Negative Transfer and Its Methodologies: Mapping the Current Research

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A B S T R A C T

This paper presents a comprehensive review of existing research in the field of negative transfer (L1 interference) in second language acquisition. It focuses on analysing key studies conducted internationally, aiming to provide a coherent overview of the current state of research. The review explores various methodological approaches employed in the study of linguistic interference, discusses their strengths and limitations, and summarises the most significant findings and trends. It explores how researchers investigate linguistic interference in written expression, often utilising student corpora and targeted diagnostic tasks or tests. Beyond written analysis, some studies integrate additional tools like questionnaires or observation to gain deeper insights into learners' perceptions of L1-L2 relationships. The review highlights that research approaches vary, with some focusing on broad error identification and others on in-depth analysis of specific linguistic areas. The insights gathered from these studies frequently inform interventions designed to mitigate negative transfer. This review highlights the importance of a detailed analysis of existing research as a prerequisite for effective scientific inquiry, offering a crucial foundation for both theoretical understanding and future pedagogical advancements in foreign language education.

Keywords: review, negative transfer, errors, methodology, interference

Introduction

Before starting any scientific research, a detailed analysis of the available research in our area of interest is an essential step. Only after this process has been completed can we proceed with our own research if it is based on existing knowledge, combining theory and research. The following paper will discuss the issue of language transfer, especially the case of negative transfer, which is according to Brown (2014) the case "in which a previous item is incorrectly transferred or incorrectly associated with an item to be learned." A slightly different definition is offered by Gass and Selinker (2013), who understand the negative transfer as "the use of the first language (or other languages known) in a second-language context, resulting in a nontarget-like second-language form." It is the opposite of the case of positive transfer, which, as the name suggests, " occurs when the prior knowledge benefits the learning task—that is, when a previous item is correctly applied to present subject matter."

As implied above, the negative transfer may have various sources, but the focus of this paper will be on the mother tongue as the cause of negative transfer errors. It will offer an overview of the research conducted in the area of negative transfer originating from mother tongue interference in students written performances. It aims to provide a basic overview of the research situation worldwide, how researchers approach this issue, what methods they use in their research, and what the most significant results of the aforementioned research have been.

The negative language transfer is the traditional concept in the foreign language scope, and when looking for researches dealing with the issue, we can find a large number of studies. For this reason, it is therefore quite difficult to get a comprehensive view of the ways in which linguistic interference has been investigated and what conclusions can be drawn from it. A suitable tool to facilitate and guide the search process is, for example, asking questions or setting search criteria.

Methodology of the review

Research questions

Based on the aim of this paper, the following questions were posed:

1.   What is the situation of research in the field of negative transfer from native languages in the world?

2.   How and through what methods is interlanguage interference in written speech investigated?

3.   What are the important findings of research in the field of negative transfer from mother tongue?

Research procedure

To answer the above-mentioned research questions, the following databases were selected: the Web of Science, Scopus, Science Direct or the Wiley Online Library. The keywords for the searches were in different languages: negative transfer, language interference, interlanguage interference/transfer, and native language interference/mother tongue interference. The first step after finding suitable research was to analyse the title and abstract of the papers concerning whether these papers, based on what we had read, at least roughly met the criteria:

- they dealt with the language interference (negative transfer) of English resulting from the learner's mother tongue,

- focused on linguistic interference (negative transfer) in written expression,

- were research papers.

Based on the selected papers, a more similar reading of them was conducted, taking into account the fulfilment of all the set criteria. Works that did not meet the criteria were excluded from the review. It is also important to mention that when reading the individual papers, those that were mentioned in them were also taken into account and included in the selection after all the criteria had been taken into account (so-called "backward research").

Results

In the following section, each of the research questions will be answered.

1. **What is the situation of research in the field of negative transfer from native languages in the world?**

There are many negative language transfer studies around the world that would address English. Due to the fact that English is the so-called universal language of communication (lingua franca), English is taught in most schools in the world, and therefore, researchers also find it important to look for areas that can facilitate this process for students and also those that may cause problems. Such studies can be found concerning the following languages, for example: Japanese, Chinese, Thai, Georgian, Spanish, Turkish, Arabic, Russian, French and German.

2. How and through what methods is interlanguage interference in written speech investigated?

Researchers interested in the topic of negative transfer or language interference in writing generally approach it in two ways. Either they opt for a corpus of written work, which they then further examine for the occurrence of negative transfer errors, or they use specially designed tasks (tests) that address negative transfer errors in a more isolated setting. Each of these possible approaches will be explained in more detail below.

The vast majority of research conducted to date chooses the first one mentioned - the corpus approach - because it is inherently looser and allows for the analysis of learners' production in a less controlled environment. In this case, researchers examine students' overall written production or focus on specific areas that may be prone to the emergence of transfer.

When examining students' overall production, researchers typically choose to collect students' written essays from English classes. These texts are then analysed for the occurrence of negative transfer originating from their native language. Based on the errors found, they are categorized according to common features. In the first step, interference errors are usually divided into several categories, such as errors in appropriate word choice, capitalization, spelling, articles, word order, timing, subject-verb agreement, or preposition usage. This is the case, for example, of Seitova (2016), who investigated Kazakh 6th grade elementary school students in this approach, Phuket & Othman (2015) who in turn were interested in Thai EFL university students, or Kazazoğlu (2020) analysing the interference errors of Turkish and Arab university students. Some studies classify these errors into larger linguistic categories such as lexical, syntactic or grammatical categories in order to analyse which area is most affected by negative transfer from the native language and which needs special attention within the analysed/learned language relationship (Quin, 2017).

Particularly in studies that use a more general approach, researchers sometimes add additional research methods (instruments) to gain more comprehensive insights into other factors that may influence the occurrence of negative transfer or to gain a more detailed insight into students' mindsets as they produce them in English. This group includes, for example, studies by Quin (2017) looking at Chinese university students, Sermsook, Liamnimitr & Pochakorn (2017) analysing the work of Thai university students, and longitudinal research on Spanish and Korean students by Ionin & Montrul (2010), or Cagla's (2016) research on Turkish beginners, or Łockiewicz & Jaskulska's (2019) study on Polish high school students, all of which used interviews, tests, feedback or questionnaires in addition to corpora created by collecting written compositions.

Through these, the researchers obtained further information about the students' linguistic background, the years spent learning English, their level of proficiency in the foreign language, what they found most difficult, or whether they were using their native language in some of their writing in English. This also allowed them to find out what strategies students used when writing, how they planned their text, whether they used thinking patterns taken from their native language or whether they first produced a text in their native language and then translated it in their minds.

A more general approach is often followed by a focus on the areas that have been identified as most influencing learners' production due to interference from the native language. In this step, they either choose to analyse broad linguistic categories such as lexical, lexical-semantic, syntactic, morphological, morpho-syntactic, orthographic categories, or they choose one specific area such as orthography and its subcategories of capitalization and spelling. It can be stated that there are several examples of such studies, as they are usually based on previous research in this area.

Within the broader linguistic categories of lexis, for example, one can mention the lexical transfer studies conducted by Ye (2019) focusing on Chinese high school students and the problems they encounter in English in the areas of polysemy, collocations, and multi-word phrases, or the longitudinal analysis of Struc & Wood's (2013) negative transfer in the production of transferred words by Japanese university students.

Probably the largest number of studies deal with specific areas of language production. This fact is closely related to the relationship between languages already learned and languages that students are currently learning. A very common factor dividing languages is the differences between the rules of their use. This causes a number of problems that are reflected in the learners' production and are therefore the focus of researchers' attention. Obviously, there are many areas that can be analysed in this respect, and therefore in the following section only one area will be selected to demonstrate how cross-linguistic problems can vary within different groups of learners.

Capitalization, which belongs to the orthographic domain of a language, is mainly investigated in those languages that mostly differ in their capitalization rules and either have different understandings of what can be considered proper nouns (as opposed to the target language) or do not capitalize in general. This is the case, for example, with Arabic, which does not recognise capital letters, which makes it necessary for Arabic learners of English as a foreign language to adopt the new habit of using capital letters in their language production in this foreign language. This fact causes them a lot of problems, which is investigated and proved by several studies such as Siddiqui's (2015) and Salamin, Farrah, Zahid, & Zaru's (2016) studies. In terms of investigating languages in which, although they are capitalized, learners still commit interference errors due to various differences in capitalization rules, this is the case, for example, in a large corpus study by Shatz (2019) focusing on different languages such as French, German, Italian, Japanese, Portuguese, Russian, and Spanish.

In addition to classifying the errors found into different categories according to their common features, some researchers such as Sermsook, Liamnimitr and Pochakorn (2017), Gvarishvili (2013), Quin (2016), Phoocharoensi (2011) and Cagla (2016) have also focused on whether these errors based on negative transfer result from learners either using the wrong shape, using it excessively or not using the shape at all in production. Such a strategy helps them understand the broader realities and not only that students make these errors, but also how this manifests itself in their production. In this way, they can more easily set up an appropriate strategy for correcting errors in students' productions.

The second approach, which is characteristic of researchers interested in this issue, usually builds on research already conducted of a more general nature and focuses on specific areas in a more isolated setting, mostly through a variety of specially designed tests or tasks. These include Salamin, Farrah, Zahid & Zara's (2016) research on Arabic students' capitalisation errors in which they created a special test addressing this particular area, Miin-Hwa Lim's (2007) research interested in Malaysian high school students' interference errors in the present tense progressive domain, which used a multiple-choice test as a research tool, or research on Arabic learners by Alzahrani (2020), who created tasks focusing on the translation of verb tenses, which Arabs often find difficult when learning English.

The last group of studies that is important to mention represents the step that should be taken after each of the above-mentioned studies, and that is intervention (and subsequent prevention). Sersen's (2011) study, for example, combined tests to find all the areas that make Thai learners of English struggle, and then used this information to intervene and prevent interference errors from their native language into English. A similar approach was used by Urdaneta (2011), who first used interviews, questionnaires, and observations with students and teachers to find out the effect of native language on foreign language writing, then analysed their written work, and then conducted a systematic intervention throughout the semester intending to reduce the number of negative transfer errors from Spanish to English as a foreign language.

3. What are the important findings of research in the field of negative transfer from mother tongue?

The last question addresses a key aspect of the research, and that is its results. Therefore, for a general overview of the issue, only the most important and interesting findings from the studies included in this search will be mentioned.

One factor that is very often analysed in terms of negative transmission is age. Undoubtedly, it plays an important role in the analysis of its occurrence, which is also why it has been given attention, for example, by Elkilic, Han and Aydin (2009) and Shatz (2019), who were interested in students' orthographic errors. An important conclusion of both researches was that as the level of a foreign language increases, the number of errors caused by negative transfer from the native language gradually decreases.

An interesting result is provided by the study of Shatz (2019) in the area of language similarity (in writing), which was investigated between English and French, Italian, German, Portuguese and Spanish. Despite the differences between the rules in the languages studied, the study yields the results that students transferred the rules of capitalization in their native language to English, but the use of a different script between English and Russian or Japanese partially mitigated this transfer. Related to this, Shatz also examined the rules of under- and overuse of proper names. He concluded that the higher the interference in languages that tend to capitalize less than English, the more students tended to capitalize less and thus made more errors in their English speech. This was also the case for the German students, suggesting that the similarity of the capitalization rules between the students' native and target (foreign) languages makes it more difficult for them to successfully implement the capitalization rules in English. However, he points out that this is not necessarily due to the fact that capitalisation rules from the native language are transferred directly into the foreign language.

An insight into the area of verb tense interference errors is provided by the research of Lim (2007), who was interested in prepositional verb forms in Malay and English. He concluded that since Malay perceives tense differently, each verb phrase in the learners' native language may have different equivalents in English. Thus, the errors they commit can be attributed to the differences between their mother tongue and English in terms of verb tense referents. Such differences are noticeable mainly because, in contrast to Malay, verb completions in English can be expressed in different ways. The auxiliary verbs 'has', "have" and 'had' do not have exact equivalents in Malay, due to which Malay learners have to develop new frames of reference for verb perfect forms in English.

The different rules between languages were also investigated in a study by Gvarishvili (2013), which focused on Georgian learners of English as a first foreign language's production of English prepositions. The results highlight the fact that when analysing the rules between languages in relation to prepositions, it is necessary to keep in mind the different perception of space or semantic differences, which may also result in errors caused by negative transfer from the native language. In addition, the study suggests that errors that were initially intra-linguistic may later lead to inter-linguistic ones.

Both Sermsook, Liamnimitra & Pochakorn's (2017) and Urdaneta's (2011) studies combined multiple research methods, such as interview and analysis of written work, and the results of the research offer insights into the ways in which the native language is involved in the process of production in a foreign (English) language from the learner's point of view. When completing the questionnaire, the students admitted that they often use their native language to help them in producing a text in English, especially in the case of vocabulary. At different stages of writing, students in the questionnaire used by Quin (2017) admitted that they used Chinese as their native language especially in the preparatory stage of writing, because it helped them to organise their thoughts and plan the structure of the text, even though it subsequently negatively affected their production in English. At the same time, it is important to mention that the participants in Sermsook, Liamnimitra & Pochakorn's (2017) study admitted that their mother tongue sometimes helped them when writing in English, especially in the case of similar word spellings, which suggests that the issue of positive transfer should also be taken into account when examining the relationship between the two languages.

According to Sersen (2011), a study devoted to a systematic intervention for negative errors due to transfer from the native language of Thai learners suggests that the number of such errors has gradually decreased due to the intervention. However, it also highlights that there are some areas in the language that require more time and attention to reduce their occurrence. These are, for example, errors in the use of the simple present tense instead of the present progressive tense, the application of the Thai verb sequence in English, and the incorrect use of the definite article, which seem to require less time to eliminate. On the contrary, more time is needed to eliminate errors in the areas of omission of the indefinite article, incorrect use of possessive pronouns or incorrect use of reflexive pronouns. However, as mentioned above, it is important to stress that this depends on the specific languages under study and it is not possible to make more generalisations from this.

In addition to the above analysis, it is important to mention other resulting conclusions. The first aspect is the age of the chosen research sample. Based on the studies mentioned above, we note that most of the selected studies deal with university students, which may be due to the easier availability of data from such a sample compared to primary and secondary school students.

Conclusion

In conclusion, we can summarize that the issue of linguistic interference, or negative transfer from the native language to English as a foreign language, is a subject of interest to a large number of researchers around the world and has been studied in relation to a variety of languages. The investigation of negative transfer takes place in a variety of ways and depends largely on the approach of the researcher in question. Some either focus on the general identification of errors caused by negative transfer across several categories of language or concentrate on a more specific area, which they then investigate in depth.

A common tool they use for such identification is the collection of students' written work, which they use to build a corpus. Another tool is also the development of various tasks or tests that focus on a selected area of language that causes students problems in terms of linguistic interference, and then investigate the extent to which this is reflected in their production in the foreign language. In addition to examining written expression,

researchers sometimes add other tools such as corpora and tests, such as a questionnaire or observation, to gain more information about how learners perceive the relationship between their mother tongue and the language they are learning. All this information gathered is then used by some researchers to intervene in learners' errors due to negative transfer from their mother tongue and find out to what extent this phenomenon can be eliminated from their production in foreign language classes.

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