

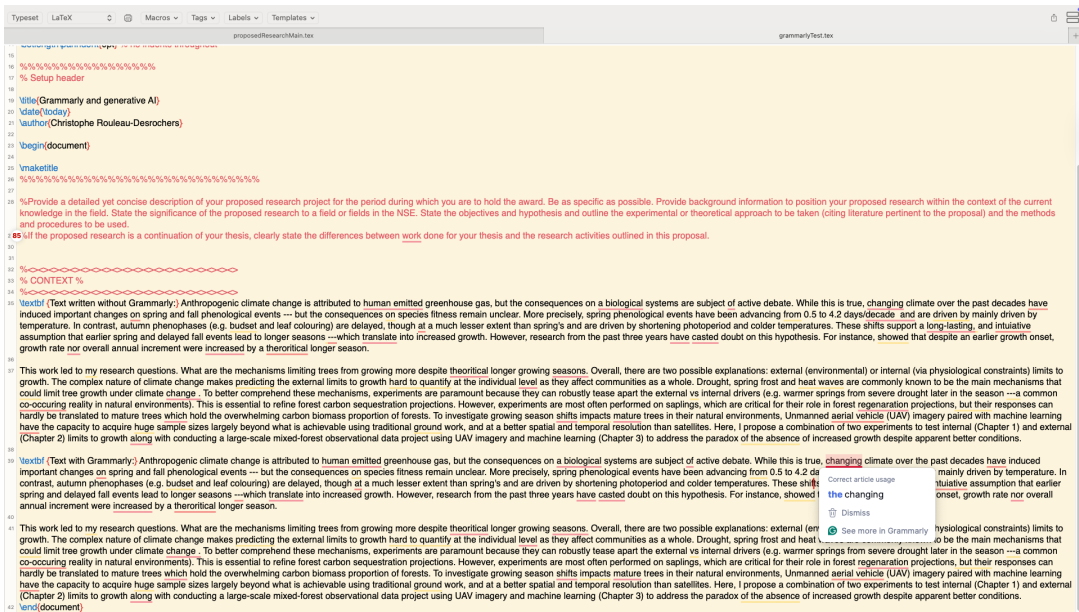
Grammarly and generative AI

Christophe Rouleau-Desrochers

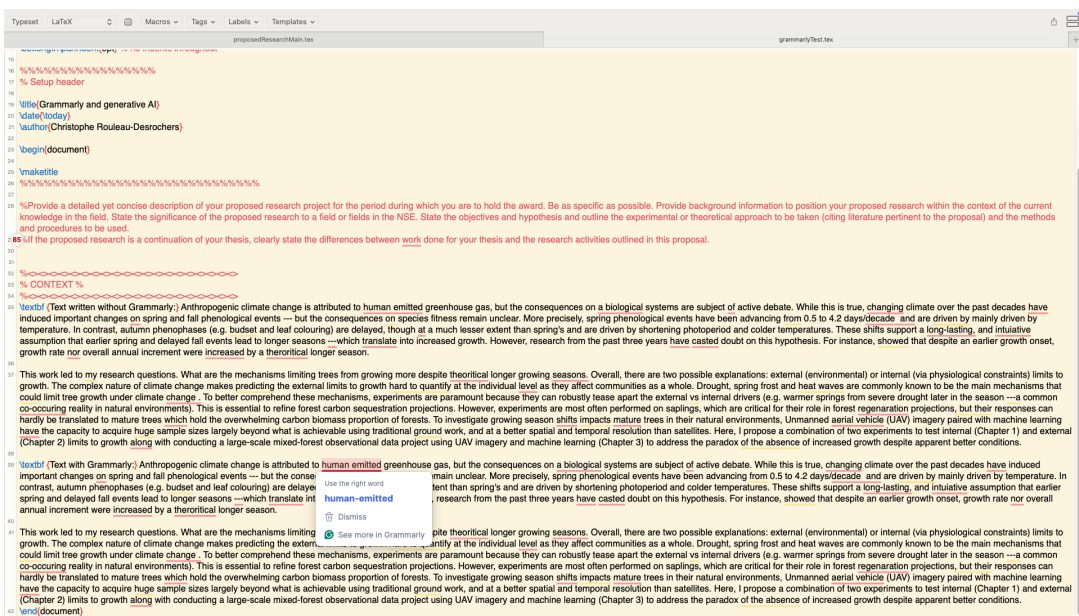
August 18, 2025

1 Examples of what I use Grammarly for and I think it's ok

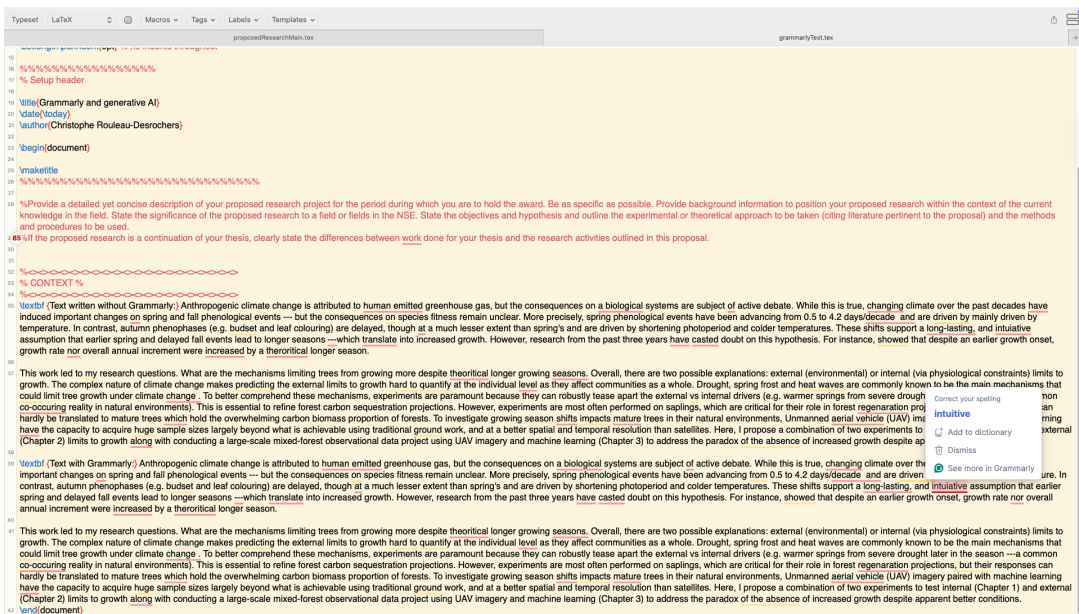
1.1 Article usage



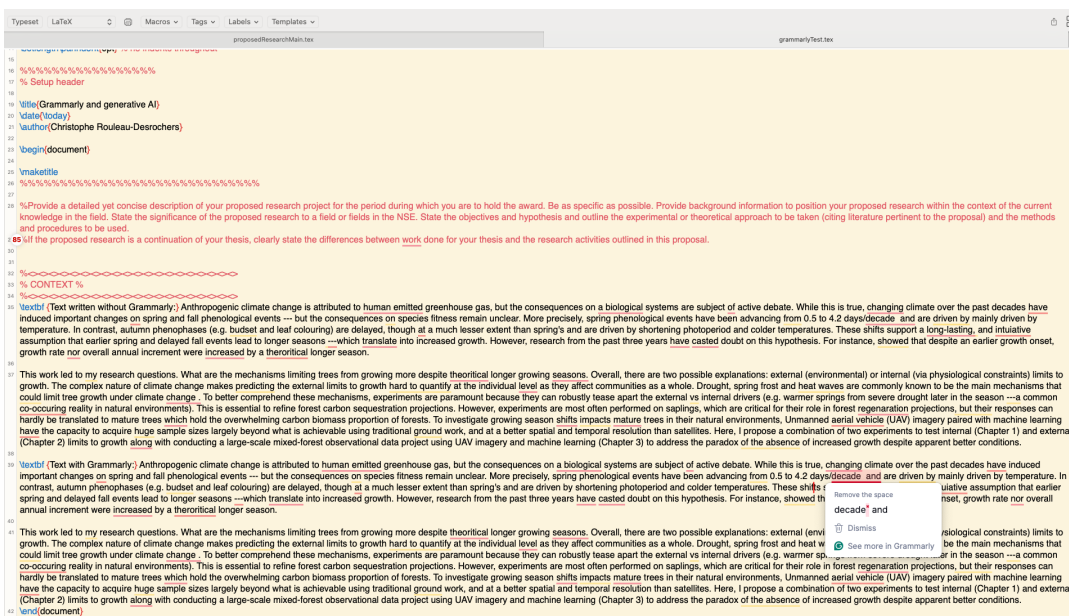
1.2 Change spelling aka use the right word



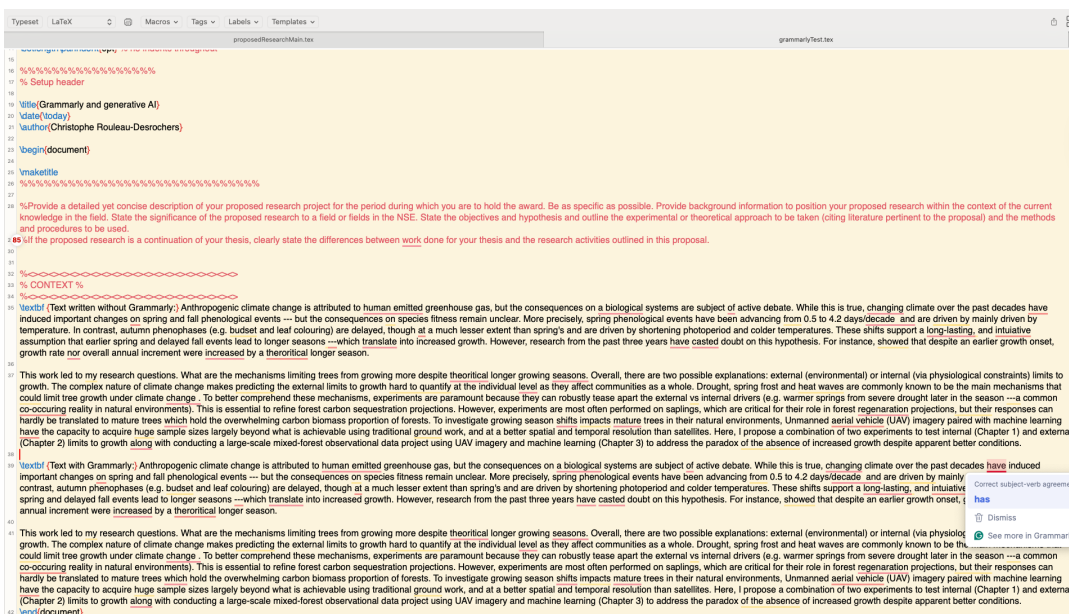
1.3 Fix spelling



1.4 Remove extra spaces

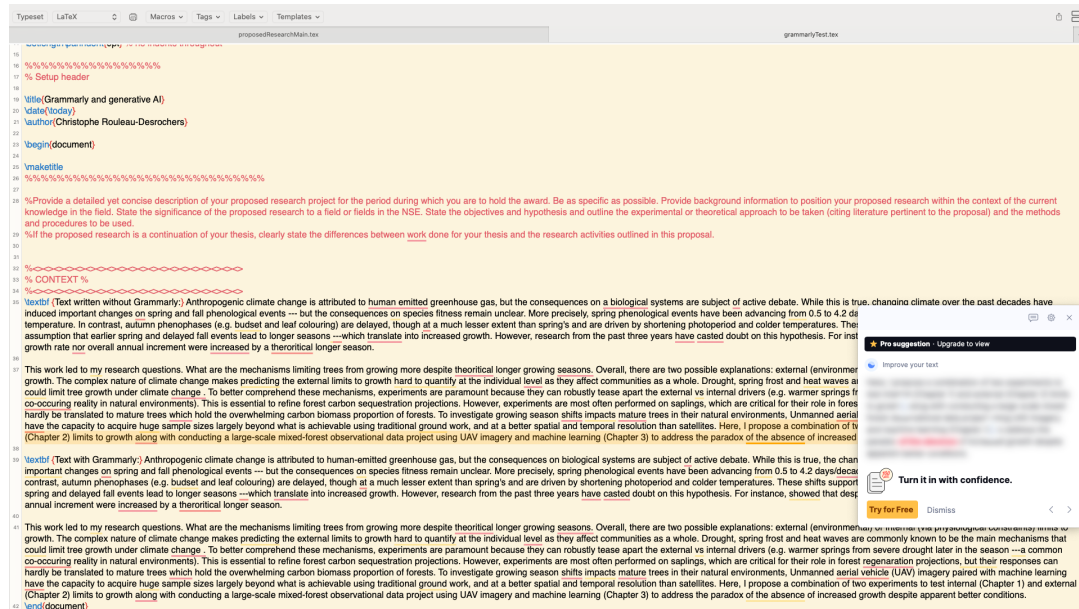


1.5 Subject-verb aggrement

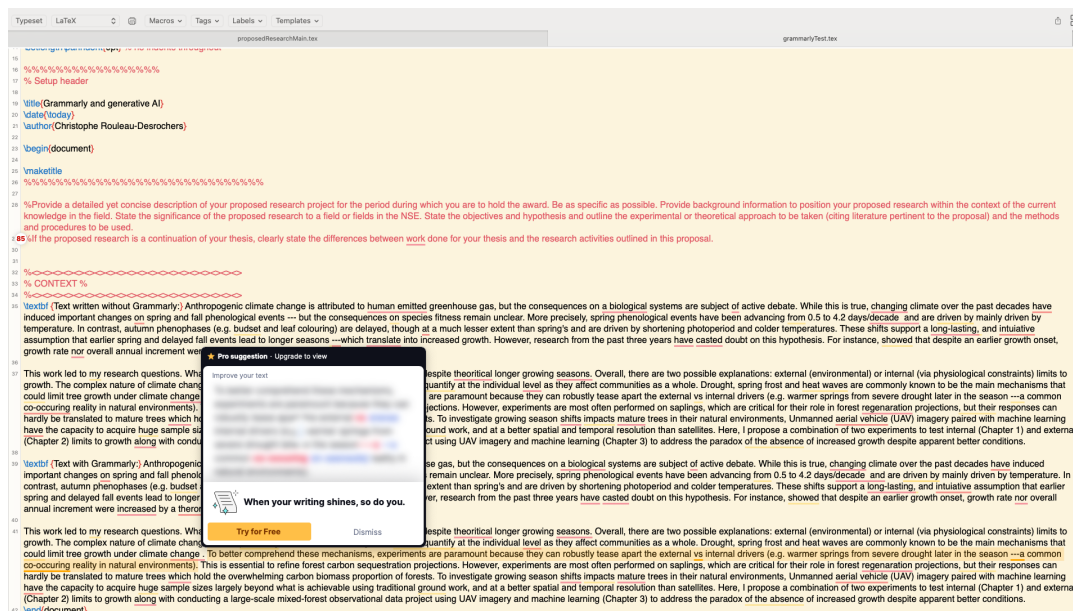


2 Examples of what I ****don't**** and won't use Grammarly for

2.1 *Smart* suggestions that use generative AI for rewording your sentences



2.2 Smart suggestions that use generative AI for rewording your sentences



3 Thoughts

I started going in the rabbit hole of how Grammarly uses AI, and from what I understand, their generative AI model is a paid option that you can get limited access to under the basic version of it (Pro suggestion). The way I've used Grammarly in the past and think it's ok to use it still is to check verb tenses, grammar, punctuation and spelling (basically what is shown in section 1). However, I don't know if these suggestions use generative AI... My suspicion is that it doesn't but I might be wrong. I couldn't find reliable information for this.

4 Before and after spelling and grammar fixes with Grammarly

Text written without Grammarly: Anthropogenic climate change is attributed to human emitted greenhouse gas, but the consequences on a biological systems are subject of active debate. While this is true, changing climate over the past decades have induced important changes on spring and fall phenological events — but the consequences on species fitness remain unclear. More precisely, spring phenological events have been advancing from 0.5 to 4.2 days/decade and are driven by mainly driven by temperature. In contrast, autumn phenophases (e.g. budset and leaf colouring) are delayed, though at a much lesser extent than spring's and are driven by shortening photoperiod and colder temperatures. These shifts support a long-lasting, and intuitive assumption that earlier spring and delayed fall events lead to longer seasons —which translate into increased growth. However, research from the past three years have casted doubt on this hypothesis. For instance, showed that despite an earlier growth onset, growth rate nor overall annual increment were increased by a theroritical longer season.

This work led to my research questions. What are the mechanisms limiting trees from growing more despite theoretical longer growing seasons. Overall, there are two possible explanations: external (environmental) or internal (via physiological constraints) limits to growth. The complex nature of climate change makes predicting the external limits to growth hard to quantify at the individual level as they affect communities as a whole. Drought, spring frost and heat waves are commonly known to be the main mechanisms that could limit tree growth under climate change. To better comprehend these mechanisms, experiments are paramount because they can robustly tease apart the external vs internal drivers (e.g. warmer springs from severe drought later in the season — a common co-occurring reality in natural environments). This is essential to refine forest carbon sequestration projections. However, experiments are most often performed on saplings, which are critical for their role in forest regeneration projections, but their responses can hardly be translated to mature trees which hold the overwhelming carbon biomass proportion of forests. To investigate growing season shifts impacts mature trees in their natural environments, Unmanned aerial vehicle (UAV) imagery paired with machine learning have the capacity to acquire huge sample sizes largely beyond what is achievable using traditional ground work, and at a better spatial and temporal resolution than satellites. Here, I propose a combination of two experiments to test internal (Chapter 1) and external (Chapter 2) limits to growth along with conducting a large-scale mixed-forest observational data project using UAV imagery and machine learning (Chapter 3) to address the paradox of the absence of increased growth despite apparent better conditions.

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