Rehabilitating translation in the language classroom: A proposal based on conceptual metaphors to foster machine translation literacy

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Comment définir le rôle que peut jouer la traduction dans l'apprentissage des langues étrangères, alors que des usages pluriels et encore mal décrits de la traduction automatique neuronale sont en train de devenir la norme ? Pour rouvrir le débat et tâcher d'imaginer les nouvelles articulations entre traduction (humaine et automatique) et apprentissage des langues, nous commençons par analyser les travaux publiés depuis une cinquantaine d'années, et nous montrons un regain d'intérêt récent, souvent lié à de nouvelles approches qui intègrent la traduction à une conception holistique et située des apprentissages. Nous évaluons ensuite les bénéfices et les limites de la traduction pour l'apprentissage des langues, à l'aune des principaux résultats empiriques publiés. Enfin, nous considérons l'intégration de la traduction automatique (TA) à l'apprentissage des langues, et nous proposons un plan de cours qui articule la post-édition de TA, dans une tâche de traduction située, à un travail sur les métaphores conceptuelles. Cette proposition se situe dans le prolongement des perspectives ouvertes par Ladmiral, lorsqu'il proposait de "réhabiliter la traduction et [d'] en renouveler la pédagogie" (Ladmiral 1987: 16), et du rapprochement opéré par Lavault (1998) entre traduction pédagogique et professionnelle.

Mots-clés:
traduction, apprentissage des langues, enseignement des langues, traduction automatique, métaphore conceptuelle.

Keywords:
translation, language learning, language teaching, machine translation, conceptual metaphor.

1. Introduction

More than a decade after Cook's warning that in the expanding field of second-language acquisition (SLA) research "very little attention [had] been given to the role of translation as either a means or an end of learning English" (2007: 396), this review article seeks to reassess the gap in the literature.

Our focus is on second/foreign language learning, whether it is achieved as a result of language teaching strategies or not (see e.g. Widdowson 2014: 223 on

the difference between teaching and learning). Based on a thorough literature review, we seek to answer the following questions:

- What are the theories integrating translation in language learning? If distinct theories exist, are their foundations related in any way?
- What empirical results are there which show the impact of translation on language learning?

We start by discussing the emergence of integrated or holistic approaches (Takimoto & Hashimoto 2010; Laviosa 2014) and what distinguishes them from previous frameworks. The new empirical evidence that these approaches have brought is then analysed and compared with previous findings. In the final sections of this paper, we consider the potential and limitations of recent applications of machine translation, and suggest that future research might bring new evidence by integrating Neural Machine Translation (NMT) into a holistic approach. Focusing on the development of conceptual fluency as a key step in language learning, we draft a task proposal based on the translation and post-editing of conceptual metaphors.

2. Integrating translation into language learning

Both European and English-speaking countries witnessed the decline of language teaching methods based on grammar and translation over the second half of the 20th century, as direct methods were promoted, followed by communicative approaches. This change is well documented in France (see e.g. Harvey 1996), but also in the English-speaking sphere, including India and Pakistan, while translation has continued to be used in language teaching in other countries, e.g. China (Malmkjær 2010).

Recent collective work examining the part that translation could play in contemporary language teaching (Witte et al. 2009; Pym et al. 2013; Koletnik & Froeliger 2019) would suggest that translation and language learning have remained a poorly matched couple (Carreres 2006). However, since the 2010s, "studies exploring translation in the language classroom have multiplied", as demonstrated by Pintado Gutierrez (2018: 12). She provides an updated overview of sometimes opposing views about the role of translation in foreign language pedagogy and proposes that the relationship between translation and language learning should be optimised, rather than neglected, by re-mapping the "conceptual landscape" (2018: 17) and integrating multimodal translation tasks.

In order to better understand and characterise renewed interest in the relationship between translation and language learning, we searched one of the largest databases in linguistics and related disciplines in the language science,

i.e. the Linguistics and Language Behavior Abstracts (LLBA)[1]. Figure 1 below gives an overview of the results. We looked for "translat*" in the titles or abstracts of articles whose main subject was "second language learning". We then refined our search by getting rid of irrelevant topics: the resulting selection (of over 700 references) was then manually checked, resulting in 346 references. We excluded references in which translation was mentioned but not really studied as such – sometimes with a different meaning, as in "translates into practice", or when there was an indication that the abstract had been translated. We also excluded publications dealing exclusively with machine translation, with no applications to language learning or teaching. On the other hand, we included publications which referred negatively to translation, e.g. mentioning that the purpose of the author was to "rid the classroom in the second year program of the tedious translation exercises" (Pfister 1972: 425).

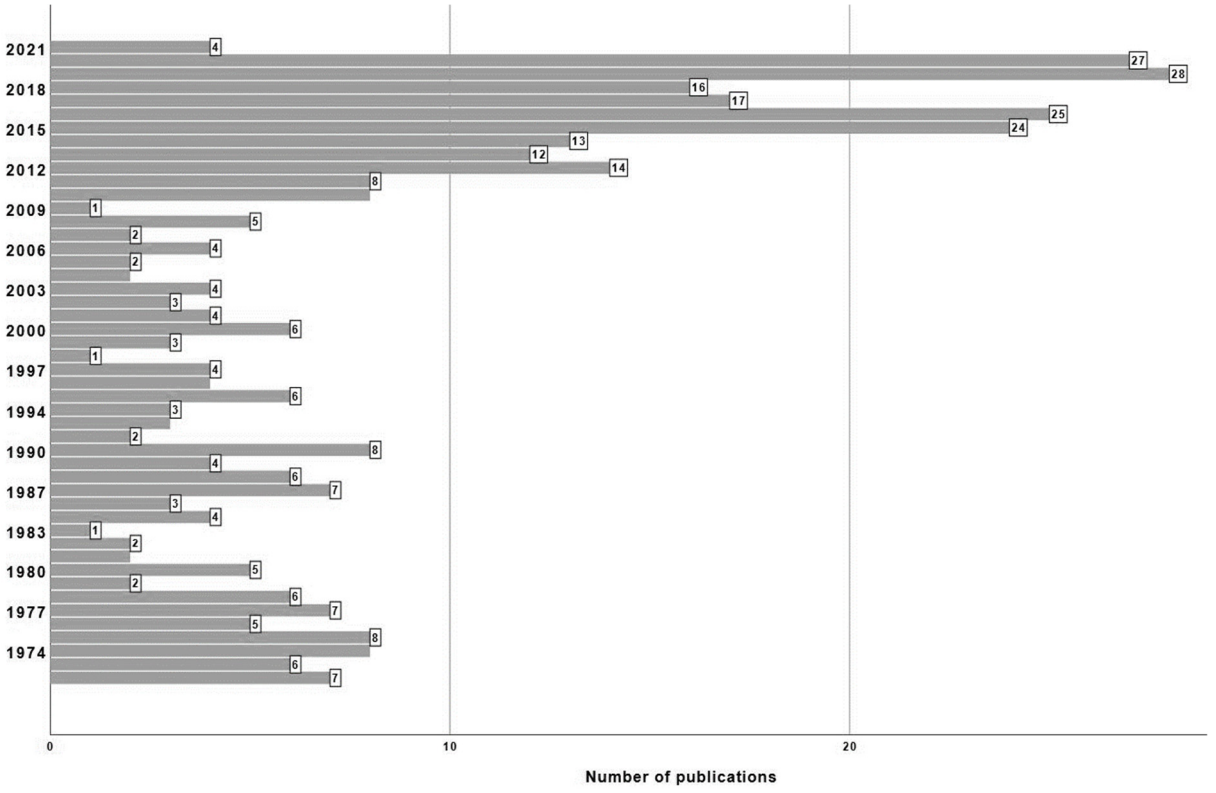

Figure 1: Number of publications per year about translation and language learning, retrieved from the Linguistics and Language Behavior Abstracts database

[1] Our choice was made based on the availability and relevance of the databases: among the ones we could access and deemed relevant to our search, we chose to use the largest. We also searched bibliographies for translation studies, but we found that the ones we could access included only few papers on translation and language learning.

Overall, counts are relatively similar except for the final decade. This finding suggests that the part played by translation has indeed been reconsidered recently, opening up bright prospects, as Koletnik and Froeliger suggested:

> The debate […] is not new: dust has settled upon it, to the point that one might easily have considered it a closed case. The editors of this book thought it might be worthwhile to reopen and continue it, however slightly, in order to lead to a possibly brighter, greener future. (2019: viii)

To find out more about the topics covered in these publications and any trends that emerged over the period examined, we noted the keywords associated to each article (labelled "subject terms" in the database). The keywords used for these articles give an idea of the different theoretical frameworks and teaching methods considered. We grouped the publications by date; 1971-1991, 1991-2011 and 2011-2021. The most recent group contained the most publications. This provided us with an overview of how the discussions around translation and language learning have evolved over the past five decades.

The most frequent and relevant "subject terms" associated to the articles we found are included below, grouped by publication date of the article.

1971-1991: audiolingual language teaching, direct method of language teaching, conditioning, reinforcement, oral language teaching, grammar translation, transformational and generative grammar.

1992-2011: cognitive processes, (interpersonal) communication, bilingualism, bilingual education, online instruction, computer-assisted instruction, computer mediated communication, metalanguage, metalinguistic awareness, learning environment, learning processes, fluency, metaphors, idioms, speech.

2012-2021: creativity (creative writing), code-switching, collocations, computer-assisted language learning, computational linguistics, communicative language teaching, conversation (analysis), context, corpus linguistics, metaphor, machine translation, motivation, task-based language teaching, grammar translation

Perhaps the first striking element is that grammar translation appears only in the first and last period. Although it had been "the villain" (Cook 2010: 9) ever since the end of the 19th century, the method certainly had a "secret life" (Benson 2000) and its mention in keywords for these two periods shows that it was still used as a reference, though most of the time heavily criticized. Particular issue was found with its use of isolated and artificial sentences, as well as the translation "of difficult grammar points and obscure vocabulary" (Newmark 1988: 183-184), and the characterization of such artificial translations as "a very bad way to test language skills" (Malmkjær 2010: 186). The fact that grammar translation should be referred to again in the last period certainly relates to the need to give historical overviews, and account for the continuing trend according to which translation is rejected yet needed (see e.g. Liebscher & Dailey-O'Cain 2004; Swain & Lapkin 2000; Lavault 1998).

While the keywords in the first period are marked by theories derived from (or against) behaviourism, interest in cognitive processes appears in the second period. At the turn of the century, cognitive sciences began to explore how translation competence develops from a bilingual substrate (Schäffner & Adab 2000). Theories integrating translation into language learning while steering clear of the grammar-translation approach are often based on progress in cognitive sciences, leading to the development and validation of useful methods. Think-aloud protocols are a case in point: they have been "imported from the cognitive sciences and applied to translation research" (Bernardini 2001: 242), and have been at the heart of a number of publications seeking to assess the usefulness of translation for L2 learning (e.g. Gerloff 1986; Königs & Kaufmann 1996; Krings 1986; Uzawa 1997).

Finally, the keywords in the last period (1992-2012) emphasize student motivation and the importance of genuine tasks as well as referring to the move to more technologized learning environments that began in the preceding period (1992-2011). These keywords evoke the salient characteristics of current approaches, which are discussed in the next section.

3. The emergence of holistic, ecological approaches

> Older models of translation tend to be based on formal equivalence (literal translations or the best language), whereas more recent models include pragmatic and functional equivalence, notions of discourse, genre and style, plus the purpose of the L1 text and its audience, the purpose of the L2 translation, the nature of the L2 audiences. These models require not only linguistic competence but sociocultural and intercultural competence, which are high on the agenda in twenty-first century language teaching. (Hinkel 2011: 570)

Renewed interest in possible integrations of translation in language teaching and learning can be explained in various ways, but functional and interpretive approaches to translation have certainly contributed to bringing translation significantly closer to foreign language teaching. Lavault's (1998) original application of a communicative and interpretive approach to translation for foreign language learners is clearly in line with communicative approaches (Lavault 1998: 102). Functional approaches to translation, with their focus on a situated translation task, have also made translation much easier to use with second language learners – one recent and successful example concerning French learners of English being Le Disez's F.A.C.T method (2015). In a book mainly aimed at French students of Applied Foreign Languages (LEA), Le Disez uses different text types, domains and translation situations as exercises that help learners reach beyond classical approaches to pedagogical translation, usually called "theme" for translation into L2 and "version" for translation into L1 in France. Students are trained to produce functional target texts while noticing the importance of meaning and learning about cross-linguistic differences.

Overall, current approaches integrating translation into language learning see language as "a semiotic ecosystem that cooperates with other meaning making

processes" (Laviosa 2014: 44). For instance, Intercultural Language Teaching (ILT) is a framework which includes cross-linguistic and cross cultural comparisons and explorations aimed at establishing links and promoting multiilingual, rather than monolingual, speakers (Takimoto & Hashimoto 2010: 88). Laviosa proposes her own "ecological" approach, i.e. a cooperative learning environment in which:

> Developing symbolic competence and adopting holistic translation methods are essential interrelated processes in the education of the language professional of the future, who needs. to grow into a self-reflective, interculturally competent and responsible meaning maker in our increasingly multilingual world. (Laviosa 2014: 105).

It is worth highlighting that multilingual environments and plurilingual learners are now at the heart of pedagogical approaches. This implies for instance that new uses of translanguaging are emerging (see e.g. Oliver et al. 2020), i.e. mixing resources from different languages to "maximize communicative potential" (García 2009: 140). However, such approaches do not necessarily include translation: "Few research studies currently connect a plurilingual approach explicitly with translation use" (Bazani 2019: 10). Remarkable exceptions (e.g. Vermeulen & Escobar-Álvarez 2021; Galante 2021) include studies which insist on using translation "in context" and as a meaningful activity, while drawing a clear line between pedagogical translation "as a means" and professional translation as "an end in itself" (Leonardi 2010: 17-20).

By offering situated, ecological tasks, holistic approaches will certainly contribute to bridging the gap between pedagogical and professional translation, notably by "connect[ing] a plurilingual approach explicitly with translation use" (Bazani 2019: 10). These approaches, however, are probably still in their infancy, and more literature is needed, as Malmkjær underlined more than a decade ago:

> It would be valuable to have results of studies examining the use of properly situated translation and even interpreting tasks in language classrooms, since the translation and interpreting professions are a major destination point for language learners, and it would be an advantage if some of their classroom time could be spent preparing them for that destination. (Malmkjær 2010: 189)

4. Looking for empirical evidence

We have identified hundreds. of studies on translation and language learning, a number of which provided readers with empirical results. These results, however, are limited in a number of ways. A major limitation is that they almost exclusively examine restricted uses of pedagogical translation, and studies of "properly situated translation" (Malmkjær 2010: 189) applied to language learning are still lacking.

Thus for instance Källkvist's interesting results (i.e. improved writing and translation skills) are based on "form-focused" activities in which translation was not a situated task, but more of an exercise targeting sentences or sentence parts (2008: 183). As Vermes (2010) noted, translation is still often used as "only structure manipulation" whereas "it is primarily a form of communication. And as such, it necessarily involves interaction and cooperation between people, which makes it a potentially very useful device in foreign language teaching." (p. 91) The need to assess learners' progress, together with frequent uses of translation within "rigid assessment practices" (Carreres et al. 2021: 11) can hinder communicational uses of translation. However, over the past few years, a number of studies exploring new uses of translation have been published. Among the 5 papers in the 2021 volume directed by Carreres and colleagues, 3 are proposals with examples of classroom activities, and 2 provide us with empirical results. These papers show the benefits of audio-visual translation into a foreign language, based on a comparative evaluation of Spanish clitic pronoun use (Vermeulen & Escobar-Álvarez 2021) and the positive impact of translation processes (rather than textual products) in multilingual classrooms, based on student diaries and classroom observations (Galante 2021).

Empirical results are hard to find because pedagogical translation is extremely versatile: it can be used as a means to various ends, making its impact more difficult to assess. For instance, not only can translation from L1 into L2 be used to further explain and teach difficult structures to students, but it can also be helpful to teach vocabulary and expressions in L2 (Källkvist 2008; see also Prince 1996; Liao 2006). One particular benefit of pedagogical translation reported by students in Galante's recent study (2021) is enhanced conceptual knowledge, a key skill for language learners, although it is not usually assessed.

In terms of skills, the use of translation in the classroom allows for a better development of three out of the four main language skills (for reading see Upton & Lee-Thompson 2001; for writing see Kobayashi & Rinnert 1992; for speaking see Prieto Arranz 2002 and Cahnmann 2005). However, as for the fourth skill, listening, Ulanoff & Pucci's (1993) experimental research project found that using "concurrent translation", i.e. where the teacher translates everything as it is said, had a negative effect on student performance. They found that students with weaker foreign language skills simply stopped listening to the teacher.

Students' perceptions are in line with these results. A recent study found that the majority of students believed that translation activities could help them prepare for an English language examination (Dagilienė 2012: 128) – 65% of the respondents reported having developed speaking skills through translation activities, while 50% reported improved listening skills. Most students (80%) felt that translation had strengthened their reading and vocabulary skills, with about 60% saying it positively impacted their grammar and writing.

None of these studies assesses translation competence as "a key mediation skill" (Gonzáles Davies 2020: 445), which had been a blind spot in the Common European Framework of Reference until the recent addition of cross-linguistic mediation within a series of scales presented in the CEFR *Companion Volume* (Council of Europe 2020: 90 & sq.). It is hoped that these scales will help teachers to relate situated translation tasks to other key steps and skills in language learning.

The study by Takimoto & Hashimoto (2010) was a first step in this direction: the authors found that if translation tasks included 'relevance to real life and constant interaction,' (Takimoto & Hashimoto 2011: 8) they subsequently promoted students' learning, as well as their intercultural exploration. It is worth noting here that intercomprehension skills are closely linked to listening skills, as demonstrated e.g. by Castagne & Ruggia (2004) or Conti & Grin (2008). In a PhD thesis defended a few years ago, Artar (2018) also showed a positive impact of contextualised translation activities on L2 writing skills, based on a Beliefs Inventory Questionnaire and data from 2 groups of students.

This increasing focus on "properly situated" translation tasks and the importance of connecting these tasks to real life leads us to the question of Machine Translation (MT). MT is part of the current linguistic landscape and has become even more prevalent since the introduction of Neural Machine Translation in 2016 (Le & Schuster 2016). As such, it merits inclusion in contextualized translation tasks. Language students do not necessarily receive explicit instruction in MT and its use without contextualization might reinforce learners' beliefs about direct correspondences across languages. In the next section we outline a proposal for integrating MT in a translation task which includes conceptual metaphors. Conceptual metaphors are challenging both for MT and for students as their meanings cannot always be intuited from their constituent parts (Koglin & Cunha 2019). Many conceptual metaphors cannot be translated directly and thus explicitly challenge the idea of one-to-one correspondence between languages. By focusing on these challenging linguistic expressions this task is intended to promote conceptual fluency (Danesi 2016) and Machine Translation literacy (Bowker & Ciro 2019).

5. Machine Translation applications for language learning

> Machine Translation (MT) and specifically free online programs such as Google Translate are transforming the way students engage with a second language. (Clifford et al. 2013: 109)

Perhaps for lack of empirical evidence, uses of translation for language learning have remained marginal, especially in European curricula and ESL. As a result, free online machine translation (MT) tools have been considered as a threat by many language teachers and instructors. In a study conducted in the United

States before the advent of Neural Machine Translation (NMT), Clifford and colleagues have assessed uses of MT in second language courses as well as instructors' perceptions. They found that a majority of students did use MT in various ways, and contrasted this finding with strong disapproval in 43 faculty members: 77% of whom reported that they (strongly) disapproved of their students' use of MT (Clifford et al. 2013).

The idea of using MT to enhance language learning, however, is not new. Our LLBA search for instance allowed us to find a 1988 paper on applications of MT to reading and second language instruction (Schulz 1988). Less than a decade later, Anderson (1995) foresaw leveraging MT and integrating its use to "IT-enhanced language learning" (Rüschoff 1993), but points to the need for evidence that MT "can be used to enhance language learning" (Anderson 1995: 88). Even though Anderson's intuitions have been reiterated a number of times (see e.g. Lewis 1997; Chinnery 2008; Garcia 2010), the evidence he called for was not to be found until very recently.

Resende & Way (2021) have assessed the possibility that MT users might learn from the MT output, using syntactic priming. The positive effects that they evidenced are new for at least two reasons. First, because previous reports on MT use by language learners have shown a focus on words, and a tendency to use online MT engines as dictionaries (see e.g. Clifford et al. 2013: 112). In their initial survey, Resende & Way (2021: 73) show that their respondents currently use MT for full sentences almost as often as for word translation. In this context, and with NMT systems' improved fluency, the discovery or reinforcement of learners' knowledge of syntactic constructions through exposure to an MT output has become more likely. Resende & Way's paper suggests that at least some users are able to implicitly learn about syntax from NMT outputs. The second intriguing finding is that, as opposed to previous work showing how MT helped beginners (Garcia 2010; Garcia & Pena 2011) or intermediate learners (Niño 2009; O'Neill 2012), priming effects were stronger in more advanced learners (Resende & Way 2021: 81).

Taken together, these results call for a reassessment of MT use for language and translation teaching at university level, with intermediate to advanced learners.

5.1 Computer-assisted L2 learning and translation (CAL2T)

For more than two decades, MT was mainly used to make language learners aware of mistakes and able to repair them, while uses of MT as a "CALL [Computer-Assisted Language Learning] tool [remained] the most controversial" (Niño 2008: 32). Thus in a study involving statistical machine translation, and translation from English to Spanish, Niño (2008) showed that advanced English-

speaking learners of Spanish, if trained in post-editing (PE[2]) were better at PE than translation in their L2: they made fewer mistakes of all types when post-editing into Spanish than when translating into Spanish. The approach was successful, but MT was not fully integrated as a tool for language learning.

With the advent of NMT, new applications of machine translation for language learning have been imagined and brought into the classroom. Proposals bringing together corpora and MT are particularly sound in that they enable students to discover the corpus-based and probabilistic nature of NMT systems gradually, as teachers and instructors can e.g. point out frequency effects in corpora and MT outputs (see e.g. Forcada 2017). This approach, labelled computer-assisted L2 learning and translation (CAL2T) by its proponents (Enríquez Raído et al. 2019), is an adaptation of computer-assisted language learning (CALL) which reassesses

> the pedagogical potential of L2 translation to further foster linguistic and intercultural mediation skills in other learning contexts involving the use of a second, or additional, language. (Enríquez Raído et al. 2019: 278).

Enríquez Raído and colleagues (2019) have made suggestions about how to harness the potential of free online NMT engines to deepen students' knowledge of a second language while making them critically aware of the limitations of MT. The authors' recommendations are threefold (Enríquez Raído et al. 2019: 291-292). First, students can be asked to discover and use the whole range of tools available on free online NMT interfaces – including e.g. dictionaries, text-to-speech and sometimes concordancers and frequency indications. Second, they suggest translation exercises, preferably into the students' L1, aimed at focusing students' attention on NMT mistakes and flaws. The third recommendation concerns applying MT to the creation of L2 texts, on a given topic, with possible applications including the retrieval of vocabulary and collocations, and the adaptation of MT outputs for a different audience.

Finally, an interesting proposal is to be found in Torres-Hostench (2020: 231-232) where an "entertaining, informal approach to MTPE [Machine Translation Post Editing]" is suggested. Both this proposal and Enríquez Raído et al.'s (2019) would easily fit within an ecological approach, with learners engaging in situated tasks. In what follows, we make suggestions for a different kind of situated task, with a focus on conceptual metaphors.

5.2 A proposal based on conceptual metaphor translation

Cognitive linguists define metaphor as a cognitive device allowing us to understand and talk about one concept in terms of another (Lakoff 1993; Lakoff & Johnson 2003). Metaphorical language is understood as a fundamental cognitive mechanism through which our knowledge of the world is conceptually represented. Metaphor is grounded in our bodily experience; it works by using

[2] The students took part in 10 PE training sessions in this study.

concrete physical experience to structure abstract experience. As a result, metaphor mirrors the conceptualization of the world of a speech community and bears the imprint of idiosyncratic cultural models (Gibbs 1999). Thus, even though a metaphorical conceptual system is a universal neural apparatus shared by humanity (see Lakoff 2008 and Feldman 2008 about the neural substrate of metaphor), metaphor shows remarkable cross-cultural variation at both conceptual and linguistic levels (Hiraga 1991; Kövecses 2005). An important corollary of metaphor variation is that metaphorical language use can present a major challenge to translation (Schäffner 2004; Kövecses 2014; Massey et al. 2017) and language learning (Littlemore 2003, 2001; Carrol et al. 2018).

In this proposal, we use conceptual metaphors to bootstrap students' understanding and translation of an English text through awareness-raising metaphor identification and analysis activities. Our suggestions can be seen as an MT-friendly version of Lavault's (1998: 102 & sq.) example of using a communicative and interpretive approach to foreign language texts and their translation.

We start by accounting for our focus on metaphors, before discussing a proposed course outline.

5.2.1 Why metaphors?

Littlemore & Low (2006) identify 'metaphoric competence' as a key language competency. Littlemore (2001) outlines four abilities that comprise metaphoric competence; creating original metaphors, identifying a variety of possible meanings for a novel metaphor, proposing relevant meaning for a metaphor and carrying out the first three quickly. It has been argued that metaphorical language is so commonly used that learners must be able to understand it in order to gain proficiency (Kweldju 2005; Littlemore & Low 2006). Incentives for using metaphors in language teaching can be found even earlier in the literature (see e.g. Manno 1998). In the late 80s, Low (1988) argued that instructional programmes should be concerned with metaphor-related skills development. Danesi (1995) also noticed a gap between verbal fluency and conceptual fluency among second language learners, that is, they are capable of correctly using the formal structure of their second language but they still think with their L1 conceptual system. The author further argues that improving conceptual fluency entails language learners understanding how concepts are encoded through metaphorical thinking, which requires the deployment of heuristic pedagogical activities shedding light on underlying conceptual asymmetries between languages.

Within this context, some authors have introduced metaphor-based awareness-raising activities to the second language classroom as a heuristic way of teaching L2 vocabulary (Boers 2000, 2004; Gao & Meng 2010; Doiz & Elizari

2013). Conceptual metaphors can also be used to highlight grammatical differences and to demonstrate systematicity in grammatical features which would otherwise appear idiomatic and irregular, such as the difference in prepositions used in Italian and English to describe information obtained from a newspaper; *read on* or *read in*, respectively (Danesi 2016).

Finally, at a time when NMT outputs are extremely fluent in many languages, metaphors remain an "open challenge" even when applying deep neural networks to the task (Bizzoni 2019). Metaphor competence can thus be seen as key when dealing with NMT.

5.2.2 Proposed Course Outline

The following course outline aims to introduce Conceptual Metaphor Theory to non-linguist L2 learners of English at undergraduate level (B2-C1) at a French university and to integrate translation into their language learning. Conceptual Metaphor Theory will be used to raise learner awareness of the L2 conceptual framework, which Danesi (2016) argues is necessary to become a proficient L2 user. A focus on the role of metaphor within the text and its ability to highlight or hide aspects of arguments being made will provide students with tools to identify author stance and intention in English, and this skill will also be transferrable to their L1, which for most students will be French. A translation exercise will allow students to deepen their understanding of the text and the metaphorical expressions within it. The focus on conceptual metaphor and metaphorical expressions before the translation is approached will encourage students to consider the text above the word level, focusing on conveying the meaning, rather than the individual words. Completing this translation and discussing it in class will prepare students for a post-editing exercise with the same text and enable them to identify where the MT output is inadequate. This exercise aims to highlight the type of language MT deals with poorly, to show students that they are capable of producing better translations in these cases and, as a result, to discourage habitual reliance on MT for language-based tasks. The course is outlined in more detail below. The text used (and included in the Annex) is a recent article – "Why the Great Reset also means fighting racism" – published online by the World Economic Forum which introduces the organisation's project to build a greener and fairer world economy as part of the post-Covid economic recovery.

The text will be introduced as a reading task, with students asked to work in groups to draw up a list of the main topics in the article and give a short oral summary. This gives learners an initial familiarity with the content of the text, as well as an opportunity to look up or ask about any unfamiliar vocabulary. As the article is about a fairer post-Covid economic recovery, the class will then move to a discussion of two questions:

- What were the problems with the pre-Covid world?
- What changes would we like to see in a post-Covid world?

Depending on the class this can take place either as a class plenary using the 'think, pair, share' method to allow students to prepare and practice before engaging, or as group discussion and presentations to the class, with time for other groups to ask questions. This discussion allows students to engage with the issues raised in the article as larger concepts, rather than simply as vocabulary items, and encourages a meaning-based approach to text comprehension. It is also an opportunity for students to activate their existing vocabulary and knowledge relating to these concepts. A useful extension activity would be for students to collect related texts (i.e. on the topics they identified in the first activity), thus allowing them to deepen their understanding of the topics in question, as well as providing parallel texts for the translation activity.

The course will then proceed to introduce conceptual metaphor theory. Students will be asked to focus on phrases from the first two paragraphs that exemplify the POLITICAL CHANGE IS WAR metaphor; "to *battle* and *beat* racism" and "imprisoned for years for *fighting* institutional racism" (our italics). They will be asked to discuss what these words normally refer to, and what they are referring to in the context, as a means of both identifying the metaphor and scaffolding the Metaphor Identification Procedure (Pragglejaz Group 2007) which will be introduced later. Students will be asked to discuss in groups what they know about the concepts 'war' and 'political change', which will be used to facilitate a class discussion of the following questions:

- how is 'war' used to understand 'political change'?
- what are the similarities and differences between 'war' and 'political change'?
- how does this phrasing highlight certain aspects of 'political change' whilst hiding others?

The Conceptual Metaphor Theory will then be introduced and some examples explored ('greet someone warmly' – AFFECTION IS WARMTH, 'interest rates are soaring' – MORE IS UP) to deepen understanding of the theory and provide an opportunity for questions to be raised. Students could then discuss the term 'The Great Reset', used in the title and throughout the text as having explicitly discussed metaphor should enable them to draw more meaning from this phrase.

The next stage of the course is to introduce the Metaphor Identification Procedure (MIP) (Pragglejaz Group 2007) in a simplified form: looking up each word and deciding the most basic (specific and/or concrete) meaning and the contextual meaning for that word, then deciding whether the contextual meaning

can be understood in comparison to the basic meaning. As well as providing students with a procedure for identifying metaphors, this exercise highlights the way meaning is tied to context rather than to form, and encourages students to engage with a variety of possible meanings for each word. An additional benefit of this exercise is that it requires the use of a dictionary and can provide students with practice in choosing the correct meaning for the context. As this text is long, students should be encouraged to work in groups on sections of the text to identify metaphorical expressions. In presenting findings to the class, the whole class can work together to consider the conceptual metaphors that underlie the identified metaphorical expressions.

The next exercise is intended to scaffold the translation exercise while raising awareness of the different conceptual frameworks that underlie different languages. In groups students should consider the list of metaphorical expressions and conceptual metaphors previously identified and how these relate to French by discussing the following questions:

- Does the conceptual metaphor exist in French?
- If so, is there a similar metaphorical expression and does it have a similar or different meaning?
- Does the conceptual metaphor give rise to other metaphorical expressions in French that they have not seen in English?
- Does French use a different conceptual metaphor to express a similar concept?

Hiraga's (1991) work comparing metaphors in (American) English and Japanese could be introduced here to provide a framework for these comparisons. She considers 4 types of match/mismatch between languages: same conceptual metaphor with similar metaphorical expression; same conceptual metaphor with different metaphorical expression; different conceptual metaphor with similar metaphorical expression; and different conceptual metaphor with different metaphorical expression.

If resources are available, students could be encouraged to search reference corpora for the English metaphorical expressions they found in the text, and for the French metaphorical expressions listed as a result of this exercise. Seeing multiple examples of phrases in different contexts can help students to pinpoint and articulate differences of usage or meaning between similar metaphorical expressions, either in the same or different languages. Using corpora to check collocations and usage of words and phrases is a useful skill for producing texts in a second language, and this exercise could be used to introduce or develop this skill.

Having explored the meaning of the text as a whole and focused on the metaphorical expressions within the text, students have been supported to

approach translation of the text at meaning, rather than word, level. Introducing this exercise as a commission for a specific person, perhaps a colleague, for a specific purpose, e.g. for use in class, can increase student motivation and engagement in the task (Lavault 1998: 106). To encourage collaborative working, the translation can be set as a 'flipped' activity, to be done at home, and class time can be devoted to group discussion and revision of specific sections and whole-class editing of a final, collaboratively-produced document. Technologies such as OneDrive or GoogleDocs can be used to facilitate this type of activity. This type of detailed work on the text gives students a greater understanding of the content, and working to produce an idiomatic target text helps to avoid a focus on meaning at the word level. Both of these aspects, together with the previous work on metaphor, will guide students towards identifying issues with the MT output for this text that they may otherwise have missed.

In preparing this outline, 'The Great Reset' text was translated on 10/05/2021 using DeepL, a free online Machine Translation engine, to give the MT output for students to work with. The output includes unidiomatic and inadequate translations such as: 'la Grande Réinitialisation, 'une grande remise à zero' for 'the Great Reset'; 'société cohésive' for 'cohesive society'; 'une tranche de ce que nous devrons aborder' for 'a slice of what we'll need'. We suggest that students be given the opportunity to evaluate the MT output themselves and identify any translations they feel they could improve. If necessary, the teacher can draw student attention to translations such as those listed above. However, the previous reading comprehension and translation tasks should ensure that students can identify areas where they prefer their own translation to that produced by MT. Students can also be asked to identify the types of issues found in this DeepL translation, and what they think may have caused them. Discussing this will help students form a more concrete idea of the issues that can result from MT use, hopefully encouraging a more cautious attitude towards its usage. Having produced a more effective translation than a widely used resource is likely to induce feelings of pride, which can increase motivation to learn. The preceding work on the text used a variety of resources; parallel texts, dictionaries and corpora and created deeper understanding of the text, which may encourage usage of these resources in future.

6. Conclusion

While the benefits of using translation with language learners are now well described, empirical results on situated uses of translation are still scarce. With translation now being understood as part and parcel of a set of mediating skills "increasingly seen as a part of all learning, but especially of all language learning" (Council of Europe 2020: 36), the time is ripe for reconsidering what part it might play in increasingly multilingual settings, Besides, we have argued

that while the advent of NMT could reinforce equivalence-based approaches, it above all called for improved conceptual fluency in language learners. We have outlined a proposal for a series of tasks including MT and the analysis of conceptual metaphors, with a view to empowering language learners. By encouraging learners to focus on the multiple dimensions of meaning, our proposal fosters critical discovery of MT's overly literal translation, as well as reliance on knowledge and experience: "engaging with meaning implies integrating a message to previously acquired knowledge and experience[3]" (Seleskovitch 1975: 143). The proposal was successful with our students and we will provide evidence for success in future work. It is also our hope that a number of other such proposals will be made, to explore the many possibilities opened up by increasingly fluent NMT systems, that are now freely available on many devices and ready for integration in the language and translation classroom.

REFERENCES

Anderson, D. D. (1995). Machine translation as a tool in second language learning. *CALICO journal*, *13(1)*, 68-97.

Artar, P. (2018). *The role of translation in foreign-language teaching*. Doctoral dissertation, Universitat Rovira I Virgili.

Bazani, A. (2019) Translation and L2 teaching's relationship status: From former "friends" and "enemies" to current "strangers". In M. Kotelnik & N. Froeliger (eds.), *Translation and language teaching: Continuing the Dialogue* (pp. 3-22). Cambridge: Scholars Publishing.

Benson, M. J. (2000). The secret life of grammar-translation. *British Studies in Applied Linguistics*, *15*, 35-50.

Bernardini, S. (2001). Think-aloud protocols in translation research: Achievements, limits, future prospects. *Target. International Journal of Translation Studies*, *13(2)*, 241-263.

Bizzoni, Y. (2019). *Detection and aptness: A study in metaphor detection and aptness assessment through neural networks and distributional semantic spaces*. Doctoral dissertation in computational linguistics, University of Gothenburg

Boers, F. (2000). Metaphor awareness and vocabulary retention. *Applied Linguistics*, *21(4)*, 553-71.*

Boers, F. (2004). Expanding learners' vocabulary through metaphor awareness: What expansion, what learners, what vocabulary? In M. Achard & S. Niemeier (eds.), *Cognitive linguistics, second language acquisition and foreign language teaching*. (pp. 211-232). Berlin, New York: De Gruyter Mouton.

Bowker, L. & Ciro, J. B. (2019). *Machine translation and global research: Towards improved machine translation literacy in the scholarly community*. Bingley: Emerald Publishing.

Cahnmann, M. (2006). Reading, living, and writing bilingual poetry as scholARTistry in the language arts classroom. *Language Arts*, *83(4)*, 342-352.

Carreres, A. (2006). Strange bedfellows: Translation and language teaching. *Sixth Symposium on Translation, terminology and interpretation in Cuba and Canada (15)*.

[3] Our translation of the following French quote: "Assimiler un sens, c'est intégrer un message dans une connaissance et une expérience préalables".

Carreres, Á., Noriega-Sánchez, M. & Gutiérrez, L. P. (2021). Introduction: Translation and plurilingual approaches to language teaching and learning. *Translation and Translanguaging in Multilingual Contexts*, *7(1)*, 1-16.

Carrol, G., Littlemore, J. & Gillon Dowens, M. (2018). Of false friends and familiar foes: Comparing native and non-native understanding of figurative phrases. *Lingua, 204*, 21-44.

Castagne, E. & Ruggia, S. (2004). Compréhension et traduction: l'approche Eurom4. In Z. Bohusova et al (eds.), *Translating in the 21st century: Trends and Perspectives. Proceedings of the international conference*. (pp. 143-150). Thessaloniki: Faculty of Arts, Aristotle University.

Chinnery, G. (2008). You've got some GALL! Google-Assisted Language Learning. *Language Learning and Technology*, *12(1),* 3-11.*

Clifford, J., Merschel, L. & Munné, J. (2013). Surveying the landscape: What is the role of machine translation in language learning. *@tic*, *10*, 108-121

Conti, V. & Grin, F. (2008). *S'entendre entre langues voisines: vers l'intercompréhension*. Chêne-Bourg: Georg Editeur.

Cook, G. (2007). A thing of the future: Translation in language learning. *International Journal of Applied Linguistics, 17(3)*, 396-401.

Cook, G. (2010). *Translation in language teaching: An argument for reassessment*. Oxford: Oxford University Press.

Council of Europe (2020). *Common European framework of reference for languages: Learning, teaching, assessment – Companion volume*. Strasbourg: Council of Europe.*

Dagilienė, I. (2012). Translation as a learning method in English language teaching. *Studies about Languages*, *(21)*, 124-129.

Danesi, M. (1995). Learning and teaching languages: The role of 'conceptual fluency'. *International Journal of Applied Linguistics, 5(1)*, 3-20.

Danesi, M. (2016). Conceptual fluency in second language teaching: An overview of problems, issues, research findings and pedagogy. *International Journal of Applied Linguistics & English Literature, 5(1)*, 145-153.

Doiz, A. & Elizari, C. (2013). Metaphoric competence and the acquisition of figurative vocabulary in foreign language learning. *ELIA, 13,* 47-82.

Enríquez Raído, V., Austermühl, F. & Sánchez Torrón, M. (2019). Computer-assisted L2 learning and translation (CAL2T). In S. Laviosa & M. González-Davies (eds.), *The Routledge Handbook for Translation and Education* (pp. 278-299). London, New York: Taylor & Francis.

Feldman, J. (2008). *From molecule to metaphor: A neural theory of language*. Cambridge, MA, London: MIT Press.

Forcada, M. L. (2017). Making sense of neural machine translation. *Translation spaces*, *6(2)*, 291-309.

Galante, A. (2021). Translation as a pedagogical tool in multilingual classes: Engaging the learner's plurilingual repertoire. *Translation and Translanguaging in Multilingual Contexts*, *7(1)*, 106-123.

Gao, L.-Q. & Meng, G-H. (2010). A study on the effect of metaphor awareness raising on Chinese EFL learners' vocabulary acquisition and retention. *Canadian Social Science*, *6(2)*, 110-124.

García, I. (2010). Can machine translation help the language learner? *ICT for Language Learning, 3rd edition*.*

Garcia, I. & Pena, M.I. (2011) Machine translation-assisted language learning: Writing for beginners. *Computer Assisted Language Learning*, *24(5)*, 471-487.

García, O. (2009). *Education, multilingualism and translanguaging in the 21st century*. In A. Mohanty, M. Panda, R. Phillipson & T. Skutnabb-Kangas (eds.), *Multilingual education for social justice: Globalising the local* (pp. 128-145). New Delhi: Orient Blackswan.

Gerloff, P. (1986). Second language learners' reports on the interpretive process: Talk-aloud protocols of translation. *House and Blum-Kulka,* 243-262.

Gibbs, R. W. (1999). Taking metaphor out of our heads and putting it into the cultural world. In R. W. Gibbs & G. J. Steen (eds.), *Metaphor in cognitive linguistics* (pp. 145-166). Amsterdam, Philadelphia: John Benjamins.

González-Davies, M. (2020). Developing mediation competence through translation. In S. Laviosa & M. González-Davies (eds.), *The Routledge handbook of translation and education* (pp. 434-450). London, New York: Taylor & Francis.

Harvey, M. (1996). A translation course for French-speaking students. In P. Sewell & I. Higgins (eds.), *Teaching translation in universities: Present and future perspectives*. (pp. 45-65). London: Association for French Language Studies and Centre for Information on Language Teaching and Research.

Hinkel, E. (ed). (2011). *Handbook of research in second language teaching and learning*. New York: Routledge.

Hiraga, M. K. (1991). Metaphor and comparative cultures. *Cross Cultural Communication: East and West, 1*, 149-166.

Källkvist, M. (2008). L1–L2 translation versus no translation. The longitudinal study of advanced L2 capacities. In L. Ortega & H. Byrnes (eds.), *The Longitudinal Study of Advanced L2 Capacities* (pp. 182-202). London: Routledge.

Kobayashi, H. & Rinnert, C. (1992). Effects of first language on second language writing: Translation versus direct composition. *Language learning*, *42(2)*, 183-209.

Koglin, A. & Cunha, R. (2019). Investigating the post-editing effort associated with machine translated metaphors: a process-driven analysis. *The Journal of Specialised Translation, 31*, 38-59.

Königs, F. G. & Kaufmann, R. (1996). Processus mentaux étudiés chez des sujets allemands apprenant le français lorsqu'ils sont en train de traduire. *Meta, 41(1)*, 7-25.

Koletnik, M. & Froeliger, N. (eds.). (2019). *Translation and language teaching: Continuing the dialogue*. Newcastle upon Tyne: Cambridge Scholars Publishing.

Kövecses, Z. (2005). *Metaphor in culture: Universality and variation*. Cambridge: Cambridge University Press.

Kövecses, Z. (2014). Conceptual metaphor theory and the nature of difficulties in metaphor translation. In D. R. Miller & E. Monti (eds.), *Tradurre figure / Translating figurative language*. (pp. 25-40). Bologna: Quaderni del CeSLiC.

Krings, H. P. (1986). Translation problems and translation strategies of advanced German learners of French (L2). *House and Blum-Kulka*, 263-275.

Kweldju, S. (2005). Lexically-based language teaching: Metaphor for enhancing learning. *Indonesian Journal of English Language Teaching, 1(2)*, 164-177.

Ladmiral, J. R. (1987). Pour la traduction dans l'enseignement des langues: version moderne des Humanités. *Les Langues Modernes*, *81(1)*, 9-21.

Lakoff, G. (1993). The contemporary theory of metaphor. In A. Ortony (ed.), *Metaphor and thought* (pp. 202-251). Cambridge: Cambridge University Press.

Lakoff, G. (2008). The neural theory of metaphor. In R. W. Gibbs (ed.), *The Cambridge handbook of metaphor and thought*. Cambridge: Cambridge University Press.

Lakoff, G. & Johnson, M. (1980/2003). *Metaphors we live by*. Chicago, London: University of Chicago Press.

Lavault, E. (1998). *Fonctions de la traduction en didactique des langues. Apprendre une langue en apprenant à traduire*. Paris: Didier érudition.

Laviosa, S. (2014) *Translation and language education*. London, New York: Routledge

Le, Q. V. & Schuster, M. (2016). A *neural network for machine translation, at production scale.* Retrieved from https://ai.googleblog.com/2016/09/a-neural-network-for-machine.html

Le Disez, J.-Y. (2015). *Anglais. F.A.C.T. Une méthode pour traduire de l'anglais au français. De la version à la traduction. Mieux lire, mieux rédiger, mieux traduire.* Paris: Ellipses.

Leonardi, V. (2010). *The role of pedagogical translation in second language acquisition: From theory to practice*. Bern: Peter Lang.

Lewis, D. (1997). Machine translation in a modern languages curriculum. *Computer Assisted Language Learning, 10(3)*, 255-271.

Liao, P. (2006). EFL learners' beliefs about and strategy use of translation in English learning. *RELC Journal*, *37(2)*, 191-215.

Liebscher, G. & Dailey-O'Cain, J. (2004). Learner code-switching in the content-based foreign language classroom. *Canadian Modern Language Review*, *60(4)*, 501-525.

Littlemore, J. (2001). Metaphoric competence: A language learning strength of students with a holistic cognitive style? *TESOL Quarterly, 35(3)*, 459-491.

Littlemore, J. (2003). The effect of cultural background on metaphor interpretation. *Metaphor and Symbol 18(4)*, 273-288.

Littlemore, J. & Low, G. (2006). Metaphoric competence and communicative language ability. *Applied Linguistics, 27(2)*, 268-249.

Low, G. (1988). On teaching metaphor. *Applied Linguistics, 9(2)*, 125-147.

Malmkjær, K. (2010). Language learning and translation. In Y. Gambier & L. van Doorslaer (eds.), *Handbook of translation studies* (Vol. 1, pp. 185-190). Amsterdam, Philadelphia: John Benjamins.

Manno, G. (1998). L'enseignement des langues et le sens 'non littéral' des signes. *Multilingua*, *17(1)*, 59-92.

Massey, G. & Ehrensberger-Dow, M. (2017). Translating conceptual metaphor: The processes of managing interlingual asymmetry. *Research in Language*, *15(2)*, 173-189.

Newmark, P. (1988). *A textbook of translation*. Hemel Hempstead: Prentice-Hall International.

Niño, A. (2008). Evaluating the use of machine translation post-editing in the foreign language class. *Computer Assisted Language Learning*, *21(1)*, 29-49.

Niño, A. (2009). Machine translation in foreign language learning: Language learners' and tutors' perceptions of its advantages and disadvantages. *ReCALL*, *21(2)*, 241-258.

Oliver, R., Wigglesworth, G., Angelo, D. & Steele, C. (2020). Translating translanguaging into our classrooms: Possibilities and challenges. *Language Teaching Research*, *25(1)*, 134-150.

O'Neill, E. M. (2012). *The effect of online translators on L2 writing in French*. Unpublished PhD, University of Illinois at Urbana-Champaign, United States.

Pfister, G. G. (1972). Making the second year foreign language program count: An appeal for continuity. *The Modern Language Journal*, *56(7)*, 425-426.

Pintado Gutiérrez, L. (2018). Translation in language teaching, pedagogical translation and code-switching: Restructuring the boundaries. *The Language Learning Journal, 49(2)*, 219-239

Pragglejaz Group (2007) MIP: A method for identifying metaphorically used words in discourse. *Metaphor and Symbol*, *22(1)*, 1-39.

Prieto Arranz, J. I. (2002). Liaison interpreting in the ELF classroom: A case study. *Revista alicantina de estudios ingleses*, *15*, 207-228.

Prince, P. (1996). Second language vocabulary learning: The role of context versus translations as a function of proficiency. *The Modern Language Journal*, *80(4)*, 478-493.

Pym, A., Gutierrez-Colon Plana, M. & Malmkjaer, K. (2013). Translation and language learning: The role of translation in the teaching of languages in the European Union. A study. *Studies on Translation and Multilingualism, 1.* Luxembourg: Publications Office of the European Union

Resende, N. & Way, A. (2021). Can Google Translate rewire your L2 English processing? *Digital*, *1(1)*, 66-85.

Rüschoff, B. (1993). Language learning and information technology: State of the art. *Calico Journal*, *10(3)*, 5-17.

Schulz, R. (1988). Reading and second-language instruction. *Die Unterrichtspraxis/Teaching German*, *21(1)*, 55-59.

Schäffner, C. & Adab, B. (eds.). (2000). *Developing translation competence*. Amsterdam, Philadelphia: John Benjamins.

Seleskovitch, D. (1975). *Langage, langues et mémoire*. Paris: Minard.

Swain, M., & Lapkin, S. (2000). Task-based second language learning: The uses of the first language. *Language Teaching Research, 4(3)*, 251-274.

Takimoto, M. & Hashimoto, H. (2010). An "eye-opening" learning experience: language learning through interpreting and translation. *Electronic Journal of Foreign Language Teaching*, *7(1)*, 86-95.

Takimoto, M. & Hashimoto H. (2011). Intercultural language learning through translation and interpreting: A study of advanced-level Japanese learners'. *Babel, 45(2/3)*, 1-11. Australian Federation of Modern Language Teachers Association, Australia.

Torres-Hostench, O. (2020). Translator training outdoors. *Translation Spaces*, *9(2)*, 224-254.

Ulanoff, S. & Pucci, S. (1993). Is concurrent-translation or preview-review more effective in promoting second language vocabulary acquisition? Paper presented at the *Annual Meeting of the American Educational Research Association* (Atlanta, GA, April 12-16, 1993).

Upton, T. A. & Lee-Thompson, L. C. (2001). The role of the first language in second language reading. *Studies in second language acquisition*, *23(4)*, 469-495.

Uzawa, K. (1997). Problem-solving in the translating process of Japanese ESL learners. *The Canadian Modern Language Review, 53(3)*, 491-505.

Vermes, A. (2010). Translation in foreign language teaching: A brief overview of pros and cons. *Eger Journal of English Studies*, *10(1)*, 83-93.

Vermeulen, A. & Escobar-Álvarez, M. Á. (2021). Audiovisual translation (dubbing and audio description) as a didactic tool to promote foreign language learning: The case of Spanish clitic pronouns. *Translation and Translanguaging in Multilingual Contexts*, *7(1)*, 86-105.

Widdowson, H. G. (2014). The role of translation in language learning and teaching. In J. House (ed.), *Translation: A multidisciplinary approach* (pp. 222-240). Palgrave Macmillan, London.

Witte, A., Harden, T. & de Oliveira Harden, A. R. (eds.). (2009). *Translation in second language learning and teaching*. Bern: Peter Lang.

Annex

Source text for translation activity (with metaphors highlighted):

Why the Great Reset also means fighting racism

- *Great Reset launched* on 3 June by Klaus Schwab and Prince Charles.
- IMF chief says it will mean "*greener, smarter*, *fairer world".*
- Schwab cites Mandela on *link* between racism and fair economy and society.

The *Great Reset* - *rebuilding* the global economy in a fairer, greener way as we come out of the coronavirus pandemic - will also require societies to battle and beat racism.

In his closing words at Wednesday's launch of the project, World Economic Forum Founder and Executive Chairman Klaus Schwab chose to cite Nelson Mandela, a man imprisoned for years for fighting institutional racism in apartheid South Africa and who became the country's president.

"I stood, 21 years ago, together with Nelson Mandela in Davos on the stage when he said: 'We should lay the scourge of racism, of divisiveness to rest. This requires strong, democratic institutions and (the) will of everybody and the culture of compassion. None of this is possible without a strong economy and a cohesive society."

While much of the Great Reset will be about environmental sustainability and the better use of technology, it is also about seeking greater fairness and less inequality.

"The COVID-19 crisis has shown us that our old systems are not fit any more for the 21st century," Schwab said in his opening statement. "It has laid bare the fundamental lack of social cohesion, fairness, inclusion and equality."

We could try to go back to the world we had before the pandemic, he said, but that risked "the amplification of many of the trends we see today: polarisation, nationalism, racism and ultimately social unrest and conflicts."

A great reset of how the economy and society run would do the opposite, he said.

It was also a time to support those who had been left behind. Juliana Rotich, Venture Partner at Atlantica Ventures in Nairobi, said we were at an inflection point.

"There's an opportunity to centre the reset on those who are most vulnerable, those on the edge where it only takes something like a pandemic to slide into poverty."

Other speakers at the launch echoed Schwab's concerns about inequality and racism.

Microsoft President Brad Smith made a direct reference to the racial conflict in his own country, and how the Great Reset could be part of the solution.

"Data, and technology more broadly, are indispensable tools to solving almost any of the problems that we confront," he said.

"And so when it comes to protecting people's fundamental rights, as we are seeing in the United States today, we have been focused for several years on using data to shine a light on disparities, for example, between the practices of police on African-Americans and blacks in the United States in comparison with other populations - that is a slice of what we'll need to address around the world."

In a passionate address, Kristalina Georgieva, the head of the International Monetary Fund said the Great Reset would result in a "greener, smarter, fairer world".

"We know this pandemic, if left to its own devices, will deepen inequality," she said.

"But if we were to concentrate in investing in people, in the social fabric of our societies, in access to opportunities and education for all, in expansion of social programmes - then we can have a world that is a better world for all."

Source: World Economic Forum https://www.weforum.org/agenda/2020/06/why-the-great-reset-also-means-fighting-racism/