

Metaphor and Second Language Learning: The State of the Field

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Abstract

Once considered a stylistic issue, metaphor is now considered a critical component of everyday and specialized language and most importantly, a fundamental mechanism of human conceptualizations of the world. The use of metaphor in language, thought and communication has been examined in second language (L2) learning. The body of literature that investigates the relationship between metaphor and L2 learning has increased significantly, with most studies revolving around the Conceptual Metaphor Theory and receptive learning or metaphorical competence. This review aims to provide a comprehensive picture of current scholarship in the area and draw scholarly attention to other unexplored areas of metaphor and L2 learning.

Key words: metaphor, metaphor awareness, metaphoric processing, metaphorical competence, second language learning

Introduction

In 1980, Lakoff and Johnson introduced the Conceptual Metaphor Theory in *Metaphors We Live By*. By analysing daily language, they uncovered the pervasiveness of metaphorical language, asserting that metaphor is a matter of the mind, not an issue of language. According to Lakoff and Johnson, “the essence of metaphor is understanding and experiencing one kind of thing in terms of another” (1980, p. 5). This definition stipulates that our basic daily-life experiences with our body, physical environment and culture shape the way we perceive the world, which gives rise to conceptual metaphors. These conceptual metaphors are re-represented in different modes, one of which is language. For example, speakers use the italicised expressions below because ideas are conceptualised as food (Lakoff & Johnson, 1980, pp. 47-48).

What he said left a bad taste in my mouth.

There are too many facts here for me to digest them all.

I just can't swallow that claim.

We don't need to spoon-feed our students.

He devoured the book.

The example illustrates a conceptual metaphor – IDEAS ARE FOOD – and a number of expressions that we use to manifest this conceptual metaphor. (Conceptual metaphors are capitalized according to cognitive linguistics convention.)

Lakoff and Johnson's theory has since offered a theoretical framework to investigate metaphorical language and thoughts across disciplines (see, for example, Gibbs, 2008). The application of metaphor to language teaching is situated in the cognitive linguistics paradigm and began approximately thirty years ago (Danesi, 1986; Low, 1988). As more language researchers are becoming interested in metaphor, and as many strong claims have been made about the power of metaphor in almost every aspect of language education, it is advisable to consider the value of metaphor in language research and pedagogical contexts. Thus, this article reviews the current literature on the role of metaphor in L2 learning, examines how metaphoric processing is understood in L2 research, and proposes avenues for future research in metaphor and L2 education.

The article does not include studies that use metaphor as a metacognitive research tool to explore the conceptualization of learning and teaching and instead, focuses only on studies that investigate metaphor as a pedagogical object. Readers who are interested in the former are redirected to accounts such as Aubusson, Harrison, and Ritchie (2006), Berendt (2008), Zanotto, Cameron, and Cavalcanti (2008), and Wormeli (2009).

The Role of Metaphor in L2 Education

Metaphor awareness

Because metaphor has gained its present status due to cognitive linguistics, it is not surprising that the majority of empirical studies that attempt to connect language teaching and metaphor are based on cognitive theories. One central principle of cognitive linguistics is that language is motivated, i.e., the relations between form, meaning and use are not arbitrary. Instead, language can be explained with links (or "motivations", in cognitive linguistics term) to bodily or conceptual experiences. For example, *to show someone the ropes* acquires the meaning of *to teach someone how to do something, especially a job* (Macmillan's online dictionary, n.d.) thanks to its original domain of *sailing* where an experienced sailor would teach an apprentice how to handle the ropes of a mast. Therefore, learners who are aware of the motivated nature of language are more likely to learn it in a cognitively, affectively and pragmatically effective way (Boers & Lindstromberg, 2006, 2008b). This is because learners are encouraged to analyse the relationship between form and meaning of input, which results in deep processing and an increased learning gain (Boers, 2013).

Boers (2004) sees metaphor awareness as the ability to recognize the ubiquity, underlying themes, non-arbitrary nature, cross-cultural differences and cross-linguistic variety in the linguistic instantiations of metaphorical expressions. Metaphoric awareness research points to the metaphorical underpinnings of language and claims that awareness-raising activities can facilitate vocabulary

learning. Kalyuga and Kalyuga (2008) suggest raising metaphor awareness by presenting vocabulary in metaphorical chunks in conjunction with activating learners' prior knowledge to reduce a potential cognitive overload. Enhanced metaphoric awareness via activities that help participants to establish the associations between the metaphorical expression and its more concrete senses can lead to higher retention rate of vocabulary (Boers, 2000a, 2000b, 2001; Guo, 2007). Discussing and comparing metaphors in first and target language are also effective in improving learners' metaphor comprehension and production (Deignan, Gabrýs, & Solska, 1997). In Csábi's study (2004), learners who were exposed to metaphor-awareness instruction outperformed their peers in comprehension and retention of the polysemous verbs *hold* and *keep*. In another study, Gao and Meng (2010) organized metaphorical expressions by theme for the experimental group and found similar results. Metaphor awareness-raising activities can also aid L2 learners in the reading of literature both in immediate and delayed interpretation, as shown in Picken (2005; 2007). These activities, when incorporated in translation classes, can enhance cross-linguistic awareness, translation competence, metaphoric competence, learner autonomy, interactive learning and critical thinking (Sacristán, 2009).

Awareness-raising activities are generally found to be more effective than rote learning activities. Such activities are effective because they call learners' attention to the metaphoric nature of language (Gibbs, 1994; Lakoff & Johnson, 1980). However, in Boers' study (2000b), the experimental group did not perform any better than the control group in dealing with novel multi-word verbs. Thus, Boers warns that the success of metaphor awareness activities depends on the transparency of the idioms and distance between the first and target language and learners' proficiency. It stands to reason that a one-off learning experience is often not sufficient to turn metaphor awareness into long-term strategy or future skill transfer (Beréndi, Csábi, & Kövecses, 2008; Boers, 2004) or help learners overcome obstacles caused by intercultural and cross-linguistic differences (Hu & Fong, 2010). Language learners are actually aware of figurative language in use (Chen & Lai, 2012); what they need is explicit meta-cognitive instructions of the underlying conceptualization and the metaphorization of the items. The scope of the metaphor awareness studies, however, has not been extended beyond vocabulary instruction.

Conceptual Metaphor Theory (CMT) as a pedagogical approach

Research that promotes CMT in the L2 classroom assumes that the universality of conceptual metaphor can contribute to the process of language learning. This is because using CMT can draw learners' attention to the metaphorization processes of language, facilitating the comprehension of unfamiliar figurative language. For example, participants in Kövecses and Szabó's study (1996) performed better in gap-filling tasks (with the target phrasal verbs *up* or *down*) and were able to use metaphorical reasoning for task completion. Yasuda's (2010) experiment with Japanese students on phrasal verbs yielded similar findings. CMT-based instruction can also foster learners' engagement, motivation and productivity when learning idioms (Csábi, 2004; Kömür & Çimen, 2009), thus implying a potential alternative or

complementary option to vocabulary teaching. Beréndi et al. (2008), for example, found that explicit representation of polysemy and idioms in connection to their underlying conceptual metaphors can enhance comprehension and retention. Their experiments showed significant difference in learners' performance in both immediate and delayed post-tests (correct key words rather than full phrase counted as correct answers). In another study, Skoufaki's (2008) conducted an experiment that examined two methods of presenting idioms: conceptual metaphor grouping vs. conceptual metaphor grouping plus a meaning guessing task. The latter proved to be more effective as the participants performed better in both the after-task cloze test and the comprehension test. Li (2009) also found that the intended application of conceptual metaphors in a series of experiments with 394 Chinese learners of English led to higher scores in recall post-tests in the experimental group.

Inspired by these findings, many researchers (e.g., Li, 2009; Yasuda, 2010) have called for explicit instruction of conceptual metaphors in the classroom. CMT-based instruction relies on the interactive properties between the source and target domains of metaphors and gives students a rationale to ponder upon why the phrases mean what they mean, which likely explains the learning gain. Swain (2006) calls this 'languaging' – a "process of making meaning and shaping knowledge and experience through language" (p. 98). Schmitt's (2008) review of instructed L2 vocabulary learning also clearly shows that 'engagement' with target vocabulary fosters learning. The difference between the 'normal' word list that Hoey (2000) critiques and a metaphor-based word list is that the latter allows learners to understand what motivates its origination. A metaphor-based word list encourages deep processing, which has been shown to determine successful recall, as words which are semantically processed via elaborative rehearsal and deep processing are more accurately recalled (Craik & Lockhart, 1972; Craik & Tulving, 1975). However, it is not clear whether the encouraging findings in the CMT-based approach to language presentation in these studies are due to the theory itself or other factors.

As Boers and Lindstromberg (2008b) note, the learning gain can be attributed to the neat organization of the lexical items under a theme, which generally makes it easy to learn and remember. It would be interesting to find out whether a metaphor-based vocabulary lesson is more conducive to higher learning gain than one that is based on a theme or a story line. The relationship between explicit teaching of conceptual metaphors and their use by learners is not causal – the presence of conceptual metaphors in the mind does not automatically lead to their active use (Kövecses & Szabó, 1996). Thus, the implication of the CMT for the language classroom is by no means direct. A hasty application of the theory can lead to misinterpretation and an oversight of the many factors involved in language in use (*cf.* O'Halloran, 2007).

Metaphor and skill development

Metaphor is said to be integral to many important dimensions of language use (Low, 1988). First, metaphor can aid the development of reading skills. For instance, Carter and McCarthy (1988) encourage the kind of competence in figurative

language that native speakers have and point out that an over-reliance on literal readings may lead learners to overlook the evaluative or connotative aspects of figurative language. Additionally, Holme (2004) believes that treating texts as allegories is a useful way to build students' critical appraisal of the texts and helps foster debate in the language class, which enhances their critical literacy skills. Empirically, Boers (2000a) found that students who had access to the original literal use of the figurative vocabulary (trading) were better at figuring out the author's opinion than those provided with synonyms of the target language items. Apparently, activities that draw learners' attention to metaphor benefit their reading comprehension.

The relationship between metaphor and vocabulary learning is a particularly well-researched area. Metaphor has been shown to play an important role in vocabulary acquisition in terms of extending lexical relations (Lewis, 1993; MacLennan, 1994; Sweetser, 1990; Taylor, 2003). Working with metaphorical language, learners can understand the making of meaning and senses, and thus can acquire an effective way of learning to learn. The areas researched vary from prepositions and particles (Boers & Demecheleer, 1998; Boers, 2000b; Cho, 2010), polysemous content lexis (Boers, 2000b; Csábi, 2004; Lindstromberg & Boers, 2005a; Lindstromberg, 1991; Verspoor & Lowie, 2003) to idioms (Kömür & Çimen, 2009; Kövecses & Szabó, 1996; Kövecses, 2001). In a sustained effort to investigate the cognitive linguistic motivation of figurative expressions, Boers and his colleagues have explored innovative techniques such as etymological elaborations (Boers, Demecheleer, & Eyckmans, 2004a; Boers, Eyckmans, & Stengers, 2007; Boers & Demecheleer, 1998; Boers, 2000b, 2001), phonological elaborations (Boers, Lindstromberg, & Eyckmans, 2012; Boers & Lindstromberg, 2005, 2008c; Boers & Stengers, 2008; Lindstromberg & Boers, 2005b), pictorial elucidation (Boers, Demecheleer, & Eyckmans, 2004b; Boers, Lindstromberg, Littlemore, Stengers, & Eyckmans, 2008; Boers, Piquer-Piriz, Stengers, & Eyckmans, 2009; Boers & Stengers, 2008) and total physical response (Lindstromberg & Boers, 2005a). Similarly, Li (2009) and Morimoto and Loewen (2007) have taken image schemas and vocabulary learning into consideration,

Metaphor use in English for Specific Purposes (ESP) discourse has also attracted a large amount of research interest, particularly the language of economics (Boers, 2000a; Charteris-Black & Ennis, 2001; Charteris-Black & Musolff, 2003; Charteris-Black, 2000; Herrera & White, 2000; Wang, Runtsova, & Chen, 2013; White, 2003). Other fields include engineering (Roldán-Riejos & Mansilla, 2013), medicine (Salager-Meyer, 1990), and architecture (Caballero Rodriguez, 2003). These studies also contribute valuable pedagogical recommendations *vis-à-vis* the use of metaphor to teach ESP (Caballero Rodriguez, 2003; Charteris-Black, 2000; Cortés de los Rios, 2007; Lindstromberg, 1991; Pablos, 2009; Salager-Meyer, 1990; Wang et al., 2013).

While the amount of research on metaphor and language learning is booming, most of the time, metaphor is seen as "a channelling device to comprehend, store, and reproduce figurative language input" (Boers, 2004, p. 217). As shown above, scholarship has focused primarily on receptive skills, while ignoring how learners actually produce metaphors in their L2. Most scholars tend to be cautious regarding

learners' production of figurative language. The argument has been that foreign language learners often need to comprehend metaphors more than produce them (Littlemore & Low, 2006a, p. 46; Low, 2008, p. 222). The ability to produce metaphors in L2 is seen to be "of less immediate necessity" (Littlemore, 2010, p. 296). Kecskés and Papp (2000) even explicitly caution learners against the use of metaphors because this is a communicative risk.

The irony is that L2 learners are often encouraged to produce metaphors to serve different purposes of metaphor research. For example, Hashemian and Talebi Nezhad (2007) use learners' written paragraphs to investigate metaphorical competence development and metaphorical density in support of the theory of conceptual fluency (see below). Kathpalia and Heah (2011) also rely on learners' tutorial writing to examine metaphorical competence in light of Bachman's communicative model. Generally, the metaphors that learners produce are said to be unidiomatic (Kathpalia & Heah, 2011), causing their written discourse to show a high degree of literalness and "no sign of the conceptual system in English" (Hashemian & Talebi Nezhad, 2007, p. 51). At other times, L2 learners are reported to tend to avoid figurative language (Irujo, 1993; Kecskés, 2007; Philip, 2005a). This is not because they cannot produce figurative language, but because they are either worried about communication breakdowns (Kecskés, 2007) or because their metaphorical language is in an unnoticed or inactive status in the mental lexicon (Littlemore, 2009).

Thus, MacArthur's (2010) paper is significant because it expresses a strong interest in learners' productive metaphors. She contends that when learners have a relatively impoverished stock of words, metaphor is the most powerful tool to make meaning from many everyday words. The benefits of encouraging metaphor production, as she notes, are

insights into how the first (L1) and second language (L2) systems interact, how the privilege of access to two linguistic and conceptual systems may favour, rather than necessarily hinder, the bilingual's metaphoric production, and to what extent the resulting metaphors are felicitous in the context of inter-cultural communication. (p. 156)

When piloting with English teachers to find out the extent to which native speakers tolerate atypical metaphorical language use, Boers (2004) found that novel metaphors were likely to be accepted as correct rather than deviant, which promises the feasibility and practicality of raising metaphor awareness in productive language learning. The communicative "risk" of producing metaphors that Kecskés and Papp (2000) discuss may be present due to the cross-linguistic variety of linguistic instantiations of a given conceptual metaphor or the L1 interference (Boers, 2004). Alternatively, there might be some unknown causes. Apart from studies that relate cognitive style to learners' metaphor comprehension (discussed below), little is known about learners' mental operations during the process of metaphor production.

Given that L2 learners enter the target language realm equipped with a fully figurative mind, it is surprising that learners' productive use of metaphor has not been given due attention. As Müller (2008) has pointed out, a focus on the production side of the metaphor use is essential to achieve a satisfactory understanding of metaphorical meaning and of meaning in general. Significantly, Nacey (2013) has found that metaphor is ubiquitous in both native and non-native learners' English written discourse. Metaphor production in L2 learners can also be an indicator of their proficiency (Littlemore, Krennmayr, Turner, & Turner, 2012; 2014), and the quantity of metaphorically used words in a learner's essay is found to strongly correlate (positively) with the grade the learner earns (Hoang, 2013). MacArthur and Littlemore (2011) analysed two cued conversations between non-native speakers and found that the density of metaphorically used words is up to 10%. Like native speakers, non-native speakers do produce metaphors while conversing and their use of metaphor is similarly affected by the topic and context of the conversation. The authors voice their concern that although English has been recognized as the lingua franca, non-native speakers' use of metaphor remains under-researched.

Metaphors as challenges to language learners

In line with studies that highlight the importance of metaphor in L2 learning, another line of research demonstrates how difficult it is for language learners to grasp metaphors in the target language. For instance, Low (1988) hypothesises that learners may have difficulties with the transfer between the topic (what is being talked about in a metaphor) and the vehicle (what is being used to talk about the topic). It is suggested that despite their knowledge and experience of the target language, L2 learners generally have problems processing figurative language due to the lack of what Littlemore and Low (2006a) call "native speaker competence" (p. 3), which consists of awareness of cultural conventions, cultural connotations and figurative language repertoire.

According to Littlemore (2001c), there are two types of metaphor comprehension difficulties: *misunderstanding* and *non-understanding*. In this study, 90% of the confusion that the participants had with lectures delivered in English resulted from misinterpretations of metaphorical language, and 145 of 180 of these items were difficult for them. Focusing on problematic language items, Littlemore, Chen, Koester, and Barnden (2011) found that about 42% of the words or phrases that a student found difficult to understand were used metaphorically. Even when the items were composed of familiar words, the participants failed to understand 41% of them. What is more pressing is the fact that they were aware of only four percent of the problematic items. When this finding is juxtaposed with the fact that metaphor is commonly used by native speaker lecturers to impart new knowledge and convey evaluative values (Camiciottoli, 2005; Corts & Pollio, 1999; Littlemore, 2001c, 2003b; Low, Littlemore, & Koester, 2008), it is easy to see the grave situation that international students face. There have been suggestions that lecturers can help these students by developing their self-awareness of the metaphors they use in lectures (Camiciottoli, 2005; Low et al., 2008) or providing metaphor supporting

tools such as metaphor signalling language and appropriate gestures (Littlemore, Holloway, MacArthur, & Cienki, 2013). However, if international students are exposed only to structured (and unnatural) communication situations in an academic environment, they might be more likely to have problems behaving in a culturally appropriate way in real life.

Metaphorical competence (MC)

The notion of MC, or the ability to understand and use metaphor, has been examined in the English as a first language (L1) literature (e.g., Pollio & Smith, 1980) before it was introduced to L2 pedagogy by Danesi (1986). Danesi (1986) later developed MC into *conceptual fluency* (CF) (1993), a cognitive mapping operation underlying “the programming of discourse in metaphorical ways” as a basic feature of native-speaker competence (p. 493). This was later revised as “the ability to give appropriate structural form to all kinds of meanings, literal and non-literal that constitute the semantic system of the L2” (Danesi, 2008, p. 233). Danesi’s book (2003) presents the idea of conceptual competence, which is comprised of *meta-formal competence* (the ability to use the conceptual system of a language appropriately in speech), *reflexive competence* (the ability to transform concepts into language categories), and *associative competence* (knowledge of how concepts are interconnected in cultural terms). In these publications and in other studies (e.g., Danesi, 2008), Danesi argues for the importance of CF in language learning. This is echoed in studies that investigate the role of CF in the acquisition of formulaic expressions (Kecskés, 2000; Wray, 2002), phrasal verbs (Matlock & Heredia, 2002), and idioms (Bortfeld, 2002, 2003; Cooper, 1999).

Other scholars, however, have different ideas about MC. According to Low (1988), MC includes the ability to construct plausible meanings, knowledge of the boundaries of conventional metaphor, awareness of acceptable topic and vehicle combinations, ability to interpret and control ‘hedges’, awareness of ‘socially sensitive’ metaphors, awareness of ‘multiple layering’ in metaphors and interactive awareness of metaphor. Holme critiques this point of view, saying that in this way metaphor becomes another load of language knowledge learners have to bear (2001), which does not reflect the nature of either metaphor or competence (2004, 2009). Littlemore (2001a) suggests that MC consists of four components: the original character of metaphor production, the mastery of metaphor comprehension, the ability to figure out the meaning of a metaphor and the speed in doing so. Littlemore and Low (2006a) explain MC as “an individual’s ability to understand and produce metaphors” (p.79), a definition re-employed by Azuma (2004). Azuma, however, interprets MC as the recognition of metaphorical expressions in receiving discourse, use of metaphorical expressions in producing discourse and understanding of the underlying concepts of metaphors in both L1 and L2. Finally, taking a translation point of view, Andersen (2000) sees MC as a macro-strategy, the lack of which causes translators to rely on their intuition or micro-strategies, which are insufficient for the translating process.

Although researchers seem to differ about the composition of MC, they agree on the significance of this “competence” in language learning. It is claimed to be

inextricably intertwined with all components of Bachman's model of communicative competence (Littlemore & Low, 2006b, 2006a; Littlemore, 2001b) or part of Cook's multi-competence (Bromberek-Dyzman & Ewert, 2010; Littlemore, 2010). Danesi (1986, 1993) considers 'the ability to metaphorize' in the target language the true sign of proficiency. Littlemore (2001b) goes as far as to propose "metaphoric intelligence", which is a component of the multiple intelligence which operates on the psychological processes of loose analogical reasoning and divergent thinking. The construct is believed to play a positive role in the overall level of language learners' communicative competence.

The literature that advocates MC and CF asserts that learners produce non-native-like and literal discourse because they have difficulty with conceptualization (Danesi, 1993, 2008; Kecskés & Cuenca, 2005; Kecskés & Papp, 2000) as conceptual competence "*serve[s] as a basis for grammatical and communicative knowledge*" (Kecskés & Papp, 2000, p. 104, italics in the original). It is argued that L2 learners have trouble acquiring the conceptual system of the target language, which results in a high degree of literality (Danesi, 1993; Hashemian & Talebi Nezhad, 2007) and strange collocations (Kathpalia & Heah, 2011; Philip, 2005a, 2006) in their discourse, even after years of learning. Danesi (2008) calls these *conceptual errors*, which occur when learners activate the wrong source domain of a metaphor due to the interference of the L1. There have been calls for this competence to be fostered as part of the L2 learning process by working on metaphoric extension processes of associative fluency, analogical reasoning and image formation skills (Littlemore, 2008) or by systematically incorporating it in L2 textbooks and teaching methods (Hashemian & Talebi Nezhad, 2007). Danesi (2008) found that his participants, who were trained conceptually, used more non-literal concepts and were able to apply the desired metaphorical meanings in the production tasks. He thus stresses that CF should be taught explicitly; otherwise, learners would either avoid metaphors or use them with the L1 conceptual system in mind. In addition, there are proposals for conceptual syllabi that raise metaphoric awareness and approach metaphors and idioms through conceptual domains (Andreou & Galantomos, 2008; Lazar, 1996). For example, a detailed proposal was drafted by Andreou and Galantomos (2008), according to which metaphor should be taught in a product-oriented conceptual syllabus whose specific goals is the development of L2 learners' CF or MC.

As seen previously, there has been little consistency in what constitutes MC. Littlemore (2001a) only found weak relationships between the components of the construct. The question of how strong the correlation is between MC and communicative competence is another inconclusive issue. Littlemore (2001a) admitted a difference between the tests used to measure MC and communicative language ability. Furthermore, what has been labelled as MC might just be an individual learner's metaphorical preference (Littlemore, 2010). The extent to which CF may determine linguistic competence probably is not as strong as suggested (Littlemore, 2001a). Philip's (2005b) preliminary data reveals that the unnaturalness found in learner language is caused more by linguistic (ill-formed phraseology in this case) than conceptual reasons. More research is needed to reach a comparative consensus of what MC is, and issues of learnability (Valeva, 1996) and

testability (Azuma, 2004) should also be addressed before this competence can be introduced to the classroom.

Metaphoric Processing

Mechanisms

From the cognitive linguistic point of view, learners need to activate the knowledge of the source and target domains in order to process a metaphor. For a language learner, this would mean the mobilization of the learned source and target domains of the target language while activating and/or suppressing features of the source and target domains of their L1 at the same time. Littlemore and Low (2006a, p. 52) suggest that foreign language learners' ability for metaphor comprehension involves five psychological processes: noticing, activation of source domain knowledge, associative fluency, analogical reasoning and image formation (see also Littlemore, 2008). In their opinion, these processes should help learners to better focus on the relationship between the source and target domains, which eventually aids them in understanding how metaphors work. At the same time, these authors encourage learners to think figuratively in an *ad-hoc* procedure that involves different trials with different strategies (Littlemore & Low, 2006a, pp. 49–50), one that is similar to Cooper's (1999) heuristic interpretive approach.

Another approach to underpin L2 learners' metaphoric processing considers the strategies they use to process metaphors. Cooper (1999) found two main types: preparatory strategies and guessing strategies. Littlemore (2003a) listed four groups of strategies: substitution, substitution plus, reconceptualization and functional reduction, with reconceptualization being the most communicatively effective. She also found that strategies favoured by ectenic learners, who need conscious control of what they are learning, were more communicatively effective than those favoured by synoptic learners, who tend to rely on their intuition and pre-conscious processing. In another study, Azuma (2009) found that Japanese students relied on intuition, context guessing, their L1, mental image association and analogical reasoning to process metaphorical language. Generally, the less proficient learners use more L1 strategies, while the more proficient learners use more L2 strategies (Irujo, 1986; Jin, 2011). Transfer from L1 to the target language has proved to be an effective strategy, especially when the two languages share many features (Boers, 2000b; Irujo, 1986). Relying on L1, however, can be counter-effective, especially when learners over-generalize the effectiveness of the strategy and risk erroneous 'direct' translation (Azuma, 2009; Boers, 2000b).

With this insight into learners' strategy use, it has been suggested that learners should be trained to process figurative language (Irujo, 1993; Littlemore, 2004, 2009). This is part of the claim that metaphor can help learners build a strategic competence (Holme, 2004; Littlemore & Low, 2006a, 2006b), enabling them to draw on the linguistic resources available. Littlemore (2004), for example, trained learners in metaphoric extension strategies, which helped learners figure out the metaphorization of word formation and meaning. These strategies require learners

to activate their associative fluency and analogical reasoning to make available as many meanings as possible for the core meaning of a word and as many links as possible between this meaning and the surrounding context. Although the effectiveness of these strategies depends on different factors, Littlemore's findings suggest that the training is worthwhile in helping learners understand new vocabulary, especially with highly imageable words and for students who have an 'imager' cognitive style, and prefer to process information in images.

First language and culture

A learner's L1 knowledge and culture may influence metaphoric processing in the L2; however, the extent, dimensions, causes and effects of this influence are largely unknown. Interestingly, learners' MC in the L1 has been found to correlate with their MC in the L2 (Littlemore, 2010). In terms of L2 learners' metaphoric processing, L1 knowledge seems to be the most-used strategy (Azuma, 2009; Cooper, 1999). L1 is generally employed via an indirect process similar to the traditional view of metaphoric processing; in other words, the literal meaning is accessed and rejected before the activation of figurative meaning (Searle, 1993). Nevertheless, the second stage of rejecting the literal meaning in favour of a figurative meaning does not happen automatically, but depends on a number of issues, such as learners' proficiency.

The influence of an L1 in metaphoric processing has been explained as the result of the cultural background and expectations of that language, which affects the way learners conceptualize the target language (Sharifian, 2007; Yu, 2007) and process metaphors in the target language (Boers, 2003; Kövecses, 2004). It is important that learners discern the way figurative language is used in a particular culture because learning a language means learning about a culture (Bailey, 2003) and becoming culturally accepted by a group (Atkinson, 1999). Language learners can gain linguistic and non-linguistic knowledge from the way a group conceptualises and instantiates their culture within which metaphors emerge. As a means of cultural transmission (Charteris-Black, 2003; Littlemore, 2003b), metaphors can raise learners' awareness of the relationship between language, thought and culture (Charteris-Black & Musolff, 2003; Niemeier, 2003, 2004) and intercultural communication (Taki, 2011). Because metaphor is both universal and culturally specific (Kövecses, 2005; Sharifian, Dirven, Yu, & Niemeier, 2008), a number of configurations of the relationship may occur between conceptual metaphor and metaphorical linguistic expressions between two languages (Boers, 2003; Deignan et al., 1997; Kövecses, 2003). Differences in cultural-ideological characteristics and assumptions may often result in the differences in the linguistic instantiations of a conceptual metaphor that may be shared between two languages (Kövecses, 2003), however subtle (Charteris-Black & Ennis, 2001).

A number of studies have investigated these cross-linguistic variations in L2 teaching. For example, Irujo (1986) examined whether advanced Spanish learners of English used L1 knowledge to comprehend and produce L2 idioms in comprehension and production tests. The results showed that identical idioms were the easiest to comprehend and produce for these participants. Idioms that were

similar in the two languages were equally easy to understand but influenced by the L1 interference in production, while idioms which were completely different in both languages were the hardest to comprehend. In addition, participants most correctly understood and produced idioms of high frequency, high transparency and accessibility. Charteris-Black (2002) found similar results in his study of L2 figurative proficiency in English and Malay. Malay English learners performed best with figurative expressions that have an equivalent conceptual basis and linguistic form between the two languages. The most difficult figurative expressions for them were those with an equivalent linguistic form but a different conceptual basis and those with a different conceptual basis and a different linguistic form. Charteris-Black concludes that there is intra-lingual confusion between higher and lower frequency L2 figurative expressions, which he explains is due to the typological distance between L1 and English. The pattern also applied to Chinese learners in Chen and Lai's study (2013). In addition, cultural differences may cause learners to misinterpret metaphors in the target language, as in the case of the Bangladeshi participants in Littlemore's studies (2001c, 2003b). These participants tended to arrive at inappropriate connotations of the metaphors the British lecturers used, resulting in their misunderstanding the main points of the lecture and misinterpreting the lecturer's stance towards the topic of the lecture.

Proficiency

It is generally assumed that learners' proficiency can determine their ability to process metaphorical language in an L2. It has been suggested that beginners will have difficulty with figurative language due to the lack of lexical knowledge; advanced learners, who are more aware of the acceptability of their interlanguage, will be more hesitant about producing figurative language while learners at intermediate level are those who may actually produce figurative language (Boers, 2004). Of those who have investigated the issue, Johnson and Rosano (1993) found that proficiency was not related to metaphor interpretation. On the other hand, Trosborg (1985) observed a direct proportion between language proficiency and metaphorical ability, which was consistent in both preference and production tasks. Jin's (2011) analysis of spatial metaphors in Chinese students' writings and Littlemore et al.'s (2012, 2014) investigation of metaphors in German and Greek students' essays also displayed a developmental trend in metaphor use across proficiency levels. In addition, there is a significant correlation between learners' proficiency and the accuracy in the use of formulaic sequences (Boers, Eyckmans, Kappel, Stengers, & Demecheleer, 2006) and between learners' vocabulary knowledge and their metaphorical competence (Azuma, 2004, 2009).

Cognitive style

Cognitive style is defined as "people's preferred modes of processing information, and hence preferred ways of learning" (Hawkins, 1998, p. 52). As part of the influence of the cognitive linguistics approach to metaphor, cognitive style has been investigated as one important variable of learners' metaphoric processing. Cognitive style has been shown to have an impact on learners' way of metaphor interpretation (Johnson & Rosano, 1993) as well as the speed of interpretation (Littlemore, 2001a).

The first dimension examined is the scale of holistic and analytic style of cognition. Learners who prefer a holistic style tend to treat the source and target domains of a metaphor as an integrated entity, while learners who prefer an analytic style see them as separate (Boers & Littlemore, 2000). Littlemore (2001a) maintains that holistic thinkers have a higher metaphoric competence in terms of speed and possible interpretations because the holistic cognitive style is associated with loose analogical reasoning and divergent thinking. Another continuum of the cognitive style is the preference of modality: some people have a predisposition for thinking in mental pictures (imagers) while others prefer to process information verbally (verbalisers). Boers and Littlemore's (2000) experiment showed that imagers were more likely to activate stereotypical mental imagery to explain conceptual metaphors. Boers, Eyckmans, and Stengers (2006) also found that high-imager participants generally outperformed their low-imager peers in multiple-choice and gap-filling tasks on L2 idioms. Similarly, Boers et al. (2008) observed consistent positive correlation between high-imagers' learning gain and their imagery processing ability while verbalisers had an advantage when information was presented to them propositionally. High-imagers, who are more successful in creating relevant interactive images, are more likely to adopt metaphoric extension strategies; verbalisers, on the other hand, were more successful in using contextual clues (Littlemore, 2004).

This correlation, however, seems to be unilateral. Littlemore (2004) notes that the presence of image information (the imageability of the metaphorical items) does not necessarily facilitate meaning processing, nor does the presence of verbal information automatically trigger learners to use the contextual clues (pp. 21-22). It is thus difficult to apply these findings in the formal teaching of metaphorical language or language in general. It requires too much on the teacher's part to be feasible: paying attention to the individual learner's hidden aptitudes while catering to a normally large and mixed class with the same set of material. Learners actually need the kind of training that can help them recognize which kind of information is presented to them so that they can autonomously apply the needed knowledge to the right task.

Directions for Further Research

A compelling issue in research on the interrelationship between metaphor and L2 learning is how this metaphor knowledge can directly contribute to language learning. As seen in the review above, despite its vigorous growth, research on metaphor and L2 education remains scarce, and the practical applications of this knowledge for language teaching have not been explored. There have been calls to present metaphor and figurative expressions explicitly in language teaching materials. Reviews by Lindstromberg (1997), Bailey (2003), and Littlemore and Low (2006a), however, have shown that language teaching materials make little reference to metaphor. An important study by Skorczynska Sznajder (2010) reveals only a slight overlap between metaphors used in a business English textbook and those found in a professional corpus of English business (two or three items

depending on the source domain). Findings like these should be alarming to those who are concerned about bridging the gap between teaching and research, as it shows that teaching and researching remain worlds apart.

Suggestions for classroom activities can be found in many studies (e.g., Boers & Demecheleer, 1998; Boers & Lindstromberg, 2008c, 2009; Lennon, 1998; Lindstromberg, 2001; McCarthy, O’Keeffe, & Walsh, 2010), but the findings of current literature on metaphor have not been presented in a way that is systematic and teacher-friendly enough for a metaphor-based teaching approach to be implemented to the full. It is perhaps unrealistic to expect busy teachers to read monographs (e.g., Holme, 2004, 2009; Littlemore, 2009) and apply the theoretical suggestions to the classroom. Teachers need awareness-raising and hands-on workshops before they can confidently implement a metaphor-based activity or lesson. Additionally, many claims that associate metaphor with construction learning and the affective side of language learning and feedback need to be empirically investigated.

In terms of methodology, the representativeness of the data can be seen as questionable in some studies. One small group of participants cannot speak for all L2 learners. One or two items of a few tropes do not constitute figurative competence; one test of one type of lexis does not constitute metaphorical competence. In a review of 17 studies on cognitive linguistic-based vocabulary learning, Boers (2013) has pointed out that in the majority of studies under examination, “the target vocabulary was poorly contextualised, so the input was lacking in cues regarding common usage patterns” (p. 217). This means that more research is needed to pinpoint the “usage-based” tenet promoted by cognitive linguistics, especially research that employs learners’ natural language production in natural settings. Longitudinal, corpus-based and process-oriented approaches are still not popular.

In order to successfully incorporate metaphor knowledge into the language classroom, a better understanding of metaphor is required. That is to say, the scope of metaphor research in L2 education should be expanded. A few directions of immediate interest are:

1. Of all the constructs that make up the metaphoricity of a text (e.g., conventionality, formulaicity of the metaphorical items, clustering of metaphors, metaphorical density, and linguistic structures), which most strongly reflects proficiency and to what extent? Is the developmental trend found in recent studies (Jin, 2011; Littlemore et al., 2012, 2013) a constant variable of proficiency development and how does one translate this indicator of proficiency into everyday learning, teaching and assessment?
2. Metaphor has been found among L2 learners at a very young age (Piquer-Piriz, 2008a, 2008b, 2011), but does this metaphoricity develop with age? How does it develop? And what are the differences in L2 metaphor use across age groups?
3. Which conceptual metaphors should be introduced to the L2 learners and in which order? When introducing conceptual metaphors, should teachers consider the learners’ cultural and linguistic background, the discipline, the topic of the

lesson, the objective of the task or an intuitive judgement based on what they like to teach most or students like to learn most?

4. When using conceptual metaphors to introduce new vocabulary, which source domain should be brought to attention first? Kövecses (2001) suggested that the most common and frequently-used idioms are based on the source domain of the human body and should be taught first and predominantly, but which part of the body? For instance, should the abdomen-centring cultural group be introduced first to the gut-related idioms, the heart-centring group to the heart-related ones, and the mind-centring group to the mind-related ones? What about dualistic groups who stress heart and mind equally (cf. Sharifian et al., 2008)? Should the teaching start with space, the ground of cognition and language (Mix, Smith, & Gasser, 2010; Tenbrink, 2007; Tyler & Evans, 2003) instead?
5. Cognitive linguists contend that words are developed in a radial network by means of metaphor and metonymy. Do L2 learners develop such radial networks and if so, how? Do they learn words separately, or do they establish the link between senses of words? Along the same lines, should the metaphorical (and metonymic) senses be introduced in the radial network with the prototypical sense or with synonymous metaphorical (and metonymic) senses of an overlapped network?
6. How do L2 learners use metaphors for discourse management? Does the way they pick a metaphor in the first place, the way they develop it, the way their metaphors cluster in discourse, and especially the way they use metaphor to start a conversation, change topics, etc... (cf. Cameron & Stelma, 2004; Kimmel, 2010) characterize their own individuality and cultural background or corroborate L1 users'?
7. Is the acquisition of metaphorical language item learning or system learning? There seems to be an assumption of a short-cut to L2 figurative language development via the introduction of MC and CF. What if the mastery of L2 metaphorical language were largely item learning where learners have to battle with myriads of conventionalized expressions?
8. What is going on in the learners' minds when they produce metaphorical language? Are L2 metaphors products of an analogical and associative thinking or a conceptual blending process? Are they mere strategic word decisions for communication purposes?

It is surprising that metaphor research in L2 learning does not seem to be influenced much by the mainstream of metaphor research, since implications of metaphor research have several practical implications for learners, teachers, curriculum designers, and material developers. Apart from the CMT that has been applied as discussed above, the Blending Theory (Fauconnier & Turner, 1994, 1996, 1998), the pragmatic cognitive approach to metaphor (Gibbs & Tendahl, 2006; Tendahl, 2009), the view of metaphor in discourse as dynamic complex systems (Cameron, 2007, 2010), and the Graded Salience Hypothesis (Giora & Fein, 1999; Giora, 2003; Peleg, Giora, & Fein, 2001) promise worthwhile research endeavours that can benefit L2 learners. For instance, the Graded Salience Hypothesis maintains that the most salient features of both the source and target domain are

automatically accessed in figurative language processing regardless of its conventionality, frequency, familiarity, or prototypicality. Investigating the implications of the hypothesis in L2 acquisition, Kecskés (2001) found that compared to native speakers, non-native speakers were not able to apply the principle of salience in the L2 due to the absence of conceptual fluency, and that to the non-native speakers, the most salient meaning was the literal meaning (Kecskés, 2006, 2007). The Graded Salience Hypothesis might elucidate the patterns of meaning shifts in learners' discourse where learners' 'salient meaning' shifts or evolves from one sense to another depending on the learners' proficiency, profession, social context and familiarity with the most common use of the item.

This review has addressed the current state of metaphor research in L2 education in terms of its importance and conceptualization, and offered several worthwhile directions for future research. It is believed that metaphor will soon be valued in L2 education in order to promote innovative metaphor-based practices of L2 teaching and learning.

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