Canadian and Brazilian research on L2 production and the Output Hypothesis: seeking for a psycholinguistic rationale for the use of translation in L2 learning

As pesquisas canadenses e brasileiras sobre produção de L2 e a Hipótese da Produção: em busca de uma base psicolinguística para o uso da tradução na aprendizagem de L2

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Abstract: The aim of this paper is to pursue a psycholinguistic rationale for the use of pedagogical translation in L2 learning². First, it reviews the panorama of translation in L2³ teaching/learning. Second, it presents the Output Hypothesis (Swain, 1985, 1995) and reviews empirical studies on output carried out in Canada and in Brazil. Next, it presents the task based teaching as an approach that is compatible with the use of translation in L2 learning. Finally, taking the perspective that translation is language production, it is argued that translating tasks (written or spoken) will trigger cognitive processes that, according to the Output Hypothesis, are beneficial to L2 learning. We claim that the beginning of the search of a psycholinguistic rationale for the use of translation has its crucial point in the mental processes that are triggered.

Keywords: Translation. The Output Hypothesis. Psycholinguistic rationale.

Resumo: O objetivo deste artigo é buscar uma base psicolinguística para o uso da tradução pedagógica na aprendizagem de L2. Primeiro, analisamos o panorama da tradução no ensino/aprendizagem de L2. Em segundo lugar, apresentamos a Hipótese da Produção (Swain, 1985, 1995) e revisamos estudos empíricos sobre a produção de L2 conduzidos no Canadá e no Brasil. Em seguida, apresentamos o ensino baseado em tarefas como uma abordagem compatível com o uso da tradução no aprendizado de L2. Finalmente, assumindo a perspectiva de que a tradução é produção de língua, argumentamos que tarefas de tradução (escritas ou orais) desencadearão processos cognitivos que, de acordo com a Hipótese da Produção, são benéficos para o aprendizado de L2. Argumentamos que o início da busca por uma base psicolinguística para o uso da tradução tem seu ponto crucial nos processos mentais que são desencadeados.

Palavras-chave: Tradução. The Output Hypothesis, Base psicolinguística.
Introduction

Initially, translation acted as main character in the Grammar Translation Method (henceforth GTM) period. According to Leffa (2012, p. 394), "to understand a text, the student memorized L2 word lists and associated them with L1, also applying syntax rules. By producing a sentence in L2, and by reversing the process, the application of syntax rules assumed more importance." In this perspective, translation had a primary role in this method, since this is the fundamental teaching tool. According to Leffa (Ibid., p. 394), "the practice consisted basically of translation and version exercises, but questions of understanding and interpretation of the selected texts were also used; the evaluation was done by means of written tests."

At the end of the 19th century, restructurings in teaching methods promoted the diffusion of the Direct Method. The aforementioned reforms occurred around 1880, when "linguists emphasized that oral discourse, rather than the written word, was the primary form of language" (RICHARDS and RODGERS, 1999, p. 7). It is at this moment that the reflections upon L2 classroom practice emerge as well as developing areas of knowledge such as Applied Linguistics and Second Language Acquisition (SANTORO, 2011). Santoro supports that orality gained importance according to the easiness of communication among countries, people and also due to the access to information; the Direct Method, thus, achieved space and status. Such method has as its main characteristic the primary use of the target language and the prohibiting of the translation as a teaching technique.

According to Leffa (2012), in the Direct Method, the focus of meaning goes from L1 to L2, following the assumption that the learner must learn how to think in the L2 and, thus, the use of L1 must be avoided by the student. In summary, while the GTM advocates the teaching of literary language, the Direct Method (hereafter DM) seeks to use daily spoken language as the object of instruction. Therefore, while DM avoids the use of translation, GTM uses it as the main teaching resource.

The Communicative Approach, which emerged in the 1970s (SANTORO, 2011), has as its fundamental principle the use of the target language for communication, which, consequently, excludes the use of the mother tongue and avoids explicitly explaining
the grammar of the L2. After reviewing the most used methods, we will turn to what the critics and the advocates of L2 teaching-learning tend to believe.

According to Santoro (2011, p. 152), "a distorted view of the communicative approach has spread the idea that aspects of real life are only those that relate to current and utilitarian communication situations", which would not correspond to focusing on specific linguistic structures. The critics of the use of translation do not clearly define what this "real" activity would be in the context of L2 teaching. Currently, we are experiencing the post-method, an era of change and integration of knowledge, in which the teacher has more autonomy to act, maximizing learning opportunities. In this contemporary perspective of post-method, the discussion on the use of translation has been back into the scenario of L2 teaching and learning.

Review of the Literature: Pedagogical Translation

Escolar (2011: 83) claims that when we produce speeches in a foreign language, "we cannot avoid taking our first language as a starting point ..." and that "a person may consider himself bilingual when he is able to translate mentally messages in their mother tongue to a foreign language." In this sense, Branco (2009: 188) states that:

(...) at the beginning of learning a foreign language, it is common for students to use their mother tongue and such experience is considered a negative interference by teachers in the context of an L2. However, the influence of the mother tongue in the target language learning can be used to introduce particularities of mother and foreign languages, and gradually make the student realize that there is no possible total symmetry between languages. In this case, we try to convert the interference, considered negative in principle, into positive.4

Jakobson (2000) reinforces the fact that metalinguistic operations are intrinsically related to the cognitive functions of language, thus justifying that cognitive functions are not dependent only on grammatical functions. This statement corroborates Balboni's statement

(...) the goal of translation is (meta) linguistic, but it is (mainly) intercultural, and only with translation can students realize how much culture, how much worldview, how many values are embedded in every word. If the student discovers the infinite complexity of languages, the magic way in which
each language permeates the spirit to translate so as not to betray, the success of translation as a teaching technique will be total. (...) (201, p. 1):

According to Balboni (2011, p.2), "translation is the most metacognitive, metalinguistic and metacultural of all techniques of language teaching, (...)". Therefore, discussing the role of the mother tongue in the construction of knowledge of the target language should be considered and, consequently, the prior knowledge of the student should be addressed and worked by the teacher (TERRA, 2004). In this case, the L1, as prior knowledge must be considered, and the translation tasks are justified in the teaching of an L2.

According to Lier (1995), learning is a process of correlating the "new" to the "already acquired" and language learning is no exception. He claims that we learn a new language, therefore, we rely on knowing the language (s) we know. Our conscious learning strategies and actions can be greatly aided if we can connect what we already know (L1) to the new (L2).

According to Scneider and Bezerra (2011), translation activities should not be used to teach vocabulary in isolation. Rather, translation activities must be contextualized, take cultural aspects of both languages into account as well as aim at preparing learners to face daily situations of life. Undoubtedly, the teacher needs to be aware of these issues mentioned by Scneider and Bezerra (2011), so that the use of translation as a pedagogical tool is feasible and profitable.

Tudor (1987) also advocates the use of translation in the L2 classroom. He states that the translation activity will only occur in a communicative fashion if learners have a good level of knowledge in L2, being able to deal with L2 texts, recognizing meaningful linguistic operations. In other words, translation will be useful for learners with more advanced levels of proficiency.

Bearing these arguments in favor of translation in mind, what seems to be missing in this discussion is an attempt to build an interface between the use of translation and theories and/or hypotheses of L2 acquisition. So far, researchers have stated their positions in favor of translation, and have suggested activities that can be incorporated
into classes, but we believe one crucial question deserves to be asked: **What theory and/or hypothesis of L2 learning support the use of translation?** In the attempt to answer this question, we propose that the Output Hypothesis (Swain, 1985, 1995) has the potential to provide a psycholinguistic rationale for the use of translation as a pedagogical tool in L2 learning.

**Studies on language production in immersion programs in Canada**

Before we describe the Output Hypothesis itself, we will present the historical background of language production research in Canada. Swain's studies in language production emerged from her work in French language immersion assessment programs in Canada. Swain observed children whose English was the first language and who were learning French as an L2 in context of immersion program (CANALE and SWAIN, 1980).

In the first research on bilingual immersion programs, when discussing the applications of communicative competence in second language pedagogy Canale and Swain (1980) proposed a theoretical framework for communicative competence. This theoretical model consists of three dimensions: Grammatical Competence (lexical items), Sociolinguistic Competence (cultural aspects and rules of discourse) and Strategic Competence (verbal and nonverbal strategies that can be used).

On this basis, Canale and Swain, thus justify their theoretical model:

(...) we have in mind several general assumptions about the nature of communication and of a theory of communicative competence. Following Morrow (1977), we understand communication to be based in sociocultural, interpersonal interaction, to involve unpredictability and creativity, to take place in a discourse and sociocultural context, to be purposive behavior, to be carried out under performance constraints, to involve use of authentic (as opposed to textbook-contrived) language, and to be judged as successful or not on the basis of behavioral outcomes (CANALE e SWAIN, 1980, p. 29).

According to Canale and Swain (1980), communication would involve verbal and non-verbal symbols, production and comprehension skills, and written and oral modes. Later, Canale (1983, p. 4) reiterates communication in second language teaching as a process of exchange and negotiation of information between at least two individuals.
through the use of verbal and nonverbal symbols, visual modes / written and oral and written and production and process understanding.

In addition, until the 1980s, language production was seen only as a result of what the student had learned (KRASHEN, 1985). The dominant paradigm was the theory of information processing in second language acquisition studies. The broad growth of French-language immersion programs in Canada and the evaluations of these programs have yielded fruitful results for the research areas related to bilingual education and L2 acquisition. It is worth mentioning that the immersion programs examined school learning and claimed that an L2 could be learned through an integration between the teaching of the language and the teaching of contents (IZUMI, 2003).

Swain (1985) observed that students in immersion programs obtained satisfactory results in listening and reading activities, and even obtained grades similar to those of Francophone students, at the same level of proficiency (remembering that the learners were native English speakers who were in immersion programs in French). However, these learners had some difficulty in speaking and writing, even after about eight years studying French as a second language. She found that they were less accurate in pronunciation, as well as in their general use of morphosyntax and vocabulary, and less knowledge of complex grammar. Swain (1985) verified that students had few moments of language production and that lack of production occurred because they were not "required" in their production and consequently did not have adequate opportunities to use target language in the classroom.

According to Izumi (2003), learners can disguise linguistic problems in comprehension and compensate their limitations by grasping general main ideas of a text, by the context and by their knowledge of the world. In production, however, learners are responsible for conveying the message and this requires communicative goals, lexical access, grammatical and phonological encoding (IZUMI, 2003). Thus, learners may discover what they cannot do or can do only partially since they need to create meanings and linguistic forms. In speaking and writing, learners tend to seek to solve their linguistic limitations by using the internalized knowledge acquired, as already mentioned (IZUMI, 2003).
Bearing that in mind, Swain (1995) argues that the amount of input - related to reading and listening skills given to learners ends up restricting their language production. Learners of immersion programs in Canada needed not only comprehensible input but also opportunities for comprehensible production in order to become fluent and accurate in the second language (SHEHADEH, 2002). Results of research on language production in immersion programs in Canada led Swain to propose the Output Hypothesis.

**Swain’s Output Hypothesis**

Krashen (1981) claims that when output occurs, acquisition has already taken place. On the other hand, Swain (1985, 1995) postulates that output plays a role in fostering acquisition. The function of output in the sense of practicing the language may enhance fluency (Swain, 1985), but not necessarily leads to accuracy (SCHMIDT, 1990). Hence, besides this more general function of output in the sense of practicing, Swain (1985, 1995) proposes three other functions of output, which are related to accuracy. These functions are the noticing/triggering function, the hypothesis-testing function, and the metalinguistic reflection function.

The noticing/triggering function proposes that as learners need to produce the language in order to achieve communicative goals, they may notice gaps in their interlanguage. In other words, “In producing the target language (vocally or sub vocally) learners may notice a gap between what they want to say and what they can say, leading them to recognize what they do not know or know only partially” (SWAIN, 1985: 125). Thus, output may lead learners to raise consciousness of what they need to learn about the target language.

The hypothesis-testing function proposes that language production may represent learners’ hypotheses about how the target language functions. It is important to highlight that these hypotheses are implicit, they are not conscious. In this sense, output itself is the hypothesis. Hence, what learners speak may represent their best guesses about how something should be said in the target language (SWAIN, 1985, 1995).

Swain (1985, 1995) also proposes a third function of output, namely, conscious reflection. This function of output is more related to explicit hypotheses. In this sense,
output may also generate explicit hypotheses about learning, which may take place as learners communicate about the target language in class. Whenever learners engage in communication for the purpose of discussing and reflecting upon how the target language works, output is, then, leading learners to generate explicit hypotheses about the language. In this sense, this third function of output is actually a metalinguistic function.

It is important to highlight that the Output Hypothesis does not deny the relevance of input. It complements and reinforces input-based approaches to language acquisition (IZUMI & BIGELOW, 2000). In short, the Output Hypothesis postulates that producing language may engage learners in cognitive processes which are useful for L2 learning. We take the perspective that translation is language production. Thus, we advocate the idea that translation can trigger the processes described in the Output Hypothesis: noticing gaps, testing hypotheses and reflecting metalinguistically.

Having discussed how the Output Hypothesis may be in line with the use of translation in the L2 classroom as a fruitful pedagogical tool, we will present a brief review of language production studies carried out in Brazil.

**Language production studies in Brazil**

The output hypothesis has also generated a considerable body of research in the Brazilian context of teaching English as a foreign language. Armentano (2006) investigated the cognitive and interactional aspects involved in digtogloss tasks. The author chose this task because "the goal of the digtogloss is to go beyond" to force ", to demand in form, to generate a production (pushed output) in the context of the collaborative dialogue between partners". In her study, she investigated intermediate and upper intermediate level students who are fluent in their performance but lack linguistic accuracy.

For such an attempt, Armentano (2006) took into account the cognitive complexity of the task, observing the content of the task and how it should be manipulated and how the focus on language, in a pedagogical task, promotes possibilities of modification in the interlanguage from a deeper production. Overall results showed that the task had a certain cognitive complexity, since in all phases of the task - from the oral modality to the written modality - it demanded controlled attention of the participants. As for the
interactional patterns provoked by the collaborative dialogue, it was observed that there is a limit to its usefulness, since less experienced or less proficient students were annoyed or frustrated when they were unable to solve the linguistic problems that occurred during the task.

Guará-Tavares (2007) reports on a case study with three L21 teachers, the purpose of which was to examine teachers’ perspectives towards the speaking skill, types of opportunities provided for speaking the target language in the classroom, and functions of output (SWAIN, 1985, 1995) mostly emphasized by teachers within the opportunities provided for speaking. Results indicate that teachers tend to view speaking as communication and most opportunities provided for speaking are discussions about familiar topics. Teachers tend to emphasize the practice function of output. However, noticing gaps, testing hypothesis and metalinguistic reflection emerged from the part of the learners.

Seba (2008) investigated the effectiveness of collaborative dialogue, focusing on how to improve reading comprehension ability in English. Seba considered collaborative dialogue based on the concept of Swain (2000), which has language not only as a means of communication, but also considers it as a cognitive tool for the construction of knowledge (SWAIN, 2006). In her experiment, Seba observed four regular classes in an English language course for academic purposes, in which two intermediate-level English-language students worked collaboratively on reformulating a particular text in English and on production tasks. She then analyzed the dialogical interaction between the pair of students during two collaborative writing tasks and observed an improvement in the reading comprehension of the students, because while they produced and reformulated a text in English, the learners spontaneously engaged in a collaborative dialogue, thereby mediating their learning. The role of the teacher, in this sense, in facilitating learning, was a fundamental factor in the process.

Lacerda (2009) studied the collaborative dialogue as a facilitator in learning basic level of English as a foreign language. For this, she observed six students, divided into three dyads for performing two tasks. Language related episodes were used to evaluate negotiation of meaning in collaborative dialogues. Overall results revealed that students
paid more attention to the lexical aspects during negotiation of meaning. Moreover, results also showed that the dialog between the students of each dyad was useful to improve the production of basic level students, because in trying to produce the L2, the students perceived gaps, which in turn stimulated the search for solutions, elucidating some questions and feedback. Following Swain (2001), Lacerda, claims for more opportunities for collaborative dialogues in language production tasks.

Guará-Tavares (2016) investigated the processes learners engaged when they planned an oral narrative task. During planning, there were already instances of language production in which learners noticed gaps, searched for lexical items, organized their narratives, and reflected metalinguistically on formal aspects of the L2. In addition to that, participants that had higher working memory capacity produced significantly more metacognitive strategies. Results indicate that not only producing language trigger cognitive processes described in the Output Hypotheses, but also planning language production engage learners in these cognitive processes.

Sales (2016) sought to scrutinize the cognitive processes learners engage during the performance of a translation task from the perspective of Swain’s Output Hypothesis. Assuming that translating is language production, and it as re-creation of meaning effects (SANTORO, 2011), they analyzed whether functions of the Output Hypothesis emerge during a translation task. Participants performed a translation task in pairs. Overall results demonstrated that the functions of output occur interwoven, in a juxtaposed fashion during the performance of the task. Therefore, results indicate that translation tasks generate cognitive processes that are beneficial to learning and should be used as a pedagogical tool in the L2 classroom.

D’Ely and Guará-Tavares (2018) have incorporated translation into the construct of tasks. Tasks can be defined as pedagogical tools that resemble daily life activities, and lead learners to focus on form in order to express meaning to achieve a communicative outcome (ELLIS, 2003; BYGATE, SKEHAN & SWAIN, 2001). Within the study of tasks, two constructs that have received considerable attention are pre-task planning and task repetition.
D’Ely and Guará-Tavares (2018) sought to investigate L2 speech performance of a translation task under two task implementation conditions: pre-task planning (FOSTER and SKEHAN, 1996; SANGARUN, 2005) and collaborative pre-task planning for repetition (D’ELY, 2006). Learners performed a translation task twice, under a pre-task planning and under a collaborative pre-task planning for repetition condition respectively. The task consisted of a one minute commercial video. L2 speech performance was measured in terms of fluency, accuracy and complexity. Results showed that performance after the collaborative pre-task planning condition yielded statistically significantly more accurate L2 speech when compared to performance under a pre-task planning condition. Results also indicate that translation tasks can be useful when aiming focusing learners’ attention on formal aspects of the language.

It is important to highlight that tasks have generated a considerable amount of research over the last decades, however, translation tasks have been unexplored. D’Ely and Guará-Tavares (2018) provided evidence that translation tasks trigger cognitive processes that are similar to the ones triggered in tasks that do not involve translation. Like other types of tasks, translation tasks have the potential to foster L2 learning. Therefore, they should be used as pedagogical tools.

All studies here reviewed on language production provide evidence that producing the target language generates cognitive processes that are useful to L2 learning. In the next section we will discuss how the task based approach to language teaching may be compatible with the use of translation.

**The task based approach to language learning/teaching**

Skehan (1996) proposes a framework for the implementation of task-based instruction. Within the task-based approach, the main assumption is that “psychological factors and processing conditions are highly relevant to second language learning and second language performance” (SKEHAN, 1998, p. 93).

In this sense, three issues are central as regards task analysis and implementation (SKEHAN, 1996). First, attention and noticing are essential for L2 learning (SCHMIDT, 1990). Second, attentional resources are limited (VAN PATTEN, 1990, 1996). Third,
in L2 learning and performance, learners draw upon a dual-mode processing system consisting of the exemplar-based system and the rule-based system (SKEHAN, 1998).

The exemplar-based system emphasizes meaning and regards learning in terms of the accumulation of chunks. The rule-based system emphasizes analyzability leading to the development of an open form-oriented system, according to which learning regards growth, change, and complexity of the underlying system.

In his framework, Skehan (1996) proposes a cycle of tasks which encompasses pre, mid, and post task activities. Pre-task activities are aimed at enhancing task performance. Mid-task activities focus on the ways in which the tasks are done and are aimed at balancing, reducing or enhancing task difficulty in order to balance learners’ attention among the goals of fluency, accuracy, and complexity. Post-tasks activities are aimed mainly at raising awareness for a focus on form.

Ellis (2003) suggests that grammar teaching is crucial for achieving proficiency. Machida (2011) claims that the focus on form approach integrates traditional grammar teaching (form without context or discourse) with an analytic approach requiring context where the learners are engaged in communication.

Learners naturally try to translate in the context of L2 learning and assigning translation activities meets this natural tendency (MACHIDA, 2011). Translating requires wary attention to form in the attempt to convey meaning which is in line with task based teaching. In translation tasks, learners may notice gaps in their language, generate hypothesis and undergo metalinguistic reflection upon the target language (SWAIN and LAPKIN, 1995; MACHIDA, 2011).

In addition to that, task based research has shown that learners frequently may avoid linguistic structures they do not know (GUARÁ-TAVARES, 2009, 2016). A translation task allows teachers to ask students to use specific linguistic items thus reducing avoidance. In order to translate specific linguistic structures they do not know, learners must search, study, ask for help and feedback so that they can use the language required for performing the task. Therefore, we advocate the use of translation as a pedagogical tool within the task based approach to L2 learning and teaching.
CONCLUDING REMARKS

To recapitulate, we take the perspective that translation is language production. According to Swain’s Output Hypothesis (1985, 1995) language production is not only an indication that learning has taken place. She claims that production has the potential to foster learning due to the cognitive processes it generates.

For Swain, production makes the learner move from semantic processing which is prevalent in comprehension to syntactic processing, thus, leading learners to perceive gaps in their L2 knowledge, and once learners perceive these gaps they tend to formulate implicit hypotheses on how the L2 functions. Also, when working in pairs, learners may engage in discussions on formal aspects of the L2 which may lead to metalinguistic reflections from the part of learners. The empirical studies on L2 production carried out in Canadian and Brazilian contexts reviewed here provide evidence that language production engages learners in cognitive processes that are prolific to L2 learning.

As discussed in the review of the literature, there is compatibility between the use of translation and task based teaching. Translating requires cautious attention to form in the effort to express meaning which is congruent with task based teaching. Thus, translation can be easily incorporated into an approach to teaching that is based on tasks.

As showed in the studies on L2 production reviewed in this paper, especially Sales (2016) and D’Ely and Guará-Tavares (2018), translation tasks require learners to produce language and they do have the potential to trigger several cognitive processes that are in line with the processes described in the Output Hypothesis. Therefore, the question previously asked in the introduction: What theory and/or hypothesis of L2 learning support the use of translation? We argue that the Output Hypothesis support the use of translation in L2 learning because translation – seen as language production – generates the same processes described in the functions of the Output Hypothesis.

In conclusion, in the search of a psycholinguistic rationale for the use of translation in L2 learning, a crucial point that may guide the beginning of our pursuit is the evidence that translation prompts mental processes such as noticing of gaps, hypothesis testing and metalinguistic reflection. In other words, translation triggers mental processes that may foster L2 learning.
Canadian and Brazilian research on L2 production and the Output Hypothesis: seeking for a psycholinguistic rationale for the use of translation in L2 learning

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² The terms learning and acquisition will be used interchangeably in this paper.

³ Following Ellis (1994), the term L2 will be used as an umbrella term for both second and foreign language, thus, referring to the target language being learned.

⁴ No início do aprendizado de uma língua estrangeira, é comum que os alunos recorrão à língua materna e haja
a influência da mesma, sendo tal experiência considerada uma interferência negativa por professores em geral, no contexto de língua estrangeira. Entretanto, a influência da língua materna no aprendizado de LE pode ser aproveitada para apresentarmos particularidades das línguas materna e estrangeira, e aos poucos, fazermos com que o aluno perceba que não é possível haver simetria total entre as línguas. Neste caso, busca-se converter a interferência, considerada a princípio negativa, em positiva.

5 Following Ellis and Barkuizen (2005) the term interlanguage refers to the language of the learner.