

Simplification Strategies in French Spontaneous Speech

DeTermlt! Workshop: Evaluating Text Difficulty in a Multilingual Context

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Overview

1. Introduction

- 1.1. ATS: a written-text-centered task
- 1.2. Challenges in Speech Simplification (SpeechSimp)
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4. Conclusions and further work

1. Introduction

1.1. ATS: a written-text-centered task?

- Automatic Text Simplification (ATS) is an area of NLP that aims at automatically converting texts into **simpler variants**, by **reducing their linguistic complexity**, albeit **preserving their original meaning** and **grammatical coherence** [[Horn et al, 2014](#); [Stajner, 2021](#)].

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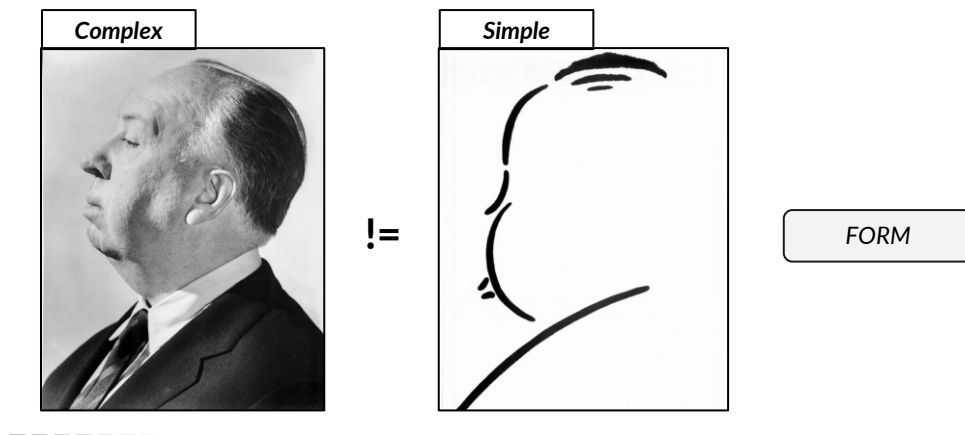
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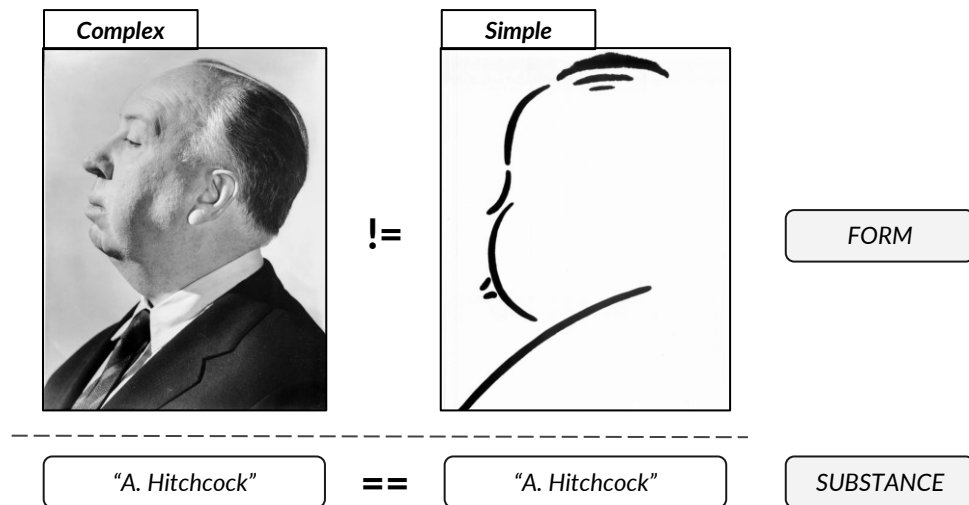
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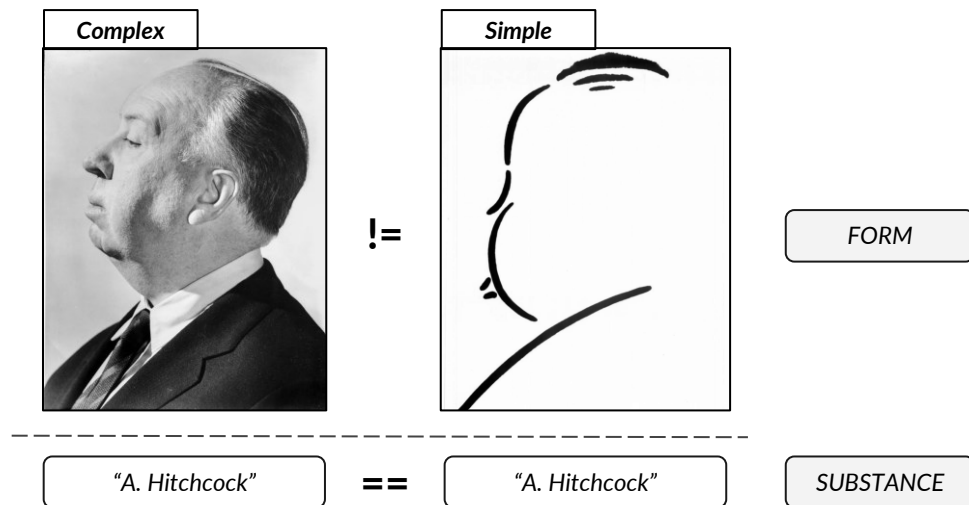
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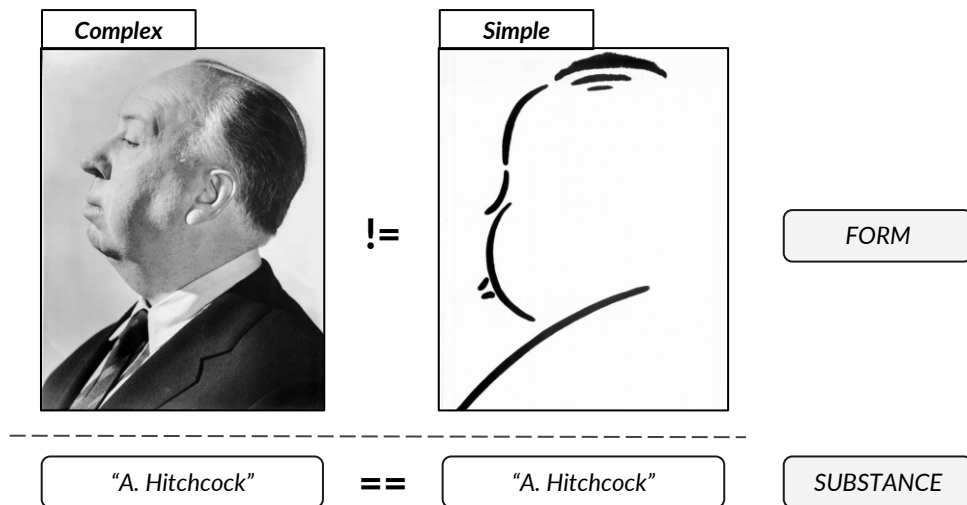
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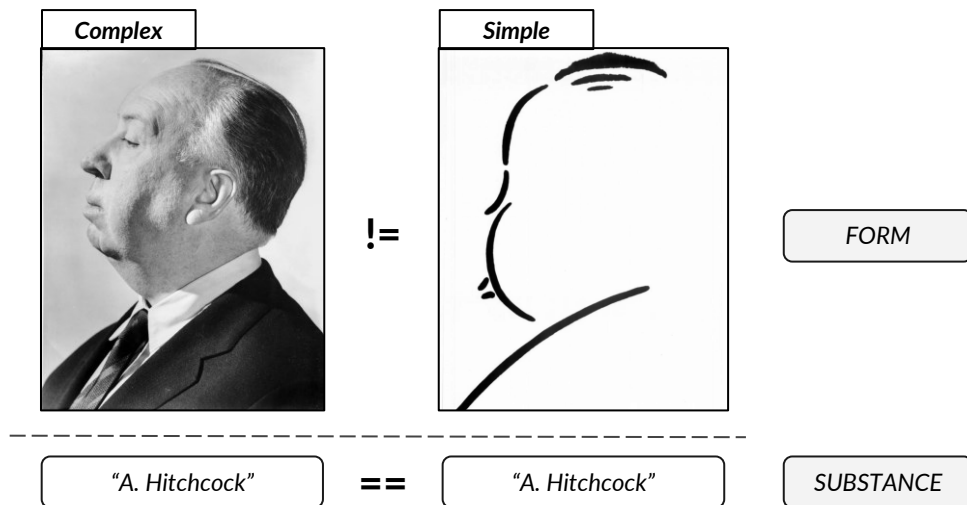
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 - **Healthcare documents**, *i.e.*, PharmMT [Li et al, 2020], BioLaySumm [Goldsack et al, 2022].



1.2. Challenges in Speech Simplification (SpeechSimp)

What about applying simplification to a speech input instead?

- We often associate **complexity** in language with the **features** commonly found in **formal written texts**.
- Yet, **speech is not exempt from modality**, but might be **reflected differently** in reason of:

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2. Spontaneity and grammaticality

- ❑ **Traces of real-time construction of speech:** revisions, false starts, repetitions and self-corrections.
- ❑ **Concatenations** of elements having a **paradigmatic relation** along the syntagmatic axis.

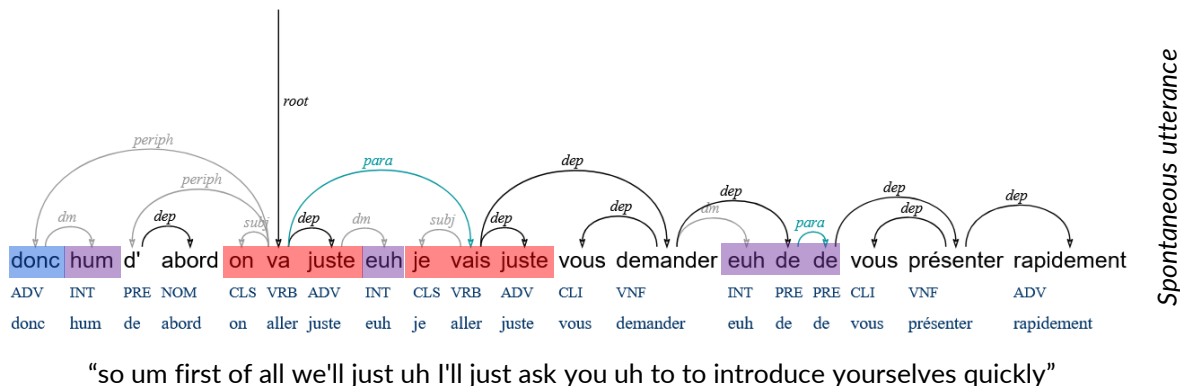
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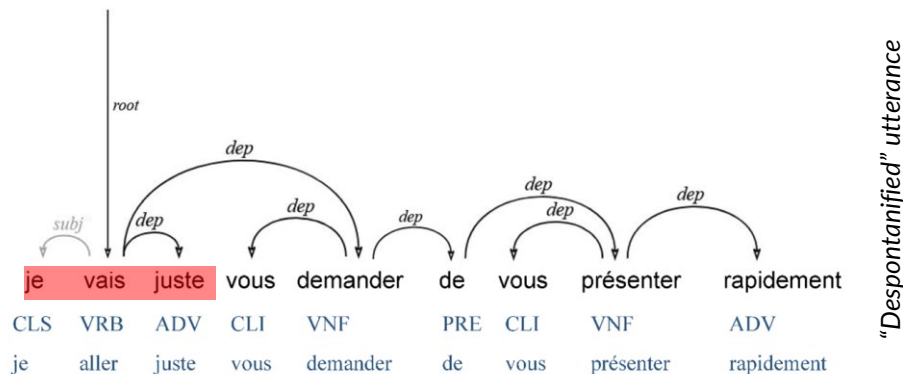
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"Despontanified" utterance

"I'll just ask you to introduce yourselves quickly"

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Accessibility purposes	Simplified transcripts → Help clarify the input message for different target audiences.
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- Main caveat about SpeechSimp→ **No guideline to steer the simplification process.**
- Need to characterize the process empirically:
 - Intuitive approach [Allen, 2009].
 - Based on the **criteria** of expert linguists.
 - Output comparison with **ChatGPT**.

RESEARCH QUESTIONS

RQ1: What are the **edit operations** performed to obtain a **simplified version** of a **French spontaneous speech transcript**?

RQ2: How do **human simplification strategies** align with those adopted by **ChatGPT** and how **suitable** are they for a **non-native audience**?

2. Methodology

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- Orféo-CÉFC [[Benzitoun et al, 2016](#)] → French spontaneous speech dataset:
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 - Various **degrees** of **spontaneity**.
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 - **Proportionate random stratified sampling**.
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 - **Stratum** → Each Orféo subcorpus (12).
- Resulting sample size → **100 utterances**. 
 - **Reasonable workload** for respondents.
 - Not compromise the task's **stability** and **consistency**.

Orféo-Test			
subcorpus	# utterances	%	# samples
Cfpb	362	1.69	2
Cfpp	3,232	15.06	15
Clapi	967	4.51	5
Coralrom	1,376	6.41	6
Crfp	2,259	10.53	10
Fleuron	217	1.01	1
Oral-Narr.	1,050	4.89	5
Ofrom	1,476	6.88	7
Reunions	1,245	5.80	6
Tcof	1,997	9.31	9
Tufs	4,525	21.09	21
Valibel	2,753	12.83	13
Total	21,459	100	100

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 - European **French-native** speakers.
 - **Solid background** on linguistics.
 - **Current dedication** to the latter.

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- Setting a **manual simplification task**: **LimeSurvey platform**.
 - **Survey** including **two questions** to respondents:

1. Provide a **candidate simplified version** of the utterance.
 2. Explain the **chain-of-thought** followed to make such transformations.

Simplification du français parlé spontané

Notre corpus est constitué de phrases en français qui proviennent de **transcriptions de discours spontané**. Nous souhaiterions obtenir **leur équivalent simplifié**, c'est-à-dire, une phrase qui soit linguistiquement plus simple, sans pour autant perdre le sens et les informations originales. L'objectif est d'obtenir des phrases plus compréhensibles pour des locuteurs non natifs du français.

Pour chaque phrase, il vous est demandé de :

1. **Transformer la phrase donnée en une version plus simple**. Utilisez un langage clair, en évitant le jargon et les constructions grammaticales complexes. Vous pouvez également ajouter des signes de ponctuation si nécessaire. Notez que les mots avec le symbole « ~ » sont des amorces (termes inachevés).
2. **Expliquer votre raisonnement**. Après chaque simplification, énumérez et expliquez les transformations que vous avez effectuées. Par exemple, le remplacement de mots complexes par des synonymes plus simples ou encore la restructuration de la phrase.

***Voici la phrase à simplifier :**

"ouais c'est ça sauf que moi on m'a jamais expliqué le rythme du coup"

Simplification :

Raisonnement :

2.3. Machine-based SpeechSimp: ChatGPT prompting

Human-crafted simplifications agree or differ against machine-generated ones?

- Experts annotations are **expensive** to produce.
- We sought to compare **human- vs. machine-based simplified outputs**.

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To this respect:

- **ChatGPT** has been utilized for **text-annotation tasks** [[Gilardi et al, 2023](#)].
- We **prompted** one of the latest models (gpt-4-0125-preview) to **collect artificially-generated simplified transcripts**.

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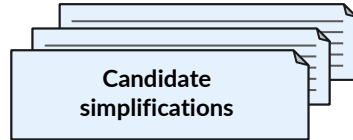
- temperature=0 → Ensuring consistency.
- One-by-one basis → Avoiding history influence.
- Identical prompt than one used with humans.

```
completion = client.chat.completions.create(  
    model="gpt-4-0125-preview",  
    messages=[  
        {"role": "user", "content": f"Notre corpus est constitué de  
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        effectuées. \  
        Voici les phrases à simplifier : \  
        {sentence} \  
        Voici le modèle pour ta sortie : \  
        SIMPLIFICATION : \  
        RAISONNEMENT :"}  
    ],  
    temperature=0  
)
```

3. Results

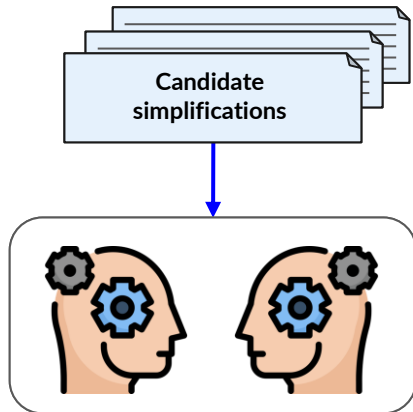
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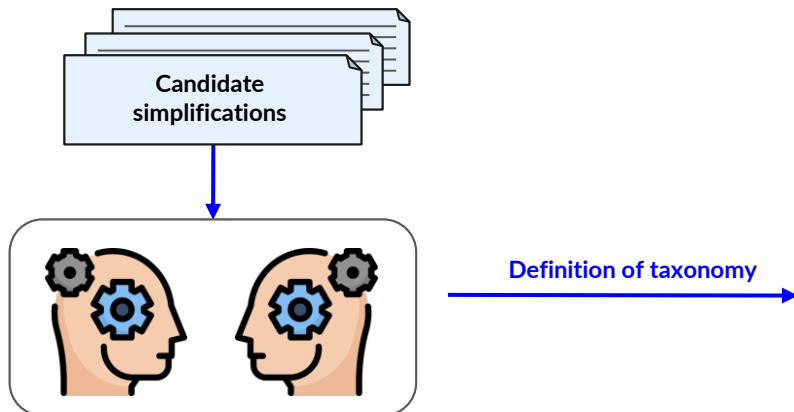
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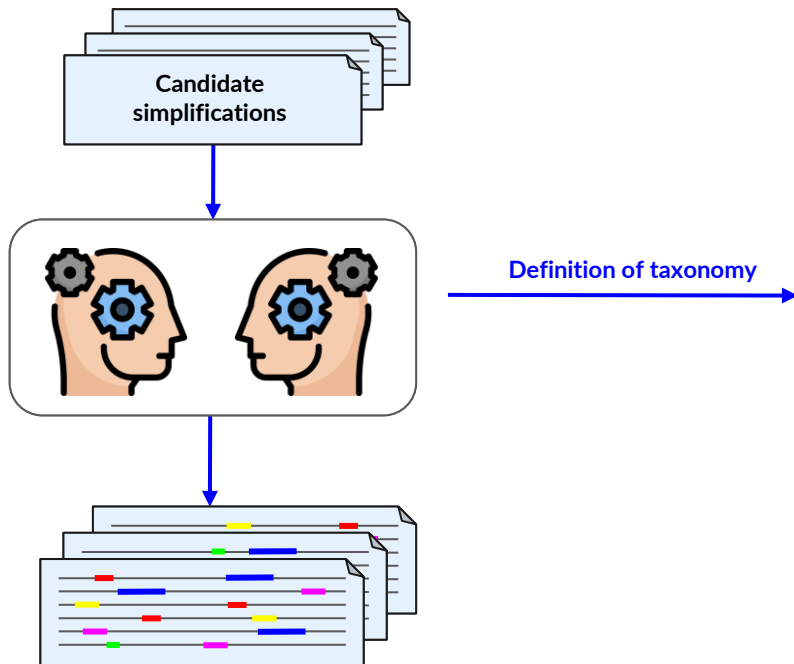
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Deletion		1	Repetitions
		2	Affirmation and negation words
		3	Interjections
		4	Conjunctions
		5	Discourse markers
		6	Restarts and reformulations
		7	Adverbs and adjectives
		8	Incomplete words
		9	Statement verbs
		10	Pronouns
		11	Verbs with little semantic value
Replacement	Lexical	12	Simpler synonyms for content words
		13	Compression of nominal phrases
		14	More standard equivalents for content words
		15	Smoothing of swear words
	Verbal morphology	16	Intransitive to transitive verbs
		17	Pronominal to non-pronominal verbs
		18	Change of verbal tense
		19	Compression of verbal locutions
	Syntactic	20	Passive to active voice
		21	Cleft to canonical constructions
Restructuration		22	Neutralization of dislocated subjects
		23	Pronoun transformations
		24	Reorder
Addition		25	Sentence splitting
		26	Sentence merging
		27	Explication or disambiguation of a word
Copy		28	Completion of truncated sentences
		29	Clarification of uncommon terms
		30	Input sentence is left unchanged

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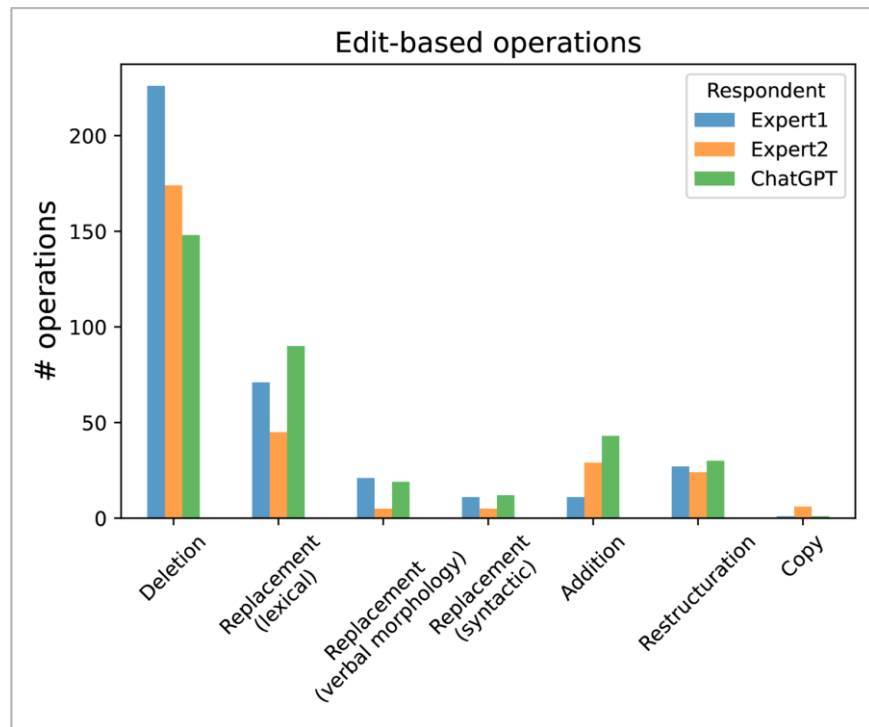
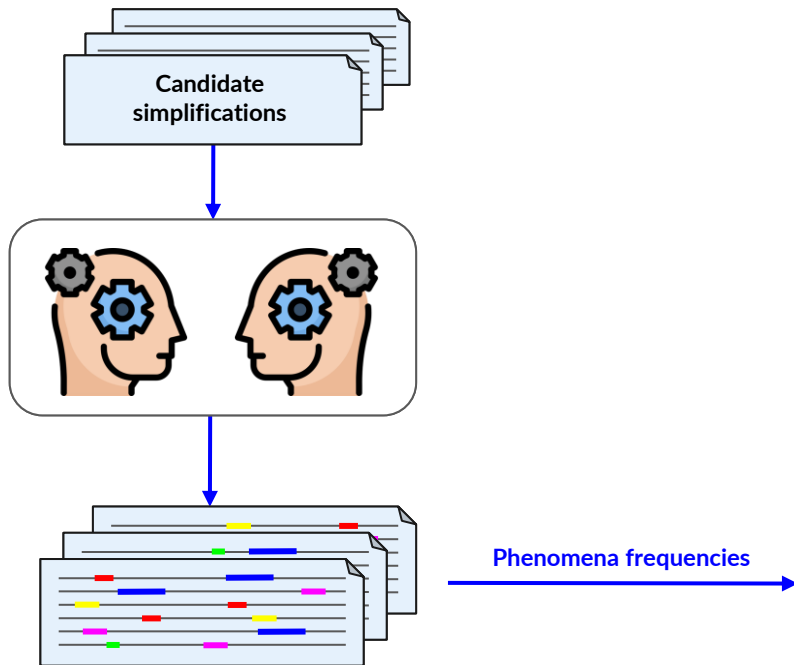
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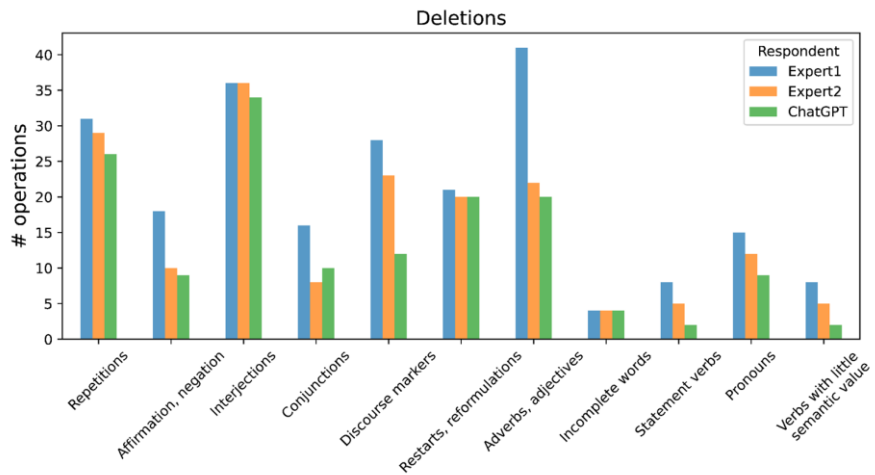
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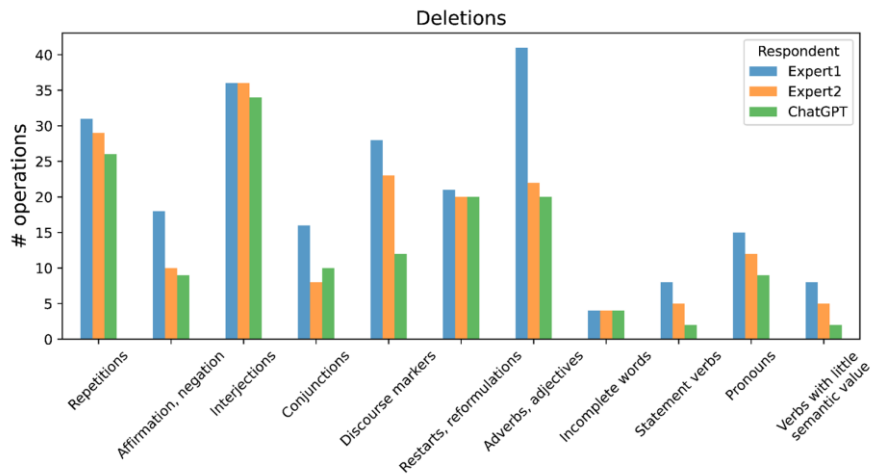


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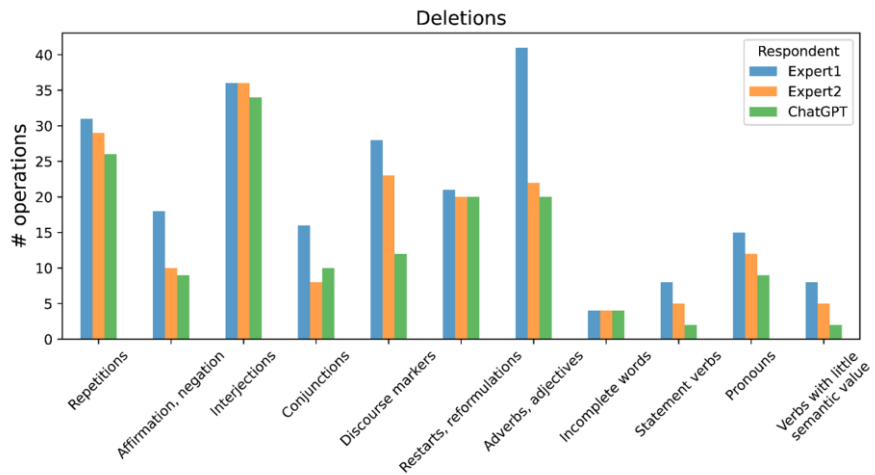
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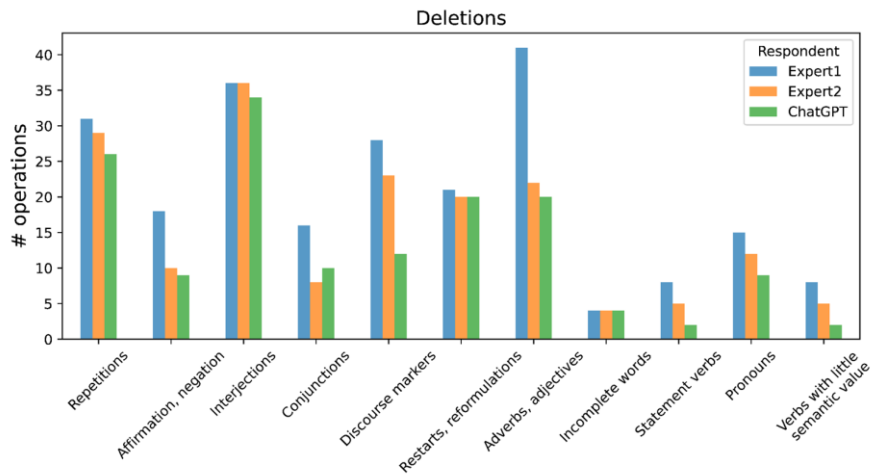
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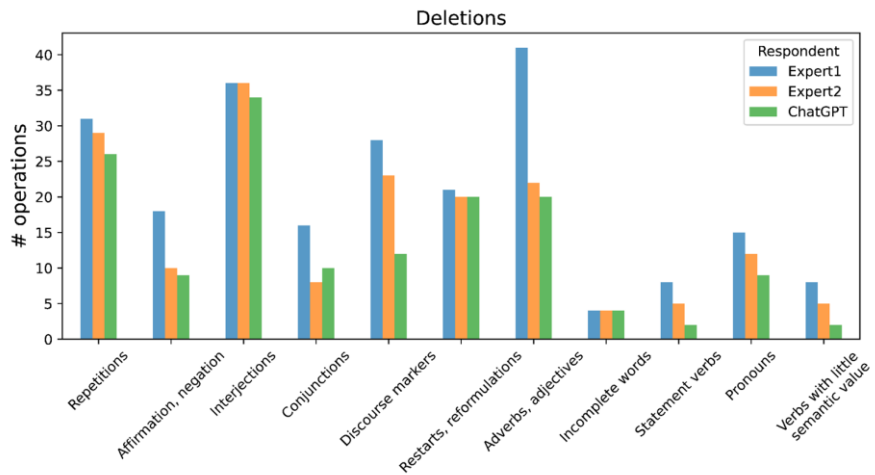
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RESULT

Simplified utterances seem to be “**writified**” or **register-standardized versions** of the **inputs** that just include their **propositional content**.

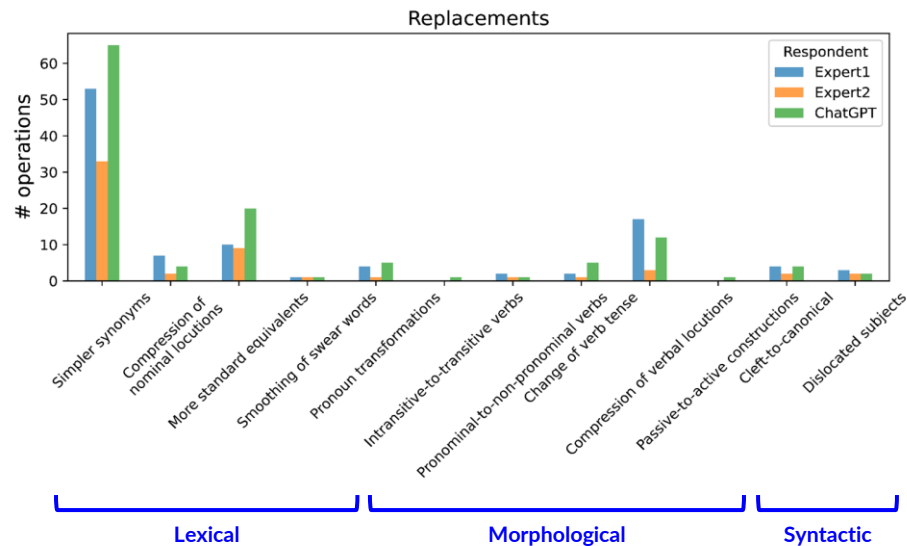
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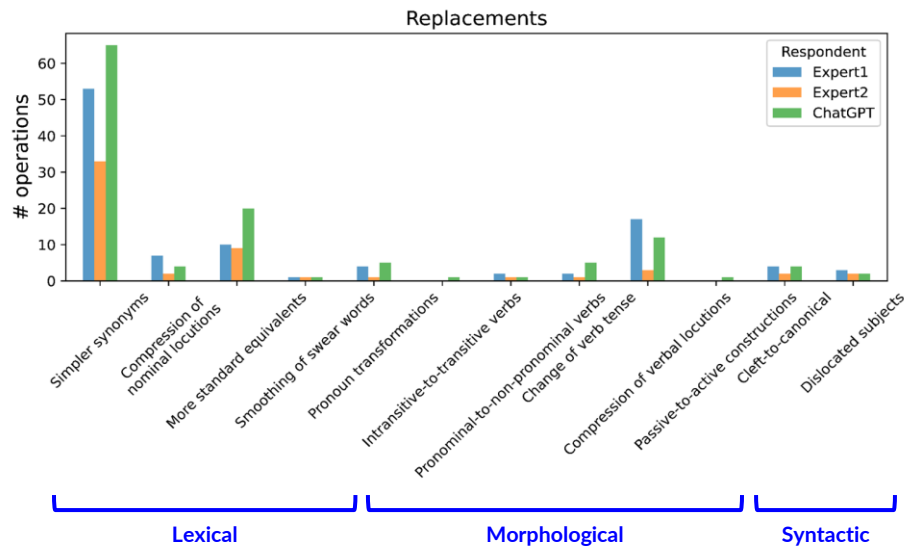


Input	mais enfin cette confrérie elle avait quand même un un avantage c' est que elle venait en aide euh aux malheureux
Expert 1	Cette association avait un avantage, elle a aidé les démunis
Expert 2	Cette association avait l'avantage de venir en aide aux malheureux
ChatGPT	Mais cette confrérie aidait quand même les malheureux

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Category subdivided according to the linguistic transformations observed:

- **Lexical** (more frequent):
 - Propensity to find **simpler** equivalents for **content words**.
 - But also: **smoothing** of **slang**, **colloquialisms** and **profanity** (*monde* → *personnes*, *bouquins* → *livres*).

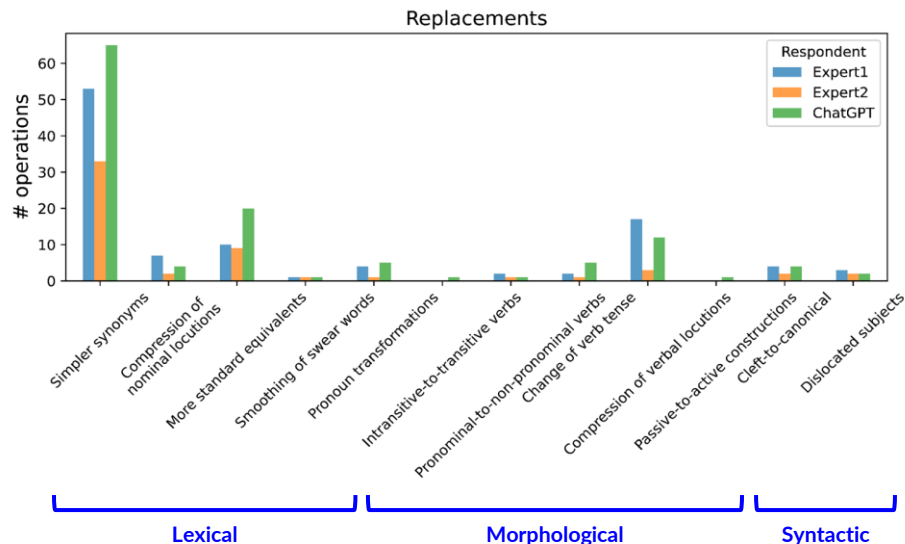


Input	et c' était pas son style de bouffer de la merde
Expert 1	c'était pas à son goût de manger mal
Expert 2	Et il/elle n'est pas habitué à manger des aliments de mauvaise qualité
ChatGPT	Il n'aimait pas manger de mauvaises choses

3.1. Quantitative evaluation: special focus on replacements

Category subdivided according to the linguistic transformations observed:

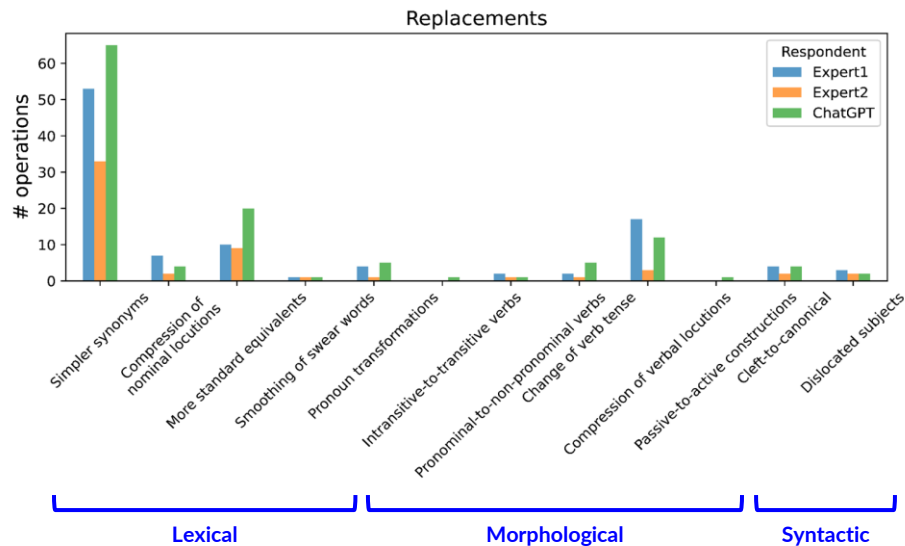
- **Lexical** (more frequent):
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- **Syntactic** (less frequent):
 - **Standardization of marked information structures** (cleft clauses and dislocated subjects).
 - **Passive voice** changes: **anecdotal**.



Input	on sent que la prise de conscience de ce genre de choses elle s' est faite tard
Expert 1	Nous pensons que la compréhension de ce problème est arrivée tard
Expert 2	La prise de conscience de ces choses-là est arrivée tard
ChatGPT	Les gens ont commencé à comprendre ces choses tard

3.2. Qualitative intrinsic evaluation

To assess the **suitability** of the **produced** human- and machine-based **outputs** for a **foreign-speaking audience**:

- We conducted a **qualitative intrinsic evaluation**.
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Survey design:

- Also set up on the **LimeSurvey** platform.
- We asked to **score** the produced **simplifications** on a **5-point Likert scale**.
- Under two typical **ATS dimensions** [[Yamaguchi et al, 2023](#)]:

Simplicity gain (S _g)	Meaning preservation (M _p)
5 - <i>Much simpler</i>	5 - <i>Fully preserved</i>
4 - <i>Somewhat simpler</i>	4 - <i>Mostly preserved</i>
3 - <i>Same difficulty</i>	3 - <i>Partially preserved</i>
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1 - <i>Unintelligible</i>	1 - <i>Unintelligible</i>

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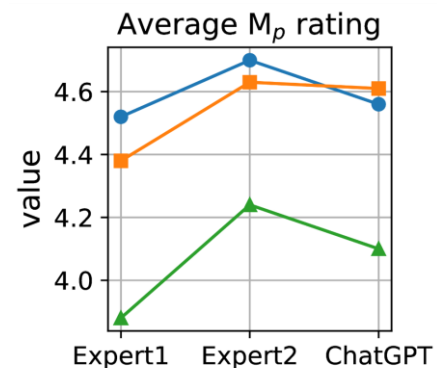
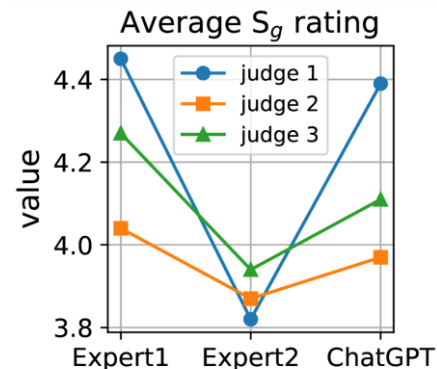
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4. Conclusions and further work

CONTRIBUTIONS

- **Taxonomy** and **quantification** of simplification operations applied to French spontaneous transcripts.
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LIMITATIONS

- **Small scale study** → Due to the **costly process** required to produce such data.
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FURTHER WORK

- **Propicto-Orféo-Simple** → Further use as an **evaluation set** to assess the performance of **speech simplification models**.

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Thank you for your attention!

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References (1/3)



C. Horn, C. Manduca and D. Kauchak (2014)

Learning a Lexical Simplifier using Wikipedia

Proceedings of the 52nd Annual Meeting of the Association for Computational Linguistics, 458-463.



S. Stajner (2021)

Automatic Text Simplification for Social Good: Progress and Challenges

Findings of the Association for Computational Linguistics, 2637-2652.



X. Zhang and M. Lapata (2017)

Sentence Simplification with Deep Reinforcement Learning

Proceedings of the Conference on Empirical Methods in Natural Language Processing, 584-594.



L. Ormaechea and N. Tsourakis (2023)

Extracting Sentence Simplification Pairs from French Comparable Corpora Using a Two-Step Filtering Method

Proceedings of the 8th Swiss Text Analytics Conference (SwissText), 30-40.

References (2/3)



J. Li, C. Lester, X. Zhao, Y. Ding, Y. Jiang, V.G.V. Vydiswaran (2020)
PharmMT: A Neural Machine Translation Approach to Simplify Prescription Directions
Findings of the Association for Computational Linguistics: EMNLP, 2785-2796.



W. Xu, C. Callison-Burch, C. Napoles (2015)
Problems in Current Text Simplification Research: New Data Can Help
Transactions of the Association for Computational Linguistics, 283-297.



T. Goldsack, Z. Zhang, C. Lin, C. Scarton (2022)
Making Science Simple: Corpora for the Lay Summarisation of Scientific Literature
Proceedings of the Conference on Empirical Methods in Natural Language Processing, 10589-10604.



D. Allen (2009)
A study of the role of relative clauses in the simplification of news texts for learners of English
System, 37, 585-599.



R. Carter and M. McCarthy (2017)
Spoken Grammar: Where Are We and Where Are We Going?
Applied Linguistics, Volume 38, Issue 1, 1-20.

References (3/3)



A. Pupier, M. Coavoux, B. Lecouteux and J. Goulian (2022)

End-to-End Dependency Parsing of Spoken French

Proceedings of Interspeech 2022, 1816-1820.



C. Benzitoun, J.M. Debaisieux and H.J. Deulofeu (2016)

Le projet ORFÉO : un corpus d'étude pour le français contemporain

Corpus, 15, 91-114.



F. Gilardi, M. Alizadeh and M. Kubli (2023)

ChatGPT outperforms crowd workers for text-annotation tasks

Proceedings of the National Academy of Sciences, 120 (30).



D. Yamaguchi, R. Miyata, S. Shimada and S. Sato (2023)

Gauging the Gap Between Human and Machine Text Simplification Through Analytical Evaluation of Simplification Strategies and Errors

Findings of the Association for Computational Linguistics: EACL 2023, 359-375.