CHAT-GPT

**Summary of the Research Paper:**

**Title:** *Can Grammarly and ChatGPT Accelerate Language Change? AI-powered Technologies and Their Impact on the English Language: Wordiness vs. Conciseness*  
**Author:** *Karolina Rudnicka*  
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**Key Findings:**

1. **AI-powered writing tools influence language change:**
   * Grammarly and ChatGPT promote concise writing by favoring shorter grammatical structures over more elaborate ones.
   * The study focused on the phrase *in order to*, showing that both tools significantly reduce its usage in favor of the simpler *to*-infinitive.
   * Grammarly completely eliminated *in order to* in 100% of the cases, while ChatGPT removed it in 95% of instances.
   * These tools may accelerate existing linguistic trends toward conciseness.
2. **Sentence shortening and readability impact:**
   * Both Grammarly and ChatGPT shortened sentence lengths in the study.
   * Grammarly-revised sentences were, on average, 2.7 words shorter, and ChatGPT-revised sentences were 3.2 words shorter.
   * Grammarly slightly improved readability, whereas ChatGPT’s modifications sometimes made texts harder to read.
3. **Potential long-term effects:**
   * If widely adopted, AI writing assistants could actively shape English syntax, grammar, and word usage.
   * Their influence extends beyond mirroring language change—they could also drive it by promoting more concise and less formal writing.

**Methodology:**

1. **Corpus-based case study:**
   * The study analyzed **100 sentences** containing *in order to*, extracted from the **Corpus of Contemporary American English (COCA)**.
   * These sentences were processed through Grammarly and ChatGPT to observe how the tools modified them.
2. **Analysis parameters:**
   * **Wordiness vs. conciseness:** Checking if the AI tools considered *in order to* redundant.
   * **Sentence length:** Measuring changes in the number of words in revised sentences.
   * **Readability scores:** Using the **Flesch Reading-Ease Test** to compare readability before and after modification.
3. **Results comparison:**
   * Raw frequency of *in order to* in the datasets:
     + **Original COCA sentences:** 100 instances
     + **Grammarly-processed sentences:** 0 instances
     + **ChatGPT-processed sentences:** 5 instances
   * Sentence length changes:
     + **Original:** 17.6 words
     + **Grammarly-revised:** 14.9 words
     + **ChatGPT-revised:** 14.4 words
   * Readability:
     + Grammarly slightly improved readability, while ChatGPT's modifications sometimes made sentences harder to read.

**Limitations:**

1. **Narrow scope:**
   * The study focused on a single grammatical construction (*in order to*), which may not fully represent broader AI-driven language changes.
2. **Limited dataset:**
   * Only 100 sentences were analyzed, which may not generalize across all writing contexts.
3. **Lack of contextual variation:**
   * The study did not differentiate AI suggestions based on formality, genre, or target audience.
4. **AI behavior explanations remain unclear:**
   * While Grammarly provides explicit feedback on why edits are suggested, ChatGPT does not clarify why it removes certain phrases.

**Comparison to Existing Studies:**

* Prior research (e.g., *Lewis, 1894; Rudnicka, 2018, 2019*) has shown that English sentence lengths have been decreasing over time.
* This study builds on that trend, showing how AI-based tools could accelerate the shift toward more concise writing.
* Unlike earlier studies, which analyzed natural language evolution, this research suggests that **technological intervention (Grammarly, ChatGPT) could become an external driver of language change.**

**Future Improvements and Research Directions:**

1. **Expand the dataset:**
   * Analyze more grammatical structures beyond *in order to*.
   * Include a larger, more diverse set of sentences.
2. **Investigate AI’s impact on different writing genres:**
   * Compare AI-driven modifications in **academic writing, business communication, journalism, and casual online discourse**.
3. **Study the influence of AI customization settings:**
   * Examine how different Grammarly settings (e.g., formality, audience type) affect language changes.
4. **Longitudinal analysis:**
   * Track AI's impact on real-world writing over several years to assess long-term linguistic effects.
5. **User behavior analysis:**
   * Investigate how users respond to AI-generated corrections and whether they adopt suggested changes in their writing habits.

**Conclusion:**

This study provides compelling evidence that Grammarly and ChatGPT **not only reflect but also accelerate language change**, particularly in promoting conciseness. If these AI tools continue to gain widespread adoption, they could significantly reshape modern English, reinforcing trends toward shorter, clearer, and less formal writing styles. Future research should explore their broader impact on syntax, vocabulary, and linguistic norms.

PERPLEXITY.AI

Okay, here's a summary of the research paper you provided, focusing on its key aspects and potential improvements:**Summary**

* **Key Findings:** The paper argues that AI-powered language tools like Grammarly and ChatGPT have the potential to accelerate language change, specifically towards more concise writing. It finds that these tools often suggest shorter grammatical structures and less verbosity, even in correct sentences from native speakers.
* **Methodology:** The study uses a case study approach, analyzing how Grammarly and ChatGPT treat the purpose subordinator "in order to" in sentences extracted from the Corpus of Contemporary American English (COCA). It then compares the readability and sentence length of the original and AI-modified sentences.
* **Limitations:** The research is limited by its focus on a single grammatical feature ("in order to"). Also, the study acknowledges that it is early to definitively assess the long-term impact of these technologies.

**Comparison to Existing Studies**

* The paper notes a gap in research concerning the overall impact of AI language technologies on the English language. While previous studies have explored the impact of short forms of communication (email, text messages), and the use of AI in language teaching, this paper specifically addresses the potential of AI to influence language change itself.
* The author refers to existing research that demonstrates the trend towards shorter sentences in English over the past centuries, and positions the study as an investigation into whether AI tools are contributing to this trend.

**Suggested Future Improvements**

* **Broader Grammatical Analysis:** Expand the case study to include a wider range of grammatical structures and stylistic features beyond "in order to".
* **Longitudinal Study:** Conduct a longitudinal study to track changes in language use over a longer period, correlating these changes with the increasing adoption of AI writing tools.
* **User Behavior Analysis:** Investigate how users interact with and adopt the suggestions made by Grammarly and ChatGPT. This could involve surveys, interviews, or analysis of user writing patterns.
* **Cross-Linguistic Analysis:** Compare the impact of these tools on different languages, considering that different languages have varying levels of tolerance for verbosity and complexity.
* **Qualitative Analysis:** Include a qualitative analysis of the nuances lost or gained when AI tools suggest changes, considering the potential impact on style and expressiveness.
* **Control Groups:** Use control groups of writers who do not use AI tools to compare against those who do, in order to more definitively isolate the impact of the technology.
* **Deeper Dive into Algorithms:** Investigate the algorithms that drive the suggestions made by Grammarly and ChatGPT, to better understand the biases and preferences that are being promoted.

SCISPACE

**Key Findings**

* The research indicates that both Grammarly and ChatGPT promote a trend towards more concise language, reducing wordiness in writing. This is evidenced by their preference for shorter phrases over more elaborate constructions, such as the phrase "in order to," which they largely suggest removing **[**1**]** **[**2**]**.
* The study highlights that the use of these AI tools can influence the language produced by users, potentially accelerating language change processes by decreasing the frequency of complex phrases and overall sentence length **[**3**]** **[**4**]**.

**Methodology**

* The methodology involved applying both Grammarly and ChatGPT to a dataset containing sentences of varying lengths and representing multiple writing registers. This approach aimed to ensure a diverse and representative sample rather than focusing on a single genre **[**5**]**.
* The researchers analyzed the modifications suggested by both tools, comparing their effects on sentence structure and readability metrics. They noted that while both tools aimed for conciseness, the changes did not necessarily improve readability **[**4**]**.

**Limitations**

* One limitation mentioned is the potential for software bugs to influence the observed effects. The authors suggest that future studies should replicate the investigation with updated versions of the tools to confirm the findings **[**6**]**.
* Additionally, the study calls for further research to explore other linguistic phenomena and the algorithms behind Grammarly and ChatGPT, which may affect their output **[**6**]**.

**Comparison to Existing Studies**

* This research builds on existing studies that have primarily focused on AI's role in English language teaching. However, it extends the discussion to the broader implications of AI tools on language change, particularly in terms of conciseness and wordiness **[**7**]**.
* Unlike previous studies that may have concentrated on specific educational outcomes, this paper emphasizes the potential for AI technologies to influence general language use and evolution.

**Future Improvements**

* Future research could benefit from a more extensive dataset that includes various genres and contexts to better understand the impact of these tools across different writing styles.
* Investigating the interplay between user demographics and the effectiveness of these AI tools could provide deeper insights into their influence on language change.
* Additionally, exploring the algorithms behind these tools could reveal more about how they prioritize certain linguistic features over others, potentially leading to more tailored and effective writing assistance **[**6**]**.

COMPARISION

**Accuracy & Depth**

ChatGPT nailed it when it came to depth and accuracy. It provided a well-structured and detailed summary, covering everything from the key findings to methodology, limitations, and future directions. More importantly, it accurately captured the paper’s main argument—how AI tools like Grammarly and ChatGPT might not just reflect language change but actually accelerate it by promoting conciseness.

Perplexity’s summary, while accurate, was noticeably shorter and missed some crucial details—like the exact numbers behind Grammarly’s 100% elimination of *in order to* versus ChatGPT’s 95% reduction.

SciSpace, on the other hand, focused more on methodology and limitations but didn’t really highlight the bigger picture—how these AI tools could be shaping the way we use language.

**Technical Understanding**

ChatGPT clearly showed a strong grasp of both linguistic concepts (like purpose subordinators and sentence length trends) and methodology (corpus analysis, readability metrics). It explained these aspects in a way that was both precise and easy to follow.

Perplexity also understood the core ideas well but didn’t dive as deep into the technical side. It kept things at a high level, focusing more on the overall findings rather than the underlying linguistic analysis.

SciSpace was technically solid but sometimes lacked context, which made its explanations feel a bit disconnected from the bigger picture.

**Critical Thinking**

This is where ChatGPT stood out the most. It didn’t just summarize the study—it also pointed out specific and relevant improvements, like expanding the dataset, studying AI’s impact on different writing genres, and tracking language changes over time.

Perplexity had some useful suggestions but wasn’t as systematic in analyzing the study’s limitations.

SciSpace did mention limitations, but it didn’t fully explore what they meant or suggest ways to address them.

**Uniqueness & Approach**

Each AI had its own style:

* **ChatGPT** took a comprehensive and structured approach, clearly organizing the information and making meaningful connections between different aspects of the study.
* **Perplexity** was concise and to the point, focusing more on the core findings but without much depth.
* **SciSpace** leaned heavily on the technical and methodological side, but its summary felt a bit fragmented rather than smoothly integrated.

**Final Verdict**

ChatGPT delivered the most well-rounded and insightful summary, balancing technical details with broader implications. Perplexity was a decent option for a quick overview, but it lacked depth. SciSpace was great for technical details but could have done a better job connecting the dots and presenting a more cohesive narrative.

The biggest difference? ChatGPT didn’t just list information—it structured it hierarchically, analyzed it critically, and made meaningful connections, while the other two tended to present things in a more linear and less integrated way.