# Checking a Grammar Checker:
# In Defense of the Human Eye

In today's fast world of Twitter, Facebook, blogging, and websites, people often post articles or print documents without first proofreading them. To be fair many people do run their documents through their word processor's grammar checker, relying on it to catch mistakes. But, as this paper shows, your automated grammar checker is not infallible. Here is a brief paper describing why automated grammar checkers are not as reliable as having a real person proofread your document.

During editing, a trained proofreader performs a number of different correctness checks. In addition to misspellings and errors in punctuation, a proofreader routinely looks for unfortunate wording, checks the cohesiveness of each sentence and the text as a whole, fixes typographic errors, and ensures consistency of style throughout the document.

Grammar checkers are routinely provided with software with the claim that they are capable of checking both grammar and style of writing.

But grammar checkers suffer from the false-flagging problem, that is, they mistakenly identify grammatically correct sentences as incorrect. At the same time, incorrect constructions are not detected. Let's look at a few examples of the grammar checker provided with Microsoft Word 2003.

## Stumping the Grammar Checker

Let's first test how this grammar checker fares with simple agreement. In the example below, both the correct and incorrect constructions are shown. Microsoft Word 2003's grammar checker flags only the *correct* construction: PTOs (plural of "PTO") and misses the subject-verb agreement.

- The PTOs is paying for the sweatshirts.

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And here the checker continues to be stumped.

- The boy the girls love are here. (The checker misses that the correction should be “love is.”)
- The boy the girl love is here. (The checker misses that the correction should be “loves is.”)
- The boy the girls loves are here. (And here the checker suggests making “girl” or “girls” possessive rather than suggesting “boys … love.”)

Clearly this checker doesn’t recognize the word “love” as a verb.

Now, let’s see how this grammar checker does on a very common keyboarding error: using “to” instead of “too.”

- They returned to quickly.
- They returned to quickly to finish the job.

Not so good! It flagged nothing.

And how will it fare with the *your/you’re* problem?

- Your going to want you’re project actively managed.

It catches one out of two, noting that “Your” should be “You’re,” but misses that “you’re” should be “your.” Chalk another one up for the human eye!

## Current State of Automated Language Processing and Perspectives

The obvious questions here are:

1. Why do the existing grammar checkers perform so poorly?
2. Is it likely that their performance will dramatically improve in the near future?

To answer that, we have to consider the type of processing required to approach the human level of text comprehension.

 

When a human assesses a given sentence for correctness she

1. identifies which words are grouped together and form phrases,
2. identifies phrases and attributes that refer to the same entity,
3. determines the meaning of each composite phrase, and
4. computes the meaning of the sentence.

Native English speakers also easily keep track of all intersentential linkages, that is, we identify references to the same entity throughout the whole text. This includes keeping track of pronouns, named entities, and phrases with definitive articles, etc.

Lexical information, i.e., the information about the semantics of the words, is what allows a native speaker to identify the correct meanings of phrase components, to compute the meanings of individual sentences, and to keep track of the entities referred to by different phrases throughout the whole text.

No automated language processing system can succeed fully without a comprehensive knowledge base.

Several attempts have been made to create broad language knowledge but so far they have been of limited use for practical purposes. In order to be productively used in an automated text processing system, world knowledge and/or lexical information must be formally represented in a coherent all-encompassing manner. At the same time, this representation must be flexible enough to allow for such age-old conundrums as resolution of word ambiguity. In the current state of the field it appears all but impossible to satisfy both of these conditions on a large-scale segment of vocabulary.

## Conclusions

Automated grammar checkers can clearly help to eliminate human error by assisting with easily detectable errors. However, even with advances, it is highly improbable that the level of sophistication necessary to substitute a human proofreader will be achieved in the foreseeable future, if, indeed, at all. Much more likely, automated text processing will be developed further for highly specialized domains, those for which the task of formalizing world knowledge might be at least partially resolved.

So, when you want perfection . . . the human eye will get you closer than the computer!

 

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