

Idiom Comprehension and Processing: the Case of Thai EFL Learners

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Abstract

This study explores the issue of L2 learners' idiom comprehension and processing in order to examine the strategies for comprehending idioms in English used by those learners and to determine the factors that play a role in idiom processing and comprehension. Sixty L1 Thai-L2 English learners at three different proficiency levels were asked to complete the idiom recognition task in which they would be presented with fifty idioms embedded in context then required to verbalize their thoughts on what the idioms might mean. The overall results show that all groups of learners used a cohort of strategies in comprehending idioms during the pre-guessing, guessing and post-guessing stages; namely, use of context clues, the literal meaning of the words and use of keywords in the idiom string to recover the idiom meaning. Learners at each proficiency level employed different strategies: the highly proficient depended more on context clues, while both of the lower proficiency groups based idiom interpretation on the literal meaning of the words. The types of idiom played an important role in comprehending idioms. Theoretical and

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practical implications for idiom comprehension and teaching will be discussed.

Keywords: idiom comprehension; idiom processing; learners' strategies

งานวิจัยขึ้นนี้มุ่งศึกษาเรื่องการทำความเข้าใจและการประมวลผลสำนวนภาษาอังกฤษโดยมีจุดประสงค์เพื่อศึกษากลวิธีและปัจจัยที่มีผลต่อการทำความเข้าใจและการประมวลผลสำนวนภาษาอังกฤษโดยผู้เรียนภาษาไทยที่เรียนภาษาอังกฤษเป็นภาษาที่สอง ที่สอง ผู้เข้าร่วมการทดลองคือผู้เรียนชาวไทยที่เรียนภาษาอังกฤษเป็นภาษาที่สอง จำนวน 60 คน แบ่งตามระดับสมรรถนะทางภาษาได้เป็น 3 ระดับ เครื่องมือวิจัยที่ใช้คือแบบทดสอบการรับรู้สำนวน (idiom recognition task) กล่าวคือ จะมีสำนวนที่หงุด 50 สำนวน ปรากฏอยู่ในบริบท ผู้เข้าร่วมการทดลองจะต้องคิดออกเสียง (think aloud) ว่าแต่ละสำนวนน่าจะมีความหมายว่าอย่างไร ผลการวิจัยแสดงให้เห็นว่าบังคับเรียนทุกรุ่นระดับสมรรถนะทางภาษาในกลวิธีที่หลากหลายเข้าด้วยกัน เพื่อทำความเข้าใจสำนวน ทั้งในขั้นตอนการเตรียมการก่อนการเดาความหมาย ระหว่างเดาความหมาย และหลังการเดาความหมายของสำนวน กลวิธีที่ใช้มากคือการใช้บริบท การอาศัยความหมายตามตัวอักษรของแต่ละคำที่ปรากฏในสำนวน การใช้คำสำคัญในสำนวน ผู้เรียนที่มีสมรรถนะทางภาษาในระดับที่ต่างกัน จะใช้กลวิธีที่แตกต่างกันออกໄไป กล่าวคือ ผู้เรียนที่มีสมรรถนะทางภาษาอังกฤษสูงจะอาศัยบริบท ส่วนผู้เรียนระดับกลางและระดับต้นจะอาศัยความหมายตามตัวอักษร ประเภทของสำนวนเป็นอีกปัจจัยหนึ่งที่มีผลอย่างยิ่งในการกำหนดต่อการทำความเข้าใจสำนวนบทความนี้ได้ให้ข้อเสนอแนะทั้งในเชิงทฤษฎีและเชิงปฏิบัติเกี่ยวกับเรื่องการทำความเข้าใจและการประมวลผลสำนวนภาษาอังกฤษ เพื่อนำไปใช้ในการสอนภาษาอังกฤษต่อไป

คำสำคัญ: การทำความเข้าใจสำนวน การประมวลผลสำนวน กลวิธีของผู้เรียน

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Introduction

Idioms are an important element in language use as most English speakers utter 10-20 million metaphors/idioms during their lifetime (Cooper, 1999); thus, novel idioms are created almost every day. These idioms are easily produced by native speakers and abound in both written and spoken discourse. Idioms are used not only in private conversations but also in public discourses to enhance effective communication, to draw the listener's attention, as well as to add flavor to language use (Lim, Ang, Lee & Leong, 2009). Given the widespread use of idioms, L2 learners (henceforth L2ers) should be taught how they could make sense of, and tackle the new idioms they come across and obtain a certain level of 'idiomatic competence' in order to comprehend, or even produce, idioms correctly (Carter & McCarthy, 1988; Celce-Murcia & Larsen Freeman, 1999; Boers, Demecheleer & Eyckmans, 2004).

However, research to date does not offer any definite conclusions relating to idiom comprehension; i.e., how the relevant factors, such as learners' proficiency levels, types of idioms, learners' vocabulary knowledge or the frequency of idioms retrieved from the native speakers' corpus play a role in learners' idiom processing and comprehension (Zyzik, 2011).

The other relatively unexplored area involves strategies that learners use to comprehend novel idioms. Cooper (1999) suggested that L2ers use a cohort of strategies in idiom comprehension; namely, using context clues, using the literal meaning of idioms and discussing and analyzing idioms; while Irujo (1986) and Ciéslicka (2004, 2006a, b) emphasized the role of L1 transfer – especially when idioms in both languages share some similarities. It is thus interesting to explore how the learners' selection of strategies is affected by the above factors.

With regard to idiom processing, the central investigation focuses on how L2 idiom processing is different from the L1 and whether literal or figurative meaning receives a priority in L2 idiom processing. Several L2 idiom processing models have been proposed since the last decade: Abel's (2003) Model of Dual Idiom Representation hypothesized that non-native speakers tend to assign meanings to individual constituents of idioms, and the literal meaning remains active when interpreting their overall figurative interpretation. Matlock and Heredia (2002) emphasized the significance of L2ers' proficiency levels in defining the processing. Low-proficient learners depend on literal meanings, but upon reaching a more advanced level, they tend to abandon the literal meaning and begin processing idioms figuratively. Ciéslicka (2004) argues that for non-native speakers, literal meaning is more salient than figurative, so the L2ers give priority to literal processing. Vega-Moreno (2001, 2003) argues that both lexical and contextual information play a role in idiom processing, suggesting that literal meaning of the words as well as context are important and bottom-up and top-down processing apply.

Based on previous works, more exploration is needed to address the following issues: i) what specific strategies are selected and why? ii) what factors (e.g., learners' proficiency levels and types of idiom) might be an important determinant of the strategies selected? and iii) how do L2ers process idioms (whether literal or figurative meaning receives priority in processing)? This article aims to explore the aforementioned issues.

Review of Literature

In order to shed light on idiom comprehension and processing, it is very crucial to define idioms, find linguistic characteristics they have and classify them because based on previous studies, types of idioms might inevitably affect comprehension and processing. This particular section then discusses the definition and classification of idioms in details.

Definition and Classification of Idioms

Defining idioms is a rather difficult and challenging task. As Moon (1998) commented, "idiom is an ambiguous term, used in a conflicting way" (p.3). Therefore, the way idioms are defined varies considerably. On the one hand, the layman's definition of idiom, which is generally used in language classrooms, is too simplistic: an idiom is a group of words whose meaning is different from the meanings of the individual words (Oxford Advanced Learners' Dictionary, 2011). Such a definition is overly simplified and conveys the misconception that idioms are fixed expressions whose meanings cannot be drawn from a single constituent in the string of expressions and that the idiomatic meaning does not reflect its literal interpretation while in fact,

there are some expressions classified as idioms, whose meanings can be recovered from the meaning of each constituent in the idiomatic string (see also Keysar & Bly, 1995, for the use of opaqueness and transparency in interpreting idioms). To illustrate, compare the meaning of 'to kick the bucket' and 'to get a grip'. In the idiom, 'to get a grip', the meaning of the word grip (to control and to get hold of something) is part of the idiomatic meaning (to make an effort to control your emotions and behave more calmly); by contrast, in the idiom 'to kick the bucket', which means 'to die', no constituent of the idiomatic string contributes to the overall meaning of the idiom.

On the other hand, the definitions of idioms as well as the classifications of idioms proposed by linguists are quite numerous and conflicting. First, while traditionally some linguists categorized idioms as one type of formulaic sequences, under which lie other categories i.e. collocations, social formulas and multiword units, others classified them as one sub-category under multi-word units (MWUs), which means 'a fixed and recurrent pattern of lexical material sanctioned by usage'. From such categorizations, it is difficult to clarify what linguistic characteristics idioms have and to what extent they differ from other types of multi-word units. Second, some concepts that are proposed to classify idioms are, to a certain extent, overlapping. To illustrate, in categorizing idioms from a semantic point of view, at least two important concepts have been proposed. Nunberg (1978) proposed a concept of decomposability of idioms-- how the literal meaning of each component in the idioms contributes to the overall interpretation of the phrase and argued that idioms vary along the degree of decomposability. Idioms are divided into three types: normally decomposable idioms, abnormally decomposable idioms and semantically non-decomposable idioms. On the

other hand, Cacciari & Glucksberg (1991) proposed an equally important concept of opaqueness vs. transparency as a typology to define idioms. Components of the opaque idioms did not contribute to the interpretation of the whole idiomatic interpretation while the literal meaning of the constituents in the transparent idioms could make up its idiomatic meaning. From such classifications, the definition of opaque idiom is, to a certain extent, compatible with non-decomposable, despite distinct terminology used. However, it is still unclear whether transparent idioms have similar linguistic characteristics to abnormally decomposable or decomposable idioms and how exactly they could be classified.

To date, the working definitions and the criteria used to classify idioms vary but most L2 studies on idiom comprehension tend to put aside this important point. By contrast, research findings from L2 idiom processing argued that types of idioms may have affected learners' comprehension and processing (see literature review section below). This study then aims to adopt Grant's (2004) taxonomy in order to clarify what "core idioms" really means and what linguistic characteristics they possess before addressing the comprehension and processing issues.

Grant's (2004) Taxonomies to Define Idioms

Attempting to propose a central definition of idioms and to establish separate categories of idioms with distinct criteria, Grant (2004) conducted a study of idioms, postulating three research questions, two of which are relevant to the present study: i) how to clearly define idioms and ii) how to establish frequency of the multi-word units (MWUs) to facilitate ESL/EFL learning (see also Grant & Bauer, 2004).

Grant (2004, p.56) classified idioms into “core” and “non-core”. To qualify as core idioms following pre-requisites must be met: idioms must be i) multi-word units (MWUs), ii) non-compositional, iii) frozen and fixed and iv) institutionalized. Multiword units mean that an idiom should consist of at least two words. Being frozen and fixed suggests the inflexibility of idioms in terms of grammar and being institutionalized suggests that the expressions being commonly used by a large number of people in a speech community. For the test of compositionality, Grant (2004, p.4) defined compositionality as follows: “if the meaning of the construction can be gained from the meaning of its elements, the meaning of the construction should remain unchanged if each of those elements is replaced by its own definition”.

The question that must be used to test for compositionality is “Is the meaning of the MWU retained when you replace each lexical word in the MWU with its own definition?”

If the answer is YES, then the idiom is compositional, but if it is NO, the idiom is non-compositional and should be interpreted literally.

If the tested idiom is not a core idiom, it is a non-core idiom, which can be subcategorized further as a figurative or a ONCE, which is an idiom that has one non-compositional element in the string. If the MWUs do not fall into the above category, it may have to be interpreted literally. Grant (2004) used the following test to distinguish between a figurative and a ONCE:

The test for figurativeness. Grant (2004, p. 49) stated that the test for figurativeness is to investigate whether the

MWU is first recognized as an untruth and can be reinterpreted, by the use of an image or other means, to deduce the intended truth.

The question is “Is it possible to understand the meaning of the MWU by recognizing the ‘untruth’ and pragmatically reinterpreting it in a way that correctly explains the MWU?”

If YES, it is figurative and if NO, it is non-figurative.

The test for ONCE. ONCE is a multi-word unit in which only one element in the string is non- compositional.

The question is “Is there only one word in the MWU which is either not literal or non-compositional?”

If YES, it is one non-compositional element (ONCE) and if NO, it is core idiom.

In sum, a core idiom should be non-compositional and non-figurative and cannot be interpreted literally. None of the elements in the string can be interpreted either literally or non-compositionally.

Below are examples from Grant’s (2004) study which show how to test the core idioms.

Example 1:

Drive sb to distraction (meaning: make someone angry or bored)

Question 1 (compositional?)

The answer is YES if the idiom is defined as ‘make someone distracted’ and NO if it is defined as ‘make someone very angry or bored’.

Question 2 (able to recognize the untruth and pragmatically reinterpret it as a truth?)

The answer is NO if it is defined as ‘make someone very angry or bored’.

Question 3 (only 1 word not literal or non-compositional?)

The answer is YES. There is only one word “distracted”, which is used in a non-compositional sense because it does not mean “angry” or “bored”.

In this case, *drive sb to distraction* is not a core idiom but a ONCE because the answers to the three questions are not all ‘NO’. Following the first two questions, if replacing the whole string of an idiom with its dictionary definition, its idiomatic meaning cannot be retained as it does not mean ‘make somebody very angry or bored’. Also, it cannot be interpreted in any figurative or literal sense either, thus the answers to the first two questions were ‘no’. However, the word ‘distracted’ is the only word in the idiom string that can be interpreted in a non-compositional way, so this idiom is a ONCE.

Example 2:

A dog and pony show (meaning: an elaborately staged activity, performance, presentation, or event designed to sway or convince people (from a derisive term for a small circus)

Question 1 (compositional?)

The answer is NO. If replacing the dictionary definition of each word in the string in the idiom, the idiomatic meaning cannot be retained especially for the words “dog” and “pony”, so the string is not compositional.

Question 2 (able to recognize the untruth and pragmatically reinterpret it as a truth?) YES

Therefore, it is NOT a core idiom but a figurative.

From this example, the constituents in the idiom strings do not contribute to its idiomatic meaning. The meaning of the words 'dog' and 'pony' does not point to the way one tries to sway or convince people. However, this string can be interpreted figuratively, comparing a staged activity that attempts to convince people like a circus show. Both shows share similar characteristics that they do not take the content seriously but just want the audience to enjoy the tricks. As this string can be interpreted figuratively, it is not a core idiom.

Example 3:

Divide and conquer (a strategy to solve a problem by dividing the problem into small instances and then combine the solutions later)

Question 1 compositional? YES

Therefore, NOT a core idiom.

For this example, both words 'divide' and 'conquer' can be interpreted literally and the meanings of the constituent contribute to the idiomatic meaning, then it is not a core idiom but it contains the literal sense.

Example 4:

Kick the bucket

Question 1 compositional?

The answer is NO. Each constituent in the string does not make up the idiomatic meaning 'to die'.

Question 2 (able to recognize the untruth and pragmatically reinterpret it as a truth?)

The answer is NO. The idiom cannot be interpreted figuratively.

Question 3 (only 1 word not literal and non-compositional?)

The answer is NO. There is more than one element in the string which can be interpreted literally or in a non-compositional way.

From this example, if each constituent of the idiom was replaced by its dictionary definition, the idiomatic meaning cannot be retained. Also, each word cannot be interpreted literally or figuratively, so it would qualify as a core idiom.

To create a list of core idioms, Grant (2004) compiled word lists from several dictionaries of idioms and other important sources used to teach idioms in ESL/EFL contexts e.g. instructors of English, course books, materials for teaching vocabulary, written and spoken corporuses and then used the criteria above to categorize which types of idiom they were. The results showed that there were altogether 104 core idioms. After compiling the list of core idioms, Grant (2004) checked the frequency of the words from the corpus data and compiled the list of core idioms with their frequency.

This present study selected altogether 50 idioms from Grant's (2004) list: 30 core idioms and 20 non-core idioms (which include both figurative and ONCEs). The purpose is to see whether core idioms are processed differently from the non-core idioms or not. To this point, the issue of how to rigidly define idioms has already been addressed. The next issue reviews previous empirical works on L2 idiom comprehension and the proposed psycholinguistic models on L2 idiom processing.

Previous Empirical Works on L2 Idiom Comprehension

The key areas that interest applied linguists and ELT scholars are strategies employed to comprehend new idioms they come across and factors that play a role in determining the strategies used, e.g. learners' proficiency level, idiom types, length of exposure to the English language, vocabulary knowledge, L1 or frequency of idioms that can be retrieved from native speakers' corpus. The first seminal work by Cooper (1999) investigated strategies L2ers to comprehend and process idioms. Eighteen NNS of English from various L1 backgrounds, whose length of residence in the U.S. was 0.8-12 years, were asked to complete an idiom recognition task. The participants had to orally give the meaning of twenty frequently used idioms selected at random. Each idiom was presented in a one-or two-sentence context. Results show that learners used a cohort of strategies during the preparatory and guessing stages, and the most frequently used strategies included: guessing from context (28%), discussing and analyzing idioms (24%), and using literal meaning (19%). Other strategies used by learners included: requesting information (8%), repeating and paraphrasing idioms (7%), referring to L1 idioms (5%) and other strategies (2%). Cooper (1999) concluded that the participants used a combination of strategies and

explained that the L2ers had to decipher what the most plausible interpretation, was by taking into account the context, the literal meaning of the expression and the learners' own experiences in the target language culture. The results suggest that L2ers employed a heuristic approach in idiom comprehension and processing, which means that idiom meaning was arrived at by discovery and experimentation in a trial-and-error manner, and that the comprehension process was dynamic and varied for each individual. He also added that L2 processing is a totally distinct process from L1 processing and the existing L1 processing model cannot be used to explain L2 cases.

Similar to Cooper's (1999) study is Bulut's (2004), which explores the L2 idiom processing and the role of context versus literal meaning in interpreting idioms, the effect of the types of idiom (formal or informal) upon idiom interpretation, and L1 influence in interpreting L2 idioms. Eighteen Turkish teachers of English/BA or MA in ELT/Linguistics/AL, divided into two proficiency groups, were asked to do the idiom recognition test. Results were similar to Cooper's (1999) study in the sense that they used the heuristic approach in arriving at the meaning of idioms and depended more on context. The only exception is that where L1 and L2 idioms were similar, learners were likely to depend on the L1. This suggested that L1 influence also played a role in idiom processing. However, the effect of learners' proficiency towards idiom comprehension is not explicitly discussed.

The study that particularly investigated the role of L1 transfer in idiom comprehension is Ciéslicka's (2006a, b), which addressed the issue of L1 transfer in the interpretation and production of L2 fixed expressions (see also Laufer, 2000). The aim of the study was three-fold; i.e., to discover: (1) how the learners' L1 affected the comprehension and production of L2

idioms, (2) whether transfer effects differ for different types of idioms, and (3) what reading and interpretation strategies advanced L2 learners employed to interpret familiar and less familiar idioms. The idioms selected were divided into three types: lexical level idioms (LL: L2 idioms with direct translation equivalents in L1), semi-lexical level idioms (SLL: idioms which partially match their L1 equivalents) and post-lexical level idioms (PLL: idioms without any L1 matching).

Thirty-six L2 advanced learners of English were divided into three groups and asked to perform different tasks. Group 1, consisting of twelve participants, did both comprehension and production tasks while groups 2 and 3, consisting of thirteen and eleven participants, were asked to complete one task only (either comprehension or production). The production tasks consisted of a discourse completion, where the participants had to supply a missing word in the idiom string, and a translation task, where they were given sentences in Polish and English. In the English version, one word, which was an element in the idiom string, was omitted and the participants had to translate that particular word from Polish to English. For the comprehension task, the participants were presented with L2 idioms and had to answer three questions requiring explanation of idioms, writing down their thought processes, reading strategies or mental images during processing, and giving the best Polish equivalents of those idioms.

The overall results from the production task showed that the lexical level idioms were the easiest to comprehend, and both semi-lexical and post-lexical idioms were very difficult. L1 transfer effect was prevalent, suggesting that the learners used the literal, L1-based mechanism in idiom production and comprehension. The strategies most frequently used across idiom types were literal-based images, analogy between literal

and figurative senses, and guessing, based on literal analysis respectively. This suggests that literality plays an important role in idiom interpretation as even learners attained a high-level of proficiency.

The importance of L1 and literal meaning of the idioms in L2 idiom comprehension is resonated in Ghareeb-Ali's (2011) psycholinguistic experiment. He investigated online idiom processing by second language learners of English, focusing on whether L2ers assign figurative or literal meanings during the computation of idioms to prove Ciéslicka's (2006a, b) idea, which suggested that the literal meaning of the words would be obligatorily computed and activated during idiom processing. Forty advanced Kuwaiti learners of English and twenty native speakers of English were asked to perform a cross-modal lexical priming task in which the priming effect of literal and figurative meanings were measured. The results showed higher priming effects for target words related to the literal meaning of the last word in the idiom string than for targets related to the overall figurative interpretation of idioms. This was in favor of the access to literal meanings and in line with Ciéslicka's (2004) findings.

L2 Idiom Processing

As Cooper (1999) suggested, L2 idiom processing was a process distinct from L1 processing and needed its own model, psycholinguists tend to agree with the above view point and address the following issues e.g., how idioms are represented in the bilingual mental lexicon (storage issue), how idioms are processed (which aspects of meaning i.e., figurative, literal or other sense, receive a priority in processing) and to what extent L1 influence plays a role. An increasing number of proposals on L2 idiom processing have emerged: the Model of Dual Idiom Representation (Abel, 2003), the Graded Salience Hypothesis

(Giora, 1997), the Literal Salience Hypothesis (Ciéslicka, 2004), and the Relevance-Theoretic Model (Vega-Moreno, 2001, 2003, 2005).

The Model of Dual Idiom Representation (DIR) (Abel, 2003) argues that the representation and processing of idioms depend on their types: decomposable idioms are represented via constituent entries, while non-decomposable idioms are separate entries. Non-native speakers tend to analyze idioms as decomposable by assigning meanings to individual constituents in the phrase, and suppose that the idioms' overall meanings depend on the literal meaning of the constituents. This seems to contrast with native speakers, who interpret idioms as a unitary whole chunk without considering the literal meaning of each constituent.

Ciéslicka's (2004) Literal Salience Hypothesis is also in line with Abel's (2003) claim that literal meaning has primacy over the figurative meaning and is first activated when processing L2 idioms. Given the privileged status of literal meaning, decomposable idioms are easier to process because the literal meaning of each constituent can be mapped onto its idiomatic meaning and the literality supersedes the contextual effect in idiom interpretation. The processing of unfamiliar idioms differs from familiar ones because the former does not have any specific idiom entry stored in the lexicon, so the idiomatic meaning cannot be directly retrieved. Instead, the conceptual representation of each constituent is accessed.

Giora (2003) proposed the Graded Salience Hypothesis (GSH), which argues that it is the most salient meaning and not literality or figurativeness that indicates the way in which L2ers process idioms (see also Giora, 2004). Words have several meanings but the most accessible are 'the most salient' or privileged meanings, which are 'meanings foremost on our mind, which

affect comprehension and production primarily, regardless of context or literality' (Giora, 2003, p.103). What determines saliency is a person's prior knowledge, familiarity and frequency of encounters. In an utterance interpretation, the salient lexical meaning will be accessed first and thus supersedes the contextual effect, therefore implying bottom-up processing.

Saliency of meaning can be different for native and non-native speakers. Unlike native speakers, L2ers do not immerse themselves in the native speaker community or contexts and they encounter different experiences during the L2 acquisition process. Thus the saliency of meaning that they construct will diverge from native speakers. For native speakers the salient meaning of idioms tends to be figurative, while the L2ers favor the literal meaning of the components in an idiom string because they encounter the literal more often than the figurative sense. In order to develop their understanding of salient meanings L2ers may have to participate in similar linguistic and socio-cultural experiences as native speakers. However, the model claims that it is too idealistic to hope to develop such a native-like competence.

The other model that goes beyond the literal vs. figurative dichotomy debate is the Relevance-Theoretic Model of Idiom Comprehension (Vega-Moreno, 2005). The main claim of this model is that idioms are mentally represented and processed as structured phrasal concepts with three entries (logical, encyclopedic, and linguistic), and in terms of processing, the activated information is accessed and processed online following the considerations of relevance. Familiar and unfamiliar idioms are processed differently. For unfamiliar idioms, the hearers, hearing the string of idioms in context, will construct an *ad hoc* concept of the phrase to create a meaning to fit that context and exploit their background knowledge, contextual informa-

tion and constituent word meanings to assign content to the ad hoc concept previously made. Accessibility of information is relevance-guided and context-dependent.

Vega-Moreno (2005) also adds that the types of idiom may have an influence upon idiom processing. For opaque idioms (non-decompositional idioms or core idioms), use of context and background information is crucial in making sense of the idiomatic string. However, if the context does not help in the decoding process, the hearers then start to assign meanings to each constituent, which generally leads to failure because the constituent in the opaque meaning does not contribute to the overall interpretation of the idiom string. For example, to guess the meaning of the idiom 'to spill the beans' (to reveal a secret), the hearer might use the context to deduce the meaning of the idiom and construct an ad hoc concept 'to tell someone something'. Then, the hearer tries to map the interpretation to the linguistic form 'spill the beans': 'spill' means to cause or allow, especially accidentally or unintentionally, to fall, flow, or run out, and 'the beans' represent something trivial that can be spilled out. During this process, the hearer uses the encoded concept of the words 'spill' and 'beans' to see how they fit with the interpretation. They continue adjusting their interpretations using their background knowledge and contextual clues as well as word meaning until the relevance is satisfied. The implication that can be drawn from this model is that both top-down and bottom-up processing will be used during processing, as L2ers depend on both contextual meaning and lexical meaning respectively. Table 1 summarizes the prediction of each L2 processing and comprehension model.

Table 1. Predictions of each L2 processing model in terms of processing

Recent models	Processing
Model of Dual Idiom Representation (Abel, 2003)	L2ers rely more heavily on literal than figurative meanings. Non-native speakers analyze idioms as decomposable.
Literal Salience Hypothesis (Cieślicka, 2004)	Literal meaning has a salient status and is activated first and very strongly during the processing, especially in decomposable idioms. Idiomatic meaning of unfamiliar idioms cannot be accessed because it is not previously stored in the lexicon.
Graded Salience Hypothesis (Giora, 2003)	Salient meaning of lexical units (e.g. conventional, frequent, familiar and prototypical) is processed automatically, irrespective of contextual information and literality. Non-native speakers favor literal to figurative meaning.
Relevance-Theoretic Model (Vega-Moreno, 2005)	Listeners create an attributive ad hoc concept of the idioms using their inferential ability and then create the meaning of the idioms by using their background knowledge, contextual effect and word meanings until the relevance is satisfied.

In sum, findings from previous studies on L2 idiom comprehension and processing propose the following points:

- (i) Findings from both comprehension and processing studies share a common assumption that idiomatic meaning does not have primacy in L2 processing, especially non-familiar or novel idioms
- (ii) Contextual information and learner's L1 are both important determinants of L2 idiom comprehension and processing but more investigation is needed to clarify if the effect of the former will supersede the latter

- (iii) Each of the existing L2 processing models offers different viewpoints in terms of what aspects of meaning (literal, salient or idiomatic meaning) are accessed first
- (iv) Various factors e.g., types of idioms, the degree of familiarity (familiar vs. unfamiliar), learners' proficiency level play a role in learners' strategies selection.

This study then aims to clarify the aforementioned issues.

Research Questions

The following research questions have been postulated:

- (i) What strategies do L2ers use to comprehend idioms in English?
- (ii) What factors (e.g., learners' proficiency levels and types of idiom) might be an important determinant of the strategies selected?
- (iii) How do L2ers process idioms?

Methodology

Participants

Sixty participants were involved in this study and divided into three groups according to their proficiency levels: beginners, low-intermediate, upper-intermediate/advanced levels. Their proficiency level was measured using Oxford Quick Placement Test.

For the participants' background, beginners were 2nd and 3rd year students from various faculties in a large public university in Thailand. They were exposed to English language only three hours per week and limited to classroom instruction only.

Low-intermediate learners were 2nd and 3rd year non-English major students from the faculties of Political Sciences and Liberal Arts. The bio-data questionnaire reveals that their exposure to English language was six hours per week and limited to classroom instruction only. By contrast, upper-intermediate students were studying at an international program in the Faculty of Liberal Arts. Their weekly exposure to English language was around fifteen hours.

Materials

All the students had to take an idiom recognition task in which they had to verbalize their thoughts on the meaning of idioms shown on a screen. The idioms presented here were embedded in contexts. Two main criteria were used in categorizing idioms: frequency of use and type of idiom (core vs. non-core).

The task was explained in Thai to the participants. The think-aloud protocol was recorded and transcribed. Adopting Cooper's (1999) methods of transcription, the data was transcribed to check whether the students had provided correct answers and to investigate the learners' strategies.

Examples of test items

Daniel has just been promoted and got a pay raise. We definitely have to celebrate and this time we have to push the boat out for him.

What does the underlined phrase mean?

Procedure

All participants were asked to fill out the bio-data questionnaire, which was divided into two parts: personal information and language background. Then, they had to complete the Oxford Placement Test, followed by an idiom

recognition task, which consisted of fifty test items, thirty of which were core idioms and twenty non-core idioms. For the core idioms only, they were divided into three frequency ranges retrieved from Grant's (2004a, b) data from corpus.

The protocols that were collected from the think-aloud procedures were transcribed. Following the methodology used by Hunt (1970) and Cooper (1999), the verbatim was divided into T-unit, which is defined as 'the shortest unit which is grammatically allowable to punctuate as sentences...' (Hunt 1970, p.4) The language that the participants mainly used was Thai, but on some occasions they code-switched into English. The transcription kept the participants' original language choice.

Data Analysis

After the transcription process, the analysis was divided into two phases: checking the correctness of the students' answers, analyzing the verbalized thoughts into T-units and identifying the protocol into three stages: the preparatory stage, the guessing stage and the post-guessing stage¹. Students received one point if they got the correct meaning of the idiom, half a point for a partly correct meaning and no points for a totally incorrect answer.

Procedures that students used to verbalize their thoughts were divided into three phases: preparatory, guessing and post-guessing stages.

¹ In Cooper's (1999) and Bulut's (2004) studies, the learners' think-aloud data were categorized into two stages (preparatory and guessing stages) but our data was quite revealing in the sense that high-proficient learners tend to recheck their answers after their guess. The post-guessing stage was then included.

Table 2. Strategies L2ers used in three different stages with examples

Stages	Strategy	Example
Preparatory	Repeating or paraphrasing the idiom without giving an interpretation	serve him right (serve him right) ¹
	Discussing and analyzing the idiom or its context without guessing at the meaning	take the mickey out of him/mickey น่าจะเหมือนตัวการ์ตูนที่เป็นตัวตลก (take the mickey out of him/Mickey may refer to a cartoon character)
	Requesting information about the idiom or context	Mickey เมนูอนตัวการ์ตูน Mickey Mouse หรือเปล่า (Mickey is a cartoon character. Is it a Mickey Mouse?)
Guessing	Guessing the meaning of the idiom from the context	At loggerheads น่าจะแปลว่า 'ไม่เห็นด้วยกับคู่อื่นๆ' อาจจะมีการต่อสู้กัน เรื่องนี้ประโภคหลังจากว่า they definitely fight the meeting... (At loggerheads may mean 'to disagree with something', 'to have a dispute with someone.' The following sentence means 'they definitely fight the meeting')
	Using the literal meaning of the idiom as a key to its figurative meaning	Pull a face... ดึงหน้า...ชักสีหน้า (pull a face...pull face...means to show dissatisfaction)
	Using background knowledge to figure out the meaning of the idiom	The red tape เคยเรียนมาเหมือนกระบวนการราชการที่มันยุ่งยากเหมือนเวลาราชการเราใช้เทปสีแดงๆ เพื่อปิดซองเอกสาร (The red tape. I used to learn this expression before. Does it mean something like the complex administrative system? It is like when we use a red tape to seal an envelope).

³ In the bracket is the translated version of the above verbatim.

Table 2. (Cont.)

Stages	Strategy	Example
	Referring to an idiom in the L1 to understand the L2 idiom	Cook the company's goose คือ ทำความเสียหายให้กับบุรุษทั้งมือนายา ไทยเรียกว่ากินบนเรือนชีรควบหลังคา (Cook the company's goose is to ruin the company. It is like a proverb in Thai, which means to show ingratitude).
Post-guessing stage	Reanalyzing the guess based on contextual clues	Clear the air น่าจะสร้างบรรยากาศ ให้ผู้บุพพ์ไปได้ด้วยดีถ้าบรรยากาศก่อน ที่นั่นนี่ไม่ดีก็น่าจะต้องทำให้บรรยากาศดี ขึ้นก่อน (Clear the air means to create a better atmosphere. If the atmosphere is bad, you should make it better first).
	Reanalyzing the guess based on the literal meaning of each constituent	Clear the air ก็คือ ทำให้บรรยากาศ ดีขึ้น...clear ก็คือ clear..the air ก็คือบรรยากาศ (Clear the air means to create a better atmosphere...clear means clear... the air means atmosphere).
	Talking about the strategies used explicitly	คาดอาจจาก context (I guess from the context).

In order to test the reliability of the scoring system, a second rater was asked to recheck the possibility of the results. In cases where all raters disagreed, issues were resolved through discussion.

Results and Discussions

Strategies that L2ers Used to Comprehend the Idioms in English

Before taking a look at the strategies learners used to comprehend idioms, it is worth considering the number of correct/incorrect responses collated.

Table 3. Number of correct and incorrect responses for core vs. non-core idioms

	Correct responses		Total (1,000)	Incorrect responses		Total (1,000)
	Non- core idioms (400)	Core idioms (600)		Non- core idioms (400)	Core idioms (600)	
High-proficient	354 (88.5%)	448 (74.7%)	802 (80.2%)	46 (11.5%)	152 (25.3%)	198 (19.8%)
Intermediate	284 (71.0%)	287 (47.8%)	571 (57.1%)	116 (29%)	313 (52.2%)	429 (42.9%)
Low-proficient	167 (41.8%)	134 (22.3%)	301 (30.1%)	233 (58.3%)	466 (77.7%)	699 (69.6%)
Total	805 (67.1%)	869 (48.27%)	1674 (55.8%)	395 (32.9%)	931 (51.72%)	1326 (44.2%)

Data from Table 3 is quite revealing in several ways. First of all, the high-proficient learners gave the most correct responses for both core and non-core idioms, and the low-proficient groups gave the most incorrect responses. Results from one-way ANOVA show that there was a significant difference between the three groups of learners, $F (2, 12) = 24.543, p < .0005$. The second interesting aspect of the data is the effect of idiom types on responses. Non-core idioms were easier to comprehend than

core idioms as the correct responses were higher. Core idioms were particularly difficult for low-proficient learners because the number of incorrect responses were very high. However, the difference between groups was not statistically significant.

Let us turn to the learners' use of strategies in comprehending idioms. The data suggests that most of the highly proficient learners went through three stages in comprehending idioms (a preparatory stage, a guessing stage and a post-guessing stage), while those with lower proficiency levels completed only two stages: a preparatory stage and a guessing stage. In the preparatory stage, the strategies used were repeating and paraphrasing the idiom, discussing and analyzing the idiom and requesting information about the idiom or context; and in the guessing stage, the strategies used were guessing the meaning of the idiom from the context, using the literal meaning of the idiom, using the keyword in the idiom string, using background knowledge, and referring to an L1 idiom or other idioms. In the post-guessing stage, the participants employed the following strategies: reanalyzing answers by focusing on the literal meaning or keywords, reanalyzing answers focusing on the context, and explicitly discussing the strategies used.

Table 4. The percentage of each strategy used by participants of each level of proficiency in three different stages for core idioms

Core idioms	Low-proficient learners (%)	Intermediate learners (%)	High-proficient learners (%)	Average (%)
<u>Preparatory stage</u> Repeating and paraphrasing idioms	0.5933 (59.33%)	0.5833 (58.33%)	0.5767 (57.67%)	0.5844 (58.44%)
Discussing and analyzing the idiom	0.1350 (13.50%)	0.1517 (15.17%)	0.0817 (8.17%)	0.1228 (12.28%)
Requesting information about the idiom or context	0.06 (6%)	0.04 (4%)	0.0017 (0.17%)	0.0339 (3.39%)
<u>Guessing stage</u> Guessing the meaning of the idiom from the context	0.3400 (34%)	0.5483 (54.83%)	0.8583 (85.83%)	0.5822 (58.22%)
Using the literal meaning of the idiom	0.5543 (55.43%)	0.4783 (47.83%)	0.2288 (22.88%)	0.4205 (42.05%)
Using the keyword in the idiom string	0.6875 (68.75%)	0.4649 (46.49%)	0.1717 (17.17%)	0.4413 (44.13%)
Using background knowledge	0.0533 (5.33%)	0.04 (4%)	0.0150 (1.5%)	0.0361 (3.61%)
Referring to an L1 idiom or other idioms	0.0433 (4.33%)	0.0484 (4.84%)	0.03 (3%)	0.0406 (4.06%)
<u>Post-guessing stage</u> Reanalyzing by focusing on the literal meaning or keywords	0.0183 (1.83%)	0.0383 (3.83%)	0.0983 (9.883%)	0.0517 (5.17%)
Discussing the strategies used	0.01 (1%)	0.0033 (0.33%)	0.0167 (1.67%)	0.01 (1%)
Reanalyzing the guess based on the contextual clues	0.02 (2%)	0.0233 (2.33%)	0.0617 (6.17%)	0.0350 (3.50%)

Table 4 shows the percentage of each strategy used by participants of each level of proficiency in three different stages to comprehend core idioms. The overall results show that the most frequent to the least frequent strategies used were in the following respective order: *repeating and paraphrasing* (58.44%), *guessing from context* (58.22%), *using keywords* (44.13%), *using literal meaning* (42.05%), *discussing and analyzing* (12.28%), *reanalyzing the guess based on the literal meaning of the words* (5.17%), *referring to L1 idiom or other idioms* (4.06%), *using background knowledge* (3.61%), *reanalyzing the guess based on the contextual clues* (3.50%), *requesting information* (3.39%) and *discussing the strategies used explicitly* (1%) respectively. The statistical analysis shows that learners of three different proficiency groups differed in their use of all but three of the above strategies: repeating and paraphrasing, use of L1 or other idioms, and discussing the strategies used explicitly. The high-proficient learners differed from the low-proficient ones in their use of the following strategies: discussing and analyzing, requesting information, use of context clue, use of literal meaning, use of background knowledge, reanalyzing idioms based on context clues, and re-analyzing idioms based on literal meaning of the word. The intermediate learners diverged from the high-proficient learners for the following strategies: discussing and analyzing, requesting information, use of context, use of literal meaning, use of background knowledge, use of keywords, reanalyzing the guess based on the contextual clues, and reanalyzing the guess based on the literal meaning of the words. The intermediate learners differed from the low-proficient for the following strategies: use of context clues, and use of literal meaning of words. This suggests that the high-proficient learners tended to differ considerably from the other two groups in their use of strategies.

It is noticeable that the pattern of the strategies used by participants across proficiency levels was similar. In the preparatory stage, the most frequent to the least frequent strategies used by all groups of learners were repeating or paraphrasing the idioms, discussing and analyzing the idioms, and requesting information about the idioms or the context respectively. However, the results diverged at the guessing stage. The low-proficient learners used keywords and the intermediate learners used literal meaning in the highest percentage, but depended less on context clues. The highly-proficient learners depended more on context clues during the guessing stage. One striking aspect is that learners used contextual clues more often given the increasing level of proficiency; by contrast, use of keyword and literal meaning also decreases given the increasing proficiency level. In the post-guessing stage, only small numbers of low-proficient and intermediate learners had gone through this stage, which contrasted with the highly-proficient participants. The latter reanalyzed their prior guesses based on the literal meanings or the keyword of the idiom, and also based on the contextual clues.

Table 5. The percentage of each strategy used by participants of each level of proficiency in three different stages for non-core idioms

	Non-core idioms	Low-proficient learners (%)	Intermediate learners (%)	High-proficient learners (%)	Average (%)
Preparatory stage					
Repeating and paraphrasing the idioms	0.2800 (28%)	0.2150 (21.5%)	0.1800 (18%)	0.2250 (22.5%)	
Discussing and analyzing the idiom	0 (0%)	0 (0%)	0.0025 (0.25%)	0.008 (0.08%)	
Requesting information about the idiom or context	0.0025 (0.25%)	0.0075 (0.75%)	0.0200 (2.0%)	0.0100 (1%)	
Guessing stage					
Guessing the meaning of the idiom from the context	0.3050 (30.50%)	0.2900 (29%)	0.6600 (66%)	0.4183 (41.83%)	
Using the literal meaning of the idiom	0.5650 (56.50%)	0.7325 (73.25%)	0.5725 (57.25%)	0.6233 (62.33%)	
Using the keyword in the idiom string	0.500 (50%)	0.1550 (15.50%)	0.1175 (11.75%)	0.2575 (25.75%)	
Using background knowledge	0.0200 (2%)	0.0275 (2.75%)	0.0450 (4.5%)	0.0308 (3.08%)	
Referring to an L1 idiom or other idioms	0.0800 (8%)	0.0675 (6.75%)	0.0425 (4.25%)	0.0633 (6.33%)	
Post-guessing stage					
Reanalyzing by focussing on the literal meaning or keywords	0.0300 (3%)	0.0325 (3.25%)	0.0550 (5.5%)	0.0392 (3.92%)	
Discussing the strategies used	0.0025 (0.25%)	0.0075 (0.75%)	0.0050 (0.50%)	0.0050 (0.50%)	
Re-analyzing the guess based on the contextual clues	0.1900 (19%)	0.1575 (15.75%)	0.1900 (19%)	0.1792 (17.92%)	

Table 5 shows the percentage of each strategy used by participants of each level of proficiency in three different stages to comprehend non-core idioms. The overall results show that the most frequent to the least frequent strategies used were in the following respective order: *using literal meaning* (62.33%), *guessing from context* (41.83%), *using keywords* (25.75%), *repeating and paraphrasing* (22.5%), *reanalyzing the guess based on the contextual clues* (17.92%), *referring to L1 idiom or other idioms* (6.33%), *reanalyzing the guess based on the literal meaning of the words* (3.92%), *using background knowledge* (3.08%), *requesting information* (1%), *discussing the strategies used explicitly* (0.5%) and *discussing and analyzing* (0.08%) respectively.

The statistical analysis shows that learners of three different proficiency groups differed in their use of the following strategies except for the use of four strategies: *discussing and analyzing the idioms*, *reanalyzing the guess based on the literal meaning of the words*, *discussing the strategies used explicitly*, and *reanalyzing the guess based on the contextual clues*. The low-proficient learners differed from the high-proficient in their use of the following strategies: requesting information, use of contextual clues, use of background knowledge, use of L1, and use of keywords. The intermediate learners differed from the high-proficient in their use of contextual clues, use of literal meaning, use of background knowledge, and use of keywords. The low-proficient learners differed from intermediate learners in their use of literal meaning, and their use of keywords. This implies that, again, high-proficient learners differed from the other two groups in several respects.

The data for non-core idioms show a similar pattern to core idioms in certain respects. First of all, in the preparatory stage, all groups of learners used repeating or paraphrasing of idioms in the highest percentage; however, they rarely used other strategies; i.e., discussing and analyzing the idiom and requesting information about the idiom or the context in quite a small percentage. Similarly, in the guessing stages, the low-proficient learners used keywords and the intermediate learners used literal meaning in the highest percentage, but depended less on context clues. The highly-proficient learners depended more on context clues during the guessing stage. In the post-guessing stage, only small numbers of low-proficient and intermediate learners had gone through this stage, which contrasted with the highly-proficient participants. The latter reanalyzed their prior guesses based on contextual clues.

It should be noted in passing that the selection of strategies corresponded to learners' success or failure in idiom interpretation. A certain strategy that led to learners' success was the use of context. Successful participants analyzed the context in either the preparatory or post-guessing stage, or both. By contrast, the strategies used by participants that led to failure were L1 keyword and literal meaning, without taking context into consideration. What is interesting is that in many cases the participants moved towards the right meaning when preliminarily looking at contexts; however, when they started to take the literal meaning of words into account and disregarded prior contextual analysis they got it wrong.

Examples:

Strategies that Lead to Success

Stimulus situation: The decoration of this newly opened hotel is magnificent; still, it can't hold a candle to the Oriental, which remains the top-class hotel in Bangkok.

Hold a candle to

Preparatory Stage

Hold a candle to (Repeating and paraphrasing)

Hold a candle to

เปรียบเทียบระหว่างการตกแต่งของโรงแรมใหม่ ซึ่ง Hold a candle to Oriental (Using the context)

Comparing between the decoration of the new hotel, which holds a candle to the Oriental

Guessing Stage

น่าจะเป็นการเปรียบเทียบกัน มีสองอย่างเปรียบเทียบกัน (First guess)

It may mean to compare. You compare two things.

Post-guessing stage

คุ้นได้จากการพิจารณาคำว่า top class ที่ขยายคำว่า Oriental top class (Reanalyzing the answer by using the context)

I look from the adjective top-class, which modifies that word "Oriental". Top-class.

Hold a candle to น่าจะแปลว่าดีกว่าไม่ใช่เทียบเท่า เปรียบเทียบ เทียบไม่ติด (Making the final guess)

Hold a candle to means better, can be compared, to compare, cannot be compared.

From the protocol above, the participant made the right guess because of the context clues. He started off by repeating the idiom "hold a candle to" then making the first attempt to guess its meaning based on the context. He later analyzed the context

again: the decoration of the two hotels was being compared and the adjective that modified the Oriental was “top class”, so the Oriental must be better than the other one, and came to the conclusion that “hold a candle” might mean “compare”, “cannot be compared”.

Strategies that Lead to Failure

The strategies that the participants used but led to failure were: using L1 keyword and using literal meaning, without taking the context into consideration. What is interesting is that in many cases the participants moved towards the right meaning when preliminarily looking at the contexts; however, their guesses turned out to be wrong when they started to take the literal meaning of words into account and disregarded the prior contextual analysis.

Stimulus situation: Addicted to coffee for a long time, Amy has been suffering a lot in cold turkey.

Preparatory Stage

ติดกาแฟนานา เอ็มี่ต้องพยายามอย่างมาก (Repeating and paraphrasing)
(Addicted to coffee for a long time, Amy suffers a lot).

cold turkey ที่หมีอ่อนเลิกเหรอ

(Does ‘cold turkey’ mean to quit?)

ไก่ร่างหนาว ไม่รู้ (Reanalyzing by using literal meaning)

(The turkey is feeling cold. I don’t know).

แต้มันติดนานา ต้องพยายามอย่างมากในการเลิก อด (Reanalyzing by using context)

(But he has been addicted for a long time. He may have suffered a lot in quitting).

ซึ่งดูไม่น่าจะเกี่ยวขั้นไก่ร่างตกรวงใหญ่

It may not be related to a turkey at all.

Guessing Stage

ไม่รู้ เค้าไม่ได้ (Final guess)

(I don't know. I can't guess).

The participant repeated the context and his first guess was correct: that “cold turkey” means “to quit”. However, he then resorted to the literal meaning of the words “cold” and “turkey” and failed to make a correct guess because he could not associate its literal meaning and the figurative meaning suggested by the context.

In sum, the participants who could understand the context and based their guesses on that seemed to be more successful than those who employed the literal meaning or keywords.

The Role of Learners' Proficiency Levels in L2 Idiom Comprehension and Processing

The results from this study indicate that learners' proficiency levels play an important role in L2 idiom comprehension and processing. In terms of the number of correct answers, learners' proficiency levels were likely to correspond with the scores of correct answers in the test: the scores of the highly-proficient, intermediate and low-proficient groups were 32-43, 20-34, and below 20 respectively. Regarding the strategies, in general, it seems that learners across proficiency levels used similar top three strategies during the guessing stage: use of context clues, use of literal meaning and use of keywords. However, some differences could still be observed among these three groups.

The first difference lay in terms of the understanding of context. Despite using the context clues as one main strategy, the low-proficient learners and some intermediate learners

could not translate the context correctly and misunderstood what was said in the context because of their limited command of English, thus providing wrong guesses. The highly-proficient group, with their good command of English, could interpret the contexts very well in most cases.

Example:

Stimulus situation: Addicted to coffee for a long time, Amy suffered a lot from cold turkey.

The strategies used by the low-proficient learners included depending on the literal meaning of the word and their background knowledge. Knowing that Turkish coffee is delicious and famous, the participant thought that 'cold turkey' referred to Turkish coffee. With a low proficiency level, the participant did not know that the word 'turkey' could not refer to the country 'Turkey' as it does not use a capital letter and the coffee is referred to as 'Turkish coffee'. Lack of knowledge relating to reference causes problems in interpretation for the participants.

The next disparity is attested in the combination of strategies used. The low-proficient and the intermediate group depended more on the literal meaning of the constituents as well as the keywords, which can imply that they may rarely find idioms in everyday life contexts and do not know how to tackle idioms embedded in context. Another implication is that idiomatic competence has not yet developed for these two groups of learners. By contrast, the highly-proficient learners were assumed to have acquired some idiomatic competence as they realized that some idioms could not be interpreted literally and decided to depend more on contexts. It can then be

concluded that high level proficiency does not only assist in context comprehension but also with the use of strategies.

This study produced results that corroborate the findings of Doroodi and Hashemian (2011), which reported that the L2 learners' proficiency level, the reading comprehension ability and the figurative competence were interwoven. His findings showed that skilled readers tended to understand idioms better, regardless of idiom types.

In terms of processing, it might be argued that learners of different proficiency levels process idioms differently. The highly proficient learners used the top-down approach (focusing more on contextual information or background knowledge) to recover the meaning and primacy is given to idiomatic meaning rather than literal one. By contrast, the learners with lower proficiency levels depended more on the literal meaning of the idioms or used only one keyword to make a guess. Contextual information may impede idiom comprehension. This aspect is striking in the sense that these learners may not realize that for some idioms (non-compositional ones), constituents in the string may not contribute to their idiomatic meanings. Also, it might be possible that the learners have depended on only one or two keywords in the string because they did not know some vocabulary items, so they created meanings based on only keywords with which they were familiar. For instance, 'bang to rights' or 'swing the lead', the low-proficient learners based their guess on the keyword 'rights' and the word 'swing' respectively, while the intermediate learners translated every constituent literally and tried to create meaning.

The Role of Idiom Types (the Degree of Decomposability) in Idiom Comprehension and Processing

Recall that several previous studies in L2 idiom comprehension and processing do not use the terms 'core' and 'non-core' to distinguish idioms; rather, they employ the degree of decomposability as a criterion. However, in Grant's (2004) study, one of the important criteria used to define core idioms is compositionality, which relates to whether the meaning of the constituents in the idiom string contributes to the whole meaning of the idiom. If so, it is a non-core idiom. Given this compatibility, core idioms share the same characteristics as non-compositional/non-decomposable idioms, and non-core idioms equate with decomposable idioms.

The results from the present study show that learners tend to use the same strategies for both core and non-core idioms in the sense that more advanced learners use context clues to comprehend idioms, regardless of types while the low proficient ones depend more on the literal meaning. However, decoding the meaning of non-core idioms is easier for L2ers than core idioms because L2ers comprehend idioms by analyzing the meaning of each constituent in the idiom string. For non-core idioms, the meaning of some constituents contributes to the overall idiomatic meaning. This led to more correct guesses for non-core idioms.

Conclusions

This paper analyses the way in which L2ers of three different English proficiency levels processed two types of idioms (core vs. non-core) unfamiliar to them. The results show

that the strategies used by high-proficient learners are distinct from the other two groups in the sense that they do not rely on the literal meaning of the constituents in the string but use context to help decode the meaning of idioms. However, some high-proficient learners re-examined their final guesses by considering the literal meaning of the idioms. Given these results, the Relevance-Theoretic Model tends to cast the most correct predictions on idiom processing in the case of L2 high-proficient learners. Another implication is that the high-proficient learners use both top-down and bottom-up processes in understanding the idioms.

By contrast, two groups of learners with lower proficiency levels may not use contextual clues effectively, possibly due to their lack of idiomatic competence or inability to understand the context. Lacking idiomatic competence, the learners did not have knowledge about the linguistic characteristics of idioms and ways to tackle unfamiliar idioms in context, resulting in their attempts to translate them literally. The low-proficient learners could not translate sentences in context correctly due to their limited proficiency level, and this also contributed to the misinterpretation of idioms. This implies that the Model of Dual Idiom Representation and Literal Salience Hypothesis made the correct predictions for learners with lower proficiency. Unlike the high-proficient learners, the low-proficient learners use bottom-up processing, analyzing the constituents when decoding the meaning of idioms.

For other variables that come into play, idiom types play a role in idiom comprehension and processing. Non-core idioms are easier for the learners to comprehend because the literal meaning of the constituents can be mapped on to the idiomatic

meaning. The Idiom Decomposition Hypothesis is thus correct in claiming that the core vs. non-core distinction of the idioms plays a role in idiom processing, and non-core idioms are easier to understand. The current findings add to a growing body of literature on L2 idiom comprehension and processing. However, a number of important limitations need to be considered.

Limitations of the Present Study and Recommendations for Further Work

A number of caveats need to be noted regarding to the present study. First of all, methodology-wise, the think-aloud method may not be able to display a real-time thinking process of the learners or reflect the authentic processing picture but it is widely used by ELT scholars to shed light on processing issues. What is needed is that further psycholinguistic experiments such as those investigating the priming effect should be conducted to see whether the results converge and to pinpoint which of the existing L2 processing models cast the most correct predictions on the issue. Alternatively, in-depth interviews can be used to complement the existing data. Participants whose responses were interesting should be interviewed to see how they tackled the idioms. Second, in this study the learners were asked to interpret the idioms in context. A further study with a focus on interpreting idioms without contexts is recommended. Next, this study focuses only the idioms unfamiliar to learners. Further investigation on the L2 processing and comprehension of familiar idioms is also strongly recommended.

Implications

The findings of this study have significant implications in terms of theory and practice. Theoretically speaking, the results have implications for idiom processing models; factors like idiom types (core vs. non-core idioms), the degree of familiarity, and learners' proficiency levels have an effect on idiom processing, thus psycholinguists may have to take these variables into account when postulating a model. In terms of practice, the results from this particular study suggest the following: i) it is important to design classroom activities to build up student's idiomatic competence, and ii) more care should be taken in selecting materials to suit learners of different proficiency level.

Building up Idiomatic Competence

There is a need for designing course materials and providing enough exposure to idioms in a step-by-step fashion, which can gradually build up learners' idiomatic competence. This means that the learners should be explicitly introduced to the linguistic characteristic of idioms, the classification of idioms and the interpretation of both familiar and unfamiliar idioms. The practice of interpretation should be done through deductive approaches and include bottom-up and top-down process: learners may have to take contextual information, cultural background and lexical information into account. Also, learners must have enough exposure to a wide range of authentic texts; e.g., news, literary work, advertisements, political speeches, where idioms are naturally used and contextualized and an opportunity to use idioms in language production tasks. Such exposure may help develop idiomatic competence.

To build idiomatic competence, Tran (2012) and Tran (2013) suggested that learners should be able to recognize, understand, familiarize themselves with idioms until this usage becomes automatic. Several teaching strategies and material developments should be created to reach such a goal (see Schmidtt & McCarthy, 1997; Simpson & Mendis, 2013).

Recognizing idioms

To recognize idioms, learners should be trained through 'noticing' activities (Schmidtt & McCarthy, 1997) to make them realize that the MWUs that they are reading are idiom strings and cannot be interpreted literally. Teachers may introduce idioms in context and let students discover the meaning by trial-and-error methods, as suggested by Asl (2013) that contextualized presentation of idioms enhance learning more than isolated ones. Also, teachers may present idioms, which are inappropriately used and let students notice such an error. This activity will train them to notice the real use of idioms.

Understanding idioms

Liu (2008) proposed four main strategies learners can use to understand idioms: use of contextual knowledge, use of the first language, use of pragmatic knowledge or knowledge of the world and use of cultural knowledge in the first language and also stated that teachers should assist students to understand idioms by giving its definition, elaboration and paraphrasing activities.

Familiarizing students with idioms until usage becomes automatic

Liu (2008) stated that learners should be encouraged to use idioms as many as possible as it is a part of learning idioms,

which resonates Richard's (1996) idea of proactive approach to idioms. Irujo (1993) also suggested that learners are encouraged to compile a list of idioms that they come across and teachers must provide an opportunity for them to use those idioms.

Learners' Proficiency Level

The results from this study found that if learners do not reach a certain proficiency level, they will not be able to understand the contextual cues and recovering meaning from context itself becomes very difficult for them. However, several previous studies (Asl 2013, Lontas, 2002) demonstrated that presenting idioms in context may enhance more effective learning. This implies that teachers should make sure in the selected materials, idioms are presented in a context where contextual clues are explicit enough and suitable for the level of students. For more advanced learners, comprehending idioms in context may not be a problem; teachers are then encouraged to create environment which facilitates idiom production.

Apart from using contextual clues, all learners should be taught how to use a good idiom dictionary and memorize some useful and most frequently used idioms. To help learners memorize idioms, there are several techniques that are better than just blind memorization such as mnemonic techniques (Nation, 2001) and the one that is particularly useful is etymological elaboration; learners will learn the origins of each idiom presented through pictures and create the related image in mind for each idiom. This may lead to better idiom recall, retention and acquisition (Boers et al., 2007).

Biodata

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