Invited symposium 1:
“GAUGING VOCABULARY LEARNING IN INTERVENTION STUDIES: WHAT EYE-TRACKING, EEG, AND REACTION TIME MEASURES CAN OR CANNOT TELL COMPARED TO OFF-LINE TESTS”

Expanding Nation’s framework: Sensitive measures of vocabulary knowledge and processing
Aline Godfroid

Following Nation’s (1990, 2001, 2013) framework of what it means to know a word, researchers and teachers have placed greater emphasis on the teaching and learning of word form and usage, in addition to word meaning. No doubt this development has led to more balanced approaches to vocabulary instruction and research. But even so, the field is still measuring vocabulary knowledge in largely the same way it used to, using explicit-declarative measures of vocabulary knowledge (e.g., translation and multiple-choice tests). While explicit-declarative measures are informative, they provide limited insight into second language learners’ ability to use vocabulary in real time. In this talk, I make a case for supplementing well-established, offline measures of vocabulary knowledge with relatively new, real-time measures of vocabulary knowledge and processing. Drawing on examples from published literature (e.g., Elgort, 2011; Godfroid et al., 2018; Montero Perez, Peters, & Desmet, 2015; Pellicer-Sánchez, 2015; Solovyeva & DeKeyser, 2018), I show how these measures can measure tacit-implicit, automatized explicit, or procedural aspects of vocabulary knowledge and learning (Godfroid, in press). The online measures in question are (i) reaction time tasks and priming, (ii) the coefficient of variability as a measure of automaticity, and (iii) eye tracking. Together, they cover Nation’s three dimensions of word knowledge (form, meaning, use), but different from traditional measures, they provide information about how fluently an individual can access her knowledge in real time. Fluent word retrieval is key because it underlies listening, speaking, reading, and writing skills. Thus, the introduction of real-time measures in vocabulary research will help expand teachers’ and researchers’ views of vocabulary knowledge once again, this time focusing on learners’ ability to use their knowledge under the time demands that characterize real-time communication.


Made-to-measure: investigating vocabulary knowledge development in more and less controlled tasks.
Irina Elgort

What kind of vocabulary knowledge do language users need in order to be able to engage in meaning focussed language processing? Too often vocabulary tests and intervention studies in applied linguistics focus exclusively on offline measures of explicit word knowledge using multiple-choice, gap-fill, translation tasks, and the like. However, the kind of knowledge estimated by using these tests may not necessarily predict whether a word is likely to be readily available in real online language use, without the need to divert available cognitive resources from the processing of meaning to the processing of
individual lexical items. In reading or listening, for example, fast and accurate recognition of word forms and activation of their contextually relevant meanings are needed for fluent comprehension. In this talk I will make a case for using measures of non-explicit knowledge, alongside traditional vocabulary knowledge tests of form and meaning, in order to evaluate and compare the effectiveness of different contextual word learning treatments. I will put forward examples of contextual word (and multiword unit) learning studies ranging from unassisted reading of a long text to short deliberately constructed texts to word learning from sentence contexts, with and without treatments necessitating different types of learning (meaning inferences, form and meaning elaboration, access to definitions, typographic enhancement, different repetition regimes). Using these examples, I will show how such experimental measures as response times, form and semantic priming, and self-paced reading can provide insights into the development of non-explicit vocabulary knowledge. I will also consider limitations associated with using behavioural experimental paradigms in second language vocabulary acquisition research.

**Exploring the relationship between eye movements and offline measures in vocabulary research**

*Ana Pellicer-Sanchez*

The last few years have witnessed a remarkable increase in the number of vocabulary studies using eye-tracking to explore the online processing of new words in different learning conditions. Eye-tracking provides a direct record of learners’ allocation of attention during the learning process, and thus offers clear advantages over other traditional techniques. An important concern in these studies has been to explore the potential relationship between processing times and lexical gains. Earlier studies showed that longer reading times were related to higher scores in vocabulary tests (e.g., Godfroid, et al., 2013; Godfroid, et al., 2017; Pellicer-Sanchez, 2016). However, other studies failed to show this connection (e.g., Elgort et al, 2017) or showed an opposite effect (e.g. Montero et al., 2015). These conflicting findings highlight some of the limitations of eye-movement data in explaining the vocabulary learning process and point towards the need to use other techniques to explore that relationship.

After discussing the empirical evidence exploring the connection between eye movements and vocabulary gains, this presentation will discuss a potential approach to overcome some of the limitations of eye-movement data. It will report results from a recent study that examined the use of interview data to examine the relationship between eye movement patterns and vocabulary gains. Advanced L2 speakers of English read a story that contained 23 pseudowords while their eye-movements were recorded. After the reading participants completed a recall vocabulary test and participated in an individual interview. Participants were asked to explain the strategy employed when encountering each of the target items and to rate each target word according to the level of difficulty in guessing its meaning from context. Results from this study will illustrate how this triangulation of data can provide a more comprehensive view of what eye movements tell us about the vocabulary learning process.

**What can EEG data tell us about vocabulary learning in intervention studies?**

*Bert Vandenbergh – Maribel Montero Perez – Bert Reynvoet – Piet Desmet.*
Second language (L2) vocabulary studies have traditionally used measures that allow for conscious thinking and attentional control. Yet, few studies have used measures that are sensitive enough to tap into knowledge that is not consciously accessible (e.g., Elgort, 2018). In this presentation, the potential contribution of neurocognitive measures to L2 vocabulary learning will be discussed. As Event-Related Potentials (ERPs, i.e., brain responses elicited by experimental stimuli) reflect cognitive processing (e.g., N400 indicates semantic processing and P600 indicates combinatorial processing), they may account for form-, meaning-, and use-related vocabulary knowledge aspects. Furthermore, ERPs may reveal the earliest stages of knowledge development and refine our understanding of the incremental nature of vocabulary knowledge.

So far, few ERP studies have focused on L2 vocabulary learning. Moreover, the bulk of previous ERP research has been conducted in controlled laboratory settings. Consequently, it has been suggested to further investigate the impact of instruction on neurocognitive processing in more ecologically valid contexts (e.g., Morgan-Short, 2014). This presentation will report on the findings of a classroom-based ERP study. Intermediate-level participants (N=40, age=16, L1=Dutch, L2=French) performed computer-based meaning-oriented or word-focused reading and writing activities containing 20 unknown French verbs (i.e., the targets). Subsequently, ERPs were recorded during three tasks that focused on form-, meaning-, and use-related aspects of the targets, i.e., a lexical decision task, a semantic relatedness task and a grammatical judgement task. Results will be discussed in light of previous lab-controlled ERP vocabulary research. We will conclude by discussing the assets and limitations of ERP’s as sensitive measures in L2 vocabulary research.

The role of eye-movements in research on vocabulary learning from viewing.

Maribel Montero Perez

An increasing number of studies has started to investigate the effect of viewing audio-visual input on vocabulary learning. The majority of these studies have looked into the role of captioned video, that is video with subtitles in the L2, and whether the availability of captions leads to more vocabulary learning as measured by means of traditional paper-pencil tests (e.g., Montero Perez, Peters, & Desmet, 2018; Winke, Gass, & Sydorenko, 2010). While these studies provide information about participants’ learning gains, little is known about how learners process words in captions while watching video and how this relates to learning. Eye-movement registration could provide us with a real-time account of participants’ attention allocation on words in captions and their attention-shifting patterns on the screen. Yet, eye-tracking research on vocabulary learning while viewing remains scarce (Montero Perez, Peters, & Desmet, 2015).

In this presentation, we want to show what eye-movement registration can or cannot offer in studies on vocabulary learning from viewing. In order to do so, we will present the results of an eye-tracking study (N = 25) in which we investigated the effects of pre-learning new (pseudo)words before viewing a captioned video. The objective of this study was twofold. First, we investigated whether pre-learning affects learners’ processing of target pseudowords as measured by means of first and total fixations on the words. We also investigated their total time spent on the entire caption and the images. Second, we studied how learners completed two vocabulary posttests (i.e., a form recognition and a meaning
recognition test) and whether pre-learning affects participants’ eye-movements on the items in the tests. We will conclude this presentation with a discussion on the role of eye-movement data in studies on vocabulary learning from viewing and discuss the specificity of audio-visual input for eye-tracking research.

Symposium 2:  
THE USE OF LEARNER CORPORA FOR VOCABULARY ASSESSMENT  
Assessing phraseological complexity with corpus-based metrics  
*Magali Paquot*

The main objective of this talk is to introduce the construct of phraseological complexity (Paquot, 2019) and illustrate its usefulness for language assessment. Phraseological complexity is defined in terms of the sophistication and diversity of word combinations and corpus-based metrics are used to operationalize these two dimensions. The talk will illustrate how this approach has been used so far to describe English Foreign Language (EFL) learner language development in cross-sectional and longitudinal studies (e.g. Paquot, 2018; Paquot et al., forthcoming). It will also identify major methodological challenges and sketch out directions for future research.

References  

Phraseological complexity as an index of L2 Dutch writing proficiency  
*Rachel Rubin*

Measures of phraseological complexity have been shown to differentiate between EFL learners at the B2-C2 levels of the CEFR (Paquot, 2018; 2019), indicating the important role of phraseological competence in the assessment of learner writing. I present the results of a corpus-based study investigating the cross-linguistic validity of measures of phraseological complexity by assessing their effectiveness as indices of L2 Dutch writing proficiency. Measures of phraseological diversity (root type token ratio—RTTR) and sophistication (based on mutual information—MI) are computed for the target phraseological units (relational or grammatical co-occurrences) using an L2 Dutch corpus compiled from more than 2,700 written exam extracts produced by learners at the B1-C1 CEFR levels. The
measurements are then compared across proficiency levels, as well as to the results obtained for L2 English. The results are discussed in terms of their contribution to the description of phraseological competence in learner writing, as well as its role in the assessment of L2 Dutch writing.

References

The effect of age on lexical preferences of test-takers: Evidence from the Trinity Lancaster Corpus
Dana Gablasova, Raffaella Bottini, & Vaclav Brezina

The paper reports on the investigation into lexical preferences of L2 users of English in a spoken high-stakes assessment situation. The data is taken from the Graded Examination in Spoken English (GESE), developed and administered by Trinity College London, a large international examination board. The study uses corpus linguistic methods and GESE data compiled into the Trinity Lancaster Corpus, which contains over four million words and 2,000 transcripts from the GESE exams. The study examined the effect of age on the lexical choice of the test-takers at three levels of proficiency (B1, B2 and C1/C2 of the CEFR), looking at global lexical trends (lexical sophistication and complexity) as well as the effect of topic (choice of topic and topic familiarity). The implication of the findings for language assessment practice will be discussed.

A framework for measuring productive lexical proficiency as a multidimensional construct
Kristopher Kyle

Productive lexical proficiency is commonly measured with regard to the proportion of sophisticated or advanced words a language learner uses to complete a particular task. Most often, a word’s reference corpus frequency determines the degree to which it is considered advanced or sophisticated (e.g., Laufer & Nation, 1995). While frequency is undoubtedly an important feature of sophistication, a number of recent studies have demonstrated that lexical proficiency is most accurately modeled when multiple complementary features are used (e.g., Kim, Crossley, & Kyle, 2018; Kyle, Crossley, & Berger, 2018). In this talk, an overview of theoretically and empirically motivated measures of lexical proficiency related at the word (e.g., concreteness, contextual diversity, lexical access, etc.) and lexicogrammatical (i.e., n-gram, dependency relations and verb-verb argument construction strength of association) levels is provided. The results of an empirical investigation into the relative importance of each of these features in explaining the variance in L2 production scores are also discussed.

Assessing vocabulary: generating test items using the Cambridge Learner corpus
The assessment of vocabulary for a candidate at a particular level can be problematic due to the fact that the same lexical item can have multiple meanings that feature at different CEFR levels (Hindmarsh 1986; Capel 2010). When testing vocabulary we are tapping into the first two stages of the model of Reading currently used by Cambridge Assessment English, which consist of cognitive processes of word recognition and lexical access (Khalifa & Weir 2009). In our talk we will be looking at the different task types that are employed in our exams to assess these two processes, and the corpora and corpus methods which are used to validate lexical items to be included in a test, in particular the Cambridge Learner Corpus.

References