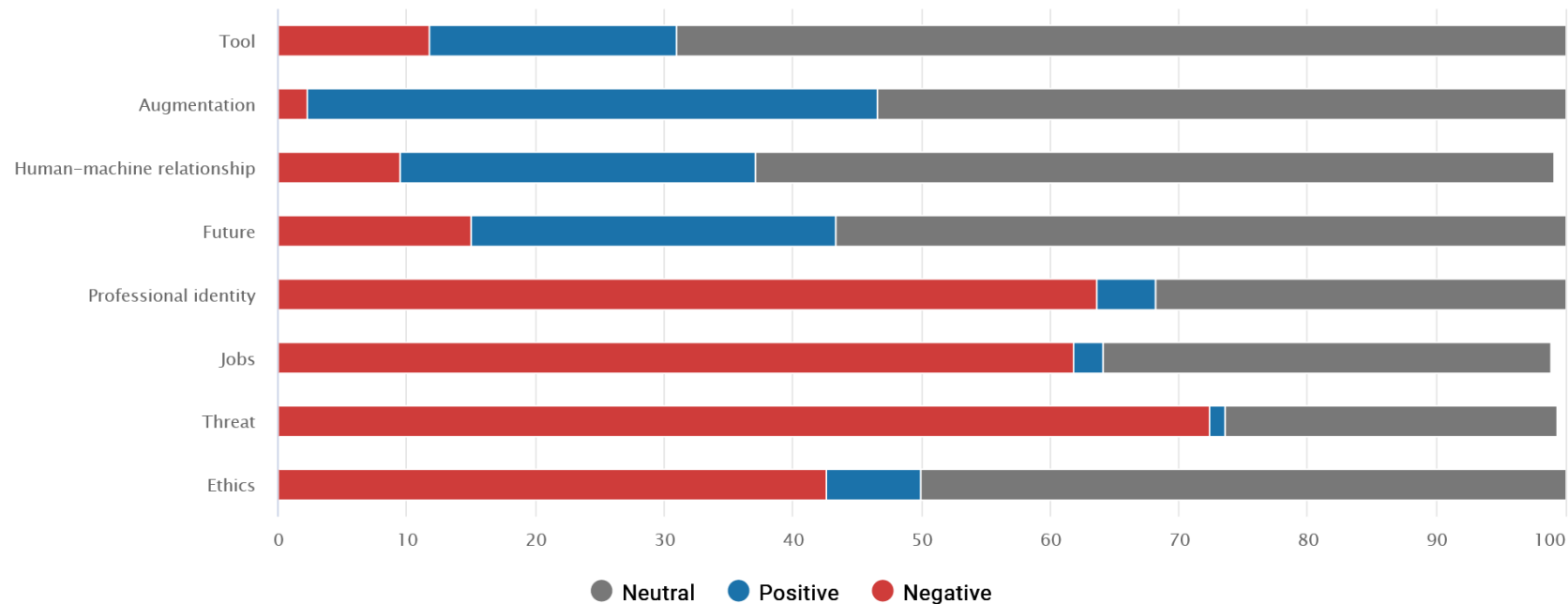
# Statistical significance (linear regression model)

- The term “Robot” and the field “GenAI” explain only a small proportion of the variance in the “Negative” dependent variable, but F-statistics suggests a statistical significance of the model.
- More significance with the association of “GAI” and “Jobs”, explains a strong proportion of “Negative” connotation and strong significance in the field of “Fact-checking”.
- “GenAI” and “Fact-checking” have the most meaningful impact (P-value 0.001011 for GenAI and 0.0192 for FC)
- The results obtained for the sole variable “Robot” do not show the significance of the model



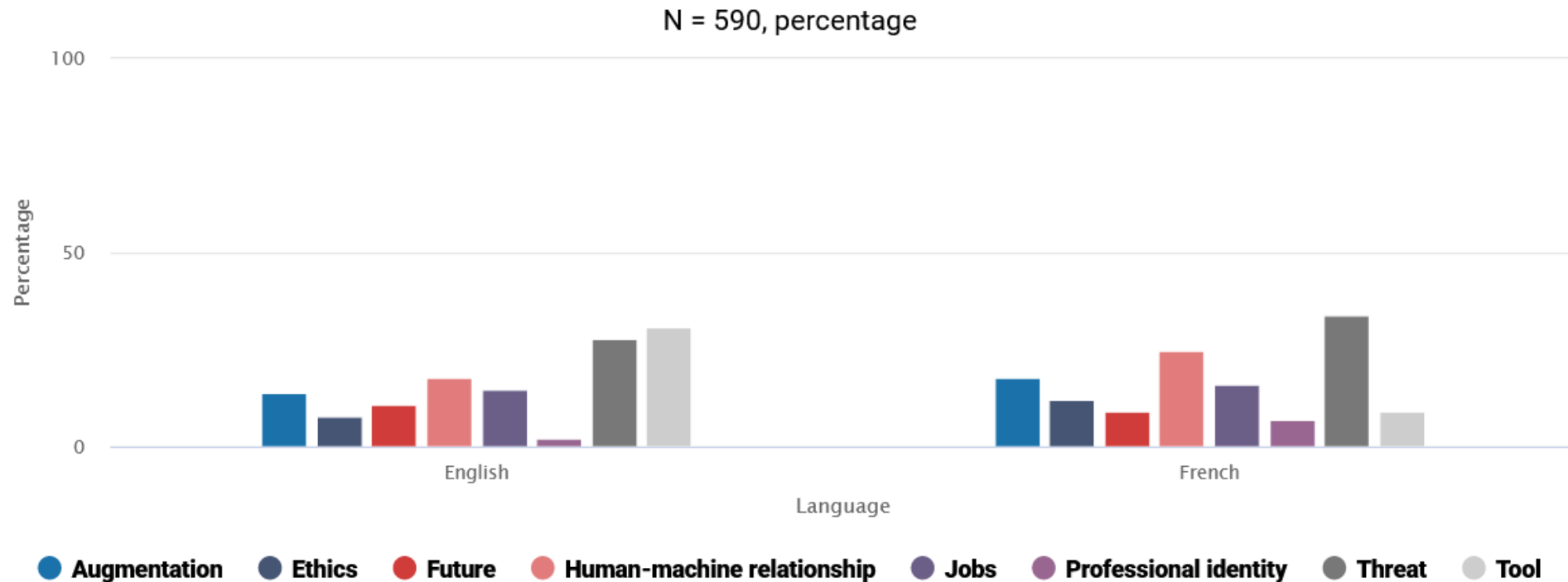
# Threats on journalistic jobs: from confidence to fear

- Job losses in the USA and Germany due to job replacement by AI or GenAI systems
- Exacerbated concerns with the rapid rise of GenAI and its potential to disinform and create biases/hallucinations
- Impact on the collective representation in textual discourses
- The idea of a human replacement is not always negatively connoted
- Blogs, professional organisations and educational organisations more optimistic



# Common challenges to tackle (EN + FR)

- The future of journalism: for the better or the worse?
- Ethics: encouraging responsible uses of (un)responsible technology
- The relationship between the human and the machine in question (supplementing vs. augmenting)



# Journalists' discourses on technology (in history)

## 1. Determinism **Building resilience**

Technological developments are unavoidable and have benefited from creating the conditions for specific work and reinforcing existing professional standards.

## 2. Technological Pessimism **Threat**

Technological developments diverge from established professional norms and values and are not without having risks of disastrous consequences on journalism.

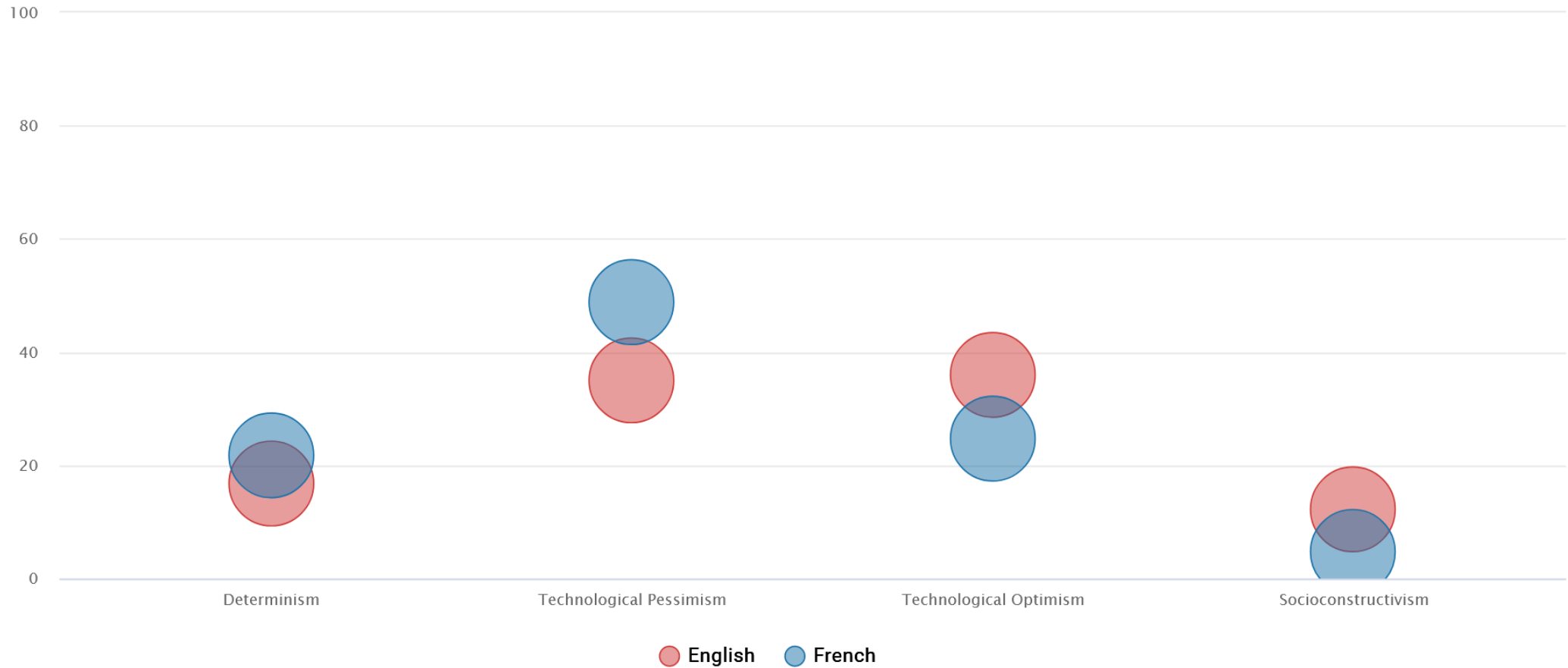
## 3. Technological Optimism **A bright(er) future**

An optimistic outlook on the future, where technological advancements catalyse the reshaping and revitalising of journalism practices.

## 4. (Socio)Constructivism **Augmented journalism**

Technology is a dynamic force that shapes journalism within its social and cultural environment (the idea of a mutual shaping of technology). Emphasises collaborative learning, contextual & adaptative understanding, and AI literacy that acknowledges the possibilities and limits of value-based systems.

# Sociotechnical representations influenced by GAI





## Technological pessimism

# Microsoft 'to replace journalists with robots'

🕒 30 May 2020

future 🔗 tense

## Chatbots Suck at Journalism

So why is journalism welcoming them?

MEDIA | GERMANY

## AI: Chatbots replace journalists

## Automated fact-checking won't stop the social media infodemic

'ChatGPT is stealing our articles'

## Robo-journalists will not protect human rights and free speech, says media expert

AI is great at making connections and finding patterns but is weak when it comes to the high-level creativity humans are capable of, says researcher and author Noam Lemelshtrich Latar

**How AI-generated text is poisoning the internet**

# Technological optimism

- Related to AI actors' announcements or communication: e.g., Google launches an assistant writer
- Views of publishers: opportunity in terms of business model
- AI will “save” journalism (without why journalism should be saved)

TechCrunch+ Growth

## 4 ways generative AI makes founders more interesting to journalists

Successful PR strategies shine in the age of ChatGPT

## AI Will Create Golden Era Of Journalism

This is how AI could change the future of journalism

OpenAI strikes \$5 million-plus local news deal

Published on December 12, 2018 In Endless Origins

Google To Empower Quality Storytelling With Its Journalism AI Project

How artificial intelligence can save journalism

Published: May 5, 2020 10.41pm CEST

# From Big Tech determinism to augmented journalism

New initiative pushes for artificial intelligence  
innovation in newsrooms

How AI Will Change Big Tech's  
Relationship with Journalism

Meta Is Building an AI to Fact-Check Wikipedia—  
All 6.5 Million Articles

Google is Testing New AI Tool  
'Genesis', Capable of Writing News  
Articles

Reuters' new automation tool  
wants to help reporters spot  
the hidden stories in their  
data (but won't take their  
jobs)

How AI can support your journalism

**"Panama Papers" journalist says AI  
helps investigative reporting**

With Lynx Insights, Reuters wants to marry the data-crunching skills of machines  
with the editorial judgment of human reporters.

Getty Images launches a new AI tool that helps  
publishers find the right picture for the story

## Conclusion

- Professional discourses in the context of professional practices are mostly neutral
- Predominant positive tonality in EN (2010-2017) moved to a predominant negative one, reaching 26%
- The predominant negative stance in FR (2010-2017) was exacerbated, reaching 38%
- The GAI phenomenon has a **disruptive effect** and questions **the human-machine relationship** in terms of labour division and ethics
- Generative AI is perceived as a threat to the quality of information
- For fact-checkers, the challenge is mainly related to the limited efficiency of AI-based tools and the new threats posed by machine-generated content, either visual or textual, that are less and less distinguishable from human-generated content

# Thank you!

<https://ohmy.shinyapps.io/aijournalism/>

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