Syntactic variability in L2 acquisition of English idioms.

Abstract

This paper examines the lexical and semantic representation of idioms in L2 speakers of English who have Spanish as L1. We hypothesize that L2 speakers process idioms more compositionally than monolinguals, because the full idiomatic interpretation is linked to frequency in the input. We measured acceptability ratings for idioms using four types of determiners that force compositional meaning to different degrees (fully quantificational universals vs. definites and indefinites), and found that L2 speakers accept all types of determiners more than monolinguals, and that the difference in rating between both types of determiners was less pronounced than for monolinguals. Since quantificational Ds force compositional meaning, higher ratings by L2 speakers suggest that they are not sensitive to the idiomatic meaning of the expressions (which would force a non-compositional meaning).

Our results also challenge a direct link between a larger (or more complex) lexicon and increased proficiency (because L2 speakers showed syntactic processing ability precisely due to lack of idiomatic meaning). Rather, we suggest that increased proficiency should only be linked to quantitatively larger and qualitatively better word associations, but since idiomatic meaning does enter into productive word associations, it does not relate to proficiency. Finally, we propose a path for idiomatic meaning acquisition: first L2 learners process idioms compositionally, resulting in incongruity with the context, then they attempt to process the idiom through purely contextual and conceptual mechanisms (metaphor formation, etc.), and when input frequency increases, the idiomatic meaning is fixed. For more semantically transparent idioms, we suggest, acquisition is linked to a process of selectively processing the transparent portions of the
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idioms, leaving the opaque ones as undefined variables that are interpreted contextually. Once enough evidence is gathered, those variable portions are remapped to the full idiomatic meaning. This process of leaving syntactic or semantic variables undefined may be connected to other phenomena like overextended use of light verbs by L2 speakers and by code switchers.

Introduction

Idioms such as *kick the bucket* or *lose one’s marbles* display unique properties from the point of view syntactic and semantic composition, which in turn pose a challenge for L2 learners. From a syntactic point of view, certain idioms cannot undergo certain transformations while maintaining their idiomatic meaning, so, for example, *the bucket was kicked* no longer has the meaning of ‘dying’. Semantically, the possibility of extracting the overall meaning of the idiom from its parts varies from expression to expression, but typically, idioms are not semantically transparent, so that *kick the bucket* ‘dying’ has little to do with the literal meaning of *kicking* or *buckets*, and the meaning of *lose one’s marbles* ‘to go crazy’ may be vaguely related to losing something, but certainly not to losing *marbles*. Rather, much of that meaning follows from a combination of metaphoric extension and culturally-determined, conventionalized meanings (cf. Nunberg et al. 1994).

On the other hand, semantic opacity also means that idiomatic meanings must have a separate lexical representation that is not directly derived through the idiom’s individual parts. However, if the L2 lexicon is smaller in size and the network of word associations less dense (cf. Meara 1996; Wilks and Meara 2002; Meara 2007), one might expect that idiomatic meanings are less prevalent for L2 speakers than for monolinguals. Furthermore, Abel (2003) has proposed that overall idiomatic representation depends on frequency, hence it will be less available for L2 speakers for this additional. This, in turn, raises the question of whether lack of knowledge of the expression’s idiomatic meaning relaxes syntactic restrictions usually associated with that idiomatic expression.

In this paper we explore these two questions (L2 speakers’ knowledge of idiomatic meaning and the correlation between idiomatic meaning and structural/syntactic variability) by examining the acceptability of idiomatic expressions whose internal argument has varying determiners or quantifiers. Different determiners force a literal meaning to different degrees, hence they can be used to test whether speakers are processing
idioms more idiomatically or more compositionally. Monolingual speakers should rate idiomatic meanings lower when a more literally-interpreted quantifier is present than when a less-literally interpreted one is present. For L2 speakers, on the other hand, if it is true that L2 meaning is less accessible, we would expect them to have no issue with literally-interpreted quantifiers.

Finally, to the extent that the availability of idiomatic meaning signals a larger/more dense lexicon, one would expect variation in proficiency for L2 learners depending on their lexicon size/complexity (cf. Zareva 2007). Thus, lower ratings for anomalous idiomatic readings should signal lower proficiency (represented by ability to apply syntactic and semantic principles of composition).

The paper is organized as follows. In section 1, I review the combinatorial restrictions on idioms, in section 2, I turn to idioms and L2 acquisition, and I state the hypotheses of the study, in section 3, I describe the study, followed by results in section 4 and discussion in section 5 and conclusions.

1. **Combinatorial restrictions of idioms**

Most syntactic frameworks assume that individual constituents function as independent units that can undergo syntactic permutations (questions, passivization, etc.), and that they contribute to the meaning of a sentence by combining their meaning and the meaning of their sister constituents (i.e. compositionally). Throughout this paper, I assume that the process of deriving the meaning of phrases is intimately linked to the processing of merging syntactic units into larger phrases, and that this process is at the core of our ability to speak and understand a language. As is well known, idiomatic expressions raise a challenge to both of these assumptions, as we will review below.

1.1 **Syntactic properties of idioms**

Expressions with an idiomatic meaning cannot undergo many syntactic operations (Nunberg et al.’s (1994, 492) inflexibility. For example, the idiomatic meaning of a VP (V+DP) can be lost if the object is extracted, so that in the context of (1-a), the question in (1-b) clearly doesn’t have the idiomatic interpretation (and in that context, it makes no sense).

(1)  
   a. Several of the patients were very sick, and a few survived, but one kicked the bucket.
   
   b. What did the patient kick?
Similarly idiomatic meaning has frequently been quoted as a diagnostic for the difference between raising and control structures. In (2-a), *is likely*, a raising verb, allows for an idiomatic interpretation, whereas in (2-b) *try*, a raising verb, does not.

(2)  
  a. The patient is likely to kick the bucket.  
  b. The patient tried to kick the bucket.

Passivization is also restricted in idioms. Certain expressions can be passivized, others cannot (cf. Katz and Postal 1964; Chafe 1968; Fraser 1970; Katz 1973; Newmeyer 1974; Van der Linden 1993 and Nunberg et al. 1994, 509). Thus, *spill the beans* can be passivized while preserving its idiomatic meaning, as seen in (3-a), whereas *kick the bucket* loses its idiomatic meaning when passivized (cf. (3-b)). Crucially, the ability to passivize with the idiomatic meaning seems to be correlated with the degree to which the meaning of the idiom can be decomposed into parts. Thus, in *spill the beans* ‘divulge a secret’, one can associate the meaning of ‘divulge’ to *spill*, but no such mapping is available for the parts of *kick the bucket* (cf. Gibbs and Nayak 1989a; Abrahamsen and Burke-Williams 2004).

(3)  
  a. The beans were spilled by Pat.  
  b. #The bucket was kicked by the sick man.

### 1.2 Properties of idiomatic meaning

Idiomatic meaning cannot be transparently derived from the meaning of the idiom’s parts. Thus, the idiomatic meaning of *shoot the breeze* ‘to chat idly’ has nothing to do with combining together the meaning of *shoot* and *the breeze*, and the individual meaning of the parts is not related in any transparent way to the idiomatic meaning of the VP. In this sense, *shoot the breeze* represents an extremely opaque idiom. For other idioms, one can see a certain connection between parts and whole. For example, in *save your breath* ‘avoid a useless effort’, one can tenuously connect the meaning of *save* to ‘avoid’. In any case, an expression that is interpreted idiomatically must have an separate meaning entry for the whole expression from its parts.\(^1\)

Regarding the relationship between the overall meaning of the expression and the meaning of its parts,

\(^1\)The literature disagrees on the extent to which the meaning of idiom parts is also accessed when the full expression is interpreted idiomatically (cf. Gibbs and Nayak 1989a; Burt 1992; Everaert and Kuiper 1996; Hamblin and Gibbs 1999).
Nunberg et al. (1994) distinguish two properties: conventionality and compositionality. Conventionality refers to the fact that idiomatic interpretation cannot be fully predicted from the meaning of its parts used in isolation, whereas compositionality reflects “the degree to which the phrasal meaning, once known, can be analyzed in terms of the contributions of the idiom parts” (p. 498) (cf. also Gibbs and Nayak 1989b; Gibbs et al. 1989; Abel 2003 among others). So, for example, the idiom *spill the beans* is fairly non-conventional, since its meaning cannot be predicted from the meaning of *spill, the* and *beans*, but once you know its idiomatic meaning *divulge a secret*, you can map subparts of the idiom to subparts of the meaning (*spill → ‘divulge’ the beans → ‘information’*). By contrast, knowing that *shoot the breeze* means ‘chat idly’ does not easily improve the ability to map subparts of the idiom to the overall meaning. In order to avoid confusion between this sense of the word compositionality and the slightly different Fregean sense of compositionality (used above), I will use the term *analyzability* to refer whether one can map the idiomatic meaning to individual parts of the idiom (Nunberg et al.’s compositionality). Likewise, I will use the term *semantic transparency* or *compositionality* to refer to whether the full idiomatic meaning can be predicted from parts in isolation (this notion is closer to Fregean compositionality).

Clearly, these two properties are related: idioms that cannot be analyzed will tend to be semantically opaque. Consider what it would mean for an idiom to be semantically transparent but not analyzable. Such an idiom would have parts that are close in meaning to how they are used in isolation (i.e. it would be semantically transparent), hence the meaning of the full idiom would be close to the addition of its parts (i.e. compositional in Frege’s sense), but at the same time, the idiomatic meaning of the full phrase could not be mapped to its parts (i.e. it would not be analyzable), yielding a fairly obvious conceptual and processing contradiction.

Low semantic transparency, on the other hand, does not imply low analyzability, because low semantic transparency simply means that the mechanisms by which the literal meaning is extended to the idiomatic meaning (frequently metaphoric mechanisms) are not very obvious, but once full idiomatic meaning is available to the speaker, it may be possible to map parts of that meaning to parts of the idiom. So, for example, the meaning ‘divulge a secret’ is not semantically transparent for the idiom *spill the beans*, that is, the conventional use of *spill* and *the beans* does not remotely account for the yield ‘divulge a secret’. But once that idiomatic meaning is available, one can trace it to parts of the phrase: *spill → ‘a process of spreading something’* and *the beans*, ‘the object being spilled’.
Finally, we also expect to have idioms that are highly transparent and highly analyzable, such as *drop a bomb* ‘unexpectedly announce something shocking’, where the idiomatic meaning of the phrase is more or less obvious from extensions of the meaning of its parts. This results in following possible combinations.

(4) Combinations of idiomatic meaning.

<table>
<thead>
<tr>
<th>Semantic transparency</th>
<th>Analyzability</th>
<th>Combination</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>High</td>
<td>YES</td>
<td><em>shoot the breeze</em></td>
</tr>
<tr>
<td>High</td>
<td>Low</td>
<td>NO</td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>Low</td>
<td>YES</td>
<td><em>spill the beans</em></td>
</tr>
<tr>
<td>High</td>
<td>High</td>
<td>YES</td>
<td><em>drop a bomb</em></td>
</tr>
</tbody>
</table>

Even for those expressions that are completely opaque like *shoot the breeze, spill the beans* or *kick the bucket*, there is evidence that they do not behave as unanalyzed lexical chunks. Thus, McGinnis (2002) notes that certain idioms show the same types of aspect as other VPs. Thus, *be the cat’s pyjamas* (*be terrific*) behaves aspectually as a state, and therefore cannot appear with adverbials such as *in an hour* or in the progressive (cf. (5)). By contrast, *jump through hoops* ‘try to meet exacting expectations’ is an activity, and as such, it is compatible with the progressive but not with an *in*-phrase (cf. (6)). By the same token, certain idioms are accomplishments whereas others are achievements.

(5) a. Hermione was the cat’s pyjamas for years*in an hour.*
    b. *Hermione is being the cat’s pyjamas.*

(6) a. Harry jumped through hoops for years*in an hour.*
    b. Harry is jumping through hoops.

Because lexical aspect has been shown to depend on the internal structure of the VP (cf. Tenny, 1987), these differences suggest that idiomatic VPs must have internal syntactic structure. The effect of VP-internal structure on idioms can be seen in (7), where the telic interpretation of *in three weeks* is not compatible with the bare NP *pictures*.

(7) a. Picasso painted Gernika in three weeks.
b. Picasso painted pictures in three weeks.

Thus, aspectual properties suggest that VPs interpreted idiomatically are like other VPs and behave as complex syntactic units.

1.3 Determiner Phrase variability in idiomatic expressions

The availability of the idiomatic interpretation of VPs of the form \([VP \ V + DP]\) varies depending on the type of determiner in the DP. In their idiomatic meaning, these VPs take an unmarked D, for example, *the* is the default, unmarked D in *kick the bucket*, whereas in *pull strings*, D is null. We will refer to instances of an idiomatic meaning with a default determiner as **unmarked idiomatic meaning**, and to the D more readily acceptable in an idiomatic interpretation of VP as the **default determiner**. Non-default Ds allow for an idiomatic meaning to varying degrees depending on the idiom and the type of D. The first property is illustrated in (8)-(9) (the latter from Nunberg et al. 1994, 501). Thus, for example, *pull x’s leg* is more tolerant of D variability than *spill the beans*, as seen in (8).

(8) a. My dad usually pulls {everyone’s/some people’s/many people’s} leg.
   b. Chris spilled {the/all the/??some/??many} beans.

(9) a. Touch a couple of nerves.
   b. That’s the third gift she’s looked in the mouth this year.
   c. We could . . . pull yet more strings

Whether the idiomatic meaning can be preserved with a non-default D also depends on whether the determiner is interpreted quantificationally or not. Quantificational operators require semantic compositionality, that combines highly constant, literal meaning (the universal component in (10-b)), and a meaning dependant on the context (the contextually variable restriction in (10-b), and the open proposition with a bound variable.

(10) a. Every student saw the shooting star.
   b. \(\forall x, (x: a \text{ student}) \ [x \text{ saw the shooting star}]\)
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The quantifier’s invariant component is semantically transparent because it is constant across uses and because it is highly predictable. If used with a semantically opaque idiom, a conflict should arise between the quantifier’s transparency and the idiom’s opacity. Thus, in order to process kick every bucket as an idiom, every would have to be interpreted non-literally, i.e. not as a universal quantifier. As a result, highly opaque idioms will not be acceptable with those types of quantifiers. Conversely, if a quantifier can appear with an idiom, the idiom should tend to be transparent (i.e. compositional) and analyzable, because the quantifier parcels out one of the subparts of the idiom and provides a straightforward interpretation for that subpart. So, for example, they spilled all the beans should be fairly acceptable as an idiom because spilling can be mapped to ‘divulging’ and the beans to some undefined object of divulging, which in turn can be quantified.

In this sense, the more semantic transparent and compositional the idiom is, the more acceptable it should be with a quantificational determiner. By contrast, determiners that are not interpreted quantificationally should be more acceptable both with opaque and transparent idioms. Following Heim (1983) and others, we assume that definite and indefinite determiners are not interpreted quantificationally, so they should be more acceptable than universally quantified determiners.

In the next section, I turn to the implications of these remarks for L2 acquisition of idioms.

2. Idioms in L2 acquisition

2.1 L2 idioms and the Model of Dual Idiom Representation

From the point of view of L2 acquisition, idioms pose interesting questions. On the one hand, we might expect that L2 learners have fewer idiomatic meanings in their lexicons. On the other hand, if idiomatic meaning constrains certain syntactic operations and L2 speakers are exposed to idiomatic meaning less frequently, then we would expect that syntactic operations would be less constrained for L2 speakers than for L1. But if this is true, we seem to have a case where less lexical knowledge results in better syntactic processing.

Despite the potential interest of idioms in L2 acquisition, most of the existing research on the topic relates to the difficulties they pose for foreign language learning and how to teach them, as Abel (2003) points out (but see Irujo 1986a,b). Few articles focus on the psycholinguistic representation of idioms.

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2It follows that what we called the default D will typically be non-quantificational.
in L2 or on their processing, or on how L2 learners resolve the syntactic-semantic constraints discussed
above. One exception is Abel (2003), who addresses the issue of analyzability of idioms for L2 speakers
by testing several psycholinguistics models from the L1 literature (cf. Gibbs and Nayak 1989a; Titone and
Connine 1999 among others). Overall, Abel finds that L2 learners judge more idioms as decomposable (i.e.
analyzable) than native speakers (52.6% decomposable, 47.4% nondecomposable for L2 speakers, 41.9%
decomposable, 58.1% nondecomposable for natives). In my view, one interpretation of these results is that
L2 learners treat idioms more as regular expressions, and this would follow if they don’t have full access to
the idiomatic meaning of the expression.

For Abel, these results support a Model of Dual Idiom Representation, which postulates that “nonde-
composable idioms require an idiom entry, whereas decomposable idioms can be represented via constituent
entries and can additionally develop and idiom entry (Abel 2003, 334).” Idioms that lack an idiom entry
are interpreted by directly accessing a separate level of conceptual representation, which “are nonlinguistic
entities that organize world knowledge and are represented at a general cognitive level (p. 247).”

A separate assumption Abel makes connects the development of an idiom entry with its frequency:
more frequent idiomatic configurations result in more likely development of an idiomatic entry regardless
of whether the expression is decomposable or not. This assumption is supported by other studies of mor-
phologically complex words (cf. Frauenfelder and Schreuder 1992, for example). Because L2 learners are
probably exposed to idioms less frequently, this means that they will have fewer lexical entries for idioms
and will more often resort to conceptual representations to interpret them.

From a slightly different perspective, idiomatic expressions raise intriguing questions regarding the the
overall organization of lexical networks of meaning, and the connection between the size and structure of
the L2 speaker’s lexicon and overall proficiency. On the one hand, one can ask whether idiomatic meanings
have the same, fewer or simply different patterns of association from other lexical items. On the other hand,
the literature on lexical networks is divided on the relationship between associative patterns an language
proficiency (cf. Zareva 2007, 128). As Zareva (2007) points out, some of the contradictory results can
be traced to methodological weaknesses, and once these are addressed, one can establish a link between
quantity of word associations and proficiency. In this sense, idioms provide an indirect approach to this
connection, since we can independently measure idiomatic meaning and knowledge of syntactic principles.
2.2 Determiner variability, idiom analyzability and L2 acquisition

Assuming Abel’s results that L2 learners judge idioms as more analyzable than monolinguals and the Model of Dual Idiom Representation, one immediate consequence is that variation in determiners should be more acceptable for L2 than L1 speakers. Earlier I argued that non-default quantifiers have a literal meaning that conflicts with the determiner interpretation of idioms. As a result, the more opaque an idiom is, the less acceptable the non-default determiner and vice versa. On the other hand, if L2 speakers judge idioms as more analyzable than L1 counterparts, one can assume that they are processing them more literally (regardless of whether they access their idiomatic meaning in the conceptual component), so this should favor use of quantifiers. As a result, I propose the following hypothesis:

(11) **H1:** Idiom acceptability for idioms with non-default determiners will be higher for L2 speakers than for L1 speakers.

Additionally, because L1 speakers are exposed to idioms more frequently, they have more idiomatic lexical entries, they should be more sensitive to semantic opacity than L2 learners. This suggests a second hypothesis:

(12) **H2:** Acceptability with non-default quantifiers increases with idiomatic transparency, and it does so more for L1 speakers than for L2 speakers.

Finally, assuming Heim’s partition of determiners as non-quantificational (definite and indefinite Ds) and quantificational (universal Ds), we also predict that L2 speakers should be less sensitive to determiner type than monolinguals, and that monolinguals should rate quantificational Ds lower in idiomatic expressions than non-quantificational Ds, whereas for L2 speakers the difference should not be noticeable. The third hypothesis is stated in (13).

(13) **H3:** Acceptability of quantificational and non-quantificational Ds should not vary substantially for L2 speakers, whereas it should be substantially lower for quantificational Ds for monolinguals.
3. The study

In order to test the hypotheses in (11)-(13), we conducted an online study with L1-Spanish L2-English speakers and a comparison group of English speakers. The study included 26 L2 English learners from a university in Lima, Peru (ages 18-30), 3 of them had to be eliminated for several reasons, leaving a total of 23 (12 females and 11 males). The comparison group included 25 monolingual English speakers from a US university.

3.1 Idiom task

In the study, speakers were asked to judge idioms of the for V+DP in a 5-point Likert scale scale from “completely unacceptable” to “completely acceptable”. These idioms randomly presented variations in the DP’s determiner as in (14). For each idiom, one of the tokens was given in what we called earlier the unmarked idiomatic meaning (cf. (14-e)), which we expected to have the highest acceptability rating for monolinguals.\(^3\) The other examples involved other determiners, some quantificational, some not (cf. (14-a)-(14-e)). Finally, each idiom included a passive construction (cf. (14-f)) as an independent marker of syntactic flexibility.\(^4\)

\begin{equation}
\begin{align*}
\text{(14)} & \quad \text{a. Don’t save any of your breath} \\
& \quad \text{b. Janice told me to save all of my breath.} \\
& \quad \text{c. I told Joelle to save some of her breath.} \\
& \quad \text{d. Save none of your breath.} \\
& \quad \text{e. She had saved her breath.} \\
& \quad \text{f. Her breath was saved.}
\end{align*}
\end{equation}

In this paper, we report results from judgement of 6 idioms, totalling 34 variants, plus 34 fillers. For L2 participants, instructions were given both in English and Spanish, the comparison group was given the same instructions in English only. Each instruction included a specific example of the presentation of the idiom and the Likert scale.

\(^3\)As noted earlier, unmarked idiomatic meaning appears with what we have called the default determiner, in (14-e) a possessive, but it could be a different one for other idioms.

\(^4\)The items also included idioms in the progressive, which were not used.
3.2 Proficiency task

L2 participants also completed a proficiency test in English that included 35 multiple-choice items targeting adverb placement, prepositions and word order in root questions and in embedded questions. Each item was presented as part of a short story, as illustrated in (15)-(17) for word order in questions. All of these questions were piloted with a group and native speakers and adjusted accordingly.

(15) Mira and Joseph are taking a trip to the local mall to buy birthday presents for their friend Samuel. Upon entering the mall, Mira sees a bookstore. The two decided to look for presents inside. Mira finds the science fiction section, and asks Joseph,

a. Does Samuel like to read science fiction?

b. Samuel like to read science fiction?

c. Does like to read science fiction Samuel?

d. Samuel does like to read science fiction?

(16) Joseph answers,

a. Samuel does not enjoy science fiction.

b. Does not enjoys science fiction Samuel.

c. Samuel not does enjoy science fiction.

d. Samuel does not enjoys science fiction.

(17) They leave the science fiction section and begin to explore the History section. Joseph asks Mira,

a. You think does Samuel like books about the Civil War?

b. Do you think Samuel likes books about the Civil War?

c. Does you think Samuel likes books about the Civil War?

d. Do you think likes Samuel books about the Civil War?

4. Results

The table in (18) presents overall results for the L2 group and the monolingual, comparison group. As seen in the second column, the L2 and the comparison group gave similar ratings to all idioms (3.67 vs. 3.69
respectively). L2 speakers gave similar ratings to items with unmarked idiomatic meaning (3.77) and idioms with non-default determiners (3.58). Comparison speakers, on the other hand, show greater variability in those categories (4.29 and 3.09 respectively). If we compare the two groups for average ratings in the unmarked idiomatic meaning category, the differences are statistically significant ($M = 3.77, SE = .1$ vs. $M = 4.29, SE = .09$ for L2 and comparison speakers respectively, $t(46) = 3.67, p = .001$), as seen in the third column. Finally, the last column shows that L2 ratings for idioms with a non-default determiner are higher than those for the comparison group ($M = 3.58, SE = .13$ vs. $M = 3.09, SE = .14$, $t(46) = −2.47, p = .02$). This suggests that determiner variability has a noticeable effect on acceptability ratings for the comparison group, but not so much for the L2 group.

(18) Average idiom rating for all idioms for L2 and comparison group

(1=completely unacceptable, 5=completely acceptable)

<table>
<thead>
<tr>
<th></th>
<th>Average rating for all idioms</th>
<th>Average rating for unmarked idiom meaning</th>
<th>Average rating for idioms with non-default D</th>
</tr>
</thead>
<tbody>
<tr>
<td>L2 group</td>
<td>3.67</td>
<td>3.77</td>
<td>3.58</td>
</tr>
<tr>
<td>Comparison group</td>
<td>3.69</td>
<td>4.29</td>
<td>3.09</td>
</tr>
</tbody>
</table>

We now turn to results for analyzability. In order to do so, rather than using a subjective measure, I look at ratings for the passivized version of the idiom. Passivization has traditionally been a sign of whether an idiom is syntactically analyzable into internal constituents, hence it can serve as independent criterion to establish analyzability. As we see in (19), the most acceptable passivized idiom for comparison speakers is *turn the tables*, and the least one is *kick the bucket*. Based on these ratings, we can divide idioms into three groups (cf. (20)): fully syntactically transparent (*turn the table* and *break the ice*), syntactically semi-transparent (*beat a dead horse* and *save one’s breath*), and syntactically opaque (*pull one’s leg* and *kick the bucket*).

(19) Average idiom rating for passive idioms (1=completely unacceptable, 5=completely acceptable)
Idiom grouping based on syntactic transparency

a. Fully syntactically transparent idioms (*turn the table* and *break the ice*)
b. Syntactically semi-transparent idioms (*beat a dead horse* and *save one’s breath*)
c. Syntactically opaque (*pull one’s leg* and *kick the bucket*).

We can now test whether participants rated idioms with literal quantifiers differently depending on their transparency. In order to do so, I aggregated ratings for each group of idioms and compared them with the other two groups. Results are given in (21), and as expected, average ratings for transparent idioms are higher than those for semi-transparent and opaque ones for both groups. This difference is statistically significant both for idiom type and group \(F(2, 92) = 8.75, p < .001\) and \(F(2, 92) = 3.21, p < .04\) respectively. As seen in that same table, ratings for the comparison group were lower across the board than those for the L2 group.

(21) Average idiom rating for quantified idioms grouped by syntactic opacity

\[
\begin{array}{l|llll}
            & Transparent & Semi-transparent & Opaque \\
& idioms      & idioms         & idioms  \\
L2 group    & 3.61         & 3.48           & 3.46    \\
comparison group & 3.26         & 2.9            & 2.61    \\
\end{array}
\]

Finally, the following figure represents average acceptability rates for idioms grouped by transparency for L2 and monolingual speakers respectively. As this graphic shows, acceptability increases much more steeply for the comparison group than for the L2 speakers.
4.1 Results by quantifier type

Figure 2 presents acceptability ratings by determiner type. Both the comparison and the experimental group gave the lowest ratings to negative quantifiers, followed by *any*. Universal quantifiers followed for the comparison group but not for the L2 group. As expected, the highest ratings for both groups were for definite articles, and in the case of the comparison group, possessives, both of which are typically the default determiner in idiomatic expressions. Overall, differences across determiners were much smaller for the L2 group (min = 3.2, max = 4.2, diff. = 1) than for the comparison group (min = 2.2, max = 4.6, diff = 2.4).

To summarize results so far, 1) L2 speakers show better overall ratings for idioms than comparison speakers, 2) idioms with default meaning are rated higher than others, 3) default determiners are accepted at higher rates than those with non-default determiners, 4) acceptability of non-default determiners improves with syntactic transparency, 5) this improvement was much more noticeable for L1 speakers than for L2 speakers, 6) L1 speakers rate quantified Ds (*all, any, neg*) much lower than non-quantificational Ds (*the, a, some, possessive*), whereas the difference is much less marked for L2 speakers.
4.2 Idiom Acceptability and L2 proficiency

To see if idiom acceptability improves with English proficiency, we now turn to comparing idiom ratings based on L2 speakers proficiency in English. We found the following negative, but statistically not significant correlations between score in the proficiency test and rating for the three sets of idioms grouped by opacity:

(22) Correlations between L2 proficiency and rating of three types of idioms
We also ran a regression analysis with proficiency as an independent variable and each of the idioms with non-default quantifiers, but none of the results were significant. I take these results to mean that the proficiency task did not capture the appropriate type of proficiency that might determine idiomatic rating. The type of linguistic knowledge that will affect idiomatic rating is related to frequency, and may not necessarily be connected with knowledge of other syntactic areas, which is what the proficiency test tested.

5. Discussion

The results discussed in the preceding section clearly confirm hypothesis H1, repeated below. Recall that L2 speakers have less access to idiomatic meaning because this type of meaning depends on frequency, and idioms are less frequent for L2 learners than for monolinguals. Consequently, L2 speakers process idioms more compositionally, and this processing mode is more compatible with a quantifier’s literal meaning. As a result, higher L2 speakers rate all determiners higher than monolingual comparison speakers.

(23) **H1:** Idiom acceptability for idioms with quantifiers will be higher for L2 speakers than for L1 speakers.

Results also confirm H2, repeated below. We saw that the more transparent the idiom (as determined by ratings on passivized versions of that idiom), the more acceptable they are across the board, but also that acceptability increased much more for L1 speakers than for L2 participants. This follows from the assumption that L2 speakers tend to process the idiom more compositionally, regardless of the idiom’s actual transparency. For L1 speakers, on the other hand, semantic (and syntactic) transparency has a stronger effect, so idioms with high transparency that are more analyzable present a better environment for literal quantifier meaning, hence will yield higher acceptability than opaque idioms.
H2: Acceptability with non-default quantifiers increases with idiomatic transparency, and it does so more for L1 speakers than for L2 speakers.

Finally, results for individual determiners also confirm H3, repeated in (25): because L2 speakers treat idiomatic expressions as compositional, their ratings for quantificational and non-quantificational Ds are closer than those of monolinguals, who rate quantificational Ds much lower than non-quantificational Ds.

H3: Acceptability of quantificational and non-quantificational Ds should not vary substantially for L2 speakers, whereas it should be substantially lower for quantificational Ds for monolinguals.

As we saw, the results confirm that monolingual speakers rated *any, all* and negative quantifiers much lower than *some, a* and the definite and possessive determiner (cf. figure 2 above). If we assume Heim’s analysis of definites and indefinites as non-quantificational, we have an explanation: non-quantificational Ds do not force a compositional interpretation of the idiom, whereas quantificational Ds do. The latter type will force a lower rating in all idiomatic interpretations than the former.

The account of the representation of idiomatic expressions for L2 speakers also predicts that they should be less sensitive to the type of determiner, or put another way, they should give higher ratings to idioms with quantificational Ds, because they treat idiomatic expressions more compositionally.

5.1 L2 idioms and proficiency

The results we have reported in previous sections suggest that L2 speakers treat idiomatic expressions more like non-idiomatic ones than monolinguals. This finding supports Abel’s (2003) proposal that an idiom’s lower frequency in the input results in a lack of lexical representation for the idiomatic meaning in the case of L2 speakers, who analyze those idioms as regular VP expressions. Access to the idiomatic interpretation, to the extent that it happens, takes place through conceptual representation.

These results also question the strict link between the size or quality of the L2 lexicon and increases in overall proficiency. In the case of L2 speakers, successful syntactic processing of the idiomatic expression can happen precisely because they lack the overall idiomatic meaning of the expression. However, as pointed out earlier, several researchers have argued for a positive correlation between the L2 lexicon and proficiency. In order to resolve this apparent contradiction, it will be helpful to conceptualize how to measure the quantity
and quality of the lexicon. Meara (1996) and much subsequent work has proposed to do so by looking at the number and quality of word associations in a lexical network, and Zareva (2007) found that quantitative measures of word associations (the number of associations of any given word) are related to proficiency, whereas qualitative measures (whether associations were paradigmatic, syntagmatic or phonological) do not significantly vary across proficiency.

What I would like to propose to solve this apparent contradiction, is that idiomatic expressions trigger fewer overall word associations, and that it is this lack of word associations that breaks the link to proficiency. To see why idiomatic expressions might trigger few (if any) word associations, consider some ways in which a typical word differs from an idiom: on the one hand, the sound-meaning pairing is robust, on the other hand, it is constant and it is unambiguous. Thus, in a morphologically underived word like *blanket*, there is virtually no internal variation in sound, one can add a plural morpheme, but internal change within the word is minimal. On the other hand, even when a word may undergo some internal change, like *eat/ate*, those changes frequently show subregularities, like applying to a whole subgroup of words in the lexicon, so they are constant and semi-predictable. Finally, the parsing of the word’s meaning is relatively unambiguous because the meaning does not depend on interpreting individual subparts of the word.\(^5\)

By contrast, and idiom’s sound-meaning pairing is much more complex. From the point of view of meaning, the whole expression is parsed both as a single item and as a sum of parts. Syntactically, idiom is also complex, so that certain syntactic mechanisms operate inside the idiom. For example, the verb can vary in number and tense (*kicks the bucket* vs. *kicked the bucket*), or can show VP-internal aspect, as discussed earlier. Lexical and syntactic complexity both make it more difficult to establish associations between the idiom and other words. For example, if *shoot* in *shoot the breeze* were to trigger associations with *bullet*, that association would not be consistent with the meaning of ‘chat idly’.

As a direct consequence, the acquisition of an idiom’s lexical meaning cannot rely as heavily on word associations as when a single word is learned. If we see the lexicon as a network of relations between words, in some sense, idioms are dead-end in those networks, so the speaker must rely only on contextual cues and operations that take place at the conceptual level (metaphorical extensions, etc.)

If this view is correct, we have a partial explanation as to why the relative size and complexity of the lexicon does not necessarily correlate with overall proficiency in the case of idiomatic expressions: since

\(^5\)In morphologically complex words this is not the case (cf. *in-evitable*), but constancy and predicatibility remain.
word associations don’t play a significant role for idiomatic meanings, understanding these meanings is not a prerequisite for the syntactic computation that indirectly reflects proficiency. At the same time, this view points to the need to develop a more fine-grained view of the lexicon as a lexical network, because idioms have a lexical entry, but they tend to occupy a peripheral dead-end in the association patterns.

5.2 L2 acquisition of idiomatic meaning

The view just sketched suggests that the acquisition of idioms might be much more difficult for L2 than for L1 speakers. On the one hand, in addition to the difficulty of not having word associations to bootstrap the idiom’s meaning, L2 speakers are exposed to idioms less frequently than L1 speakers. How, then, are idiomatic meanings acquired by L2 speakers?

Let us start the discussion with semantically opaque idioms. Suppose that an L2 speaker encounters an idiom like *shoot the breeze* or *kick the bucket*. By assumption, s/he will lack a lexical idiomatic meaning representation (‘chat idly’ and ‘die’ respectively). The first consequence is that s/he will treat the expression compositionally, as I have argued above. However, this yields a meaning inconsistent with the context where the idiomatic expression is used. In general, the more semantically opaque the meaning of the expression, the easier it will be to note the incongruence between the literal interpretation and the context that favors the idiomatic meaning. At the same time, the more semantically opaque the expression, the harder it will be to figure out its idiomatic meaning, in part because word associations are of little help, in part because idiomatic meaning cannot be derived compositionally. So connecting *shoot the breeze* with *bullet* or with *wind* will not help the speaker figure out the idiomatic interpretation. S/he will need to use cues from the context that will gradually help her hone in on the idiomatic meaning. In this process, the speaker will primarily rely on conceptual operations like forming metaphors to arrive at an interpretation consistent with the context. Subsequent encounters with the idiom will automate processing of the idiom’s meaning, and generate a separate lexical meaning entry for the full expression.

Consider now a semi-transparent idiom like (*beat a dead horse* and *save one’s breath*). Semi-transparent is ultimately related to the fact that parts of the meaning of the idiom’s components can easily be mapped to parts of the idiomatic meaning, so that *beat* includes ‘repeated action’ as part of its meaning, which maps to the idiomatic meaning ‘to insist on something beyond hope’ and *save* can directly be mapped to ‘avoid’. In this sense, word associations can be much more useful than with opaque idioms, because associating *dead*
with *finished* can help figure out the meaning of the idiom. When the L2 learner encounters semi-transparent expressions, s/he will, once again, treat them compositionally, yielding an interpretation in which the verb’s meaning partially and more or less transparently maps to some meaning that is vaguely consistent with the context. So for *save one’s breath*, *save* can be interpreted as ‘avoid’, which is consistent with the context in which the idiom is used. What I would like to suggest is that one crucial step in the process of acquisition is the ability to leave certain parts of idiom unprocessed, and to define them as variables that must satisfy whatever selectional requirements the known parts of the idiom have. Thus, *beat a dead horse* is processed as V + DP, with the meaning ‘repeatedly perform X on Y’, where the actual action and the direct object are left as undefined variables. The actual meaning of X and Y may remain temporarily undefined, or they may be tentatively linked to contextual cues. Eventually, when enough evidence is gathered, the full idiomatic meaning will arise.

If this is correct, the idea of leaving parts of meanings of expressions can be seen as an essential mechanism for L2 acquisition, which can be connected with an impressionistic observation that L2 speakers tend to use words like *thing* fairly often. Similarly, light verbs could be seen as linguistic expressions without full semantic content that stand in place for content that is not accessible. In this sense, Cagri et al. (2007) note that Persian L2 speakers perform better in grammaticality judgment tasks of non-causative light verbs than causative light verbs. Likewise, the literature on code-switching also points out the existence of productive light-verb constructions where the light verb is in one language and the infinitival or bare root form is in another. González-Vilbazo and Luis López (pear) analyze this light verb as a last-resort insertion that stems from the impossibility of incorporating the infinitival to the syntactic head above it because features of both are incompatible. In our terms, the light-verb would be the result of the failure of a syntactic computation that results in a semantically empty place-holder. The main difference between the lexicon and light verbs would be that the domain in which the strategy applies.

6. Conclusions

This paper has examined the status of the syntactic, lexical and semantic representation of idioms in L2 speakers of English who have Spanish as L1. We assumed, with most of the literature, that idioms pose a challenge for the normal, compositional processes that map form to meaning in sentences, and that they involve at least two separate types of lexical meaning, the meaning of individual words and the meaning of
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the full expression. We hypothesized that L2 speakers process idioms more compositionally than monolinguals, based on the notion that the full idiomatic interpretation is not accessible to them, because this lexical representation depends on frequency and idioms are assumed to be less frequent for L2 learners in formal classrooms than for monolinguals. We tested this hypothesis by using different types of determiners that force compositional meaning to different degrees, and we predicted that if L2 learners would process idioms more compositionally, they should accept forms with all types of determiners more than monolinguals, and that the difference between fully quantificational determiners and non-quantificational determiners should not be as great for monolingual speakers. Both of those predictions were confirmed.

This results challenge a direct link between size/quality of the lexicon and proficiency, because L2 speakers process these idioms well precisely because of lack of knowledge of part of their meaning. We argue that this is because idiomatic meanings do not generate as many word associations as regular words do, suggesting that the lexicon needs to be seen as a more complex organization than a set of words and word associations. Finally, we suggested a path to the acquisition of lexical meaning of the full idiom, whereby compositional processing will yield a result incongruent with the context, which will in turn force L2 speakers to rely on contextual cues and operations in the conceptual component. The more semantically opaque the idiom, the more the speaker will have to rely on those cues, hence the more difficult it will be to learn the full idiomatic meaning. On the other hand, for semi-transparent idioms, this process begins with selective processing of the transparent portions of the idioms, leaving the opaque ones as undefined variables that are interpreted contextually. Once enough evidence is gathered, those variable portions are remapped to the full idiomatic meaning. This process of leaving syntactic or semantic variables undefined, we argued, may be connected to overextended use of light verbs by L2 learners and also in contexts of code switching.

References


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