Incidental learning of duplex collocations from reading:
Three case studies

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Abstract

There is little research available on the incidental learning of figurative language from reading (e.g., Webb, Newton, & Chang, 2013). This study looked at collocations with both literal and figurative meanings, that is, duplex collocations[1] (Macis & Schmitt, 2017a) and whether reading could enhance lexical knowledge of the figurative meanings of these collocations. In three case studies, relatively advanced second language (L2) learners read a semi-authentic novel that contained 38 target items. Through one-to-one interviews, the study examined how much learning occurred at the meaning-recall level and how repetition affected this knowledge. Results showed that knowledge of more than half of the target collocations for each participant was enhanced either partially or fully and that repetition was consistently positive, although not always statistically significant.

Keywords: vocabulary acquisition, incidental learning from reading, duplex collocations, figurative language, repetition

Because of the large number of both single words and phrases in English, they cannot all be explicitly taught in a classroom and the majority of them are left to incidental acquisition. An important variable in incidental vocabulary acquisition research has been the role of repetition. A number of studies on individual words have suggested that L2 learners can acquire new words incidentally from reading and that repetition positively affects this learning (Pellicer-Sánchez, 2017; Pellicer-Sánchez & Schmitt, 2010; Pigada & Schmitt, 2006; Waring & Takaki, 2003; Webb, 2007). However, vocabulary also has a tendency to occur in multi-word units called formulaic sequences (Schmitt, 2010; Wray, 2002). Research on incidental learning of such units (mainly collocations) from reading has been much less abundant and has shown that there was a positive, however not always a statistically significant relationship between repetition and collocational knowledge (Durrant & Schmitt, 2010; Pellicer-Sánchez, 2017; Szudarski & Carter, 2016; Webb et al., 2013). An important caveat of these previous studies is that they have mainly used collocations with literal meanings (e.g., *powerful computer*), leaving under-researched those collocations that can have additional, figurative meanings which cannot be understood from the combined meanings of the component words. Given that idiomatic language is challenging for learners (e.g., Celce-Murcia & Larsen-Freeman, 1998) and that only a small fraction of these phrases can be covered in a classroom (Boers, Lindstromberg, & Eyckmans, 2014), finding

facilitative incidental reading conditions for learners and the degree to which knowledge is gained incidentally for the different types of collocations is worthy of investigation.

In order to address these issues, this study examines whether the figurative meanings of duplex collocations (Macis & Schmitt, 2017a) can be learned incidentally from reading, how much learning can occur, and how repetition affects this learning. Moreover, the study tries to capture partial knowledge to show incremental vocabulary acquisition towards full mastery (Henriksen, 1999; Schmitt, 2010; Webb, 2007).

Repetition and Incidental Learning of Second Language Individual Words

One of the early studies into L2 incidental vocabulary acquisition was Saragi, Nation, and Meister's study (1978). Twenty native speakers of English read the novel *A Clockwork Orange* (Burgess, 1972) and then were tested on their knowledge of 90 Russian slang words ('nadsat') through a multiple-choice meaning recognition test. There was a significant amount of nadsat learning, with an average score of 76% correct answers. Conceptual replications of this study, however, produced much lower gains, between 6.4% and 8.1% (e.g., Day, Omura, & Hiramatsu, 1991; Dupuy & Krashen, 1993; Pitts, White, & Krashen, 1989). These replications were criticised for a number of reasons: they did not measure partial knowledge (Pitts et al., 1989), there were no delayed posttests (Day et al., 1991) and it is questionable whether the gains can be generalised to other input conditions because they came from reading while listening (Dupuy & Krashen, 1993). In later studies, some of these limitations were addressed to some degree (e.g., Horst, Cobb, & Meara, 1998; Horst & Meara, 1999). These studies showed that the learning gains were higher than in the previous studies (e.g., around a fifth of the target items were learned in Horst et al., 1998) and that this knowledge was durable (Schmitt, 2010) as measured in the posttests.

Recent research has also documented incidental vocabulary gains from reading graded readers (Brown, Waring, & Donkaewbua, 2008; Pigada & Schmitt, 2006; Waring & Takaki, 2003; Webb, 2007). For instance, Pigada and Schmitt (2006) investigated how repetition affected incidental learning of spelling, meaning and grammatical characteristics of words by a learner of French. There was a clear relationship between repetition and enhancement of lexical knowledge and some degree of learning was demonstrated for 87 out of the 133 words tested. Spelling was the most enhanced level of knowledge, followed by meaning, and grammatical characteristics. Similarly, Webb (2007) looked at the effects of repetition on productive and receptive knowledge of spelling, association (writing associate words such as synonyms next to the target word), grammatical functions, syntax, and meaning and form. He found that repetition had a significant effect on vocabulary knowledge, although at different rates for different knowledge aspects. Knowledge of all five aspects tended to increase with greater repetition of the target words and at ten occurrences, and significantly greater gains were shown for each aspect. Spelling gains were the largest (77% and 88% on receptive and productive tests respectively), while the other aspects showed much lower gains; that is, 29% for the productive test of form and meaning.

Fewer studies have focused on unmodified authentic texts. Pellicer-Sánchez and Schmitt (2010)

conducted a study in which they explored the degree to which spelling, word class, and recognition and recall of meaning could be acquired from the unmodified authentic novel *Things Fall Apart* (Achebe, 2001). They found that repetition had an effect on learning gains and that these ranged from 14 – 43% of the target words.

Repetition and Incidental Learning of L2 Collocations

Unlike numerous studies done on incidental learning of individual words, research on incidental learning of collocations is scarce. Webb et al. (2013) investigated the effects of repetition on the learning of collocations through reading while listening. One hundred sixty-one Taiwanese students of English read and listened to one of four versions of a modified graded reader in which 18 collocations were embedded one, five, ten and 15 times (Group 1, Group 5, Group 10, Group 15 plus a control group). The pretest measured only receptive knowledge of form whereas there were four different posttests that measured receptive and productive knowledge of form and receptive knowledge of form and meaning. Results of the posttests showed that Group 15 had significantly higher gains than any other group, both on the test measuring receptive knowledge of the form as well as on the other three tests. Nevertheless, as acknowledged by the authors, results have to be interpreted with caution due to the lack of a pretest that tested these levels of collocational mastery.

Likewise, Durrant and Schmitt (2010) examined whether repetition would lead to more learning of the target collocations. Three different conditions were created, namely single presentation (one repetition in a single context), verbatim repetition (two repetitions in the same sentence context) and varied repetition (two repetitions in two different sentences). Similar results to the above studies were obtained. The learners remembered nouns that had been seen with their paired adjectives in the training session better than those that had not. Results revealed that collocations were learned, with the higher numbers of repetition leading to significantly higher gains than the lower numbers of repetition.

Szudarski and Carter (2016) also looked at how repetition affected knowledge of collocations. The reading materials consisted of six stories in which the target collocations were inserted six and 12 times. The findings demonstrated that at twelve occurrences, there was considerable learning at the form recall level, but at the meaning recall and form recognition levels, significant gains were found at six occurrences. The authors concluded that more exposure does not necessarily lead to better results at all levels of collocational mastery (i.e., form recall, meaning recall, and form recognition).

Finally, Pellicer-Sánchez (2017) looked at the incidental acquisition of adjective-pseudoword collocations while reading. Six collocations were presented in a story either four or eight times. One week after the reading, 41 L2 learners were tested on their knowledge of the form, meaning and collocation of the target items. Results demonstrated that collocation knowledge can be acquired incidentally from reading, but that there was not a statistically significant difference between four and eight encounters.

Collocations with Figurative Meanings

Collocation is one of the problematic terms in applied linguistics, with different definitions and approaches to identification. The phraseological approach (e.g., Moon, 1998) sees them as word combinations, displaying various degrees of fixedness, opacity, and combinability whereas the statistical approach (e.g., Sinclair, 1991) harnesses the power of computers to search very large modern corpora, based on statistical formulas (e.g., MI, T-score) or frequency. Unfortunately, what constitutes a collocation in one of these approaches may not be defined as such in another. For example, whereas some authors would call the word combinations *pull the strings*, *cut corners* and *bottom line* collocations (e.g., Macis & Schmitt, 2017a; Nesselhauf, 2003; Webb et al., 2013; Wolter & Gyllstad, 2013), others would argue that these are figurative idioms (e.g., Boers & Webb, 2015; Howarth, 1996). To illustrate this inconsistency in defining the terms, the expression *a piece of cake* (which has both literal and figurative meanings) can be found in both the *Collins COBUILD Idioms Dictionary* (2012) and the *Longman Collocations Dictionary for Intermediate-Advanced Students* (2013).

The present study adopts the statistical approach, and using measures of statistical strength as the only criterion leads to the inclusion of idioms as collocations (e.g., Webb et al., 2013). As Webb et al. (2013) rightly pointed out, this approach is "more ecologically valid" (p. 93) as learners are likely to encounter collocations of varying degrees of semantic transparency and also with different meaning senses in incidental learning contexts. Moreover, this study looks at only one type of collocation, those with both literal and figurative meanings, also called duplex collocations (Macis & Schmitt, 2017a) because they seem to be challenging for learners (e.g., Grant & Bauer, 2004[2]; Macis & Schmitt, 2017b; Webb et al., 2013). In particular, the study focuses on the figurative meanings of these collocations.

Factors Affecting Acquisition of Figurative Meanings

The studies on collocations reviewed above show that the effect of repetition does not seem to be as decisive as it is with individual words. Clearly, factors other than repetition also make a difference. Duplex collocations have been studied within the phraseological school as figurative idioms and so, for our better understanding, it is crucial to take the rich idiom literature into account as well. Research on idioms shows that various factors influence the successful interpretation of figurative language. For example, research suggests that the easiest L2 idioms to learn were those that had a corresponding first language (L1) equivalent (Charteris-Black, 2002; Laufer, 2000). Cross-cultural differences may be a further obstacle to successful learning of idiomatic meanings (Kövecses, 2005). In Western culture, for example, the emotions reside in the heart, so there are a high number of expressions with heart (e.g., *a bleeding heart*, *to lose heart*, *to eat your heart out*). In other cultures, like Mandarin Chinese, this is not the case, so Chinese English-as-a-foreign-language learners struggle with idioms containing the word *heart* (Hu & Fong, 2010). Furthermore, retention has been shown to be facilitated in the case of idioms that can be 'motivated', that is, traced back to their underlying metaphoric themes (Boers, 2000) or derived from creating a connection with their original, literal usage (Boers, Eyckmans, & Stengers, 2007; Boers, Lindstromberg, Littlemore, Stengers, & Eyckmans, 2008). For instance, the phrase *be waiting in the wings* can be motivated with reference to the literal meaning of the

expression: 'actors waiting in the wings of the theatre prior to a show'. This is especially important if we consider the fact that L2 learners naturally tend to search for clues in the literal meanings of the component words of figurative phrases (e.g., Ciéslicka, 2006). Polysemy and homonymy may also be the reason why L2 learners fail to interpret figurative meanings successfully. In the above example, the first meaning that comes to a learner's mind upon seeing the word *wings* is probably that related to the wings of birds, and using this meaning will most likely cause misinterpretation. Finally, research suggests that guessing from context has benefits for the successful comprehension of idiomatic meanings as well (Cooper, 1999).

Aims and Research Questions

With the limited research available, the effectiveness of repetition for the incidental learning of L2 collocations is still unclear. In most studies, more repetition leads to better results (e.g., Webb et al., 2013), whereas in others, the effectiveness of repetition is brought into question (e.g., Pellicer-Sánchez, 2017; Szudarski & Carter, 2016). Moreover, almost all of these previous studies used collocations that had only one (literal) meaning as their target item, except for Webb et al.'s (2013) study, in which the authors used few collocations with both literal and figurative interpretations. This study, however, suffers from several limitations. Because Webb et al. (2013) use different kinds of collocations, it makes it difficult to know how repetition affects the acquisition of each type from reading. Second, different levels of collocational mastery were measured in the posttests, but only one of them (receptive knowledge of the form) was tested in the pretest. Therefore, it is questionable whether the results from these tests are a true reflection of the participants' learning. Third, it is not clear how the authors scored the responses and whether they measured partial knowledge. Because of the incremental nature of vocabulary acquisition (e.g., Henriksen, 1999; Schmitt, 2010; Webb, 2007), accounting for partial knowledge is "necessary in order to fully appreciate the benefits reading has for vocabulary" (Pigada & Schmitt, 2006, p. 6). Fourth, the authors used a graded reader as their target material; as such, it is an empirical question whether the same amount of incidental learning can occur from semi-authentic texts. Semi-authentic texts in this article refer to authentic texts that have been seeded with instances of the target items but, unlike graded readers, the great majority of the text is unmodified. Finally, and most importantly, the participants both read and listened to the target text, which could have inflated scores, further justifying the need for more research.

Considering all the above, the present study examines the acquisition of L2 figurative collocational knowledge from reading in a natural context; it attempts to fill two main gaps: a lack of research on the incidental learning of collocations in general and an absence of research on the incidental learning of the figurative meanings of collocations which can be both literal and figurative (i.e., duplex collocations). By employing one-to-one interviews, including multiple case studies and accounting for partial knowledge, this study seeks to answer the following research questions:

1. To what extent does reading a semi-authentic novel lead to gains in L2 learners' knowledge of the figurative meanings of duplex collocations in the text?
2. How does repetition affect the incidental acquisition of the figurative meanings of duplex collocations?

Methodology

Participants

The participants who took part in this study were three female PhD students at a British university; one Thai, one Polish, and one Libyan. Their ages ranged from 28–34 years old ($M =$ 30.33, $SD =$ 3.21). They had lived in England for an average of 3.67 years. To be able to study at an English-speaking university, they all had to take a standardised, internationally-recognised language proficiency test. The Thai and Libyan participants took the IELTS and scored 7.0 and 6.5, respectively. The Polish participant was not required to sit any language proficiency tests as she took an advanced exam in English at the end of high school.

At the beginning of the experiment, the participants completed a self-rating test of proficiency in English (Table 1) in which they had to rate their level of the four skills (i.e., reading, writing, listening, speaking) on a scale of 1 to 10, 1 being extremely poor/ almost no knowledge and 10 being extremely good/ almost native like. The mean values for all skills were between 6 and 8, with reading having the highest mean (8).

Table 1. *Self-rating proficiency scores*

Skills	Max	Min	*M*	*SD*
Reading	9	7	8.00	1.00
Writing	8	5	6.67	1.53
Listening	9	6	7.33	1.53
Speaking	7	5	6.33	1.15

The participants' vocabulary sizes, based on scores from the Vocabulary Size Test (Nation & Beglar, 2011), ranged between 7,800 and 10,400 word families. Overall, based on the proficiency scores, self-rated reading level, and vocabulary size scores, all participants can be described as relatively advanced users of English and thus able to read authentic texts. Also, they all reported (in the post-treatment interviews) that the level of the book was appropriate for their level of English; they could follow the storyline, and there were not many unknown words (except for the target collocations).

Reading Material

An authentic novel was chosen for this study because this is the kind of text that the participants normally encountered and engaged with on an everyday basis (personal communication with the participants).

The novel selected was *Playing Dead* (the Prison Break trilogy) by Allison Brennan (2008), a romantic thriller which was first chosen on the basis of the researcher's intuition, and also because the participants confirmed they liked this genre. The novel was long, around 115,000 words spread across 462 pages. Moreover, following the above proficiency scores, the language level of the novel was judged to be appropriate for successful L2 reading comprehension (confirmed in the subsequent interviews).

Target Collocations

The target items consisted of 38 collocations (Appendix A). However, because there are many types of collocations, trying to systematically measure each one would make data difficult to interpret. Therefore, for a meaningful analysis to be possible, the study was limited to adjacent lexical collocations (or with only one intervening word, e.g., *hit the road*). These collocations were further restricted to Verb+Noun and Adjective+Noun combinations because these are the most researched types and well represented in the literature (e.g., Henriksen, 2013).

The target items were extracted from a range of different sources, such as Webb et al.'s (2013) study, collocation dictionaries (e.g., the *Longman Collocations Dictionary and Thesaurus for Intermediate-Advanced Learners* and the *LTP Dictionary of Selected Collocations* (Hill & Lewis, 1998)), the Internet and TV. The target items were all roughly the same length, with the only noticeable difference being phrases that contained a possessive adjective (e.g., *hold one's breath*).

Finally, different grammatical forms of Verb+Noun and Adjective+Noun collocations were presented in the text. This was because the storyline dictated whether a particular Verb+Noun collocation was used in the present or past or whether any of the Adjective+Noun collocations had to be used in the singular or plural (e.g., *His parents <u>kicked the bucket</u> when he was just a kid*; *But there were a lot of powerful, criminal, Russian <u>fat cats</u> in Sacramento and Stockton*). Another reason is the ecological validity of the reading process itself as when reading, learners are exposed to all types of grammatical forms in which individual words and phrases occur.

Methods of Measurement

The nature of the study (case studies) allowed for the possibility to employ one-to-one interviews as the main measurement method (Schmitt, 1998). It was possible to interactively question each participant at length, until a very good impression was achieved concerning the knowledge level of the figurative meanings of the duplex collocations. The study measured the knowledge of the target items at the meaning-recall level because it is the comprehension of these figurative meanings that learners generally struggle with (e.g., Martinez & Murphy, 2011).

Because the participants were likely to know some of the target items, they were interviewed before the reading treatment (hereafter 'pretest') and after the treatment (hereafter 'posttest'). The participants were told that they would be tested on their reading comprehension, but were not informed of the research questions.

Both the pretest and the two posttests (immediate and delayed) had the same format. Each participant was presented with a list of target items (38 in the pretest and only those unknown to each participant in the posttest) embedded in non-defining contexts and marked in bold (e.g., *They will soon <u>tie the knot</u>*.). They were given a brief summary about literal and figurative multi-word combinations and provided with a few examples. Then, in order for partial knowledge to be traced, they were asked to say everything they knew about the meaning of each item and encouraged to provide examples. They were also asked to inform the researcher if some of the target items had cognates in their L1s. The pretest lasted approximately 20 minutes, whereas the posttests were approximately 15 minutes long. Moreover, the order of the target items was

randomised in each posttest for each participant in order to account for order effects.

Finally, a questionnaire was created in order to explore how the participants approached the reading and the learning of new phrases (Appendix B). Sixteen questions were prepared regarding participants' opinions about their reading habits, interest in the novel, and reading strategies. The questions were asked through interviews and the participants were encouraged to answer freely.

Procedure

The procedure consisted of several steps. First, after the novel was selected, it was scanned and saved in a doc. file. Then, the target items were inserted as many times as possible. The insertion involved reading the book and looking for contexts/instances which would allow for the insertions to be made. It also involved looking for synonyms of the target items. Modifications included changing the word order and breaking down a sentence into several parts.

Examples of insertions:
He had no desire to go into medicine. He'd tell his father to go to hell… was replaced by
He had no desire to go into medicine. He'd tell his father to take a hike...

Raw anger and deep sadness always accompanied any thoughts of her father… was replaced by:
Any thoughts of her father were a sore spot. Raw anger and deep sadness accompanied them…

Second, when the insertions were finished, the novel was sent to additional four raters (native speakers of English), who also read the book and inserted the target items where possible. Once all possible insertions were completed (the number of insertions ranged between one and 25), they were collated into one master copy which was examined by a separate native English-speaking judge who checked every insertion and excluded those that did not fit the context well.

Third, the pretest was administered. As expected, different degrees of knowledge were demonstrated: full, partial and no knowledge. Those target items that each participant showed full knowledge of (according to the criteria below) were excluded. Cognates were excluded as well. As a result of this exclusion, the Thai participant did not know 32 target items (21 unknown and 11 partially known target items), the Polish participant's number of unknown items was 18 (13 unknown and 5 partially known items), and the Libyan participant's tally totalled 27 items (19 unknown and 8 partially known items). To flush the effects of memory and to draw participants' attention away from the collocations, two distracting tasks were administered straight after the main pretest. These consisted of a reading speed task and a multiple-choice grammar test.

Fourth, the modified novel was then given to the participants who were asked to read for pleasure, in their own free time and at their own pace. Use of a dictionary was not allowed. They were given up to four weeks, but were also told they could finish reading the book earlier or ask for more time. The Thai participant read the book in only four days, the Polish participant took four weeks to finish the reading, whereas the Libyan participant needed an extra week (i.e., five weeks in total).

Finally, the immediate and delayed posttests took place. The former was administered directly after each one of the participants finished reading the novel, whereas the latter was given three weeks later.

Marking

The tests were marked in the following manner. A fully correct answer was given 2 points (e.g., *blue ribbon* = 'the important one; compared to the others, this one is the best'), a partially correct answer was awarded 1 point (e.g., *tie the knot* = 'to become couple officially; just to be together') and a completely wrong answer (e.g., *hit the roof* = 'be excited in a positive way, for example if I tell my husband that I passed my viva, he'll hit the roof in excitement) or 'I don't know' answer received 0 points.

Two raters, who were native speakers of English and had a background in applied linguistics, were asked to listen to the interviews and mark the participants' answers in the same way as described above. They had been previously provided with all of the target items and their literal and figurative meanings. They were asked to follow the definitions provided (Appendix C). For example, the phrase *make noises* has two figurative meanings, 'complain' and 'talk about something that you might do, but not in a detailed or certain way'. The raters were told to rate the participants' answers against the second definition because it was this definition that was used in the novel. When there was a disagreement between the raters, the final decision was made by the author as third rater.

Interrater Reliability

The interrater reliability check was carried out to find how much agreement there was between the raters. There were 268 items in total (across the three participants and three tests) and out of these items, the raters agreed on 216 cases or 80.60%. Although interrater reliability greater than 80% would be desirable, judgements of partial knowledge are difficult to agree on, so the 80% figure can be seen as acceptable, as any discrepancies went to a third rater.

Results

The mean score and the percentage of target words known before and learned after the reading treatment are reported in Table 2. The results show that incidental learning can occur from reading a single semi-authentic novel. This was in a context where a semi-authentic novel was read for pleasure, with no indication that the aim of the study was the learning of new vocabulary.

Table 2. *Descriptive statistics*

	Pretest		Immediate posttest		Delayed posttest	
	M (out of 76)	%	*M* (out of 76)	%	*M* (out of 76)	%
Participant 1	23	30.26	58	76.32	57	75.00
Participant 2	45	59.21	63	82.89	60	78.95
Participant 3	28	36.84	52	68.42	60	65.79

Table 2 shows that all participants made considerable progress and the gains were durable

(Schmitt, 2010), as illustrated by the scores from the delayed posttest. Participant 1 earned 23 points out of a possible 76 points in the pretest (30.26%), moving up to 58 points (76.32%) in the immediate posttest and 57 points (75.00%) in the delayed posttest. Participant 2 showed less progress than Participants 1 and 3, but this is probably due to the fact that her initial proficiency level was higher than that of the other two participants (see the Participants section) and therefore, she knew more items in the pretest and had half the chance to learn new items. She scored 45 (59.21%) points in the pretest, 63 (82.89%) points in the immediate posttest and 60 points (78.95%) in the delayed posttest. Finally, Participant 3 showed similar gains to Participant 1. She earned 28 points (36.84%) in the pretest, 52 points (68.42%) in the immediate posttest and 50 points (65.79%) in the delayed posttest.

Next, to explore the relationship between repetition and knowledge statistically, Spearman's rank correlation (data was not normally distributed) was performed between each participant's gain score per target item and the number of times each target item was repeated in the text. Gain scores (i.e., knowledge) were based only on the delayed posttest because the focus was on durable learning (Schmitt, 2010). To do this, the possibility of test effect needs to be taken into account. Nevertheless, since the participants did not know the content of the delayed posttest and they did not encounter the target items in the three weeks between the two testing sessions (this was later confirmed in the post-treatment interviews), the results are still a good indication of durable learning (Schmitt, 2010) three weeks after the first exposure to the treatment.

The correlations were positive for all three learners, but they only reached significance in the case of one learner. For Participant 1, there was no statistically significant relationship between knowledge and repetition ($r = .285$, n.s.). The same was true for Participant 3 ($r = .254$, n.s.). In contrast, for Participant 2, the correlation showed that there was a statistically significant relationship between test scores and repetition ($r = .587$, $r^2 = .345$, $p < .010$). Thus, the correlations showed only limited evidence for the relationship between repetition and learning, with the strength of the relationship varying between participants.

Next, the aim was to investigate how much the knowledge of the target items was enhanced in real terms, and to this end, the target collocations were divided into four frequency groups (1–3, 5–8, 12–16, 20–25). All the items each participant knew were eliminated (i.e., received 2 points) in the pretest, because no further learning could be shown with the measurement instrument. The increase in knowledge of each participant's remaining items was tallied in the following way: 0 → 1 (no knowledge to partial knowledge), 0 → 2 (no knowledge to full knowledge) and 1 → 2 (partial knowledge to full knowledge). The participants' improvement from the pretest to the immediate posttest was not included because there was not any statistically significant difference between the two posttests, and as stated earlier, the main focus was durable learning (Schmitt, 2010). Table 3 shows that knowledge of a considerable number of target items was enhanced either partially or fully.

Table 3. *Number of collocations where learning occurred*

	Number of occurrences	Improvement	Delayed posttest	Total
Participant 1	1 – 3	0 → 1	1	4/7
		0 → 2	1	
		1 → 2	2	
	5 – 8	0 → 1	2	7/9
		0 → 2	2	
		1 → 2	3	
	12 – 16	0 → 1	0	8/10
		0 → 2	4	
		1 → 2	4	
	20 – 25	0 → 1	0	5/6
		0 → 2	4	
		1 → 2	1	
	All items	0 → 1	3	24/32
		0 → 2	11	
		1 → 2	10	
Participant 2	1 – 3	0 → 1	1	2/4
		0 → 2	0	
		1 → 2	1	
	5 – 8	0 → 1	1	2/6
		0 → 2	1	
		1 → 2	0	
	12 – 16	0 → 1	0	2/3
		0 → 2	0	
		1 → 2	2	
	20 – 25	0 → 1	1	5/5
		0 → 2	4	
		1 → 2	0	
	All items	0 → 1	3	11/18
		0 → 2	5	
		1 → 2	3	

Participant 3	1 – 3	$0 \rightarrow 1$	3	3/6
		$0 \rightarrow 2$	0	
		$1 \rightarrow 2$	0	
	5 – 8	$0 \rightarrow 1$	1	4/7
		$0 \rightarrow 2$	3	
		$1 \rightarrow 2$	0	
	12 – 16	$0 \rightarrow 1$	1	6/8
		$0 \rightarrow 2$	4	
		$1 \rightarrow 2$	1	
	20 – 25	$0 \rightarrow 1$	1	4/6
		$0 \rightarrow 2$	2	
		$1 \rightarrow 2$	1	
	All items	$0 \rightarrow 1$	6	17/27
		$0 \rightarrow 2$	9	
		$1 \rightarrow 2$	2	

The above table demonstrates that, in terms of possible learning, all three participants made considerable progress. The number of items learned ranged from 11 to 24 (61.11% to 75%). Another interesting finding is the amount of full and partial knowledge. Of all the items, most of them were fully learned (24 '$0 \rightarrow 2$' cases). This is quite an impressive finding that indicates the learning that occurred was strong as well as durable (Schmitt, 2010). Fewer items were partially learned (12 '$0 \rightarrow 1$' cases) or enhanced (15 '$1 \rightarrow 2$' cases).

Lastly, the follow-up interviews showed that the participants all enjoyed reading the book very much and found it rather interesting. In addition, each of the participants said that they used guessing from context as a strategy to deal with unknown items. Finally, all the participants said that they became aware of some of the target collocations, namely those that were inserted 20–25 times.

Discussion

This study looked at the incidental acquisition of the figurative meanings of duplex collocations from reading a modified version of the authentic novel *Playing Dead*. The results of the descriptive statistics confirmed that learners can incidentally acquire collocations from reading, thus supporting the findings of previous investigations (Pellicer-Sánchez, 2017; Webb et al., 2013). In addition, this study found that knowledge of more than half of the target items (Table 3) that were unknown in the pretest (32 items for Participant 1, 18 items for Participant 2, and 27 items for Participant 3) was enhanced either partially or fully in meaning. These figures suggest that much of vocabulary acquisition is incremental (Schmitt, 2010), both in terms of learning new words and phrases, as well as enhancing those that are partially known. The high percentages of learning compare favourably with other studies on the incidental acquisition of

collocations from reading, which have shown much smaller amounts of learning (e.g., Pellicer-Sánchez, 2017; Webb et al., 2013), although the difference may lie in the fact that these studies did not account for partial knowledge. However, they seem to be inconsistent with a study that employed a similar methodology (Pigada & Schmitt, 2006), in which the participant scored only 20.2% in meaning recall. This might be because the target words were presented in a decontextualised manner, which may have affected the recall of the meaning of these words.

This study may be a better reflection of the real vocabulary learning from reading for several reasons. First of all, the gains came from the reading treatment, because there was no exposure to the target words other than in the novel (confirmed in the post-treatment interviews). Second, all participants said they really enjoyed reading the novel, which would indicate that this is the type of novel they would read on their own. Third, this study reflects the real-life type of reading as the participants read for pleasure in their own time. Overall, the results of this study are very promising given that the measurement was productive in nature (meaning recall), while the participants only had receptive exposure to the collocations during the reading treatment. Therefore, in response to the first research question, the results of this study suggest that reading can enhance knowledge of the figurative meanings of duplex collocations and to quite a great extent in semi-authentic texts seeded with the instances of the same expressions.

The second research question asked whether more repetition would lead to more learning and the results suggest that the effects of frequency are not completely consistent. For example, for Participant 3 there were two items (*drop the ball* and *hit the roof*) in the 20–25 frequency group for which there was no learning at all. Interestingly, research on collocations has also shown varying effects of repetition, with some indicating significant differences between knowledge and repetition (Webb et al., 2013) and others demonstrating a lack of such a relationship (Pellicer-Sánchez, 2017; Szudarski & Carter, 2016). Thus, this result reinforces the assertion that various factors collectively determine the successful acquisition of figurative phrases (Boers et al., 2014).

The post-reading interviews looked at the participants' state of mind, their motivation and their interests. Firstly, the participants were asked whether they enjoyed the book and found it interesting. They all reported that the book was very interesting and that they would like to read similar books. In fact, one of the participants asked the author to lend her another book from the same trilogy. Research suggests that novels increase learners' interest, enjoyment and engagement with the character and the plot (Currie, 1997), which in turn results in people being more receptive to learning. This suggests that the interest in the book undoubtedly helped, but that the same encouraging learning gains may not be replicated in a study with less interested learners.

Secondly, the participants were also asked what strategies they employed when they came across an unknown phrase. They could not use a dictionary as they were instructed not to do so, and they also did not ask anyone about the meaning of the unknown items. Instead, they said they tried to guess from the context. The target phrases in this study were inserted in places where they made sense in that context. For example:

> 'He didn't like Travis, who was from a family of <u>fat cats</u>. They had the kind of money

that seemed to grow on trees. We weren't poor by any stretch, but putting me through
college and law school like my father planned would wipe out their saving account.'
[underline added]

"If you don't love me, tell me," he'd said. Divorce was foreign to him — his parents
had <u>tied the knot</u> and were happily married for 40 years before his dad died — but he
wouldn't live in a loveless house. He wouldn't keep her trapped just because they had a
life together, a child together. [underline added]

From the above examples and looking at the participants' gains, it can be speculated that they were successful in this strategy most of the time, however, as mentioned above, it seems this was not always the case.

To try to explain why there was no learning for some very frequent target items (the 20–25 frequency group), the initial encounters with these phrases were examined to evaluate the extent to which they may have overridden the initial erroneous interpretations (Appendix D). For example, Participant 1 did not show any learning for the item *take a hike* even though it occurred 20 times in the text. Similarly, Participant 3 did not show any knowledge of two of the target items, *drop the ball* and *hit the roof*, occurring 20 and 23 times, respectively. Participant 2 showed knowledge, both partial and full, of all the five target items she initially did not know in the pretest. Therefore, in case of Participants 1 and 3, one of the explanations might be that they interpreted these phrases literally first, but when these did not make any sense, they went back and reread them or just skipped them and continued reading the story, thus compromising their understanding of these particular phrases. These initial wrong interpretations might have left a memory trace that — despite the subsequent numerous contexts which could perhaps have been more helpful in arriving at the correct figurative meaning — could not be erased.

Even though the participants reported they used guessing from context only, analysis of their responses suggests that they also tried to arrive (although unsuccessfully) at the figurative meaning through a literal reading of the component words. For example, Participant 1 said that the figurative meaning of the phrase *climb the wall* (which occurred 15 times in the novel) was 'to escape; to go away' whereas Participant 3 reported that the phrase *Big Brother* (occurred seven times) meant 'people to support us; to help us; quite kind people and helpful people'. Boers and Webb (2015) point that the lexical composition of a figurative phrase can be deceptively transparent and can consequently, lead to misinterpretation. Therefore, it can be assumed that the collocation *climb the wall* has erroneously activated a scene of someone climbing an actual wall and leaving or escaping, while the phrase *Big Brother* evoked an image of an older sibling who protects other, younger siblings. The analysis of the initial contexts in which these phrases occurred shows that it was impossible to interpret these phrases other than figuratively (e.g., *Don Professor Collier said that Oliver's thesis wasn't going well and he was climbing the wall*). This clearly illustrates that context cannot be relied upon to override wrong initial interpretations of some figurative phrases. Concerning the expression *Big Brother*, another possible reason for the learner's misinterpretation might have been a lack of cultural knowledge. *Big Brother* comes from the novel *1984* by George Orwell and although many people, especially L2 learners, use the phrase without knowledge of its origin, it is most likely its use in Orwell's novel that dictates the meaning.

It is interesting to note that the participants interpreted some target collocations incorrectly in the pretest and that some of these wrong guesses were not rectified during the treatment. This result is congruent with earlier studies by Pigada and Schmitt (2006) and Haynes (1993), in which incorrect initial guesses were sustained even after the exposure. This was probably caused by cross-linguistic influence; that is, by participants' L1s (Thai, Polish, and Libyan). An example of such a misleading L1 counterpart is the Polish phrase *lay an egg*, which means 'wait for something for a long time'. The Polish participant reported that a similar phrase existed in her L1 but did not produce a correct answer in either of the posttests. One explanation for this particular phrase may be that this learner found her interpretation and the context somehow compatible as illustrated in the following example:

> Matt forced Steve to the pavement and applied pressure on his shoulder wound. Steve was fading. The last thing he heard was the D.A. calling for an ambulance and backup.

> The last thing he thought was *I laid an egg. I got a witness killed.* [italics added]

Thirdly, the participants reported that they felt they learnt new vocabulary and were very pleased about that. This can be explained by the fact that the ability to learn a second language can also be influenced by learners' attitudes towards the target language. Ellis (1994) posits that positive attitudes are typically connected to the speakers of the L2 and the culture represented by its speakers. Such positive attitudes can be expected to enhance learning, because learners want to communicate with native speakers of the language they are learning.

Teaching Implications

Research has shown that although idiomatic phrases are common as a class, they occur relatively infrequently on an individual basis in the written and oral discourse, which does not facilitate their incidental acquisition (Boers & Lindstromberg, 2009). As Webb et al. (2013) propose, unless reading materials are designed to ensure sufficient exposure to these phrases, the potential for learning them incidentally is small. This study suggests that the uptake rates that would mirror real-life texts (1–3 occurrences) are actually not that 'small' (over 50% of gains) if vocabulary acquisition is thought of as an incremental process that includes both partial and full knowledge. However, if materials are modified in such a way that idiomatic language is 'seeded' into the text at higher rates of recurrence (i.e., adapted and manipulated), then there seems to be even more learning as each participant's knowledge of the target items was enhanced by more than 50%.

Even though text seeding does seem to be effective, it has to be acknowledged that there are some limitations in terms of its practicality. To make sure that that the items are inserted in a natural way in a text, resourcefulness and native-like knowledge of the items are needed. Therefore, this implication might be more suitable for textbook writers who have the time and the resources, rather than for non-native teachers with limited resources.

Lastly, research suggests that figurative language makes up a large proportion of the language

(e.g., Stengers, 2007), and so this intervention is unlikely to provide 'coverage' of the thousands of duplex collocations that occur in the lexicon of any one language.

Limitations

This study measured only meaning recall because conducting several tests of lexical knowledge was not possible for practical reasons. The question whether the same study design would lead to equally high gains at other mastery levels (i.e., form recall) is an interesting one for future research.

Also, prior knowledge of the words making up collocations may have had an effect on the overall learning gains. In this study, the target collocations were made up of known words and this might have affected the degree to which the meaning of collocations was retained. Boers and Lindstromberg (2009) suggest that learners are more likely to notice collocations composed of unknown words because these are more noticeable in the input. On the other hand, when collocations are made up of known words, there may be more learning because the learner is not distracted by learning other word knowledge aspects (Webb et al., 2013). These contradictory views indicate the need for more research in this area.

The frequency groups were arbitrary and it is an empirical question whether, had the frequency bands been arranged differently, more frequency would have led to more learning.

It is uncertain whether the acquisition process in this study was truly *incidental*. The participants engaged in an elaborate pretest interview about the target collocations, and it is likely that this had an awareness-raising effect. There is a possibility that the pretest positively influenced the intake and uptake of the figurative meanings of duplex collocations during reading. There is also a possibility that the pretest prompted the participants to make a guess at the meaning of the items. If that guess was wrong, but left a trace in memory, this may have negatively interfered with the interpretation of the figurative expression during reading.

Finally, the results reported here are indicative of relatively advanced and highly motivated learners, who showed a high level of interest and engagement in the study. Therefore, it is not known if less proficient, less-motivated learners would obtain similar results.

Conclusion

The results of the present study indicate that reading a text seeded with target items can lead to a substantial amount of incidental learning of the figurative meanings of duplex collocations. Moreover, the learning gains were durable as shown by the results from the posttest. Through one-to-one interviews, it was shown that repetition was not always statistically significant and that guessing from context and using the literal meanings appear to have influenced the intake rate to a certain extent. In conclusion, the results emphasise the complex process of acquiring L2 figurative knowledge and only future research can shed more light on different factors that influence this knowledge.

Notes

1. Depending on research purpose and theoretical orientation, most researchers would define duplex collocations as figurative idioms (e.g., Grant & Bauer, 2004; Howarth, 1996).

2. Grant and Bauer (2004) define these items as *figuratives*, a subtype of idioms. They also state that semantically opaque idioms are the most difficult type of multi-word unit to learn for L2 learners, followed by phrases that are both literal and figurative and semantically transparent items.

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Appendix A

Target items and frequency information

No	Target collocation	Number of occurrences in the text
1	Make noises	1
2	Wet blanket	1
3	Free ride	2
4	Acid test	3
5	Bend one's knee	3
6	Build bridges	3
7	White collar	3
8	Lay an egg	5
9	Open book	5
10	Small potatoes	5
11	Soft touch	5
12	Old hat	6
13	Run a mile	6
14	Big Brother	7

15	Carry weight	8
16	Hold one's breath	8
17	New blood	8
18	Open one's eyes	8
19	Red tape	8
20	Tie the knot	8
21	Brick wall	12
22	Fat cat	12
23	See the light	12
24	Bite one's tongue	13
25	Dead duck	14
26	Old hand	14
27	Pull the strings	14
28	Sore spot	14
29	Climb the wall	15
30	Not hold water	16
31	Red flag	16
32	Big wheel	20
33	Drop the ball	20
34	Kick the bucket	20
35	Take a hike	20
36	Hit the roof	23
37	Blue ribbon	25
38	Hit the road	25

Appendix B

Reading attitudes questionnaire

1) How often do you read for pleasure in English on a weekly/monthly basis?
2) Have you enjoyed reading the book?
3) Who was your favorite character and why?
4) What character did you not like?
5) How long did it take you to read the book?
6) How often did you read?
7) Was the level of the book ok for you? In other words, did you find it difficult to understand? Was it difficult to follow the storyline? If yes, why?
8) Did you have to read some parts of the book more than once in order to understand?
9) Overall, was the book comprehensible, meaningful and interesting?
10) Would you read another book like this?
11) Were there many unknown words?
12) Which strategies did you use for dealing with unknown words?

13) Do you think you have learnt any of the unknown words?
14) Did you notice any of the phrases from the interview (pretest) and were they salient?
15) Have you met any of these phrases in other contexts between the first (pretest) and second interview (posttest) and during the reading time?
16) Have you consulted a dictionary or asked anybody what these phrases meant during the reading time?

Appendix C

Definitions of the target collocations

1. <u>*Big brother*</u> *(OxfordDictionaries.com,* n.d.*)*
   Literal meaning: An older brother
   Figurative meaning: A person or organisation exercising total control over people's lives

2. <u>*Drop the ball*</u> *(OxfordDictionaries.com,* n.d.*)*
   Literal meaning: Let the ball fall to the ground
   Figurative meaning: Make a serious mistake; mishandle things

3. <u>*Old hat*</u> (*TheFreeDictionary.com*, n.d.)
   Literal meaning: A hat that is not new
   Figurative meaning: Old-fashioned, dated

4. <u>*New blood*</u> (*TheFreeDictionary.com*, n.d.)
   Literal meaning: Blood that is new
   Figurative meaning: New people considered as a revitalising force, as in an organisation

5. <u>*Brick wall*</u> (*EnAcademic.com*, n.d.)
   Literal meaning: A wall made of bricks
   Figurative meaning: An obstacle; a problem or situation that is very difficult to solve

6. <u>*Sore spot*</u> (adapted from *TheFreeDictionary.com*, n.d.)
   Literal meaning: A spot that is painful
   Figurative meaning: A subject which someone would prefer not to talk about because it makes them angry or embarrassed

7. <u>*Take a hike*</u> (*TheFreeDictionary.com*, n.d.)
   Literal meaning: Go on an extended walk for pleasure or exercise
   Figurative meaning: Leave because one's presence is unwanted; go away

8. <u>*Soft touch*</u> (*TheFreeDictionary.com*, n.d.)
   Literal meaning: Touch that is gentle
   Figurative meaning: One who is easily persuaded or taken advantage of

9. <u>*Bend one's knee*</u> (adapted from *CollinsDictionary.com*, n.d.)
   Literal meaning: Form a curve in one's knee
   Figurative meaning: Submit to authority

10. *Blue ribbon* (*TheFreeDictionary.com*, n.d.)
   Literal meaning: A ribbon that is blue
   Figurative meaning: Of superior or highest quality

11. *Hit the road* (*TheFreeDictionary.com*, n.d.)
   Literal meaning: Come into contact with the road forcefully
   Figurative meaning: Set out, as on a trip; leave

12. *Build bridges* (adapted from *TheFreeDictionary.com*, n.d.)
   Literal meaning: Construct bridges
   Figurative meaning: Improve relationships between people who are very different or do not like each
                          other

13. *Dead duck* (*CollinsDictionary.com*, n.d.)
   Literal meaning: A duck that is not alive
   Figurative meaning: A person or thing doomed to death, failure, etc. especially because of a mistake
                          or misjudgment

14. *Hold one's breath* (*CollinsDictionary.com*, n.d.)
   Literal meaning: Not exhale
   Figurative meaning: Wait expectantly or anxiously; wait or delay until something special happens

15. *Small potatoes* (*OxfordDictionaries.com*, n.d.)
   Literal meaning: Potatoes that are small in size
   Figurative meaning: Something insignificant or unimportant

16. *Red tape* (*CollinsDictionary.com*, n.d.)
   Literal meaning: A tape that is red coloured
   Figurative meaning: Obstructive official routine or procedure; time-consuming bureaucracy

17. *Fat cat* (*OxfordDictionaries.com*, n.d.)
   Literal meaning: A cat that is overweight
   Figurative meaning: A wealthy and powerful person, especially a business person or politician

18. *Hit the roof* (*TheFreeDictionary.com*, n.d.)
   Literal meaning: Come into contact with a roof forcefully
   Figurative meaning: Get very angry and fly into a rage

19. *(Not) hold water* (*OxfordDictionaries.com*, n.d.)
   Literal meaning: (Not) be able to contain water
   Figurative meaning: (Not) appear to be valid, sound, or reasonable

20. *Old hand* (*OxfordDictionaries.com*, n.d.)
   Literal meaning: A hand that is old in age
   Figurative meaning: A person with a lot of experience in something

21. *Free ride* (*CambridgeDictionary.com*, n.d.)
   Literal meaning: A ride that costs nothing
   Figurative meaning: Something acquired without the ordinary effort or cost; an opportunity or
                          advantage that someone gets without having done anything to deserve it

22. _Red flag_ (*CollinsDictionary.com*, n.d.)
    Literal meaning: A flag that is red coloured
    Figurative meaning: A warning of danger or a signal to stop

23. _White collar_ (*BusinessDictionary.com*, n.d.)
    Literal meaning: A collar that is white coloured
    Figurative meaning: Refers to employees whose job entails, largely or entirely, mental or clerical
    work, such as in an office

24. _Big wheel_ (*TheFreeDictionary.com*, n.d.)
    Literal meaning: A wheel that is big in size
    Figurative meaning: A very important person

25. _Acid test_ (*TheFreeDictionary.com*, n.d.)
    Literal meaning: A test that measures the acidity of something
    Figurative meaning: A decisive or critical test or situation

26. _Open book_ (*TheFreeDictionary.com*, n.d.)
    Literal meaning: A book that is open
    Figurative meaning: A person or thing without secrecy or concealment that can be easily known or
    interpreted

27. _Wet blanket_ (*TheFreeDictionary.com*, n.d.)
    Literal meaning: A blanket that is wet
    Figurative meaning: A dull or depressing person who spoils other people's enjoyment

28. _Climb the wall_ (*TheFreeDictionary.com*, n.d.)
    Literal meaning: Go up a wall
    Figurative meaning: Be very agitated, anxious, bored, or excited

29. _Open one's eyes_ (*TheFreeDictionary.com*, n.d.)
    Literal meaning: Not keep one's eyes closed
    Figurative meaning: Become or make someone aware of the truth of a situation

30. _Run a mile_ (Adapted from *CollinsDictionary.com*, n.d.)
    Literal meaning: Move swiftly on feet for a mile
    Figurative meaning: Do anything to avoid a particular situation

31. _Bite one's tongue_ (*EnAcademic.com*, n.d.)
    Literal meaning: Cut or tear your tongue with the teeth
    Figurative meaning: Stop yourself from saying something because it would be better not to, even if
    you would like to say it

32. _Carry weight_ (*TheFreeDictionary.com*, n.d.)
    Literal meaning: Hold or support weight while moving
    Figurative meaning: Have influence to a specified degree

33. _Lay an egg_ (*TheFreeDictionary.com*, n.d.)
    Literal meaning: Produce and deposit an egg
    Figurative meaning: Do something bad or poorly; fail

34. _Kick the bucket_ (_TheFreeDictionary.com_, n.d.)
   Literal meaning: Strike a bucket with the foot
   Figurative meaning: Die

35. _Make noises_ (_EnAcademic.com_, n.d.)
   Literal meaning: Produce noises
   Figurative meaning: Talk about something that you might do, but not in a detailed or certain way

36. _Pull the strings_ (_OxfordDictionaries.com_, n.d.)
   Literal meaning: Apply force to the strings so as to cause motion
   Figurative meaning: Be in control of events or of other people's actions

37. _Tie the knot_ (_TheFreeDictionary.com_, n.d.)
   Literal meaning: Fasten or secure a knot with or as if with a cord, rope, or strap
   Figurative meaning: Get married

38. _See the light_ (_OxfordDictionaries.com_, n.d.)
   Literal meaning: Perceive the light with the eyes
   Figurative meaning: Understand or realise something after prolonged thought or doubt

Appendix D

Initial contexts of the very frequent phrases for which no learning occurred

Participant 1: _take a hike_
First encounter
"You'll major in biology, enroll in the premed program, then you can choose your discipline. Surgery would be the smart decision." As if he wasn't smart enough to figure out his father wanted him to follow in his big, fat footsteps.
He had no desire to go into medicine. He'd tell his father to **take a hike**. Someday. He should have done it a long time ago. [bold added]

Second encounter
"Why would I help you? I could lose everything I've built since you went to prison," she said. "My career, my PI license, my home. I don't want to go to jail."
"Claire. Please."
The quiet plea twisted her heart. "**Take a hike**. Leave me alone."
"I don't have anyone else," he whispered. [bold added]

Third encounter
The Feds had made it perfectly clear to Claire that she needed to report any contact from her father, or be considered an accomplice. They'd threatened her—jail time, loss of her private investigator's license, her concealed-carry weapons permit. Her dad said that Big Brother was still watching her. Agent Donovan had come around a couple times, but it was routine. She'd answered his questions and told him to **take a hike** each visit. She didn't think they had someone on her 24/7 after the first two weeks since the quake, but maybe she was wrong. [bold added]

Fourth encounter
Tom didn't touch anything. The man's face was turned away from the door. Barely breathing, Tom walked around the bed to look at his face. Pent-up rage ate at his gut. He would have yelled at Lydia had she been alive. He'd been prepared to confront her and her lover. Tell her to **take a hike**. Now? Guilt and anger battled with a surreal sense that this could not be happening.

Tom stared at the dead man, one eye full of blood from the bullet behind it. But Tom recognized him—a man he'd never met personally but had seen in action in the courtroom. A prosecutor, Chase Taverton. [bold added]

Fifth encounter
If she hadn't called her father to rat out her mother's infidelity, her mother would be alive and her father would never have gone to prison. They might have divorced, they might have hated each other, but they would both still be in her life.
When Oliver Maddox came to her to ask her to help with an appeal of her dad's case, she told him to **take a hike**. She'd been at the trial. She'd walked into the house only minutes after her father killed two people. Maddox said, "There's a chance your dad was framed. And I think I can prove it." [bold added]

Participant 3: *drop the ball* and *hit the roof*

Drop the ball
First encounter
Warehouses sometimes burned down by accident. A careless employee left a cigarette butt burning, lightning struck, homeless people tried to get warm in the frigid Sacramento winters.
But accidents were rare.
The building owner had **dropped the ball**, Claire thought as she walked around taking pictures and notes. There was no evidence of burned goods. They could have been stolen before the arson, but Claire suspected the merchandise had never arrived or had been sold before the arson. [bold added]

Second encounter
That first time, Lydia had cried and begged for Tom's forgiveness. She'd met the cop at the hospital where she worked as an emergency-room nurse. It was the adrenaline of the moment, she claimed, she didn't know why she had let it continue. Tom forgave her. Lydia had seemed so sincere.
But that horrible day, knowing she was in his bed with another man, the insidious self-loathing returned. That voice that said, "You're a sucker. You **dropped the ball**. She cheated on you once, Tommy Boy, you knew she was just making noises about changing." [bold added]

Third encounter
Everyone knew that he and Supervisory Special Agent Megan Elliott had tied the knot, but were no longer married. It wasn't like he had announced it, but Meg insisted that everything be on the up-and-up when Mitch came on board.
It was no one's damn business, as far as Mitch was concerned. They'd **dropped the ball**; it was over, no one needed to know anything more. [bold added]

Fourth encounter
He still had respect for Meg. Hell, Mitch liked her a lot. They'd met at Quantico, when they both were new blood, become good friends because of common interests, and ended up in Kosovo together four years later, digging through mass graves as part of a national evidence response team. When they returned to America six weeks later, they both felt out of touch with everyday concerns. The weight of Kosovo tormented them, and they turned to each other for solace. They were two busy people with the same career and they thought that tying the knot was the answer to loneliness.
They were wrong. They **dropped the ball** in the end**.** The marriage officially ended three years later. [bold added]

Fifth encounter
The police would look at the obvious: her idiot husband. When the assassin told Harper about his plan to take out both Taverton and his lover, within twelve hours Harper learned that O'Brien worked solo. He was normally a training officer, but had no new blood currently assigned to him.

He could still **drop the ball**. O'Brien could be on a call. Taverton could cancel his rendevous. But the assassin took comfort in the fact that he wasn't connected to anyone and could slip away. If it all went south and the blackmailers exposed him, he'd have to disappear and assume another identity. [bold added]

Hit the roof

First encounter
"Before you escaped from prison? Let's call a spade a spade, Daddy, okay? No time to build bridges. No bullshit. You're an escaped killer and they'll shoot first, and frankly, no one gives a shit about your answers."
Claire's insides were twisted and burning. She **hit the roof**. She'd never talked to her father like that, had never raised her voice or sworn at him. [bold added]

Second encounter
Trying to come up with a lame excuse or lie would only damage Mitch's friendship with Steve. "You knew I was looking into O'Brien's case."
"I didn't think you were playing with O'Brien's daughter."
"It's not like that, Donovan."
"Don't jerk me around, Bianchi. You're playing a dangerous game here. Meg will **hit the roof** if she finds out you're working the O'Brien case after you were removed. The only reason you're on this assignment is because you're the only diver we have in-house." [bold added]

Third encounter
The assassin was not happy.
He drove fast, away from the opulent, gated mansion where he'd just met with two of the three men who'd blackmailed him into murder. They called him "our assassin" and it made him **hit the roof**. Not that they thought of him as an "assassin," but because they considered him their *property*. [bold added]

Fourth encounter
But everything would come crashing down if Thomas O'Brien wasn't stopped. And now that Oliver Maddox's body had been found, there could be other people looking into things better left dead and buried.
What had made him **hit the roof** was his blackmailers' reaction to the discovery in the river. That they felt Claire had to be watched, that she would be a threat if she got wind of what that idiot Maddox had been working on. [bold added]

Fifth encounter
"My dad was a cop. He put his gun in the same place every night. He checked it religiously. He kept his in a holster attached to the side of the bed. He would never have put it in the wrong place. Ever."
"I could have been in a rush," Tom said, using the prosecution's argument. **"I hit the roof**. Not thinking. Heard Claire come in. Or, as in the closing statement, was trying to cast doubt that I was the killer." [bold added]

About the Author

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