

English L2 thematic vocabulary acquisition through graded readers: A single-participant study

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This paper investigates multiple aspects of incidental vocabulary acquisition through a series of thematically connected graded texts (crime stories) designed for English L2 learners. In line with some of the main trends in L2 extensive reading research, the study focuses on the effects of extensive reading on vocabulary growth, contextual and syntactic use of target items, and the enhancement of L2 associative networks. The pre-test/post-test research design employed multiple measurement instruments, including a lexical familiarity assessment scale and a sentence production task. Results indicate improvement on all the three measured aspects of vocabulary acquisition, with vocabulary growth and associative recall being the most salient benefits of the reading process.

Keywords: L2 vocabulary acquisition, L2 reading, reading for pleasure, thematic networks

1. Introduction²

Over the past few decades, there has been considerable research dedicated to the effects of extensive reading on L2 proficiency, most studies focusing on vocabulary acquisition and comprehension. Results suggest that extensive reading programs using graded readers yield generally positive results in terms of lexical gains and reading skills (e.g. Hafiz & Tudor, 1990; Paribakht & Wesche, 1993). Related case studies also confirm these conclusions, adding that one salient facet of lexical enhancement appears to be increased accuracy in spelling (Pigada & Schmitt, 2006; Hu, 2013). Earlier studies on the lexico-grammatical and narrative properties of graded readers also underline the fact that these texts provide a good source for incidental vocabulary learning, and higher-level readers can be considered as the ultimate step to non-simplified fiction (Wodinsky & Nation, 1988; Uden, Schmitt & Schmitt, 2014). At the same time, the exact benefits and drawbacks of incidental vocabulary learning through comprehension are not yet fully understood as it is a complex psychological process (Gass, 1999; Waring & Nation, 2004; Webb, 2020).

The aim of the present single-participant case study is to measure the extent to which extensive reading of graded texts (a collection of crime stories) can contribute to different aspects of L2 English thematic vocabulary acquisition, notably, comprehension, contextual and syntactic use, and the amplification of associative networks related to the topic of the readings. A pre-test/post-test design relying on multiple data collection instruments was adopted. The

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research serves as an attempt at viewing incidental vocabulary learning from a holistic perspective which regards vocabulary as complex conceptual and linguistic phenomena.

2. Literature review

2.1 Extensive reading and incidental vocabulary learning

It has been a long-held view that L2 extensive reading can enhance comprehension, boost vocabulary, and have a positive impact on grammar. In one of the earliest studies measuring the effects of extensive reading programs, Hafiz and Tudor (1990) found that L2 learners reading a series of graded texts made significant improvement with regard to both fluency and accuracy. Paribakht and Wesche (1993) conducted experimental research on how topic-specific extensive reading classes, complemented with four skills courses, can contribute to increased language proficiency among higher education students. They adopted a comprehension-based perspective on learning, and focused on learners' encountering language in meaningful and diverse contexts. Besides reading a variety of texts, the experimental group was also given some training on reading strategies. Results suggest that the combined effect of extensive reading with explicit instruction, strategy learning and learner introspection (Vocabulary Knowledge Scale) leads to noticeable gains in vocabulary and to some improvement in grammatical accuracy. The positive correlation between extensive (graded) reading and vocabulary expansion was further confirmed in a pilot study by Horst (2005), where extensive reading was complemented with computer-assisted corpora extracted from the readings. In a small set of case studies ($n=4$), Uden, Schmitt and Schmitt (2014) investigated the question whether highest level graded readers (3,800 headwords) can ensure upper-intermediate and advanced learners a smooth transition to reading authentic English novels. It was assumed that three main criteria need to be met to reach this goal: sufficient vocabulary coverage for near-complete comprehension, adequate reading speed and finding pleasure in the reading. The results of the case studies showed that higher level graded readers with a headword count closer to that of ungraded novels generally appear to be a good springboard into reading authentic fiction as the lexical gap between the two text types can be relatively easily overcome by the motivated learner.

Investigations into the lexical, structural and narrative properties of graded readers (Bamford, 1984; Wodinsky & Nation, 1988; Nation & Wang, 1999) have also pointed out that the extensive reading of graded texts is likely to lead to incidental vocabulary learning. Bamford (1984, pp. 218-219) sees L2 pleasure reading as the "free practice" of in-class intensive reading, an activity which enables the learner to employ the strategies acquired in formal education. In his review article, Nation (2015) considers repetition and varied contexts of occurrence to be among the greatest benefits of graded readers (p. 137). Encountering the same word in different contexts can also facilitate guessing from context, which in turn contributes to incidental learning (p. 137, see below). Extensive reading through graded readers was incorporated into a quasi-experimental study on the effects of integrating extensive reading into university-level L2 curricula for English Studies majors (Suk, 2016). Suk designed a 15-week reading program to measure the impact of extensive reading on three variables, namely, reading comprehension, reading rate, and vocabulary acquisition. Participants (Korean English L2 students) were divided up into two control groups (intensive reading classes) and two experimental groups (intensive reading combined with extensive reading). Participants in the experimental groups

had to choose ten graded readers of varied topics and difficulty levels (out of 155 available titles). The pre-test/post-test results suggest that a combined intensive-extensive reading program leads to greater improvement in all three areas than intensive reading in itself. In another study focusing on extensive graded reading, Chang and Hu (2018) found that graded readers do contribute to considerable vocabulary gains as well as higher learning rates. Related Hungarian L2 research also promotes the inclusion of extensive reading in L2 classes and the regular use of graded readers in vocabulary enhancement (Borsos, 2014; Kárpáti, 2015). Reflecting upon the methodological considerations of L2 Hungarian vocabulary expansion through extensive reading, Borsos (2014) promotes the importance of introducing the corpus-based analysis of simplified readings, suggesting that comparing their lexical make-up with the Hungarian National Corpus (Magyar Nemzeti Szövegtár) as well as with the readings of Hungarian course books could contribute to a better understanding of frequency patterns, which might yield some positive outcomes in vocabulary teaching.

In addition to larger-scale research, single-person case studies (Pigada & Schmitt, 2006; Hu, 2013) support the view that extensive reading in the L2 has observable benefits for overall language proficiency, especially in what concerns receptive skills, as noted in Paribakht & Wesche (1993, p. 25). Pigada and Schmitt (2006) observed a French L2 student's four-week-long extensive graded reader program, and found that the participant made gains in vocabulary and syntax, with the enhanced spelling of words being the most salient feature of his improvement. In another study, Hu (2013) reached very similar conclusions while also pointing out that the participant's form-meaning acquisition, though continuous, was relatively slow. Indeed, numerically speaking, the contribution of extensive reading to vocabulary growth appears to be limited (Pigada & Schmitt, 2006, p. 1), partly because much of the learning that takes place while reading is to a great extent incidental. Gass (1999) emphasizes that incidental learning is a complex issue, and it is impossible to state with certainty that the process lacks all conscious reflection on the learner's part (p. 319). She broadly defines it as a "by-product of other cognitive exercises involving comprehension", by which she primarily means reading, and, to a lesser extent, listening (p. 319). With relation to graded readers and vocabulary acquisition, Nation considers incidental attention to be a form of learner attention where the focus is "on some other aspect of communication besides individual words and phrases" (2015, p. 137). That is, the learner focuses on meaning rather than on form.

It is a generally accepted observation that incidental L2 vocabulary acquisition through reading is a relatively slow and cumulative process determined by various factors, such as learner attention, salience and exposure to input (pp. 321-322). For example, based on participant feedback, Paribakht and Wesche (1993, p. 23) concluded that the majority of unfamiliar words go unnoticed unless learners are required to know them in the follow-up comprehension tasks. Although they did have recourse to contextual inferencing as a reading strategy when encountering unknown lexical items, participants did not seem to have made much conscious effort in the experiment to acquire new words. While Waring and Nation (2004) acknowledge the positive contribution of extensive reading and graded readers in incidental vocabulary learning, they recommend a "balanced" combination of incidental learning and explicit instruction, emphasizing that sustained attention and repetition are fundamental elements of successful acquisition (pp. 19-20). In his systematic review of incidental vocabulary learning research over the past three decades, Webb (2020) offers some recommendations for future directions in the field. Among others, he proposes that, with the

internet and social media having become a principal source of language input, incidental L2 learning studies should start studying the effects of different input types on incidental vocabulary acquisition (p. 232). In instruction, combining extensive reading with extensive viewing will create a substantial amount of meaning-focused input, which provides opportunities for after-school learning (p. 235). Webb contends that the amount of meaningful L2 input might actually be the deciding factor in vocabulary acquisition (p. 235).

Another related question is whether frequency of occurrence has a positive impact on acquisition. Wodinsky and Nation (1988) propose that the average language learner needs approximately ten repetitions of the same lexical item in different contexts for meaningful learning to occur, but factors such as text composition and the spacing of repetitions can influence the rate of acquisition (Nation, 2014). Chang and Hu (2018) observe that although learners might pay conscious attention to high-frequency words in graded readers, retention rate is proportionate to frequency of occurrence. Generally speaking, however, there appears to be no decisive evidence about frequency being directly proportional to successful vocabulary acquisition (Pigada & Schmitt, 2006). Also, Hu (2013) found evidence for frequency negatively influencing the participant's knowledge of the grammatical properties of the target items; in other words, frequency might turn out to be detrimental to the learning process when the word (or its syntactic makeup, as Hu observed) is not sufficiently salient. Many lexical items go unheeded in the process, especially when they are embedded in a rich context that provides cues to their meaning and no conscious noticing of form and meaning takes place (Hu, 2013, p. 488). It is, however, widely assumed that there should be a positive link between repetition and learning.

2.2 Lexis and associative networks

The idea that vocabulary acquisition extends beyond simple form-meaning connections has become increasingly adopted in L2 vocabulary research. Pigada and Schmitt (2006) point out that earlier studies investigating L2 vocabulary acquisition through extensive reading do not seem to account for all the facets of lexical competence as they often fail to take properties like spelling, contextual and syntactic use into consideration (p. 6). Hu (2013) enumerates three distinct but interrelated characteristics of word knowledge, grounding her theory in Nation's (2001) categorization (p. 489):

- meaning (form-meaning pairings, conceptual and associative structures)
- form (spoken vs. written, morphological properties)
- use (syntax, collocations)

The fact that lexical items are now being increasingly regarded as complex linguistic phenomena reflects the methodological need to treat syntax and semantics together in L2 vocabulary research (Gass, 1999, p. 326). In fact, these considerations tie in with applied cognitive linguistic approaches to second language acquisition promoting a conceptually motivated, meaning-focused and emergent view of language and language learning (see, for example, Ellis & Robinson, 2008; De Rycker & De Knop, 2009; Pütz, 2010). One fundamental principle of cognitive linguistic theory is that meanings are organized in network structures, that is to say, each and every category is understood only in relation to other categories. Experience and encyclopedic knowledge continuously shape and are shaped by our conceptual architecture.

Categories are parts of larger conceptual units structuring our mental representation of the world, called frames or idealized cognitive models (Fillmore, 1976; Kövecses & Benczes, 2010). Simply put, categories and frames make up an intricate and dynamic system of associations in the mind.³ In the domain of foreign language learning, frames can translate into thematic units or topics having a specific vocabulary. Although there has been no comprehensive research in this field up to now, findings so far have suggested that organizing L2 vocabulary in thematic rather than simple semantic clusters can facilitate acquisition (Tinkham, 1997), or its efficiency is on a par with semantic clustering (Hippner-Page, 2000). One criticism towards semantic clustering (i.e. listing words of the same word class belonging to one common superordinate category, such as *fruit* or *furniture*) is that the items appear to be too similar, which creates a possible ground for confusion (Tinkham, 1997, p. 140).⁴ Related research in experimental psychology by Zareva (2007) has revealed that L2 learners' association patterns are both quantitatively and qualitatively different from those of L1 speakers, especially at lower proficiency levels. Zareva's earlier research on the assessment of L2 lexical knowledge (2005) suggests that the receptive-productive aspects of knowing a word and vocabulary size can indeed be important predictors of a learner's actual lexical repertoire (Zareva, 2005, p. 560).⁵ Even though the L2 conceptual system is a new and relatively untapped research area (mostly dealt with by applied cognitive linguists studying the lexico-conceptual properties of the bilingual mind), it is a promising field with a scope extending to several aspects of L2 competence, including vocabulary and fluency. Some recent findings in L2 reading research suggest that narrow reading can be an effective way to enhance thematic vocabulary as it ensures repeated exposure to target items through a series of connected texts and makes them therefore salient to the L2 learner (Krashen, 2004; Kang, 2015). By definition, narrow reading is a form of extensive reading directed towards one given genre, topic or author (Cho, Ann & Krashen, 2005, p. 58). It is postulated that familiarity with the topic lowers the cognitive burden of having to deal with too much novel information at a time (Kang, 2015, p. 167), and this creates room for processing recurrent linguistic input (Han & D'Angelo, 2009 [cited in Kang, Promoting L2 Vocabulary Learning, 2015, p. 167]). Kang's (2015) experimental research appears to underpin the assumption that narrow reading contributes to greater incidental learning, but this strand of L2 reading studies is still a largely unexploited area that needs further experimental data. This complex nature of lexis reaching beyond questions related to form-meaning connections creates a just ground for investigating L2 associative networks as a component of L2 vocabulary acquisition processes. In an attempt to integrate the relevant considerations of research on L2 vocabulary acquisition through extensive graded reading with

³ Marvin Minsky's schema and frame theory, based on a revised version of Bartlett's original concept, laid down similar principles in artificial intelligence research. Minsky's findings on integrating new information into already existing schematic representations have been successfully implemented into reading research as early as the 1980s.

See William F. Brewer's review article on the subject: Brewer, William F. *Learning Theory*. <https://education.stateuniversity.com/pages/2175/Learning-Theory-SCHEMA-THEORY.html>

⁴ Boers (2011) voices similar concerns about teaching idiomatic phrases in semantic sets.

⁵ The methodological considerations of Zareva's study were grounded in Henriksen's three-dimensional global-trait model, with the three dimensions of vocabulary knowledge being receptive-productive dimension, breadth (size) and depth. Henriksen, B. 1999. Three dimensions of vocabulary development. *Studies in Second Language Acquisition*, 21, 303–317. In Zareva 2005: 548-549.

the study of thematic associative networks, the major objective of this study is to measure whether graded readers can enhance the incidental learning of thematic vocabulary and, consequently, the expansion of the related associative network. The results will also be evaluated in light of frequency of occurrence to see whether there might be any correlation between the number of repetitions and lexical improvement.

3. Research questions

- (1) To what extent do graded readers contribute to an increased learning of thematically related L2 vocabulary?
- (2) In what ways can graded texts improve the syntactic and contextual use of the given target items?
- (3) In what ways can reading graded texts trigger the expansion of L2 associative networks?
- (4) What degree of correlation can be established between frequency of occurrence and acquisition?

Throughout the research, the focus will be placed on studying the effects of extensive reading on meaning comprehension, thematic networks and contextual use.

4. Methodology

4.1 *The participant*

The participant of the study is a 15-year-old Hungarian L1 speaker who attends grammar school in Szeged, Hungary. She has been learning English as her L2 for six years (5 classes/ week) and Italian as her L3 for three years (3 classes/ week). The student shows keen interest in learning foreign languages and regularly reads fiction in her native language. Besides school, she attends extracurricular English classes once a week. A recently administered placement test measuring all four skills (grammar/use of English, reading, writing, and speaking) shows that her current proficiency level is B1+, and she demonstrates strong reading skills and a solid lexical foundation. Her motivation and fondness for extensive reading made her an ideal candidate for the case study, for which she kindly volunteered.

4.2 *The reader*

The simplified material selected for the study is a stage 6 graded reader from the Oxford Bookworms Library, entitled *American Crime Stories*. Stage 6 is the highest level in this series, counting approximately 2,500 headwords. The book includes seven short crime stories, the lengths of which vary between 5 and 26 pages (11.8 pages per story on average). The primary reason for selecting this reader is that it contains thematically connected texts, which ensures the regular repetition of the target lexical items, and might therefore better contribute to incidental learning.

Prior to starting the reading program, the participant was asked to count how many unknown words she finds on one random page of the book to see if she can read the stories without any serious obstacle to comprehension (see Pigada & Schmitt, 2006, p. 8). She reported that she had encountered 5 unknown words (one page equals app. 300 words without images). This ratio corresponds to the 95-98% coverage that is estimated to be necessary for effortless comprehension and learning (see Hsueh-Chao & Nation, 2000, Waring & Nation, 2004; Laufer & Ravenhorst-Kalovski, 2010; Schmitt, Jiang & Grabe, 2011). It was therefore assumed that the participant would have no significant difficulties reading the short stories.

The participant was given two stories per week, with the exception of week 3, where she had to read three due to pre-fixed commitments in her summer schedule. She was instructed to use a dictionary only as a last resort. Every week, she had to submit a short summary (10-12 sentences) of each text in English to make sure she progressed according to the pre-fixed schedule. Together with the pre- and post-tests, the whole study lasted for four weeks. It is necessary to mention at this point that the research procedure definitely bears some resemblance to narrow reading in the sense that the texts the participant was assigned to read revolve around one specific genre, but owing to the fact that the materials were limited to one graded reader and the duration was relatively short, this case study should not be considered as an example of narrow reading studies.

4.3 The target items

The target words of the study (n=45) were selected in a way that they are both thematically related and have a frequency of at least 3 occurrences throughout the seven short stories, except for four words which had a frequency count of 2: *alibi*, *heroine*, *murderer* and *trigger*, and one word with a frequency count of 1: *trigger*. Inflected and conjugated forms were considered to be occurrences of the same word.⁶ The highest frequency words were *witness* and *cop* (19 and 18 occurrences, respectively), and almost half of the target items had a frequency of 3 or 4 (see Appendix B).

4.4 Measurement

The test materials and scales were designed in a way that they are sensitive to partial gains (Pigada and Schmitt 2006, 5). The pre-test consisted of three tasks (see Appendix A). In the first task, the participant had to list her L2 lexical associations to the expression 'crime and justice', which served as the lexical stimulus. The goal of this component was to estimate the size of her L2 semantic and lexical association network in the topic. The second task was the self-assessment vocabulary knowledge scale. The participant had to mark on a 1-5 Likert scale her perceived degree of familiarity of the 45 target items. The scale was based on Paribakht & Wesche's Vocabulary Knowledge Scale (VKS 1993), but the researcher made some modifications to the original design to create some more nuanced links of transition between zero and good familiarity of a word by equating certainty of knowledge and use with 5 on the scale in contrast with the VKS, where this phase corresponded to 4 on the scale. In addition to

⁶ Target item occurrences in the story titles and in the *Glossary* of the reader (pp. 103-105) were not included in the frequency number calculation.

this, the participant was also asked to give her best guess for the items she marked 3, and to write a sentence each with the items she marked 4 or 5 on the scale. By doing so, the researcher was able to gain some insight into how the learner uses these words in context, i.e. she could gain information about the participant's knowledge of the syntactic properties of the items she evaluated as familiar or well-known. As the third and last task, the participant was given a set of pictures covering a topic largely different from the main theme of the study (animals). This component served as the distractor to divert her attention from the target items and therefore minimize noticing effect. The idea of the distractor task was adopted from Pigada and Schmitt (2006), who asked the participant of their single case study to think of five words he knew in his foreign language (French) and then to write a sentence with each of them in order to avoid his direct noticing of the target items (p. 11). My reason for introducing a speaking task as the distractor was the intention to make my participant focus on a different topic in a different medium so that she would have to focus on something other than the target items.

The post-test was identical to the pre-test, the only difference being that the distractor task was not included in it due to its having become unnecessary. In addition, the researcher conducted a short retrospective interview in which the participant was asked to evoke what strategies she had used to decipher the meaning of unknown words and to reflect on her perceived improvement at the end of the program.

5. Results

5.1 Results of the pre-test

The properties of the measurement tools precluded substantial statistical analysis of the data as they focused on qualitative rather than on discrete numerical changes. In the task measuring semantic association network, the participant listed six items in response to the L2 word stimuli 'crime' and 'justice': *jail*, *bad people*, *law*, *prison*, *safety* and *policemen*. For this component, the instructions were given only in English (the other two task instructions were bilingual to make sure she understood what she has to do, see Appendix A), and all communication related to it was conducted in English. The rationale for this decision was to minimize external L1 influence as much as possible.

The scarcity of answers provided for task 1 indicates that the participant's representation of the concept CRIME is underdeveloped. Looking at the results of the vocabulary familiarity scale might, however, suggest otherwise. In almost half of all cases (49%), she estimated her degree of familiarity with the lexical item to be 5, the majority of these words being core elements of the conceptual frame (e.g. *murder*, *guilty*, *fingerprint*). Furthermore, she marked 9% of the remaining items with 4, 10% with three, and 31% with either a 2 or a 1. Apart from some exceptions (4 out of 24, 18%), the sentences she created with the words she marked with 4 and 5 reflected actual semantic knowledge of the items; in some cases, however, she was asked to clarify the exact meaning in Hungarian in speaking as the sentences she provided in English were vague. Despite the fact that almost all her sentences were syntactically well-formed, she used little grammar and the sentences were limited to demonstrating the meaning of the target items rather than placing them into a broader context (see Appendices D and E).

5.2 Results of the post-test

For task 1, the participant listed 18 items in response to the lexical cues ‘crime’ and ‘justice’. These were (in the original order): *evidence, witness, gun, robbery, robber, bandit, murderer, murder, suicide, detective, policeman, prisoner, prison, jail, police station, suspect, investigation, and explosion*. Out of the six words she gave in the pre-test, three were included in the post-test list as well. It is worth noting that many of the above words were rated 4 or 5 in the pre-test familiarity assessment task. In this component, the participant marked 80% (36 out of 45, which indicates a 27% growth) of all target items with 5, and a further 11% (5 items out of 45) with 4. She did not mark any of the items with 1. These numbers suggest visible improvement in the participant’s vocabulary repertoire, at least in what concerns recognition and comprehension (see Appendix C). Interestingly though, two items, *suppose* and *path*, were downgraded from 5 to 4 in the post-test. In order to see whether the extensive reading program had any visible effect on the syntactic and contextual properties of the target items, we have to analyze the sentences the participant created with the words marked with 4 and 5.

The comparison of pre- and post-test sentences for the same lexical item (see Appendices D and E) reveals certain changes in the participant’s treatment of some of the target words, especially with regard to their collocational patterns. Table 1 presents the pre-test/post-test sentence pairs for target words *cop, executed, guilty, and trial*.

Table 1. A comparison of pre- and post-test sentences (sample)

Pre-test	Post-test
The cops caught him.	I called the cops when I saw two men with knives.
The executed died.	He was executed because he killed four people.
I’m sure he’s guilty.	She was found guilty.
The trial will be tomorrow.	He won the trial because there wasn’t evidence against him.

As can be seen from the above examples, the participant appears to have learnt some of the most typical topic-specific phrases (‘call the cops’, ‘be executed’, ‘found guilty’, ‘win a trial’) through a repeated exposure to the target items in different contexts in the readings. It is worth noting, however, that the collocations ‘call the cops’ and ‘win a trial’ did not figure in any of the texts; their emergence in the participant’s lexical repertoire might be the result of L1 influence, these two collocations being the same in Hungarian as in English. Also, in some cases, she provided a more detailed, contextually rich example sentence than on the pre-test. Table 2 presents the answers given to target items *victim, innocent, and identify*.

Table 2. Pre- and post-test sentences demonstrating contextual richness (sample)

Pre-test	Post-test
Don't act like a victim.	His victims were young and beautiful ladies.
He has evidence that she's innocent.	I think she's innocent. She was with me during the robbery.
Identify: <i>fails to provide a sentence but explained the meaning in Hungarian</i>	It was hard to identify her because she was wearing a mask.

It has to be added, however, that the opposite of the above tendency can also be observed in the data. For example, the participant failed to provide a relevant sentence for 'fool' and 'lawyer' in the post-test even though she reported knowing their meanings on both tests.

6. Discussion

Research questions (1) and (2) focused on incidental L2 vocabulary learning through the extensive reading of thematically related short stories. Besides word recognition and comprehension, the study also aimed at investigating any possible gains in the syntactic and contextual knowledge of the target items. The comparison of the pre- and post-test vocabulary familiarity assessment task indicates considerable lexical uptake by the end of week 4. Moreover, the participant has shown improvement in the collocational use of several of the target items as well as in their contextual build-up, suggesting that the reading improved her ability to create meaningful and more elaborated sentences with the target words. Nevertheless, with a smaller set of target items there was no observable improvement, and, in a few cases, participant response revealed some deterioration in comparison with the pre-test. It is also important to add that some of the sentences the participant produced on the post-test were syntactically questionable (e.g. *The gutting of the city is a hard thing to plan*).

Overall, the above results imply that repeated exposure to the same target items in different but familiar contexts facilitated incidental learning. Research question (3) enquired about the potential contribution of graded texts to the enrichment of L2 associative networks. Based on participant answers given to Task 1, we might conclude that reading several texts on the same topic (i.e. in the same genre, in this case) can contribute to an enhanced activation of L2 semantic networks. It is important to note that many of the words listed on the post-test were reported as highly familiar in Task 2 on the pre-test, but were not recalled by the participant when she was asked to produce a list of associations. Such incongruity between comprehension and production suggests that recalling certain elements of a larger concept in the L2 needs external stimulus to activate familiar vocabulary. It appears that targeted input can strengthen L2 conceptual and lexical associations and enable quicker recall.

The purpose of research question 4 was to see whether it is possible to establish any correlation between frequency of occurrence and acquisition. The data suggests that the participant showed highest gains on target items with a frequency of occurrence between 6 and 17. For instance, she marked items *witness* (19) *nod* (9) and *inquest* (16) either 1 or 2 on the pre-test, and then marked all these items 4 and 5 on the post-test. These results suggest that there might be a positive correlation between degree of acquisition and frequency. On the other hand, there were some relatively low frequency (2-5) words on the test which followed the same

pattern. In the brief follow-up interview focusing on the reading process, the participant reported that she had herself noticed improvement in her vocabulary range. As for the vocabulary learning strategies she employed to decipher unknown words in the readings, she mostly had recourse to in-context guessing and, occasionally, she consulted the dictionary when the context was not indicative of the meaning. She also reported that reading texts covering the same topic helped her reinforce the newly acquired lexical items and that seeing familiar words in different contexts (“sentences”, as she formulated it) provided her with cues as to the correct usage of those words.

7. Conclusions and limitations

The present case study aimed at investigating the effects of reading a series of thematically connected graded texts on L2 vocabulary acquisition at multiple levels. Results indicate that familiarizing the learner with a given topic (or genre) through a number of linguistically and structurally similar texts generally enhances uptake, and has a positive influence on the contextual use of the target words. Frequency appears to be conducive to acquisition considering the fact that the most noticeable comprehension gains were observed with the most frequently occurring words. Moreover, concentrating on one specific topic in reading also appears to be an efficient strategy to activate and develop L2 associative networks.

It has to be emphasized, however, that the results of this case study cannot be generalized to the larger population, and individual factors probably play a role in the rate and quality of learning. The participant of this research was a highly motivated learner who enjoys reading in her free time. A cross-sectional study comprising a small but diverse set of participants would provide us with a more nuanced picture of how motivation and personal reading preferences influence incidental acquisition. Furthermore, findings related to L2 associative networks will need experimental support to see the actual contribution of thematic reading to the numerical enhancement of L2 associative networks.

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Appendices

Appendix A

Task sheet for pre- and post-tests (Part 3 was not included in the post-test)

Part 1. What words and ideas do you associate with the words “crime” and “justice” in English?

Part 2a. Below is a list of English words. Your task is to decide how well you think you know them. Mark the number that best corresponds to your estimated level of familiarity with each item. // Az 1-től 5-ig terjedő skálán jelöld be, megítélésed szerint mennyire ismered az alábbi szavakat!

Explanation:

- 1 - I have never seen this word and I don't know its meaning.
 - 2 - I have seen this word before, but I don't know its meaning.
 - 3 - I have seen this word before, and I might have some ideas about what it means.
 - 4 - I think I know what this word means/I can guess its meaning.
 - 5 - I know the meaning of this word (I can explain it and/or provide its Hungarian equivalent).
- 1 - Sosem láttam ezt a szót, és nem ismerem a jelentését.*
2 - Láttam már ezt a szót, de nem ismerem a jelentését.
3 - Kicsit ismerős ez a szó, és lehet, tudom, mit jelent.
4 - Szerintem tudom, mit jelent ez a szó, vagy ki tudom következtetni a jelentését.
5 - Tudom, mit jelent ez a szó (el tudom magyarázni/meg tudom adni a magyar megfelelőjét).

inquest	1	2	3	4	5
gutting	1	2	3	4	5
murder	1	2	3	4	5
suppose	1	2	3	4	5
crutch	1	2	3	4	5
nod	1	2	3	4	5
guilty	1	2	3	4	5
suicide	1	2	3	4	5
path	1	2	3	4	5
license	1	2	3	4	5
innocent	1	2	3	4	5
fool	1	2	3	4	5
robbery	1	2	3	4	5
heroine	1	2	3	4	5
sane	1	2	3	4	5
evidence	1	2	3	4	5
bullet	1	2	3	4	5
stare	1	2	3	4	5
trial	1	2	3	4	5

property	1	2	3	4	5
prisoner	1	2	3	4	5
coroner	1	2	3	4	5
witness	1	2	3	4	5
murderer	1	2	3	4	5
suggest	1	2	3	4	5
pile	1	2	3	4	5
mugging	1	2	3	4	5
explosion	1	2	3	4	5
executed	1	2	3	4	5
accident	1	2	3	4	5
victim	1	2	3	4	5
verdict	1	2	3	4	5
fainted	1	2	3	4	5
wipe	1	2	3	4	5
lawyer	1	2	3	4	5
identify	1	2	3	4	5
fingerprint	1	2	3	4	5
pump	1	2	3	4	5
alibi	1	2	3	4	5
bandit	1	2	3	4	5
cop	1	2	3	4	5
mourning	1	2	3	4	5
scared	1	2	3	4	5
trigger	1	2	3	4	5
wig	1	2	3	4	5

Part 2b.

Give your best guess for the words you marked 3. // *Add meg az általad gondolt jelentését azoknak a szavaknak, amelyeket 3-mas értéken jelöltél.*

Write a sentence each with the words you marked 4 or 5. // *Írj egy-egy mondatot azokkal a szavakkal, amelyeket 4-es vagy 5-ös értéken jelöltél.*

Part 3. Picture description (oral). Look at the pictures below. What topic do they depict? What are the most important issues related to the topic? Give a detailed answer (3-5 min).



(source of images: www.unsplash.com)

Appendix B

Table 3. Frequency table of target items in decreasing order

Target item	Frequency	Target item	Frequency
witness	19	explosion	6
cop	18	wig	5
inquest	16	trial	5
murder	16	property	5
stare	13	wipe	5
bandit	13	lawyer	4
suppose	12	executed	4
bullet	12	accident	4
fool (n+adj+v)	11	pump	3
crutch	10	mugging	3
robbery	10	gutting	3
nod	9	victim	3
guilty	9	verdict	3
innocent	8	fainted	3
path	8	identify	3
license	8	fingerprint	3
suicide	7	scared	3
prisoner	7	mourning	2
sane	6	heroine	2
evidence	6	murderer	2
coroner	6	alibi	2
suggest	6	trigger	1
pile (n+v)	6		

Appendix C

Table 4. Pre- and post-test participant answers of the familiarity assessment test

Target item	Pre-test mark	Post-test mark	Target item	Pre-test mark	Post-test mark
inquest	2	5	murderer	5	5
gutting	1	5	suggest	3	4
murder	5	5	pile	2	5
suppose	5	4	mugging	1	5
crutch	1	2	explosion	3	5
nod	1	4	executed	5	5
guilty	5	5	accident	5	5
suicide	5	5	victim	5	5
path	5	4	verdict	1	5
license	3	5	fainted	1	3
innocent	5	5	wipe	2	5
fool	5	5	lawyer	5	5
robbery	5	5	identify	5	5
heroine	4	5	fingerprint	5	5
sane	4	5	pump	2	2
evidence	5	5	alibi	5	5
bullet	5	5	bandit	3	5
stare	4	5	cop	5	5
trial	5	5	mourning	1	3
property	4	4	scared	5	5
prisoner	5	5	trigger	3	5
coroner	2	5	wig	2	5
witness	2	5			

Appendix D

a) Participant sentences for items marked with 4 or 5 (indicated in the upper index) on the pre-test

accident⁵: I saw a car accident.

alibi⁵: She has a really strong alibi.

bullet⁵: There was a bullet in the chest of the dead body.

cop⁵: The cops caught him.

evidence⁵: She has evidence against that person.

executed⁵: The executed died. (? semantically questionable)

fingerprint⁵: They found his fingerprint on the weapon.

fool⁵: I hope I'm not a fool. (translates 'fool' as 'stupid, ignorant' [buta] into Hungarian)

guilty⁵: I'm sure he's guilty.

heroine⁴: Heroine is a drug. (incorrect meaning)

identify⁵: fails to provide a sentence but explained the meaning in Hungarian

innocent⁵: He has evidence that she's innocent.
 lawyer⁵: He has a really good lawyer if he wins the trial.
 murder⁵: Someone murdered Ann.
 murderer⁵: I have evidence that he's a murderer.
 path⁵: My path is different from yours.
 prisoner⁵: I will visit a prisoner tomorrow.
 property⁴: He wants his own property.
 robbery⁵: There was a robbery in the supermarket.
 sane⁴: Sane people don't murder anyone.
 scared⁵: I am scared of that person.
 stare⁴: A group of people were staring at me.
 suicide⁵: He committed suicide.
 suppose⁵: He lies, I suppose.
 trial⁵: The trial will be tomorrow.
 victim⁵: Don't act like a victim.

b) Participant sentences for items marked with 4 or 5 (indicated in the upper index) on the post-test

accident⁵: No-one died in the accident.
 alibi⁵: He had a strong alibi.
 bandit⁵: There were five bandits at the shopping center, and they all had guns.
 bullet⁵: There wasn't a bullet in his gun.
 cop⁵: I called the cops when I saw two men with knives.
 coroner⁵: The coroner went to see the dead body.
 evidence⁵: There's evidence against him.
 executed⁵: He was executed because he killed four people.
 explosion⁵: *Explosion is really loud and scary.
 fingerprint⁵: They found a fingerprint on the dead body.
 fool⁵: I think I'm not a fool.
 guilty⁵: She was found guilty.
 gutting⁵: The gutting of a city is a hard thing to plan.
 heroine⁵: The girl rescued a child. She became a heroine.
 identify⁵: It was hard to identify her because she was wearing a mask.
 innocent⁵: I think she's innocent. She was with me during the robbery.
 inquest⁵: The inquest is over, but there is no evidence.
 lawyer⁵: A lawyer is well-paid. ? (The participant then gives a Hungarian equivalent)
 license⁵: He drives without a license.
 mugging⁵: Mugging is when somebody steals something from another person.
 murder⁵: It wasn't suicide, it was a murder.
 murderer⁵: The murderer's weapon was a knife.
 nod⁴: He didn't answer my question, he just nodded.
 path⁴: We went on different paths.
 pile⁴: the participant mistook it for 'pale'
 prisoner⁵: I met a prisoner in the jail.
 property⁴: He wanted to make his own property.
 robbery⁵: I survived a robbery.
 sane⁵: *Sane person doesn't kill others.
 scared⁵: I'm scared of ? the heights.
 stare⁵: He stared at me. It was really scary.
 suggest⁴: I suggest you *to get an easier job.

suicide⁵: She committed suicide with a gun.

suppose⁴: It was an accident, I suppose.

trial⁵: He won the trial because there wasn't evidence against him.

trigger⁵: I pulled the trigger.

verdict⁴: The verdict was that it was an accident.

victim⁵: His victims were young and beautiful ladies.

wig⁵: She wore a blonde wig.

wipe⁴: He wiped his face with a handkerchief.

witness⁵: There were two witnesses, but they couldn't recognize the murderer.

Appendix E

Table 5. Comparison table of target item sentences on pre- and post-tests

Target item	Pre-test	Post-test
accident	I saw a car accident.	No-one died in the accident.
alibi	She has a really strong alibi.	He had a strong alibi.
bullet	There was a bullet in the chest of the dead body.	There wasn't a bullet in his gun.
cop	The cops caught him.	I called the cops when I saw two men with knives.
evidence	She has evidence against that person.	There's evidence against him.
executed	The executed died.	He was executed because he killed four people.
fingerprint	They found his fingerprint on the weapon.	They found a fingerprint on the dead body.
fool	I hope I'm not a fool.	I think I'm not a fool.
guilty	I'm sure he's guilty.	She was found guilty.
heroine	Heroine is a drug.	The girl rescued a child. She became a heroine.
identify	fails to provide a sentence but explained the meaning in Hungarian	It was hard to identify her because she was wearing a mask.
innocent	He has evidence that she's innocent.	I think she's innocent. She was with me during the robbery.
lawyer	He has a really good lawyer if he wins the trial.	A lawyer is well-paid.
murder	Someone murdered Ann.	It wasn't suicide, it was a murder.
murderer	I have evidence that he's a murderer.	The murderer's weapon was a knife.
path	My path is different from yours.	We went on different paths.
prisoner	I will visit a prisoner tomorrow.	I met a prisoner in the jail.
property	He wants his own property.	He wanted to make his own property.

robbery	There was a robbery in the supermarket.	I survived a robbery.
sane	Sane people don't murder anyone.	*Sane person doesn't kill others.
scared	I am scared of that person.	I'm scared of the heights.
stare	A group of people were staring at me.	He stared at me. It was really scary.
suicide	He committed suicide.	She committed suicide with a gun.
suppose	He lies, I suppose.	It was an accident, I suppose.
trial	The trial will be tomorrow.	He won the trial because there wasn't evidence against him.
victim	Don't act like a victim.	His victims were young and beautiful ladies.