Learning outcomes and learners' impressions of parallel and monolingual concordancers

June Ruivivar[1] and Cynthia Lapierre[2]

Abstract. Monolingual and parallel concordancers have both been found to benefit second-language (L2) grammatical development. However, the relative benefits of these two concordancer types remains unclear. The present study compares learning outcomes and learners' perceptions of a monolingual English (Corpus of Contemporary American English, COCA) and a French-English parallel concordancer (Tradooit), using verb-preposition collocations as a target feature. Students in an advanced English as a second language (ESL) course completed three concordancing activities where they used either Tradooit (for French L1 speakers) or COCA (for other L1s) to formulate rules for challenging verb-preposition collocations (e.g. *arrive in/at*). Pre- and post-tests showed significant learning gains for both groups, which were maintained in delayed post-tests; however, perception questionnaires showed that Tradooit was perceived as easier and more useful for language learning. We suggest that these differences may be due to the type of cognitive work involved in L1-L2 comparison versus L2 pattern-finding, but that these two processes may both lead to noticing and learning.

Keywords: data-driven learning, concordancing, parallel concordancers.

1. Introduction

Data-Driven Learning (DDL), the use of authentic language samples to examine patterns of language use, is increasingly recognized for its affordances in grammar instruction. In particular, it can draw learners' attention to forms that they may otherwise overlook (Moon & Oh, 2018) and involve a greater cognitive load, which may help learners internalize language items (Herron & Tomasello, 1992; Smart, 2014).

1. Concordia University, Montreal, Canada; june.ruivivar@concordia.ca
2. Concordia University, Montreal, Canada; cynthia.lapierre@concordia.ca

How to cite this article: Ruivivar, J., & Lapierre, C. (2018). Learning outcomes and learners' impressions of parallel and monolingual concordancers. In P. Taalas, J. Jalkanen, L. Bradley & S. Thouësny (Eds), *Future-proof CALL: language learning as exploration and encounters – short papers from EUROCALL 2018* (pp. 278-283). Research-publishing.net. https://doi.org/10.14705/rpnet.2018.26.850

DDL activities are typically carried out using either monolingual or parallel concordancers. Monolingual concordancers draw on samples in one language; for example, a learner may find that *throw*, when used with its common collocate *away*, means *to dispose of*. Parallel concordancers, on the other hand, provide examples from two or more languages and are often used for L1-L2 comparisons. To use the same example, a French-speaking learner might find that *jeter*, when used in the sense *to dispose of*, translates to *throw away*, not *throw*, in English.

Research suggests that both types of concordancers result in learning gains and are well received by learners (e.g. Huang, 2014 for monolingual, and Gao, 2011 for parallel). However, to our knowledge, no published research to date has directly compared these two types. It is not clear, then, whether the documented benefits of monolingual and parallel concordancing are attributable to DDL itself, or to features unique to each type, such as learners' preferences. The present study attempts to address this gap by comparing students' learning gains from, and perceptions of, a monolingual English (Corpus of Contemporary American English, COCA) and parallel French-English concordancer (Tradooit). Specifically, we wanted to compare:

- the effects of a parallel and monolingual concordancer on learners' recognition and productive knowledge of verb-preposition collocations, and

- learners' perceptions of each concordancer's ease of use, usefulness for coursework, and usefulness for general language improvement

Verb-preposition collocations (e.g. *insist on*, *wait for*) were chosen as a target feature because it was not part of the students' course syllabus, making it possible to isolate the effects of DDL from classroom instruction. Although students may have previously encountered the form, pre-test results suggest that it continues to be a challenge for them.

2. Method

2.1. Participants and context

Participants were 23 students, aged 17 to 40, in an advanced ESL course taught by the second author. The course covered advanced grammar, vocabulary, and source-

based writing, and consisted of two 2.5-hour sessions per week over 13 weeks. Students spoke a variety of languages, including Arabic, Chinese, French, Hebrew, and Spanish. These languages were used to assign them to concordancers for the study. Ten proficient or native French speakers were assigned to the parallel concordancer, Tradooit; the remaining 13 were assigned to the monolingual concordancer, COCA.

2.2. Procedure

2.2.1. Concordance training

Each group received a 1.5-hour training session on their assigned concordancer. Students were introduced to corpora and concordancing, then provided with instructions on using the concordancer, with focus on collocations. They were then guided through practice activities where they looked up a list of expressions on the concordancer. They also performed a pilot task (not included in the analysis) to ensure that they were familiar with the concordancers before collecting data.

2.2.2. Treatment

Throughout the semester, students completed three guided induction activities where they corrected a set of sentences by looking up expressions on the concordancer, formulated a hypothesis about the underlying rule, and provided two concordance lines illustrating the rule.

Each assignment included three to four of the 10 target verb-preposition collocations, and three grammar items from the previous unit to serve as distractors. These were given as homework and graded on completion rather than accuracy.

2.2.3. Instruments

Learning outcomes were measured with pre-, post-, and delayed post-tests measuring recognition (multiple choice) and controlled production (gap-fill). The tests consisted of the ten target items and ten distractors from the previous unit.

Perceptions were measured using an end-of-course questionnaire asking them to rate three items on a ten-point scale: how easy the concordancer was to use, how useful it was for the course, and how useful it was for learning English in general. There was also space for them to write comments.

3. Results and discussion

3.1. Learning outcomes

To compare learning outcomes, paired-samples *t*-tests were performed between the pre- and post-tests, and between the post- and delayed post-tests. Table 1 shows an increase in mean recognition scores for both groups, which was maintained on the delayed post-test. Pre- to post-test gains were significant for both the COCA, $t(12)=7.63$, $p<.001$, and Tradooit groups, $t(9)=9.22$, $p<.001$, but not significant between post- and delayed post-tests. To compare improvement between groups, we conducted independent-samples *t*-tests between the mean difference in scores between the pre- and post-tests. We found no significant difference between the students who used COCA ($M=2.92$, $SD=1.38$) and those who used Tradooit ($M=2.90$, $SD=.99$), $t(21)=.04$, $p=.96$, suggesting that they improved to similar degrees.

Table 1. Mean recognition scores

	Mean scores /10 (SD)		
	Pre	**Post**	**Delayed**
COCA	6.7 (1.0)	9.6 (.65)	9.8 (.37)
Tradooit	6.6 (.74)	9.5 (.67)	9.6 (.70)

Results for the production test are summarized in Table 2. The differences were again significant for both COCA, $t(12)=6.79$, $p<.001$, and Tradooit, $t(9)=6.00$, $p=.002$. These increases were also maintained in the delayed post-test. The score increase was non-significant between the two groups, $t(21)=0.41$, $p=.69$.

Table 2. Mean production scores

	Mean scores /10 (SD)		
	Pre	**Post**	**Delayed**
COCA	7.08 (1.0)	8.54 (.88)	8.78 (1.3)
Tradooit	6.8 (1.0)	8.5 (1.3)	8.5 (1.27)

3.2. Learners' perceptions

Learners' ratings for ease of use, immediate usefulness (for the course), and general usefulness are provided in Table 3. Independent-samples *t*-tests revealed significant differences between the groups' ratings for ease of use, $t(21)=2.59$, $p=.02$, and

general usefulness, $t(21)=2.69$, $p=.01$. There was no significant difference for immediate usefulness, $t(21)=1.62$, $p=.12$. Tradooit users often commented on its simple interface (e.g. "it looks like a dictionary"), while those assigned to COCA seemed intimidated by both the less-intuitive design and technical terms (e.g. *matching strings*). Both groups, however, commented that their concordancer helped with academic writing, an important component of the course.

Table 3. Learners' perceptions

	Ease of use	**Immediate Usefulness**	**General Usefulness**
COCA	7.62 (2.26)	6.69 (2.46)	5.69 (3.12)
Tradooit	9.63 (.94)	8.5 (1.84)	8.56 (1.57)

4. Conclusions

We start our discussion with perhaps the most interesting result: the parallel concordancer was easier and more useful, although both types serve the immediate goal of improving academic writing. The interface issues addressed in the comments may have affected perceptions of general versus immediate usefulness: outside of coursework, students may be more inclined to resolve L2 issues by looking up translations or comparing expressions than by analyzing L2 samples. The similarity of immediate usefulness scores may also be due to the course material; during the concordancing assignments, students were likely picking up on features they could use in their writing. In other words, they may find concordancing more useful for features of immediate relevance than for general vocabulary or grammar development.

The comparable learning gains suggest that the two concordancers might nevertheless offer the same benefits, but through different degrees of noticing and cognitive involvement. Tradooit, with direct L1-L2 comparisons, may entail less cognitive work but highlight subtle differences between the L1 and L2 (as is the case with many verb-preposition collocations), as proposed by Moon and Oh (2018). COCA may be more cognitively challenging, as learners had to analyze concordance lines, but consistent with Smart (2014), this may have resulted in awareness and learning of the target features. Of course, because this study was concerned with learning outcomes and perceptions, these possibilities should be tested in future research. Process-focused procedures such as observation, stimulated recall, or mouse-tracking can offer further insight on learners' actual use of the concordancer and what specific features they find useful.

References

Gao, Z.-M. (2011). Exploring the effects and use of a Chinese-English parallel concordancer. *Computer-Assisted Language Learning*, *24*(3), 255-275. https://doi.org/10.1080/09588221.2010.540469

Herron, C., & Tomasello, M. (1992). Acquiring grammatical structures by guided induction. *French Review*, *65*, 708-718.

Huang, Z. (2014). The effects of paper-based DDL on the acquisition of lexico-grammatical patterns in L2 writing. *ReCALL*, *26*(2), 163-183. https://doi.org/10.1017/S0958344014000020

Moon, S., & Oh, S.-Y. (2018). Unlearning overgenerated be through data-driven learning in the secondary EFL classroom. *ReCALL*, *30*(1), 48-67. https://doi.org/10.1017/S0958344017000246

Smart, J. (2014). The role of guided induction in paper-based data-driven learning. *ReCALL*, *26*(2),184-201. https://doi.org/10.1017/S0958344014000081

Published by Research-publishing.net, a not-for-profit association
Contact: info@research-publishing.net

Future-proof CALL: language learning as exploration and encounters – short papers from EUROCALL 2018
Edited by Peppi Taalas, Juha Jalkanen, Linda Bradley, and Sylvie Thouësny

Publication date: 2018/12/08

Typeset by Research-publishing.net
Cover theme by © 2018 Antti Myöhänen (antti.myohanen@gmail.com)
Cover layout by © 2018 Raphaël Savina (raphael@savina.net)
Drawings by © 2018 Linda Saukko-Rauta (linda@redanredan.fi)

ISBN13: 978-2-490057-22-1 (Ebook, PDF, colour)
ISBN13: 978-2-490057-23-8 (Ebook, EPUB, colour)
ISBN13: 978-2-490057-21-4 (Paperback - Print on demand, black and white)
Print on demand technology is a high-quality, innovative and ecological printing method; with which the book is never 'out of stock' or 'out of print'.

British Library Cataloguing-in-Publication Data.
A cataloguing record for this book is available from the British Library.

Legal deposit, UK: British Library.
Legal deposit, France: Bibliothèque Nationale de France - Dépôt légal: Décembre 2018.