Automatic Grammar Checkers
to the Rescue of French L2 Object Clitics

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Abstract

French grammar checkers, such as Antidote, Cordial and Le Robert Correcteur, have gained a solid reputation concerning their usefulness as helping tools for learners of French L1. This usefulness is however demonstrated only in some contexts where these automatic tools make learners more conscious of the metalinguistic knowledge. Yet, for the case of French L2 learners, a lot has to be done to assert that these automatic grammar checkers are useful in language class or as complementary materials. In this context, an experiment was conducted to investigate the use of grammar checkers for French L2 learners. An online corpus of French L2 texts (CE-FLE) written by learners of various proficiency levels were analyzed using Antidote (version 10, 2019). The focus of the study was on the correction of the object clitic mistakes. As a result, although Antidote is considered as the best grammar checker, it was found that this tool did not correct erroneous productions and incorrect omissions of clitics and even some of the suggestions of the program were sometimes misleading. It is suggested to develop a second language grammar checker or a syntactic analyzer.

Introduction

French is considered to be lucky for having an increasing number of good automatic grammar checkers that are produced in Europe and in North-America. In the European region, two grammar checkers are broadly used: Cordial and le Robert Correcteur. In the North-American region, Antidote, which was created in Montreal Canada, is judged to be the most powerful and accurate grammar checker. Its integration into third party softwares (such as Microsoft Office, Apple products, Adobe tools, etc.) and with different OSes (MacOS, Windows and Linux) is impressive. Like the other members on this list, Antidote is a commercial product.

In education settings, Antidote seems to be understudied and unknow among researchers in terms of its usefulness as a writing tool. Among the studies that examined the usefulness of Antidote, we could cite (Ouellet 2014). In his study,

Ouellet examined the effects of integrating Antidote software in a French L1 high school in Quebec, Canada. She found that there is a positive correlation between the frequency of use of the software and the average final scores obtained in a French course. Likewise, the study that was conducted by Mireault (2009) confirmed the results and demonstrated the effectiveness of this grammar checker. Yet, the usefulness of this tool is limited to correcting spelling mistakes only and syntax is its main weakness. However, Bouffard and Jebali (2013) have shown that the errors of agreement of the past participle in French L2 are generally well corrected by this grammar checker. Burston (2013) also states that:

> Objective measurements of the effectiveness of the use of Antidote in improving morphosyntactic accuracy in assigned compositions were overwhelmingly positive. Students who used Antidote during the first semester to proofread their first essay scored on average 72% (14.3/20), compared to only 20% (4/20) for those who went it alone. The results of the second essay showed an increase in basic grammatical accuracy to 85% (16.9/20) for Antidote users compared to only 54% (10.7/20) for the rest of the class. (p. 507)

It should be noted that in Burston's study, learners had an advanced level in French as a foreign language and they needed to be trained to understand the meaning of certain warnings issued by the software. However, it is worth mentioning that Antidote is mainly created for the use of native speakers of French, even though its settings suggest that it's suitable for other languages, and this is the case for other grammar checkers of English, for example. For that, these tools have to be adapted to L2 learners as stated by Jacobs and Rodgers (1999):

> An excellent way to use foreign language grammar checkers as a learning resource is the way in which native speakers tend to use them, that is to say, as a flagging tool which brings possible errors to their attention. (p. 523)

Jacobs and Rodgers (1999), as well as Durel (2006), concluded that French grammar checkers, especially Antidote, can be very helpful for French L2 learners:

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Our general conclusion about the value of using French grammar checkers with native English-speaking students is, on the whole, positive. (Jacobs and Rodgers 1999)

For this reason, we chose this automatic grammar checker to test its power towards a difficult issue in French grammar learning and teaching: object clitics.

French object clitics

French object clitics are pronouns that can be used to replace a noun phrase (NP), such as in the example (1) below.
(1) a- Marie a mangé la pomme.
Mary has eaten the apple
"Mary ate the apple."

b- Marie l'a mangée.
Mary it has eaten
"Mary ate it."

As shown by this example, the clitic pronoun "la (l')" does not occupy the same canonical position as the noun phrase in French or the English pronoun "it". This illustrates one of the many difficulties that face French L2 learners when acquiring these units. Other constraints have an influence on the production of clitics too (such as animacy features, Gender and Number, etc.), making these pronouns as one of the most difficult issues in French grammar. However, there are several levels of difficulty in learning clitics. Dative clitics are the most difficult to acquire, followed by accusative 3rd person, then accusative 1st and 2nd person (Delage, Durrleman, and Frauenfelder 2016). This is the reason why learners tend to avoid these clitics as much as possible. Two strategies are used:

- Repeating the noun phrase (NP) as many times as required without using a single object pronoun.
- Deleting the grammatical object instead of repeating or pronominalizing it.

In Romance languages, avoidance strategy is frequently observed for French, Catalan and Italian learners. In Spanish and Romanian, this seems not to be an issue, as stated by Grüter (2006); Pirvulescu (2006); Pirvulescu and Hill (2012); and Wust (2009).

Method

Corpus

CEFLE (Corpus Écrit de Français Langue Étrangère) is a corpus of texts written in French L2 by Swedish-speaking learners. It was developed at Lund University, Sweden, during the 2003/04 academic year by Agren Malin for her PhD dissertation on Number and Gender in French L2, and it was published online in 2009: https://projekt.ht.lu.se/cefle/. The texts we have chosen for our study come from the Transversal Sub-corpus and are written by 110 learners who had 4 proficiency levels:
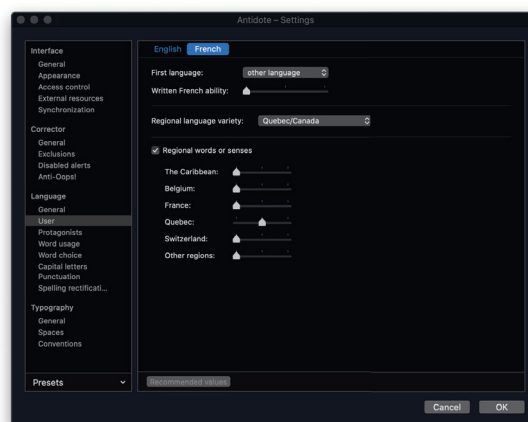
- Beginners: 16 texts
- Elementary: 30 texts

Figure 1: Preferences menu settings (Antidote 10).

- Intermediate: 30 texts
- Low-advanced: 30 texts

To collect data, high school leaners of French were asked to write on a computer (in .txt format) about an imaginary trip in Italy. See (Agren 2008) for all the precautions taken in order to make sure that learners are in a stress-free setting to perform the writing task.

Analysis

The target forms in our study are object clitics. To test the Antidote grammar checker, we first extracted all the 106 texts in the transversal corpus, then, we highlighted two kinds of contexts:

- Those where object clitics are falsely used. These include all the cases that contain a mismatch between the antecedent features and the pronoun ones (Gender, Number, Animacy), a misplacement (for example, placing the object clitic between the auxiliary and the past participle), a false order (in case there are two of them), etc.
- Those where learners should have used a clitic pronoun but repeated noun phrases or omitted the object altogether.

After extracting all the relevant contexts, we submitted all the abstracts to Antidote as separate texts and clicked on the check grammar button. But before doing so, the app was set to become more sensitive to L2 learners' errors in the Preferences-user menu and the value "other language" for "First language" from the drop-down menu was selected. This normally:

will cause Antidote to apply its regular corrections, as well as retrieving other, rarer types of errors (e.g. il te *croix instead of *croit*, *j'est tout vu instead of *j'ai*, etc.). (Antidote 10 settings)

Results

The number of errors for the misuse or the inaccurate absence of French L2 object clitics did not exceed 86 occur-

Table 1: Antidote grammar checker dialog boxes (D.B.).

D. B.	N	%
Nothing	44	51.2
Flag	42	48.8
Total	86	100

Figure 2: Nothing detected.

Figure 3: Flag.

Table 2: Antidote dialog boxes / main errors.

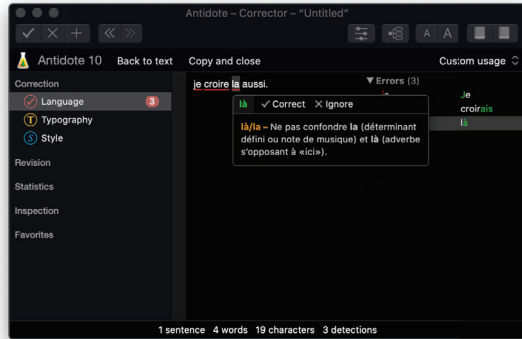| Error type	Nothing	Flag
Object omission	0	1
NP repetition	30	13
Position	3	7
Subject clitic instead of object	2	2
Case: accusative/dative	3	5
Strong pronoun instead of a clitic	1	3

rences in this corpus. The number of appropriate clitics employed were not counted, even though the use of clitics was rare even among the most advanced learners. While the CE-FLE corpus was not originally designed to study clitics and the tasks used are not quite appropriate to elicit these forms, even in corpora where this elicitation is conscious, as in (Jebali 2018), the number of object clitics remains minimal. This demonstrates the real difficulties faced by these learners and proves what other studies have shown: French second language learners tend to avoid using these pronouns as much as possible. Regarding errors, four groups were classified according to the type of mistake:

- Avoidance: repeated use of a NP (most frequent: 50% of errors), use of strong pronouns instead of clitics (4.7%), use of a subject clitic instead of an object clitic (4.7%).

- Placement errors: the clitic is correctly or incorrectly produced, but incorrectly positioned in the sentence: 11.6%.

- Case errors: the use of accusative instead of the dative clitic (9.3%).

- Other errors: such as those of gender, number, human vs non-human, etc. (19.7%).

In addition, two errors were observed where learners used an object clitic instead of a strong pronoun, but it was with the same preposition "avec" (with): "avec les" instead of "avec elles" (with them, feminine). Furthermore, Antidote's behaviour towards the error types was scrutinized. Table 1 summarizes the software's proposals for correcting mistakes in different contexts.

From the data in table 1, Antidote does not make any satisfactory correction to errors involving object clitics. The percentage of undetected cases exceeds 51.2%. An example is given in Figure 2.
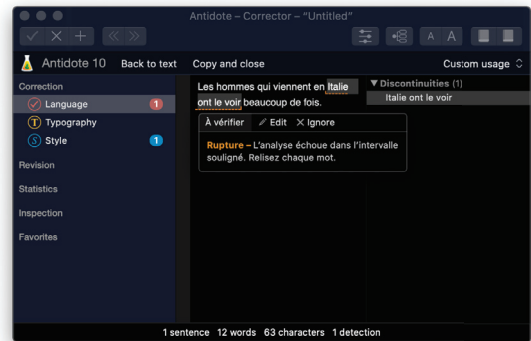
For the flags, Antidote detects that something is wrong, but it does not report the exact error. It simply highlights the text including the error and displays a dialog box as shown in Figure 3.

It is clear that, in this sentence submitted to Antidote syntax analyzer, the infinite form of the verb "voir" (to see) caused the analysis to fail, hence the warning of a "rupture" and an analysis failure. It should be noted that this warning in the version 10 replaces another warning present in the previous versions of the software: partial analysis. The new warning expresses better the crash of the analysis and invites the user to check each word and as a result, the user will correct his mistake or ask for help. Table 2 summarizes the Antidote dialog boxes by error type.

As can be seen in table 2, the error that causes the most analysis failures is the repetition of NP, nevertheless, this repetition is often overlooked by Antidote. It only causes a failure when it is accompanied by other spelling or grammatical errors, like in the following example:
(2) Dans le bar deux garcons italiens recontrent les filles. Les garcons commencent à parler a les filles.

The two errors that cause the most failures are the use of the accusative case instead of the dative (3) and the incorrect placement of the object clitic as in the sentence (4):
(3) Le deux hommes trovaient elles belles.
(4) Soudain la famille étendrait les voix et deux hommes d'Italie les ont commencé parler.

In terms of failure to detect errors, the most overlooked errors are those where learners repeated the nominal phrase to avoid using a clitic. The other avoidance strategy that passes under the radars is the use of subject clitic instead of object

clitic, although the Antidote flags or warnings often appear with these errors. Therefore, we can ascertain that Antidote did not succeed in proposing any correction to errors that are related to the misuse or avoidance of clitics. In the best of cases, Antidote signals the presence of a problem. The learner, in this case, is warned, but will need the help of others to find the error and correct it. This means the lack of autonomy for the learner.

Discussion and conclusion

Antidote software detects very few errors concerning clitic objects (anaphoric relations, position, morphosyntactic features, etc.) and sometimes flags corrections that can only disturb the learner. This is the case, for example, of the repetition of the NP "the suitcases", which goes unnoticed and the software systematically proposes:

Ne pas confondre valise ("sac de voyage") et malle ("coffre de voyage" ou "ancien véhicule"). (Antidote D.B.)

See also Figure 2, where Antidote directs the user to a lexical spelling error when it is a morphosyntactic error involving a clitic.

Why so?

It must be recognized that the nature of the errors made by L2 French learners are complex and often involve more than one linguistic subsystem (syntax, morphology, lexicon, semantics, etc.). However, the human corrector is able to detect these complex errors. Why not the machine? Is it due to the lack of training or to the lack of interlanguage sensitivity?

It seems that Antidote, as stated in the introduction, is L1 oriented and even though it is possible to make it more sensitive to L2 mistakes, this sensitivity is not enough in the case of object clitics.

In addition, since it is a commercial software, nothing has been published on its algorithm and analyzer. This is the main reason why we are proposing a new syntax analyzer for French that takes into account the specificities of interlanguage, a project to which we are now devoting ourselves. But is it even possible to create an automatic grammar checker or a powerful syntax analyzer capable of processing the often-partial data from the interlanguage interludes of second language learners?

Sidorov (2013) presented a "system for automatic English (L2) grammatical error correction". However, this system is quite simple and obtains bad scores. Other studies were not found. Interlanguage (i.e. second language grammar) automatic analysis therefore remains a largely unexplored field that deserves more attention from researchers.

References

Agren, M. 2008. *À la recherche de la morphologie silencieuse*. Ph.D. Dissertation, Department of French studies, Lund University, Lund, Sweden.

Bouffard, P., and Jebali, A. 2013. Antidote, un remède à l'accord du participe passé en français langue seconde? In Marsac, F., and Pellat, J.-C., eds., *Le participe passé entre accords et désaccords*. Presses universitaires de Strasbourg.

Burston, J. 2013. Exploiting the potential of a computer-based grammar checker in conjunction with self-monitoring strategies with advanced level students of french. *CALICO Journal* 18(3):499–515.

Delage, H.; Durrleman, S.; and Frauenfelder, U. H. 2016. Disentangling sources of difficulty associated with the acquisition of accusative clitics in french. *Lingua* 180:1–24.

Durel, P. 2006. Utilisation de l'assistant grammatical antidote dans le cadre d'activités de révision - analyse exploratoire de protocoles d'observation. *Alsic* (9).

Grüter, T. 2006. *Object clitics and null objects in the acquisition of French*. Ph.D. Dissertation, McGill University, Department of linguistics, Montreal, Quebec, Canada.

Jacobs, G., and Rodgers, C. 1999. Treacherous allies: Foreign language grammar checkers. *CALICO Journal* 16(4):509–529.

Jebali, A. 2018. Anxiété langagière, communication médiée par les technologies et élicitation des clitiques objets du français l2. *Alsic. Apprentissage des Langues et Systèmes d'Information et de Communication* 21.

Mireault, M.-H. 2009. L'apport des correcticiels pour la correction de textes d'élèves du secondaire. Master's thesis, Faculté des sciences de l'éducation, Université de Montréal, Montreal, Quebec, Canada.

Ouellet, M. 2014. Le correcticiel antidote a-t-il un effet sur les apprentissages en français ? *Revue de l'AQPC* 27(3):31–35.

Pirvulescu, M., and Hill, V. 2012. Object clitic omission in french-speaking children: effects of the elicitation task. *Language Acquisition* 19(1):73–81.

Pirvulescu, M. 2006. Theoretical implications of object clitic omission in early french: Spontaneous vs. elicited production. *Catalan Journal of Linguistics* 5(1):221–236.

Sidorov, G. 2013. Syntactic dependency based n-grams in rule based automatic english as second language grammar correction. *IJCLA* 4(2):169–188.

Wust, V. A. 2009. A la recherche des clitiques perdus: The dictogloss as a measure of the comprehension of y and en by l2 learners of french. *Canadian modern language review* 65(3):471–499.