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Fostering L2 idiom learning through copying key words?

Abstract

Research on the mnemonic benefits of writing down target words during L2 vocabulary acquisition has produced rather inconclusive results so far. In this study, we assess the effects of copying key words from idioms, on productive recall.In that sense this paper describes an experiment that was set up to measure the relative mnemonic effects of enhanced attention to form versus attention to meaning during the acquisition of L2 figurative idioms. Intermediate L2 English students were presented with online exercises on a set of 25 English idioms that they were unfamiliar with. In the first series of exercises, all participants were invited to elaborate on the meaning of the idioms. Afterwards, half of the participants were requested to copy the idioms, the other group of participants was asked to rate the usefulness of the idioms, an activity relying mainly on semantically-oriented processing. Recall was measured after the treatment by means of a gap-fill exercise in which each idiom was presented in context with a keyword missing. The results of the experiment are discussed in light of the levels-of-processing theory (Craik& Lockhart 1972), the transfer appropriate processing theory (TAP) (Morris et al. 1977) and Barcroft's transfer-of-processing-resources-allocation (TOPRA) model for lexical learning (2000).

1. Introduction

A number of recent studies have foregrounded the potential of digital media and computer technology in fostering L2 vocabulary learning that is accessible both inside and outside of the classroom (For a review, see Plass& Jones 2005 and the special issue on 'Technology and Learning Vocabulary' of *Language Learning and Technology*, 2012). Moreover, there is growing evidence that the use of ICT is positively correlated with student motivation (e.g. Evans 2009). However, even though many computer-assisted learning tools have been dedicated to improving *incidental* vocabulary learning through reading (e.g. Cobb 1997) or computer-mediated communication (e.g. Smith, 2004), there has been relatively little research on the effectiveness of CALL tools devoted to the *intentional* study of vocabulary (e.g. Horst, Cobb and Nicolae, 2005). However, if the use of visuals and glosses in multimedia can improve input-processing by making this input more comprehensible (Sydorenko, 2010), it stands to reason that multimedia can also make intentional L2 vocabulary learning exercises more meaningful, interactive, and effective. In terms of the deliberate learning of figurative expressions, for instance, previous studies have assessed the effectiveness of an online tool designed for the learning of such figurative idioms (Boers et al. 2004, Boers et al. 2006, Boers et al. 2007). In a bid to further improve upon the effectiveness of this tool dubbed *Idiom Teacher*, this present study was set up to investigate and compare the effectiveness of two proposed modifications to *Idiom Teacher's* sequence of tasks.

Second language vocabulary research has amply demonstrated that semantic elaboration facilitates lexical learning (Schmitt 2000, Barcroft 2002). With reference to idiom learning in particular, the use of mental imageryhas previously (Boers et al. 2004, Boers et al. 2006, Boers et al. 2007) been shown to lead to better retention, presumably as a result of *dual coding* (Paivio 1986), i.e. the processing of relevant mental pictures alongside target figurative expressions. By providing the literal usage of an idiom (e.g. *to throw in the towel*), an association can be established within the learner's mind between the figurative meaning of an idiom and a mental image of a concrete scene, offering an extra pathway for recall. This use of imagery as a mnemonic activates mental operations with regard to the meaning of target expressions and can therefore be considered a form of semantic elaboration.

In this paper we wish to address the question as to whether learners' attention can be channelled to the word form of figurative idioms without relinquishing their attention to the semantic properties of these idioms. As such, we investigate the effect of two modifications made to an online pedagogical tool called "Idiom Teacher", developed in particular to promote the insightful and interactive learning of L2 figurative idioms. Figurative idioms constitute a subgroup of the wide panoply of lexical phrases, also commonly referred to as "formulaic sequences", which are believed to facilitate L2 fluency under 'real time' conditions. L2 learners' accurate use of formulaic sequences has also been found to correlate significantly with their proficiency (Boers et al. 2006), suggesting that a mastery of formulaic sequences is of critical importance to L2 learners. However, given estimates that up to half of native speaker discourse is made up of formulaic sequences (Erman& Warren 2001) and that class time in classroom-based L2 instruction settings is typically limited, actually helping learners to build up sizeable repertoires of L2 formulaic sequences is a daunting challenge. State-of-the-art L2 teaching in non-immersion contexts clearly needs to cater for explicit and effective learning of formulaic sequences both inside and outside the classroom. In line with this perspective, an online CALL instrument aiming to help L2 learners add one subgroup of formulaic sequences, more specifically figurative idioms, to their lexical repertoires, seems particularly timely.

2. Description of the pedagogical tool

The CALL tool we used for the data collection of this experiment is called *Idiom Teacher* and is a web-based application designed in the open-source e-learning platform *Chamilo*. The tool, which presently targets 400 English idioms, was designed with a view to teaching new English idioms to foreign language learners according to pedagogical insights gleaned from cognitive linguistics. These insights can be classified into three principles, and *Idiom Teacher* translates these into separate treatment stages. The first pedagogical insight is derived from

Cognitive Semantics (e.g. Lakoff 1987), and it holds that a substantial amount of language is *motivated*. With reference to idiom learning, this means that while the meanings of most idioms are not fully predictable, they can nonetheless often be 'explained' in retrospect. The figurative meaning of idioms can frequently be inferred from its literal usage, for instance, and encouraging language learners to exploit this motivation has been shown to foster insightful learning (Boers et al. 2004) Therefore, the first stage in the pedagogical tool consists of a multiple-choice type of exercise in which learners are asked to indicate which 'source domain' they think the target expressions are derived from. For example, when presented with the expression *Be up in arms,* the learners are asked whether the origin of this idiom lies in "entertainment", "health" or "warfare". After their response is registered, the learners receive as feedback that the source domain is warfare and that *arms*in the expression refers to weapons.

The second cognitive linguistic tenet that is drawn upon is the previously-mentioned Dual Coding theory (e.g., Paivio, 1986). As we know, this theory holds that associating a verbal form with a mental image facilitates recollection because the information can be retrieved along both a verbal and a visual pathway. By urging the learners to contemplate the literal, original usage of an idiom in the first stage of the treatment, mental images of concrete scenes will be called up, which can be stored in memory alongside the verbal form.

Thirdly, the learning method also aims to implement elements from Levels-of-processing theory (Craik& Lockhart 1972) by encouraging learners to process the idioms elaborately. This is put into operation in the second stage of the treatment by presenting the learners with multiple choice items in which they need to match each idiom with its figurative meaning. In the case of *Be up in arms*, for example, the idiom is supposed to be matched with "being very angry and protesting strongly" rather than with any of the distracters. Tracing the idiom back to its source domain and subsequently inferring its figurative meaning through association can be considered a form of elaborate processing and can promote retention in memory. Finally, in a third stage, directed at both fostering and measuring learners retention of the new vocabulary, the idioms are presented in a meaningful context and the learners are asked to fill in the missing keyword. For the idiom *Be up in arms*, the gap-fill sentence reads "The unions were up in ___________ when the management announced the factory was to be closed down". This third type of exercise concludes the series of elaborations encouraged by the pedagogical tool. Whereas the first two exercises involve semantically-oriented mental operations, we consider the type of elaboration in the gap-fill task to be helping students map meaning onto form, and vice versa. We call this a "processing for mapping"-treatment. Moreover, the gap-fill task is the only productive task in the three series of exercises. *Idiom Teacher* was developed for students of modern languages in a college for higher education to help them acquire knowledge of 400 L2 figurative idioms over the course of a four-year curriculum.

3. Research questions

Apart from Idiom Teacher's pedagogical aims, it has also been implemented within several experimental set-ups. These experiments have aimed to measure and enhance the effectiveness of the proposed treatment by comparing the performance of students under different conditions (Boers et al. 2004; 2007). Overall, the results of these experiments confirm the assumptions we mentioned previously: figuring out the figurative meaning of an idiom, by associating it with a mental picture of its original usage in a concrete source domain, fosters recall. However, the large standard deviations in the test scores of these experiments suggest that not all learners are equally susceptible to the recall benefits of mental imagery. Boers et al. (2006) related these differences to cognitive-style variables, more specifically to the extent to which a learner is inclined to think in pictures rather than in words (i.e. an 'imager' as opposed to 'verbalizer'), and found positive correlations between students' responses to a cognitive style questionnaire (Childers et al. 1985) and their recall of idioms learned by means of the aforementioned programme.

As mentioned, only the last of the three steps in the programme requires learners to engage explicitly with lexical form – the gap-fill test. It seems likely that performance on that test could be enhanced if an *extra* type of exercise, one that is specifically intended to prompt mental operations with regard to *form*, were incorporated in the pedagogical application. When we consulted learners about possible additions to the learning treatment, they themselves suggested adding a copying stage to the learning sequence. The faith in the benefits of copying words by writing them down in order to commit them to memory was shared by many of the students we consulted.

This proposed copying phase would not only add structural elaboration to a learning method that had thus far been solely devoted to semantic elaboration, it would also enhance the productive aspect in a predominantly receptive treatment (two out of three exercise types in the current tool focus on receptive knowledge, and in experimental settings the gap-fill exercise is used as an independent measure of idiom recall, not as an exercise type). In line with TAP theory, we expected this addition to the treatment to raise learners' gap-fill scores, since the treatment and test would now tap into similar processes (both treatment and test would consist of productive tasks). Since all other phases of the learning method are already directed at semantic elaboration, we deemed it likely that the copying exercise would increase learners' productive idiom recall.

4. Method

Participants were asked to carry out the *Idiom Teacher* treatment routine (as described above) on a set of 25 idioms, but an additional learning exercise type was added in two different conditions, more specifically after the first two series of exercises, i.e. the origin exercise and the meaning exercise. In the attention-to-form (+FORM) condition, half of the students were given an exercise which required them to type each expression in a type-in window provided. Each idiom was presented on the same screen as the type-in window, which meant learners could keep on looking at the idiom's form while typing it. As mentioned before, the rationale behind this extra exercise lies in the belief that it entails an enhanced focus on the form of idioms (Barcroft 2006) which could in turn result in better gap-fill scores. Given the fact that the gap-fill task involves a mapping elaboration task which taps ‘processing for mapping’, the extra attention-to-form exercise as a complement to the first two meaning-oriented exercises was expected to yield better scores in the cued recall test.

The group in the attention-to-meaning (+MEANING) condition, on the other hand, was given an exercise in which they were asked to assess the usefulness of each expression on a scale from 1 to 5. It was assumed that this exercise would predominantly involve semantic processing (Deconinck et al. 2010).

Participants were 42 Dutch-speaking students majoring in English at a university college in Brussels, Belgium. All of them were in the second year of their four-year training programme. At the time of testing, the level of proficiency of the students was estimated by their teachers to be roughly at level B1 of the *Common European Framework of Reference (CEFR)*.

5. Results

Participants’ recall rates were submitted to a T-test, with condition (+FORM or +MEANING) defined as the between-subject factor.Results of the T-test revealed no significant effect for condition in either gap-fill task (immediate and delayed), with T-values of -.145 (p=.885) and .254 (p=.800), respectively. Therefore, there is no difference in recall rates between conditions, at either testing time. In other words, both the +FORM and the +MEANING exercises seem to have a similar impact on the recall rates in the gap-fill tasks.

6. Discussion

In assessing the relative effectiveness of an attention-to-form exercise versus one that encourages attention to meaning, we found that the attention-to-form task – as operationalized through a type-in (copy) task – does not foster a relatively higher recall performance, at least not in a gap-fill task that measured the cued recall of complete target words. Fundamentally, our proposed type-in exercise does not seem to have fostered a higher ‘intake’ of the precise lexical form and sequence of the idioms than its more semantically-oriented counterpart.

Our aim was to equip our idiom-learning method with an additional exercise intended to encourage structural elaboration on the learners’ part, since so far the exercises included in the application have relied mainly on the mnemonic effect of semantic elaboration. According to the LOP theory of human memory, this will facilitate lexical learning, be it receptive or productive. However, in accordance with the TAP and TOPRA models, learners’ productive recall should be enhanced if they are given extra pathways for the processing of lexical *form*.

7. Conclusion

The purpose of this study was to assess the merits of adding a structurally-oriented task as compared to a semantically-oriented task to an existing online idiom-learning tool. We, as the tool developers, believe it is important to continue to improve upon and measure the tool’s effectiveness. The rationale to this improvement was to add some degree of attention to form to the treatment, since the exercise types included in the method mainly favour mental operations with regard to the meaning of the idiomatic expressions (mental imagery and semantic processing). We included an extra exercise which was productive in nature and would allow for the learner’s attention to be directed at the formal properties of the L2 idioms. In accordance with TAP and TOPRA models, such an exercise was expected to yield a higher recollection in the productive gap-fill task than an extra semantically-oriented task.

The results of our study are not corroborative of TAP and TOPRA, however, as we did not record higher recall rates in the +FORM condition. Nor did we find a beneficial effect of the additional attention-to-form exercise on the acquisition of L2 idioms containing unfamiliar words, at least in comparison to a task encouraging the application of mental operations towards meaning. However, our findings might be a consequence of the way we operationalized increased attention to form, which involved learners typing the target idioms. Contrary to our expectations, this kind of output might not have led to an enhanced focus on form or consolidation of the form-meaning mapping of the idioms. It is even possible that the activity of typing in the target idioms called upon processing resources which actually ‘depleted’ the processing resources necessary to efficiently encode the lexical make-up of the idioms. Alternatively, the copying task was perhaps too ‘shallow’ to foster recall and was perhaps not ideally congruent with that final test format.

Another explanation might be that the way we operationalized attention to meaning in our study, especially in the origins exercise in which students are first asked to guess the origin of the idioms, also implies a degree of focus on form, thus encouraging these learners to establish a form-meaning mapping in favour of meaning but with due representation of form. For, semantic and structural elaboration are not to be considered dichotomous constructs: whenever an activity is meant to foster attention to meaning, one can never rule out the possibility that processing resources are actually directed to form as well (Cook 2001; Deconinck 2012). Given that they are sides of the same coin, can one actually conceive of meaning without form, or of form without meaning? If we assume that some degree of attention was devoted to form in the first exercise, the surplus value of the attention-to-form exercise might be cancelled out. Clearly, our results indicate the necessity of further research to disentangle the complexity of input processing mechanisms and their effects in the realm of lexical L2 acquisition.

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