The Comprehension of Body-Part Idioms by EFL Learners: A Cognitive Linguistics-Inspired Approach

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This paper addresses the comprehension of body-part idioms by Arabic-speaking EFL learners from a cognitive linguistics-inspired perspective. A test was devised to examine participants' receptive knowledge of body-part idioms. Participants' performance was assessed in relation to similarity of idioms to L1 and their level of transparency, moderated by language proficiency. The variables were carefully operationalised, and the data was analysed following a mixed method design employing think-aloud (TA) protocols. The findings reveal that language proficiency and the scores on the test of idioms correlate significantly. Similarity to L1 and the level of transparency of idioms also correlated significantly with the scores on the test of idioms. The findings also show interesting insights related to body-part lexis, such as imageability, concreteness and familiarity.

Keywords: *L2 idiom comprehension, language proficiency, similarity to L1, transparency, strategy use*

1. Introduction

There is a widespread recognition among researchers that "idiom comprehension is in itself an acquisition issue because the comprehension of an idiom is a prerequisite for its acquisition" (Liu, 2008, p.61). Cieślicka

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(2006) noted that idioms are problematic for foreign language learners but claimed that this research avenue is overlooked by researchers. Models of first language (cited as L1 henceforth) processing seem to overshadow studies of the second language (cited as L2 henceforth) processing of idioms. The comparison of models of idiom processing in L1 and L2 inspired a plethora of research from various linguistic perspectives (e.g. Able 2003). The complex underlying process that involves the strategies employed by the language users to understand different types of idioms was an issue that a number of researchers investigated. Cooper's (1999) exploratory study addressed the extent to which theoretical models of comprehension of idioms in L1 apply to the comprehension of idioms in L2 by examining on-line comprehension, and the strategies used by L2 learners to process idioms. He found that L2 idiom processing does not follow any L1 idiom processing pattern. Instead, he proposed a 'heuristic' approach whereby the L2 learner treats the idiom as problematic when encountering it and tries to solve it on a trial-and-error basis by employing various strategies.

The heavy reliance on L1 as a strategy to process idioms by L2 learners generated an interest in the role of L1, particularly on the positive and negative role of it on the learner, (e.g. Hussein, Khanji and Makhzoomy, 2000). However, taken alone, the L1 effect is not the only factor that is involved in this process. The processing and acquisition of idioms is also likely to be affected by 'transparency'. The absence of a link between the literal and figurative meanings is one of the defining features of 'opaqueness', which is also a mark of idiomaticity. This lack of connection between the literal meaning of the constituent parts and the figurative meaning as a whole constitutes a stumbling block to comprehension of idioms in L1 as well as to L2 learners (e.g. Able 2003; Irujo, 1986; Steinel, Hulstijn, and Steinel, 2007). Irujo (1986) pointed out that the non-literalness of the idiom is a property that results in difficulties for language learners. Motivated by the findings of the current literature on L1 and L2 comprehension of idioms, the overarching question of this study is to investigate the comprehension of idioms by L2 learners moderated by language proficiency, and more specifically the characterising features of idioms that affect the performance of EFL learners. These are namely,

similarity to L1 and the level of transparency of the idiom. In addition to this, language proficiency of the L2 learner, the level of similarity of the idiom to L1 and the level of transparency in idioms will all be explored in relation to the strategies that L2 learners employ to process them.

2. Literature Review

2.1 The role of L1

Previous studies on the role of L1 focused on whether it aids or hinders the comprehension of idioms. Irujo (1986) investigated the comprehension and production of idioms, and her materials were selected on the basis of native speakers' ratings of the degree of idiomaticity of the expressions. Her results showed that identical idioms, which are likely to induce positive transfer, were the easiest to comprehend and produce. Unique or different idioms posed the greatest challenge to the participants. In a later study, Irujo (1993) explored avoidance of idioms using a translation task to investigate the influence of L1 Spanish on advanced ESL learners' comprehension of three types of English idioms: identical, similar and totally different. The results showed that participants used their L1 to both comprehend and produce idioms in the L2. English idioms that had exact equivalents in Spanish were the easiest to understand. Similarly, Laufer (2000) investigated idiom avoidance distinguishing different types of idioms and found that learners did not avoid them generally; however, expressions which were partially similar and those with no L1 equivalent induced more avoidance. However, both studies grouped idioms into the categories of identical/similar/dissimilar without taking into consideration that idioms are a special category that resist clear-cut categorisation.

From within the Arabic-speaking context, Abdullah and Jackson (1998) examined Syrian college seniors' comprehension of idioms from various levels of similarity to L1 of the participants. The results suggested that participants' performed better on the identical idioms; however, they scored significantly lower on idioms that were identical in form but different in meaning (i.e. false cognates). They also found that many participants failed to translate identical idioms and attributed this to a belief that no such idiom existed in English (i.e. avoidance of the direct translation of

identical phrases). Similarly, the Hussein et al., (2000) study aimed to find out whether identical and similar idioms lend themselves more easily than different ones in translation from Arabic into English. They found that participants scored high in identical idioms as opposed to the different ones, which caused negative transfer. Similarly, these studies also focused on the effect of L1 (Arabic) but relied on clear-cut dichotomous criteria (e.g. considering idioms as being either similar or different) because there are variations within these categories too. Moreover, this categorisation method is sometimes operationalised subjectively and does not necessarily represent the population of their test-takers.

Jarvis and Pavlenko (2010) noted that learners of a foreign language that is related to their L1 (e.g. Dutch learners of English) comprehend that language much better than speakers of a more distant language − as is the case with Arabic-speaking learners of English. Kellerman (1986) examined the 'transferability judgements' of native Dutch learners of English and found that it was tied to their notions of prototypicality of meaning. He found that advanced learners of English were more likely to judge a word to be transferable when they perceived the L1 usage to be basic, and the converse is also true.

As Jarvis and Pavlenko (2010) explain, cross-linguistic influence (CLI) is triggered when a person's L2 knowledge fails to find a rule, form, function or structure. It goes beyond the linguistic and onto the conceptual or cognitive level. Charteris-Black's (2002) study indicates that the easiest metaphoric expressions were those which have equal conceptual foundation and linguistic forms in the native and target languages. For Steinberg (1993), "the ultimate source of meaning is based on experiences of the world and mind" (p. 171). These experiences can be non-linguistic in nature and based on culture and the way people think about or observe the world around them. A cognitive linguistics-inspired study by Boers, Demecheleer, and Eyckmans (2004) arrived at similar findings. They analysed a databank of students' scores in an online English idiom exercise and found that the lack of familiarity with a given source domain reduces the likelihood of dual coding, i.e. a process of associating verbal information with a mental image, which is believed to facilitate recall (cf. Paivio, 1986). According to Brown (1980), L1 of the L2 learner is often positively transferred, in which case

the learner benefits from the facilitating effects of L1. Negative transfer, however, appears when the result is a "nontarget-like second language form" (Gass and Selinker 2001, p. 457). Odlin (2003) further explains that both positive and negative transfer can happen in the case of similarities or dissimilarities between L1 and L2.

2.2 The role of transparency

Langlotz (2006) views the degree of transparency as being primarily dependent on the speaker's ability to relate the 'profiled literal senses' to a certain frame. Geeraerts (1995) posits that the concept of transparency depends on the degree of semantic overlap or similarity between an idiom's literal and figurative meanings. Accounting for transparency in such a scalar manner, as is the case with Geeraerts (1995), is plausible as it overcomes the problem of having to identify clear-cut criteria of what appears to be a fuzzy phenomenon. In this study, 'transparency' is referred to as the level of closeness between the idiomatic and literal meanings of the constituent parts. The absence of a link between the literal and figurative meanings is one of the defining features of 'opaqueness', which is a mark of idiomaticity. It is also considered a 'semantic' gradient phenomenon, i.e. some idioms are fully transparent (e.g. *face to face*), partially transparent or opaque (e.g. *to pull someone's leg*).

With regard to the effect of transparency on the comprehension of idioms in L2, Irujo (1986) noted that participants comprehended and produced more easily and correctly the idioms which were metaphorically transparent, in that their literal meanings were closely related to their figurative meanings and those which tended to have simple vocabulary and structure in addition to the idioms which were frequently used in everyday speech. In a later study, Irujo (1993) found that transparent idioms appeared to be easier to understand compared to non-transparent ones. She adds that, in most cases, when unsure of how to proceed a learner has several options: L1 transfer, avoidance, circumlocution or paraphrasing, and in relation to idioms they attempt literal translation.

In a more rigorous experimental study, Steinel, et al., (2007) employed a paired-associate learning paradigm. The participants were required to learn English idioms either receptively or productively. They were then assessed

twice (immediately and then three weeks later). They proposed that transparency might be expected to facilitate performance. Transparency, as predicted, did have differential effects on performance depending on the direction of testing. Hardly any variation in performance scores, due to differences in transparency was observed on the productive test. When comprehension was tested, on the other hand, performance was boosted by higher transparency. Their study also revealed that imageability of the idiom was better than transparency in predicting performance.

Along the same lines, Cieślicka (2006) utilised a cross-modal priming instrument in which non-native speakers of English were presented with idioms in neutral contexts (e.g. *Peter was planning to tie the knot later that month*). The contexts were neutral in the sense that either a figurative or a literal meaning was possible. Her model follows Giora's (1997) method of assigning literal meaning a higher salience status in online idiom processing assuming the primacy of literal over figurative meaning. Cieślicka found a significant priming effect for literal target words and concludes that "understanding L2 idioms entails an obligatory computation of the literal meanings of idiom constituent words" (Cieślicka, 2006, p. 116). In a another study, Cieślicka (2010) proposed the Literal Salience Resonant (LSR) model of L2 idiom comprehension based on the assumption that literal meanings are more salient to learners. She views the acquisition of figurative meanings as a process of 'automatisation' in which the connections between lexical representation of the idiom's constituent parts in the learner's mental lexicon is gradually strengthened through being repeatedly encountered (resulting in co-activation) until the figurative meaning can be accessed holistically in the lexical network.

As was the case with similarity to L1, the level of transparency and what it refers to can be quite varied, and it cannot be truly represented if treated as dichotomous or following a clear-cut categorisation process.

2.3 The role of language proficiency

Most studies that explored comprehension of idioms in L2 have marginalised the role of L2 proficiency. In a study about idiom avoidance, Irujo (1993) found that L2 proficiency affects avoidance of idioms, as second and third-year university students produced more idioms compared

to first-year students.

Previous research on the notion of proficiency has generated many models. Pawley and Syder (1983) argue that error-free production does not guarantee fluency; conversely, fluent production does not assure accurate production. Advanced level proficiency requires combining the two in a target-like or idiomatic fashion. Johnson (1989) and Johnson and Rosano (1993) conducted a series of studies focusing on cognitive style as well as language proficiency. They assessed English language proficiency and 'metaphor fluency', which they measured based on the ability of the participants to interpret metaphors. They found a statistically significant correlation between native speakers' metaphor fluency and a certain cognitive style (analytic), suggesting that metaphor fluency is more conducive to idiom comprehension. It is in fact related to a certain cognitive style.

Bachman (1990) proposed an influential model incorporating three aspects: language competence, strategic competence and psychological mechanisms. In light of this, Danesi (1995) proposed that an EFL learner is conceptually fluent if s/he knows how the target language organises the expression of its various concepts on the basis of metaphorical reasoning. He also claims that the hallmark of proficiency is the ability to 'metaphorise' in the L2. For Danesi (2003), conceptual competence comprises the speaker's ability to use the conceptual system of L2 appropriately and the ability to transform concepts into linguistic categories. He adds that associative competence is the knowledge of how abstract concepts are grouped and interrelated in relation to culture. So, for Danesi, conceptual competence subsumes a set of abilities which feed into L2 proficiency.

3. The Present Study

Previous studies have selectively and randomly included idioms in their instruments to test students without following any criteria or setting limitations. There are also problems with specificity in terms of how idiomaticity is represented and what properties of idioms are considered, and how they are measured is not always conducted by following rigorous methods or carefully designed techniques. The representativeness of idioms,

including what they cover and what level of acquisition is being addressed, is also important, and researchers should be very cautious to address these issues and limitations so as not to extrapolate their conclusions beyond what is warranted.

By carefully controlling for language proficiency that was either ignored in previous research or tested imprecisely with no rigour, the present study aimed to investigate how EFL learners perform on English idioms in relation to their level of similarity to L1 and transparency from a cognitive linguistics framework. Essentially, these two properties of idiom are taken as 'gradient', which theoretically aims to overcome problems of idiosyncratic behaviour of idioms that seem to resist single-criterion models to account for them, making this study worthwhile.

Lakoff (1987) mentions that idiomatic expressions are both 'conceptually motivated' and 'bodily motivated'. Accordingly, the choice of idioms included in the study was limited to the body-part domain, as they are very frequent (cf. Littlemore's, 2001). This is also motivated by the universal salience of body parts in human experience, represented in the concept of embodiment (cf. Evans and Green, 2006; Yu, 2014). This salience is underlined by the high frequency of body parts in processes of grammaticalisation (Heine and Kuteva, 2002). Lakoff explains the salience of body-part idioms in terms of cognitive development: children understand the world in terms of their bodies and the relations between their bodies and the world. The cognitive development from concrete to abstract is mirrored by linguistic development, in which concrete terms come to serve figurative purposes.

3.1 Research Questions And Hypotheses

The design involved employing qualitative and quantitative paradigms. The qualitative data was obtained via introspective methodology using a Think-Aloud (TA) protocol as an elicitation technique to permit qualitative analysis. In light of previous literature the following research questions and hypotheses were formulated:

(1) To what extent is language proficiency related to the receptive knowledge of EFL students of body-part idioms?

(2) To what extent does the level of first language similarity relate to the receptive knowledge of EFL students of body-part idioms?

(3) To what extent does the level of transparency of idioms relate to the receptive knowledge of EFL students of body-part idioms?

(4) What strategies do EFL students employ when they process body-part idioms depending on their language proficiency, the idioms' similarity to L1 and their level of transparency?

Hypothesis 1. The language proficiency of the participants correlates positively with their scores in the test of idioms.

Hypothesis 2. The participants score better on more similar idioms compared to less similar idioms.

Hypothesis 3. The participants score better on more transparent idioms compared to less transparent idioms.

3.2 Participants

The participants featured 91 third and fourth year female[1] students. All were majoring in the Arabic/English Translation programme at King Saud University in Riyadh, Saudi Arabia. The study was restricted to third and fourth year students so as to ensure a minimum threshold of language proficiency.

3.3 Instruments

The present study employed two tests: (a) the standardised paper-based New 2004 edition Oxford Placement Test (OPT) to gauge learners' proficiency, and (b) a test of idioms that aimed to tap into the participants' knowledge of idioms. It was designed in the MCQ format as it helps to assess recognition over recall. To make sure that the correct response is 'genuinely correct' the formulation of it was kept as close as possible to the way the idiom was paraphrased in the 'Oxford Idioms Dictionary for Learners' by Parkinson and Francis (2006). All idioms in the test were related to a specific semantic

[1] The sample was restricted to female students due to certain cultural and social norms which may restrict access to some male departments. The norm, however, is that in most academic settings at KSU, male and female sites function separately.

domain of body parts. These were: face(s), head(s), eye(s) and heart(s). The criteria for the selection of body-part idioms were based on their similarity to Arabic. A total of 60 idioms were selected: 30 'similar' to Arabic and 30 'different'. So, this means 12 idioms were selected containing the aforementioned body parts (6 were 'similar' to Arabic and 6 were 'dissimilar'). The distractors were formulated depending on the context provided in the test. Below is an example of an item that appeared in the test:

(1) It is a good hospital, I am sure that my brother is **in safe hands**.

(a) To be in a critical position.
(b) To be taken care of.
(c) To be ignored.
(d) To be dealt with by clean hands.

To obtain native baseline data, five undergraduate British students from Lancaster University participated in the test in the first stage along with another group of non-native participants in the pilot study. As expected, the mean score of the native speakers was higher, and options causing misunderstandings were revised. After the revisions, the test was administered to the larger sample. Items in the test were counterbalanced, and item analyses were conducted post-hoc. For each item, the facility value and the discrimination index (DI) were obtained, and 9 items were excluded because their DI was either negative or zero.

4. Data collection and analysis

Before beginning the test, participants read and signed the consent agreement form. They first completed the OPT, then the test of idioms. Following Jourdenais (2001), TA participants (n=10) were requested to complete a math problem while thinking aloud. Then, they moved on to the actual think-aloud task.

OPT was marked following the marking scheme of the test. An alpha level of $p < .05$ was set for all tests. The total scores ranged between 107

and 180 and the SD was (14.56). According to the cut-off points of the OPT, participants fell between bands three and seven. In the test of idioms, they were given a point for each correct response and no points for incorrect responses. Scores ranged between (8 and 44) and the SD was (6.97). Checks for statistical normality were conducted, and skewness and kurtosis ratios were in the acceptable range of ±2 for both tests.

The TA data of audio recordings were transcribed. In cases where Arabic was used, the segments were translated. To ensure reliability of the transcriptions, 10% of the data was randomly selected and transcribed by a second translator. The transcriptions were then regenerated with a focus on idiomatic equivalents. An inter-transcriber agreement was calculated and was found to be relatively high (<.94).

4.1 Operationalising variables

To ensure the validity of the operationalisation measures of similarity to L1 and transparency, it needed to be ascertained that idioms are perceived and identified as such by the test-takers (or by a similar population to the test-takers). Nineteen Saudi national postgraduate students majoring in linguistics participated in the ratings. The raters were asked to rate how similar to Arabic or transparent the target idioms were on 5-point Likert-type scales. Scores were summed up and averaged for each item. For transparency, the rating task presented the raters with a definition of the concept and provided them with two extreme illustrative examples (i.e. a very transparent vs. an opaque idiom). For both variables, the agreement amongst raters was checked and a high alpha level ($\alpha > .90$) was obtained. The mean score of similarity ratings was 2.85, and SD was (.88). As for transparency, the mean score was 3.72 and the SD was (.65). All skewness and kurtosis ratios across the variables were in the acceptable range of ±2, suggesting no departure from normality.

5. Results

5.1 Statistical results

Table 1 shows Pearson's r correlation between the scores in the OPT and the

scores in the test of idioms[2] (r = .69, $p < .001$, n= 51). According to Cohen (1988), this effect size is large suggesting a strong association.

Table 1. Correlation between scores in the test of idioms and the OPT

		Scores in the OPT	Scores in the test of idioms
Scores in the OPT	Pearson Correlation	1	.69**
	Sig. (2-tailed)		.001
	N	91	91
Scores in the test of idioms	Pearson Correlation	.69**	1
	Sig. (2-tailed)	.001	
	N	91	91

**. Correlation is significant at the 0.01 level (2-tailed).

Table 2 shows the Pearson's r positive correlation between the scores in the test of idioms and the similarity ratings (r = .28, p =.04, n= 51). According to Cohen (1988) this is a small effect size, suggesting that the association strength between the two variables is weak.

Table 2. Correlation between scores in the test of idioms and similarity ratings

		Score in the test of idioms	Similarity ratings
Score in the test of idioms	Pearson Correlation	1	.28*
	Sig. (2-tailed)		.04
	N	51	51
Similarity ratings	Pearson Correlation	.28*	1
	Sig. (2-tailed)	.04	
	N	51	51

*. Correlation is significant at the 0.05 level (2-tailed).

Table 3 shows Pearson's r positive correlation between the scores in

[2] The scores in the test of idioms were treated as a dependent variable when correlated with the OPT scores. However, they were treated as an independent variable when correlated with the ratings of similarity and transparency.

the test of idioms and the transparency ratings (r = .34, *p* =.01, n= 51). According to Cohen (1988), this is a medium effect size and it suggests that the association strength between the two variables is medium.

Table 3. Correlation between scores in the test of idioms and transparency ratings

		Score in the test of idioms	Transparency ratings
Scores in the test of idioms	Pearson Correlation	1	.34*
	Sig. (2-tailed)		.01
	N	51	51
Transparency ratings	Pearson Correlation	.34*	1
	Sig. (2-tailed)	.01	
	N	51	51

*. Correlation is significant at the 0.05 level (2-tailed).

5.2 TA protocols' results

The TA group data was analysed qualitatively to triangulate the quantitative results and also explore the strategies that TA group participants used. In the first stage, protocols were checked for an intra-coder agreement. An agreement of 92% between the two coders was obtained. Using content analysis of the emerging themes, six strategies were identified as follows:

(1) guessing the meaning from the context.
(2) discussing and analysing the idiom.
(3) referring to literal word-for-word translation of the idiom.
(4) referring to an L1 idiomatic equivalent of the L2 idiom.[3]

It was noted that students' verbalisations were varied with respect to producing idiomatic L1 equivalents. They were produced in Arabic, in three different registers, as (a) formal, (b) informal, and (c) neutral, or allowing

[3] In some cases, a literal translation of the idiom gives its idiomatic equivalent (e.g. to touch a hair of someone's head), and this is the area in which this strategy overlaps with the previous one to an extent.

both interpretations, depending on the pronunciation. Therefore, further coding was needed to mark these discrepancies[4]

(5) providing an interpretation or paraphrasing:
(6) referring to experience or background knowledge.

A typical example of this strategy is when a student mentioned an incident relating to when the idiom was first encountered, which only occurred 8% of the time. Guessing from the context occurred 20% of the time, while discussing and analysing the idiom occurred 15% of the time. The remainders can be grouped as L1-based strategies. This broader category encompasses three strategies: first, providing an interpretation or paraphrasing (occurred 33% of the time), second, referring to an L1 idiomatic equivalent of the L2 idiom (occurred 14% of the time), while the third is referring to a literal word-for-word translation (occurred 10% of the time). Overall, L1-based strategies were employed 57% of the time.

5.2.1. Language proficiency

In general, there was no particular pattern of strategy use that can be traced back to a certain level of proficiency. Nevertheless, the effect of how proficiency figures prominently can be noted in the item *your heart is in your mouth*, which was answered correctly only by two of the highest-scoring students. The lowest-scoring students did not know what the word 'anxious' meant, which was used in the wording of the correct option. This idiom requires a fine-grained perception of the word *qalaq* 'worry', in Arabic, as English expresses this as 'worry' and 'anxiety', which is at another level of intensity and is not similarly present in the Arabic language. The majority opted for the more generic option, 'to be worried'.

5.2.2. Similarity of idioms to L1

The data reveals a contrast in strategy use by the TA participants on similar idioms versus dissimilar ones. It was noted that idioms which are very

[4] If it is not indicated in the translation whether the interpretation is formal (f.) or informal (inf.), then the interpretation is neutral.

similar to L1 and can be translated into Arabic evoke the use of relying on L1-based strategies. The idiom *from head to toe* for example, came at the top end of the similarity continuum, and the majority of the TA participants (n=8) identified its meaning correctly. This idiom is a typical example of idioms in which a literal interpretation can work as an idiomatic or figurative meaning[5]. Therefore, it evoked the strategy of providing an L1-based alternative, as in the example below:

All over the body *min al-ra'as li-hathā akhmuṣ al-qadamayn [from head to toe].*

Mā yeṣlaḥ al-ra'as liḥalah wa mā yiṣlaḥ al liḥaluh [it can't be the head alone, and it can't be the] toes *laḥaluh [alone].*

Other students provided conventional idiomatic counterparts which differ in register, *mughaṭṭā min foog li-taḥat* (literally, 'covered from top to bottom', *inf.*), and *mughaṭṭa min a'lá ra'asih li-asfal qadamaih* (literally, 'covered from the top of his head to the bottom of his feet', *f.*). The idiom *a slap in the face* also came at the high end of the similarity scale, but it apparently was not easy. For three students it evoked its direct L1 counterpart *ṣaf'a fī al-wajh* (literally, 'a slap in the face', *f.*), which is an idiomatic equivalent and a product of a literal translation. Although the idiom in Arabic is motivated by the same underlying conceptual metaphor, FACE STANDS FOR THE PRIDE OF THE HUMAN BEING misinterpretations did occur. The idiom was linked to *ṣadmah*, 'shock' and 'surprise', by some students rather than 'disappointment'. The apparent literal denotative meaning of this expression in Arabic is completely different from its connotative cultural meaning in English. Some participants opted for the option 'an action that is intended as an insult', as they may have thought of a corresponding idiom in Arabic which conveys a slightly different meaning, but is worded exactly the same. This resulted

[5] The first literal interpretation can be in a situation in which one says the baby is covered from head to toe, i.e. when a person is wearing something that covers the part between the head and the toes. The second interpretation is figurative, whereby one can say the baby is covered in mud from head to toe, meaning everywhere, without specifically meaning the part between the head and the toes.

in negative transfer, as the word 'slap' suggests 'insult' to Arabic learners. This can be explained in terms of the socioculturally superior connotation of the face in their culture as the most important and sensitive part of the human body, which is similar in English. The English idiom grounds 'slap' in the concept of 'disappointment', which is not the same in Arabic, which grounds 'slap' in 'humiliation'.

Unlike the previous example, the idiom *to take heart from* came at the lower end of the similarity scale and was very problematic. In the absence of an L1 equivalent, it was not surprising that none of the TA participants managed to identify it correctly. Instead, students relied heavily on the context but ultimately failed to understand it.

Moving on to a discussion about the effect of similarity beyond the linguistic level (i.e. at the conceptual level), the idiom *to enter somebody's head*, is motivated by the underlying conceptual metaphor THE MIND IS A CONTAINER. As well as using contextual clues, students relied on providing an interpretation and an idiomatic L1 equivalent. It was noted that all of these interpretations stemmed from the same underlying concept but differed slightly at the linguistic level. This can be seen in the expression *mā dakhal mazājī* (literally, 'it didn't enter my mood', *inf.*), and *mā khaṭar fī balī* (literally, 'it didn't occur to my mind', *inf.*). Interestingly, one student, successfully provided an idiomatic equivalent, *mā dakhalat qalbī al-fikrah* (literally, 'the idea did not enter my heart'), in which HEART IS A CONTAINER, similar to how the head is represented, which is possible in Arabic. This asserts that such conceptualisations are evidence that our cognition is fundamentally "built for encultured variation" (Levinson 1996, p. 177). The 'heart' as a body part is seen as the locus of emotions and values. As a source domain it is productive and can be considered universal to some extent. The 'heart' has been attested as expressing emotions in many languages and different cultures, including Chinese (e.g. Yu, 2003), English (e.g. Niemeier, 2000) and Hungarian (e.g. Kövecses, 2002). In Arabic, it has an Islamic basis too. In the Holy Qur'an the heart is viewed as a bearer of the mental faculty of understanding (Maalej, 2008). Maalej also mentioned that the 'heart' is a productive source domain for cultural conceptualisations in Arabic. It is a container for emotions, and people as well as objects can enter and leave it (an IN-OUT schema).

Similarity to idioms at the conceptual level seems to work both ways, and it helped the students to apply L1-based strategies successfully when similarity occurred at both the linguistic and conceptual levels. However, it also confused students in cases where there is a lack of linguistic expression, as in the idiom *to cut off your nose to spite your face*. There is no equivalent for this idiom in Arabic at the linguistic level, so it was problematic to half the TA group. One reason behind the confusion might be attributed to the sociocultural factors of the learners' language. This idiom was erroneously linked to another deeply entrenched underlying conceptual metaphor in Arabic, THE NOSE STANDS FOR THE PRIDE OF HUMAN BEINGS, and as this idiom included the word 'nose', this underlying conceptual metaphor was employed. For example, one student unsuccessfully provided an interpretation in L1 *ya'nī ghaṣban 'anhā* (literally, 'by force', inf.) and *yaksir khashim* (literally, 'to break the nose', inf.). The conceptual similarity provoked unsuccessful use of L1. This also upholds the argument of Lakoff and Johnson (1980, p.12), who stated that "a culture may be thought of as providing, among other things, a pool of available metaphors for making sense of reality".

Interestingly and unexpectedly, the results demonstrate providing many varieties of L1 equivalents in non-standard or informal varieties as well as formal ones. Participants relied heavily on non-standard varieties, which are usually discarded and considered inferior to the standard ones. Trudgill (1995, p. 84) observes that "the same speaker uses different linguistic varieties in different situations and for different purposes". The idiom *to save face* is one example, as participants thought of the equivalent of it regardless of its level of formality. In communities which have two or more varieties there is a 'standard', as is the case with Modern Standard Arabic (MSA) and a "regional dialect" (Ferguson, 1964, p. 429). The standard variety is formal and superior and is accepted in formal education. This situation is what Ferguson (1964) defined as 'diglossia', where "two varieties of a language exist side by side throughout a community". Baker (1992) attributes the lack of use of idioms by Arabic speakers to the influence of standard formal Arabic where idioms are avoided, and she is particularly referring to colloquial idioms. However, in the verbalisations, participants seem to inextricably intertwine non-standard and standard

Arabic together to better understand the idiom in question.

5.2.3. Transparency

The qualitative data reveals a consistent advantage for the most transparent idioms as they provoked successful literal translations. The idiom *hand in hand* was answered correctly by the majority of TA students, and it received the maximum rating for transparency. It is also an example of how a literal interpretation can work as an idiomatic or figurative meaning. As the match between L1 and L2 in this expression is very clear (grammatically and lexically), there is hardly any room for negative transfer, and the reverse is also true.

The findings of the TA protocols revealed that some other factors also influenced students' strategy use, such as the imageability of an idiom, concreteness, positive and negative connotative meanings related to Arabic, as well as familiarity with the idiom. The idiom *to put one's head in the lion's mouth* was answered correctly by the majority of the TA group. It is an example of a highly imageable idiom, as its constituents (head, lion, mouth) are all concrete nouns, making the phrase amenable to visualisation. This in turn proves that high imageability enhances dual coding. Imageability as a variable was not controlled for or measured in this study, but it seemed to play a role in helping students to apply strategies successfully, as can be seen below:

> I put my head in the lion's mouth, *ḥaṭṭayt ra'asī bi-fam al-asad ma'nātuh [I put my head in the lion's mouth, meaning you, hmm]* endanger yourself, *tuḥuṭṭī nafsik fī al-khaṭar [put yourself in danger]*.

In the idiom *to have a heart of gold*, the connotative meanings of the word 'gold' as the colour and the metal itself in Arabic (and also English) convey positive and 'genuine' senses. These seemed to influence the students' thoughts. The vast majority of the participants did not encounter problems with this idiom. Students relied on the strategy of providing L1 equivalents as *ṭayyib al-qalb* (literally 'kind-hearted', *inf.*). Others mentioned counterparts with reference to colours, such as *qalbuh min*

dhahab (literally 'to have a heart of gold'), which is a literal translation of the idiom, and *qalbuh abyaḍ* (literally 'white-hearted', *inf.*), which means 'kind-hearted'.

The idiom *to wash one's hands of someone* proved to be highly familiar to the students. This was detected from the number of correct answers (although familiarity was not measured in this study). One student produced a literal translation, which is also the idiomatic equivalent. The word *ṭifisht* (literally, 'I'm fed up', *inf.*), may reflect accessing a chunk that was actively present in her mind that was not merely literally translated.

6. Discussion

6.1 Language Proficiency And Scores In The Test Of Idioms

The correlation analysis of the participants' overall scores in the test of idioms and their scores in the OPT yielded an unequivocal and affirmative response to the first research question. The results are consequently not in line with the proposals of Johnson (1989) and Johnson and Rosano (1993), who posit that language proficiency only plays a limited role in idiom comprehension. Nonetheless, the findings conform to the proposal of Danesi (2003), who argued for what he called 'metaphorical competence' that subsumes language proficiency. The lowest-scoring students were sometimes able to understand the idioms based on their metaphorical competence, but their scores were low because of their linguistic proficiency. The results also support the findings of Zyzik (2011), whose study showed a significant effect for prior lexical knowledge on performance.

Another issue that might explain why more advanced students outperformed others on the test of idioms relates to what Kellerman (1977) calls 'perceived language distance'. Kellerman stated that positive and negative transfer are more likely to occur when the learner believes that L1 and L2 are typologically similar. However, in this study, and unlike Laufer's (2000) study findings, it was clear that students were aware of how distant the Arabic is from English, and there was no case in which student avoided the correct interpretation because it was very similar to Arabic. Kellerman also argues that language proficiency of the learner works as a 'transfer detector'. He hypothesises that at lower levels of proficiency, learners are

"relatively naïve, linguistically speaking, and … will be forced to rely on their own 'feel' for the languages concerned" (p.114). Increased exposure to L2 therefore enhances not only the language proficiency of the learners, but also their metalinguistic awareness with which they can judge the possibility of transfer. It follows that it would be pedagogically plausible to take this variable into consideration. Teaching idioms should follow a certain developmental pattern, allowing students from lower proficiency levels to understand certain idioms at a particular stage.

The TA analysis conducted on the protocols showed no clear discrepancies in strategy use based on proficiency levels, as participants processed idioms on a trial-and-error basis until they arrived at a plausible interpretation. Students relied heavily on the context, with the highest-scoring students outperforming the lowest-scoring ones. There were instances where the lowest-scoring student was able to interpret idioms correctly in L1 but struggled to opt for the correct answer. Hence, language proficiency seems to have played a role in successful applications of the strategy used.

6.2 Level of similarity to L1 and the scores in the test of idioms

The correlation analysis between the similarity ratings of the native Arabic speakers of idioms and the scores in the test of idioms proved to be statistically significant. The TA protocols provide abundant evidence of CLI across linguistic and conceptual levels, inducing both positive and negative transfers. This finding is in line with the majority of previous research investigating comprehension of idioms in L2 (e.g. Abdullah and Jackson, 1998; Hussein et al., 2000; Irujo, 1986, 1993; and Zoghoul and Abdul-Fattah, 2003). The findings demonstrate that participants provided L1 equivalents in standard and non-standard forms. If presented in a feasible manner, both varieties could be pedagogically exploited to direct learners' attention to similar forms available in English which match with ones in Arabic.

The results show that similar idioms may enjoy a better status in processing because of their similarity at the linguistic and/or at the conceptual level, but also at the cultural level, which is very likely to be the case if the idiom is similar at both. Several studies have arrived at similar conclusions (e.g. Charteris-Black, 2002), and the converse may be true for the least similar idioms. It appears a plausible assumption that if the idiom

is dissimilar at the linguistic level, then it is less likely that the cultural references match in L1. With this caveat in mind, it is worth considering teaching opaque idioms, the least similar and, particularly, those which do not have counterparts in Arabic at either level at a later stage.

However, there were cases in which the linguistic expression was different but idioms were well conceived based on similarity of the underlying conceptual metaphor, as was the case with idioms related to 'heart'. One explanation of this finding could be ascribed to the concept of shared human knowledge (cf. Kövecses, 2002) and universality of comprehending certain idioms (cf. Chen and Lai, 2014).

Indirectly, the findings also inform research comparing L1 and L2 idiom comprehension. The results are in line with the findings of Abel (2003) and Cieslicka's (2006, 2010). L2 idiom comprehension is unquestionably different from L1 idiom comprehension models. This study asserts that L1 is present in the mind of the learner. L1 models of the mental lexicon assume the existence of links between semantically related words, but L2 idiom processing seems to be more complex, involving the retrieval of L1 knowledge. Although the interplay between L1 and L2 is not straightforward, it should be taken on board in any model or theory of L2 idiom processing to formulate a credible argument. Contentiously, any model should also be language-sensitive, as one single model cannot account for the variations within the language, let alone across different languages. The results obtained confirm that similarity to L1 seems to be the most influential factor, as it affects both performance and strategy use. Consequently, the second hypothesis can be firmly accepted.

Similarity to L1 seems to have affected the strategies used in various forms. Numerous interpretations in L1 at various levels of formality were noted in the students' verbalisations. It was noted that the most frequently used strategies by the students were L1-based rather than using contextual factors, which was the most frequent strategy used by learners in other studies (e.g. Cooper, 1999). However, the results clearly showed no discrepancies in relation to strategy use on similar vs. dissimilar idioms, except that similar idioms induced the use of more L1-based strategies. Therefore, similarity to L1 affects both the type and frequency of strategy use.

6.3 Level of transparency and scores in the test of idioms

The quantitative results obtained from the correlation analysis between the transparency ratings and the scores in the test of idioms yielded a statistically significant correlation. This finding is not surprising, as previous studies (e.g. Irujo 1986, 1993) yielded a similar result. The findings are also in line with Steinel et al., (2007) who suggest that the transparency of idioms affects recognition at the comprehension level. The TA analysis also showed that the students' performance on the most transparent idioms outweighed that on those which were opaque. Moreover, there was evidence that the most transparent idioms, which were simple in terms of content (lexis and grammar), and amenable to literal translation into Arabic were the easiest to understand.

The findings can also be extrapolated to support the hypothesis put forward by Cieślicka (2006), i.e. that L2 learners become familiar with the literal meanings of lexical items in L2 long before they encounter their figurative meanings in idioms. So it seems reasonable to assume that the literal meanings of an idiom may enjoy a more salient status than figurative ones in L2 idiom processing. Idioms which received higher transparency ratings were the easiest not only to recognise, but also in terms of the students' ability to translate them (i.e. forward translation), which is also in line with the findings of De Groot and Poot (1997).

In summary, learners can more easily grasp the figurative meaning of an idiom if it is closer to the literal meaning of its components. The greater the level of literalness, translatability, imageability and concreteness, the easier it is for learners to understand the idiom in question, which is in line of the findings of Boers et al., (2004) and Steinel et al., (2007). In a few cases, however, learners' performance was influenced by cultural beliefs and values, which misled their visualisations of the idiom, resulting in misconceptions, which is not surprising as it illustrates how the metaphoric choices available to a learner are filtered by the values prevailing in a certain language that has its own cultural norms. Lakoff and Johnson (1980) mentioned that "to live by a metaphor is to have your reality structured by that metaphor and to base your perceptions and actions upon that

structuring of reality" (p. 11). Learners use language to reflect their values towards the world in general and their community in particular. This supposition in turn upholds the argument in favour of a cognitive approach to understand how idioms are processed by L2 learners. Therefore, taken together, the findings allow firm acceptance of the third hypothesis.

As for transparency, the TA protocols showed evidence that the learners can more easily grasp the figurative meaning of an idiom if it is closer to the literal meaning of its components. This was through relying on the strategy of providing a literal translation which can at the same time be idiomatic.

7. Conclusion

The study investigated the role of similarity to L1, transparency and proficiency level on the comprehension of idioms in L2. The findings suggest that all these variables affect the comprehension process significantly. Language proficiency seems to play a role as it correlated positively with the scores on the test of idioms. Transparency was an influential factor that cannot be easily disentangled from similarity to L1 sometimes, but increased levels of it boosted students' performance. Similarity to L1 seems to be the most influential factor from amongst the other variables, as it affects both performance and strategy use.

An important limitation of this study, which could affect the generalisability of findings, is the fact that the study was only trialled on female Arabic-speaking learners. Moreover, they were native speakers of the Saudi dialect. As has been seen in the TA protocols, students rely heavily on their non-standard language, and the differences in language use and cultural background across the Arab world are clearly marked. Thus, the results should not be heavily extrapolated to Arabic in general, as caution about variation is required. Future research should circumvent this shortcoming by tapping into the discrepancies within various Arabic vernaculars.

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