Global or Local Errors? Cross-language Influence in Aeronautical Communication

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Abstract: This paper aims to discuss and explore - through authentic examples that depict the *interlanguage* hypothesis and cross-language influence in second language acquisition - some effects of being bilingual when teaching, learning and assessing Aeronautical English (AE). Foreign speakers' mother tongue (L1) tends to affect the way certain structural misuses of English are detected and identified, such as word order inversion (e.g. *Happened an accident*), which also affects training and assessment practices either negatively or positively. In other words, depending on the context, global errors, i.e. structural mistakes that affect meaning, might be interpreted as merely local errors which do not usually interfere with meaning, when they actually do. On the other hand, bilingual instructors can anticipate some mistakes Brazilian students commonly make and try to prevent them from happening. Considering that there are also some instances of mistakes that are more of an accidental slip than an actual error, how can one tell the difference between errors and occasional slips of the tongue? How important is recognizing these differences when training and assessing students' Aeronautical English proficiency? The examples and discussions presented here can help us address some of these questions and language issues.

Keywords: local and global errors, aeronautical English training and assessment, cross-language influence, bilingual speakers.

Introduction

At the 9th GEIA Seminar, organized by the Aeronautical English Research Group (GEIA), I proposed a workshop in which I tried to explore some language factors that impact – either negatively or positively – radiotelephony communications (RT) between pilots and Brazilian air traffic controllers.

From my own experience as an Aeronautical English (AE) instructor and test rater, I've realized that our mother tongue tends to affect the way certain structural misuses of English are detected and interpreted, such as word order inversion (e.g. Happened an accident instead of There was an accident or An accident happened). Brazilian Portuguese speakers, even the ones who have an advanced level of English competence, can hardly tell that the words are inverted in that utterance. Assuming that the accurate use of the language is closely related to intelligibility, a more thorough understanding of problematic constructions in English must be addressed in training and assessment practices. This paper aims to focus on some authentic communication errors that can help raise awareness of language-for-specific-purposes (LSP) domains, in order to enable intelligible and more effective RT conversational exchanges.

Even though the examples that support our discussions were produced in Portuguese, this paper is relevant to a broader international audience, considering that bilingual speakers,

in general, are affected by cross-language influence, when communicating in a second language. In other words, much of what this research focuses on can be applicable not only to Brazilian Portuguese speakers, but also to all language backgrounds, and to the phenomenon being discussed generally.

Neil Bullock, during his oral presentation for the 9th GEIA Seminar, emphasized that "communication is more than just language". Such assumption highlights "the need for teachers to go beyond a lexical and structural item level and value language in a wider more referential context" (N. Bullock 2022: 128). The same author advocates that "(…) teachers need to achieve a more appropriate awareness of the language required for pilots and controllers, by looking at what is actually being used" (N. Bullock 2022: 123). That's why analyzing some common errors our Brazilian students usually make while using the target language for professional purposes seems to be helpful to overcome some communication barriers and misunderstandings. According to G. Demirdöken (2020: 62), emphasis on safety in a globalized world has required "aviation professionals to be more effective communicators as there are more nonnative speakers of English as *lingua franca* than native speakers". From that perspective, the way that ATCO's mother tongue affects RT communications requires further attention.

Before going over some English constructions produced by ATCOs during an AE online course, let us take a look at some concepts and the hypotheses that support the discussions we are about to start.

1.   Cross-language influence in second language acquisition

The ability to check and clarify comprehension and interactions in RT communications is greatly affected by the way the speaker relates him/herself to his/her mother tongue (L1). M.J. Coracini, a Brazilian researcher, claims that once there is an attempt to acquire a second language (L2), the learner will always be "between languages and cultures", which influences the way the student deals with different language forms and functions while communicating. Inhabiting languages – no matter what languages they may be – implies being between languages and cultures. There is no unified 'language-culture' that is not crossed by others (M.J. Coracini 2011).

Considering the influence of the mother tongue in the process of learning a second language, some authors appeal to the *interlanguage* hypothesis whose theory was first proposed by Larry Selinker in the January 1972 issue of the journal *International Review of Applied Linguistics in Language Teaching*. *Interlanguage* was defined as a kind of language or unique linguistic system developed by foreign-language learners. This kind of language created by the students allows us to depict some of the ways non-native speakers acquire, comprehend, and use linguistic patterns or speech acts in a target language (TL).

Based on D. Crystal's definition, *interlanguage* reflects the learner's evolving system of rules, and results from a variety of processes, including the influence of the first language, contrastive interference from the target language, and the overgeneralization of newly encountered rules (D. Crystal 2008). Differently from M.J. Coracini's (2011) point of view, the *interlanguage* hypothesis defends that the learning process evolves naturally once the target language is mastered. In view of the previous definitions, I advocate for a broader view that takes into account both: cross-language influence and the fact that bilingual speakers will always struggle between languages and cultures. The process of acquiring a second

language is complex and requires further layers of linguistic, pragmatic, and strategic skills and awareness.

The influence of the L1 in the process of learning a L2 also results in language blending or language transfer. According to T. Odlin (1989: 134), language transfer is also known as cross-language influence; it is a key factor to promote the formation of language learners' inter-language. Transfer not only refers to the L1 effect, said the author, but also to any languages that the learner might have acquired previously to the target language. L. Selinker (1972) defends that the L1 is seemingly the source language that provides the initial building materials to be gradually blended with materials taken from the TL, resulting in new forms that are a mixture of both languages. The following phrases, for example, produced by a Brazilian student during an AE online course, are made of blended materials from different languages: "The aircraft landed <u>with safety</u> on the runway, <u>despite the scare suffered</u> by the crew members and controllers". As we can see, those utterances sound like English, but, in fact, the syntax of the sentence is Portuguese-like, i.e. the utterances were literally translated from one language (Portuguese – L1) into another (English – TL). To make the sentence more English-like, the lexical and grammatical items should be arranged differently: "The aircraft landed <u>safely</u> on the runway, <u>despite the fact that the crew members and controllers were scared</u>".

The similarities and differences between the target language and the learner's L1 have a huge impact not only in L2 acquisition, but also in communication errors. That's why AE instructors and evaluators should pay special attention to cross-language influence and its effects in RT communications.

Language transfer can be divided into two types: positive transfer and negative transfer (Y. Zhao 2019). On the one hand, positive transfer refers to the similarities between the target language and the student's L1. Such connections can help students accelerate their learning pace. Both languages (Portuguese and English) have similar vowel and consonant sounds, as well as similar colloquialisms (e.g. "all being well"), and cognate words (e.g. information, equipment, emergency, airport). Those similarities between languages are supposed to reduce the number of errors made in the learning process. On the other hand, negative transfer or negative cross-language influence occurs when the learning task of both languages (L1 – TL) is relative but different (Y. Zhao 2019). The foreign language learner tends to use the expressions and syntax of his/her own language to replace the way of the TL, just like the example mentioned above. To some extent, negative transfer can even prevent the learner from mastering new language forms and functions, as it results in many kinds of errors that may affect comprehension and intelligibility. Considering that there will always be some cross-language influence when communicating with foreigners, AE instructors and evaluators should be aware of that, in order to plan productive practices that can address this issue. For that purpose, the concepts of local and global errors have been shown to be helpful.

Needless to say that the detecting and correcting of errors when teaching and assessing English competence is important, especially in the aeronautical field, in which miscommunication is closely related to the majority of accidents and incidents. According to M. Burt and C. Kiparsky (1978), local errors do not hinder communication and understanding of the meaning of an utterance, whereas global errors interfere with communication by disrupting the meaning of utterances. That is exactly what must be avoided in conversational exchanges between pilots and controllers: communication disruption. Doc 9835 highlights that, for the sake of safety, aeronautical radiotelephony communications must be efficient, clear, concise,

and unambiguous (ICAO Doc 9835, 2010: 3.3.14). As an AE instructor, I believe that recognizing the nature of some common errors our Brazilian students usually make, especially the global ones, is quite important to move towards ICAO's criteria for RT communications.

The same authors (M. Burt/ C. Kiparsky 1978) claim that telling the difference between local and global errors is not that simple, considering that depending on the context, a seemingly global error can be merely local if the meaning is clear. In order to determine if the meaning is clear or not, the speaker would have to check his/her listener's comprehension, whenever necessary, which could make communication less concise and efficient.

Let us take a look at the following sentence produced by a Brazilian student, when talking about his job: "I'm working as an ATCO since 2019". In general, verb tense misuse is rated as a potentially global error that interferes negatively with communication. However, some listeners might think that the meaning of the sentence is quite clear, because of its complement (since 2019). Brazilian learners usually have a hard time acquiring the Present Perfect Tense, because there is not a similar verb tense in Portuguese. That is why, depending on the context, they would rather use the Present Continuous. Still, due to the misuse of the verb tense (Present Continuous instead of the Present Perfect Tense), we cannot tell, for sure, if the listener of such a sentence realizes that the speaker is talking about a job he started doing in 2019 and still does at present. Only by checking comprehension or using communication strategies would the speaker get this answer for sure.

Additionally, there are instances of mistakes that are more of an accidental slip than an actual error. Slip of the tongue is something you say by accident when you intend to say something else. For example, a student said, "The passenger passed away, but now she is better", instead of "The passenger passed out". Based on this sentence, it is difficult to tell if the foreign language learner actually made a mistake or if the inappropriate use of the phrasal verb (passed away) was just a slip of the tongue. In general, we tend to say that something has been said by accident when the speaker immediately corrects him/herself. According to a research available on *psychologytoday.com*, slips of the tongue are almost inevitable. For every 1.000 (thousand) words spoken, we make one or two errors. Considering that the average pace of speech is 150 words a minute, a slip is bound to occur about once every seven minutes of continuous talk. Each day, most of us make somewhere between 7 and 22 verbal slips.

How can one tell the difference between errors and occasional slips of the tongue? How important is recognizing these differences when training and assessing students' Aeronautical English proficiency? Even though the concepts mentioned above look quite clear, when errors take place in genuine aeronautical communications, it's not that easy to address them to overcome communication barriers and misunderstandings. That is why a deeper understanding of these language issues is so relevant. In the next section, some authentic examples of errors that Brazilian students made while attending an online course are explored. The analysis of the research material has been carried out in view of the previous definitions.

2.   Error Analysis – What kind of errors are these?

For the purpose of the analysis and further discussions, some communication errors made by Brazilian learners during an Aeronautical English online course have been transcribed. Special attention has been paid to the utterances that show some type of cross-language influence either in form (syntax), sound and/or meaning.

The 6-week course – composed of 8 modules – is designed for controllers who work in the Tower facility and haven't reached the operational level of English yet (Proficiency Level 4 – PL 4). The general modules (Air communications / ATC Jobs / Medical Emergencies / Phases of flight) are taught by Language Experts (LE), whereas the more specific ones (TWR Events/ Ground Operations/ Parts of the Aircraft/ Weather Impacts) are conducted by Subject Matter Experts (SME).

Most of the mistakes described below were taken from the *forums* in which students were supposed to exchange ideas on topics related to the first four modules of the course. Two kinds of *forum* activities are usually proposed throughout the course: the written ones, in which the students write down their answers and comments based on a proposed topic, text and/or pictures; and the oral ones, in which the learners can record voice messages related to the topics discussed and get oral feedback from their tutors. Qualitative analysis of the authentic utterances has been carried out, in light of the theoretical discussion presented in the previous section.

Traditionally, some common mistakes our Brazilian students make that do not disrupt communication are labeled as local errors. The following table can give us an overview of this kind of error and its lexical-structural misuse.

COMMON LOCAL ERRORS	LEXICAL-STRUCTURAL MISUSE
"ATCOs line up the **aircrafts**"	Using uncountable nouns as countable ones
"I called **to** the pilot"	Adding *to* after the main verb *call* (word collocation)
"The **others controllers** called the supervisor"	Adding the plural form when using *other* as a determiner, not as a noun
"Ø **Is** difficult to control at a busy airdrome"	Omitting *it* in the beginning of affirmative sentences
"I **didn't informed** the airport administration"	Being redundant in past marking
"I'm Ø air traffic controller"	Omitting the article *a /an* in sentences about the profession or using *a* instead of *an.*

Table 1. Common local errors produced by Brazilian speakers.

In addition to the common local errors mentioned above, it is also quite common to see mistakes involving false cognates, i.e. words from different languages that are similar in form or sound, but have different meanings. As an example, Brazilian learners tend to confuse the English word <u>pretend</u> with the verb <u>pretender</u> which means to have something as a plan or purpose in Portuguese. They usually say: "I <u>pretend</u> to be a pilot in the future", instead of using the appropriate verb "I <u>intend</u> to be a pilot". In this case, should instructors treat this mistake as a slip of the tongue or as a global error? Once it interferes with meaning, it should be addressed and corrected, especially if the student does not correct himself/herself.

On the one hand, correcting every single mistake and slip of the tongue the students produce is time consuming and not always helpful. That's why recognizing the kind of mistake they are actually producing is important, so that instructors and tutors can focus on the ones that might prevent effective and clear communication from happening. On the other hand, identifying the nature of the errors is not that easy, and it gets even more complex when we take into account cross-linguistic transfer.

Brazilian students' errors are quite similar in terms of syntax, once they tend to transfer the system of their L1 to the target language (L2). As a result, they can hardly tell that the sentence they have built carries a global error that affects intelligibility. In other words, for foreign learners that share the same mother tongue, some sentences produced in English that are closer to their native language in terms of syntax sound perfectly fine and meaningful for them. The table below points out some of these cross-language utterances:

GLOBAL ERRORS	LEXICAL-STRUCTURAL MISUSE
1) "**Have** many risks during pre-flight operations"	Using *have* instead of *there are*
2) "**Do you have conditions** to change FL?"	Using the auxiliary *do* and the main verb *have*, instead of (*to be*) *able to*
3) "**Is for that** the maintenance of every equipment is very important"	Using *is for that* instead of the appropriate connector *because of that*
4) "**The pilot had a little cold in his heart**"	Using an inappropriate *idiom* translated literally from Portuguese into English instead of *The pilot was scared*
5) "**Emergency services know** the emergency"	Using the main verb *know* instead of (*to be*) *aware of*
6) "It's a period of the year that **winds** a lot"	Using a noun as a verb + word order inversion, instead of *It's very windy in this period of the year*
7) "I **look for** the radar to identify the aircraft"	Using the preposition *for* instead of *at* which results in different phrasal verbs (*look for* vs. *look at*)
8) "The pilot **with many nerves** made the aircraft land **without problems**"	Using Portuguese-like expressions + misuse of word order and word choice, instead of *The nervous pilot could land the aircraft safely* or *The brave pilot managed to land the aircraft safely*.

Table 2. Global errors produced by Brazilian speakers.

The transcribed sentences account for the *interlanguage* hypothesis. More specifically, most of the utterances above are Portuguese-like, even though they were written in English. The issue is that Brazilian learners can't even notice that. As they share the same L1, the way the sentences were built sounds perfectly fine and understandable for them.

As we can notice, the majority of the global errors identified in these constructions derive from literal translations from Portuguese into English. The Portuguese language, differently from English, accepts constructions without a subject in the beginning of affirmative sentences, as we can see in sentences 1 and 3. Besides translating literally a common collocation in Portuguese (Você tem condições?) into English (Do you have conditions?), sentence 2 also depicts another common mistake Brazilian students make when building sentences in the Simple Present Tense: using the auxiliary verbs do or does instead of to be.

Considering that the syntax and forms of the Portuguese and the English languages present some similarities but are also different, it's quite common to see Brazilian students making mistakes that are either word order or word choice related, such as the ones in sentences 6 and 8: using the noun <u>wind</u> as a verb and the noun <u>nerves</u> as an adjective, respectively.

In terms of possible misunderstandings, sentence 8 is the trickiest one. The way the sentence was built is so Portuguese oriented that we can't tell, for sure, if the pilot was nervous or brave enough for having landed the aircraft safely.

In sentence 7, the inappropriate use of the preposition <u>for</u> in the multi-word verb affects its meaning. At least two possible meanings are possible: can the controller identify the aircraft on the radar (<u>look at</u>) or is he/she <u>looking for</u> the radar, in order to identify the aircraft?

Even though native speakers of Portuguese can understand constructions which carry global errors, such as <u>Do you have conditions to change FL?</u>, foreign speakers of English who don't share the same L1 would probably have a hard time understanding this utterance. In other words, Brazilian speakers of English might think that their prompts are either correct or present a minor English mistake that will not disrupt communication when, in fact, we are dealing with global errors from the point of view of foreigners who can't speak Portuguese, nor make sense of the Portuguese-like utterances.

When giving and receiving instructions in RT communications, controllers are supposed to use English as *a lingua franca*, i.e. as a contact language for speakers of different native languages. That is why, recognizing and correcting the utterances that are Portuguese oriented is so important, as they might sound clear for Portuguese speakers, but they are probably confusing for speakers of different language backgrounds.

How can Aeronautical English instructors raise L2 students' awareness on that matter? Are there effective teaching strategies for the purpose of AE lexical-structural awareness? The answer is not that clear, but we cannot lose sight of this issue when promoting training and assessment practices.

Conclusions

The authentic errors produced by Aeronautical English learners have reinforced the *interlanguage* hypothesis, as well as cross-linguistic transfer and influence in second language acquisition. Based on the analysis of the research material and its conceptual background, the main conclusions can be as follows:

- On the one hand, AE Instructors must keep up with ICAO criteria for RT communication: efficiency, clarity, conciseness, and unambiguity (ICAO Doc 9835, 2010). On the other hand, considering that cross-language transfer is unavoidable, we should not take for granted that the meaning is clear enough when using English as *a lingua franca* to communicate with people of different nationalities and L1 backgrounds. That is why, teaching AE students how to make use of communication and negotiation strategies to overcome possible communication barriers is so important;
- There are some pros and cons of being bilingual when it comes to Aeronautical English training and assessment practices. Once we know that, in the L2 learning process, language skills can be transferred cross-linguistically (positively and negatively), bilingual instructors can use this awareness to predict and prevent some global errors that usually disrupt communications. The analysis of the English sentences produced during an AE online course has revealed that Brazilian students tend

to make similar mistakes that are affected by the Portuguese syntax and forms, such as word order (S/V/O) inversion and literal translations from Portuguese into English. Once these errors are anticipated, they can be corrected more effectively;

- A deeper understanding of the second language syntax (structure and vocabulary) is needed when teaching and learning a target language. Most of the time, the focus is on practicing and producing the speaking skill inductively, i.e. teachers provide examples of the target language being used in real-world contexts, whereas students are expected to come up with the L2 rules, just by observing and practicing the examples. From my own experience as an English professor, I have realized that at some point of the learning process, language awareness and accuracy must be raised, in order to avoid some common global errors that interfere with meaning and comprehension. Most of these errors derive from cross-language transfer. Therefore, reflections and discussions on how language form, meaning and use relate to one another ought to be encouraged. Larsen-Freeman (2007) suggests focusing on these three dimensions of the English language to ensure that students not only learn how to form accurate sentences, but also use them meaningfully and appropriately;

- Special attention to error correction should be paid to assure more effective RT communications. In order to do so, it is quite important to recognize the nature of the mistakes made by the learners and how close they are to their L1 form, meaning and use. Once we get to know that, we can help students cross the *interlanguage bridge* to get closer to the target language and its dimensions. Some contrastive analysis of both languages and their syntax has been shown to be helpful.

Future research is needed to examine good ways and strategies for error correction. As language instructors it's important to ask ourselves: how can we teach, in a meaningful way, English-like structures that are not so L1-oriented? Just showing the students the right way to say the intended sentences in the target language doesn't seem to be a very effective way of offering feedback, as they keep on making the same mistakes. A. Pacheco (2022) advocates for a wider perspective of aeronautical communication as a non-technical skill that takes into account language as a human factor and condition. Bearing in mind the human nature of oral communications, especially in non-routine situations, as well as cross-language influence in second language acquisition, can offer us important teaching tips to support meaningful AE training and assessment practices.

Last but not least, it is also important to point out that all languages are 'alive' and keep on changing. Thus, a certain structure that is currently rated as grammatically inaccurate might become acceptable in the future, once speakers start using it more frequently in different contexts. In the Aviation context, for instance, we can mention the use of the nouns traffic vs. traffics. Even though traffic is an uncountable noun that doesn't accept the plural form, nowadays, collocations or jargons such as arriving traffic**s** have become quite common and acceptable. The authentic examples presented here enabled us to explore some language issues that require further attention. As Language Experts (LE) we play a key role in promoting effective RT communications and language awareness.

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