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Measuring the Effect of Translator Training and Language
Education on Translation Competence

Calvin J. Westfall

A thesis submitted to the faculty of
Brigham Young University
in partial fulfillment of the requirements for the degree of
Master of Arts

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ABSTRACT

Measuring the Effect of Translator Training and Language Education on Translation Competence

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This study reviews concepts of bilingualism, summarizes various models of translation competency, and quantifies the difference of translation competency among students and graduates of Brigham Young University. By means of a survey about language history and a translation test from Spanish to English, data from 57 participants was collected and analyzed to measure the effect of formal language education and translation training.

Despite numerous proposed models of translation competency (Wilss 1976, 1989; Koller, 1979; Krings, 1986; Lörcher, 1991; Toury, 1991; Pym, 1991, 1992, 2003, 2013; Kiraly, 1995; Fraser, 1996; Neubert, 2000; Kelly, 2005; Hague et al., 2011; Pietrzak, 2015), few have attempted to quantify differences in translation competency. Those that have measured translation competency have either focused on younger speakers (Malakoff & Hakuta, 1991; Valdés, 2003), untrained heritage speakers (Gasca Jiménez, 2019), or established language professionals (PACTE, 2017). This study sought to quantify differences in translation competency of university students; the results show considerable differences according to specific variables such as progress in the Spanish Translation program, the number of Spanish classes taken, and native language when comparing number of errors, number of critical errors, mistranslation errors, and grammar and spelling errors. By identifying the strengths and needs of different groups of bilingual English and Spanish speakers, this study hopes to improve translation training programs and inform language industry practices.

Keywords: bilingualism, translation competence, language education, translator training, Spanish, English

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INTRODUCTION

Often considered one of the world's oldest professions, translation is a complex human process that communicates meaning from one language system to another. In the last 80 years or so, sub-fields in translation have multiplied rapidly to keep up with ever-changing technology, with popular topics such as interpretation and its various modalities, machine translation and Computer Assisted Translation (CAT) tools, real-time machine interpretation, audio-visual translation, and transcreation. Despite these developments in the different subfields, at the core, translation remains a human process that depends on knowledge and expertise in two (or more) languages and their accompanying cultures to produce an acceptable and adequate text for consumption in a target language. However, translation competence is a complex construction composed of much more than simply the ability to speak and use multiple languages. In this paper I will specifically focus on the notion of bilingualism as a translator's competency.

Despite the extensive history of translation throughout the world and the increasing rate of globalization, Translation Studies itself is a relatively young discipline, especially when compared to the related field of linguistics. As such, a great need exists for scholars, professionals and the greater global community to understand translation and its associated competences to improve translation quality and processes. This study will summarize models of translation competence and will present research about English-Spanish bilinguals to examine the fundamental role of bilingualism as a translator's competence, as well as the impact of language education and translator training with regards to improving translation competence.

CHAPTER 1: LITERATURE REVIEW

In this research study, I will employ several terms that have been debated throughout the years, most principal among them *bilingual/bilingualism*, *native speaker*, *translation competence*, and *equivalence*. In order to contextualize each term within conversations of the corresponding literature, I have divided this first chapter into two sections—bilingualism and translation competence—to provide the theoretical framework and history of the literature upon which this work seeks to build. In addition to reviewing the literature of each discipline, I will also establish definitions for each of these terms as they relate to this study.

BILINGUALISM

Within the larger umbrella of linguistics, bilingualism itself is a well-studied field with further divisions into sub-fields like second language acquisition, intersections with culture, and public policies. Many authors have written on these and other topics and it is impossible to list them all here. However, there are relevant topics within bilingualism that demand attention from this study, such as Spanish-specific bilingualism (Thompson & Lamboy, 2012; Koike & Klee, 2013; Thompson & Alvord, 2019), language contact, particularly with English (Hamels, 1998; Martínez, 2006; Lipski, 2008; Klee & Lynch, 2009; Fuller, 2013), the effect of age on acquisition (Silva-Corvalán, 2018; Khodos & Moskovsky, 2021), bilingual costs (McGregor, 2016; Sadat et al., 2016), and non-professional translation and untrained bilingual professionals (Antonini et. al, 2017; Gasca Jiménez, 2019; Showstack & Guzman, 2020). These relevant topics within bilingualism have shaped my approach to this study and I have considered them in the analysis of the data as appropriate.

Since many authors approach bilingualism from various perspectives, their definitions and understanding of bilingualism differ as well. For this study, I have considered Grosjean's

definition in his 2010 volume *Bilingual: Life and Reality*, which begins by proposing a use-centered definition that defines bilinguals as “those who use two or more languages (or dialects) in their everyday lives” before discussing the myriad of reasons why an individual would speak two or more languages, as well as the situations in which they might find themselves.

As for my own definition of bilingualism, I will not depend on fixed categories but rather a multidimensional spectrum with several variables at play, adapting Grosjean’s (2010) definition and applying it to a spectrum of use with monolinguals on one end and fully functional bilinguals who use two or more languages daily on the other. To borrow more from Grosjean’s (2010) questioning of language fluency versus language use, I place bilingual speakers on a spectrum: on one side are speakers with linguistic competence and experience with two languages but who may not use them every day; on the other are speakers who use two languages daily. I will measure participants’ translation performance against their previous language experiences and education.

When discussing bilingualism, we must address the question: “Who is a native speaker of *language X*?” Authors have debated this question and related topics extensively, pointing to a critical period of acquisition during which a child acquires a first language, while others have attempted to propose models of language acquisition when multiple language systems are acquired simultaneously during childhood (Lenneberg, 1967; Volterra & Taeschner, 1978 & Genesee, 1989; Newport, 1990). In recent years, definitions of who is a native speaker based on origin are being replaced by those related to identity and language proficiency (Anchimbe, 2006; Saniei, 2011). For the purposes of this study, the term *native speaker* (and the abbreviation L1) will be self-described by participants who consider themselves native speakers of either or both languages.

One final consideration of bilingualism in relation to this study stems back to Martinet's (1967) distinction between social bilingualism and professional bilingualism, which is later cited in Harris's (1977) article to support his proposal of *natural translation*, or "the translation done by bilinguals in everyday circumstances without special training for it." Later authors such as Valdés et. al (2000), Valdés (2003), Shreve (2006, 2012), Angelelli (2010, 2016), and Lörcher (2012) have concluded that not all bilinguals develop the specialized skills for advanced translation and that knowledge of two languages is not sufficient enough to translate at a professional level, and some even label language professionals as "special bilinguals" (Grosjean, 2010; PACTE, 2017; Gasca Jiménez, 2019). In other words, being bilingual is simply not enough to qualify one as a translator. To do so, we must consider bilingualism, or bilingual competence, within the larger context of translation competence.

TRANSLATION COMPETENCE

In the introductory chapter of the 2017 volume *Research Translation Competence* by the PACTE Group (in Spanish, *Proceso de Adquisición de la Competencia Traductora y Evaluación*), Hurtado Albir reviews the different models of translation competence (hereafter TC), or the ability to translate, throughout the years. She notes the first foundations of Translation Studies as a field in the 1950's, when scholars began to examine the different products, processes, and behaviors related to translation. However, these interdisciplinary authors worked in isolation and had little if no contact with each other while writing about translation, and it was not until Holmes (1975) coined the term "Translation Studies" that there began to be an organized attempt to study translation as its own discipline. Nevertheless, we can observe the confluence of different authors as they thought and theorized about translation.

The notion of TC was originally postulated by Wilss (1976) and later reinforced by Koller (1979). Wilss's model is composed of two linguistic competences: the ability to decode and understand the source language, and the ability to use linguistic and textual resources in the target language. The two competences combine to create a transfer super-competency of transferring messages between the source and target culture's linguistic and textual systems. In the following decades, many others (Krings, 1986; Wilss, 1989; Lörcher, 1991; Toury, 1991; Kiraly, 1995; Fraser, 1996) proposed their own models of TC that combined lists of various competences, including (but not necessarily all together at once) linguistic, extralinguistic, thematic/subject, transfer, methodological, technical, professional, and strategic competences that better reflected the skills demanded of translators in a growing industry. Meanwhile, others presented simplified TC models, most notably Pym (1991, 1992) who only identified two "translation skills": the ability to generate different options from a source text and the ability to choose one of those options based on the specific end user and target reader.

However, others began to evaluate (and in some cases, reevaluate) the claims that previous TC models made and presented to the discipline. Lörcher (1991) stated that "translation problems has been largely speculative and that little in the way of empirical study has been carried out," while Kiraly (1995) noted that translator trainers lacked a "systematic pedagogy" and Wilss (1996) criticized the absence of an "appropriate, reliable conceptual framework" within the field of Translation Studies. Later authors also pointed out the lack of explicit details and consistent terminology of these previous models (Orozco, 2000; Hurtado Albir, 2017). Despite these initial deficiencies, it is worth noting here that all of these models included or implied some version of linguistic competence to work in multiple languages.

Since the turn of the century, authors such as Neubert (2000), Pym (2003, 2013), Kelly (2005), Hague et al. (2011) and Pietrzak (2015) have proposed and analyzed models of TC in dialogue with more details regarding the relationship of competences. Authors have suggested different approaches to TC, such as general knowledge of language, while others delineate the difference between source language competency and target language competency. The PACTE group has also published extensively on the subject, updating their own model and analyzing it throughout the years (1998, 2000, 2001, 2002a, 2003, 2005a, 2005b, 2007, 2008, 2009, 2011a, 2011b, 2014, 2015, 2017). Among their conclusions is a clear statement that “Translation Competence is an acquired competence that is different from bilingual competence” (PACTE, 2017). This declaration is made with data from different studies designed to test the validity of PACTE’s own model including an experiment involving language professionals of two groups: translators and language teachers. The PACTE group state that they:

“...have been able to corroborate the fact that TC is different from bilingual competence and is a competence acquired either through personal experience as a translator (self-taught) or as a result of a learning process. The Acceptability of translations (in particular, direct translation) obtained from the group of translators, who were experienced in translation and most of whom had studied translation, was higher than that of the group of language teachers who had no experience in translation. Moreover, the group of translators presented differentiating characteristics with regard to their concept of translation; approach to translation; identification and resolutions of problems; and use of cognitive and instrumental resources.” (2017, p. 281)

The PACTE group’s statement can be taken as a substantial piece of evidence to a growing chorus of empirical studies about the difference between professional translators and non-

professionally trained bilinguals as mentioned above. Most recently, Gasca Jiménez's (2019, 2021) work has examined TC in Spanish heritage speaker university students, building on previous studies that focused on younger participants (Malakoff & Hakuta, 1991; Valdés, 2003). As far as I know, no one has attempted to quantify the difference in linguistic competence, or in other words, bilingual proficiency reflected by translation performance, of university students and graduates with formal language education and translation training at the university level and those without. That is precisely the difference that I intend to examine with this study.

I should note that TC, and Translation Theory as a whole, has hinged on the controversial notion of equivalence. For thousands of years, proper equivalence in translation practice was loyalty to both the form and function of a source text in the production of a target text; however, Nida & Taber's (1969) introduction of dynamic and formal equivalence in their translations of the Bible opened the floodgates to freer interpretations and adaptations as well as a radical shift of perspectives regarding translation equivalence. The shockwaves of this new approach quickly inspired responses and developments from authors. Not long after dynamic and formal equivalence entered the scene, Vermeer (1978) applied Reiss' (1971) functional theory to translation to create Skopos Theory, *skopos* meaning 'purpose' in Greek. In Skopos Theory, the function of the text, which is the expected end use by the intended audience, governs the decisions made during the translation process (Vermeer, 1978; Nord, 1997).

Although an in-depth analysis of TC models is not within the scope of this work, understanding that virtually all TC models rely upon some form of implied or explicit linguistic competency in the source and target languages as a foundation helps to inform this study's approach to examining the differences of translation competence of different groups of bilinguals. If I were to formally propose a TC model, I would explore a more detailed application

of Hague et al.'s (2011) consideration of translation specifications to the PACTE (2017) model of sub-competences: bilingual, extra-linguistic, instrumental, knowledge about translation and strategic super-competency. In this hypothetical model, I would also reevaluate the relationships between the different proposed competences and seek to more clearly represent how they work together during the translation process. The use of translation specifications with function in mind is a natural extension of Skopos Theory applied to a TC model. Functionally, this model would follow a process similar to Pym's "generate and select" method using a framework much like that found in the models proposed by Optimality Theory and used in phonology, instead using translation specifications to rank the constraints that would establish what possible target text solutions are viable options given the translation project and context (Prince & Smolensky, 2004; Archangeli, 1997). The notion that texts are translated for someone with a use in mind plays an essential role in the translation approach, resolving translation problems with macro and micro strategies, and in translation evaluation.

To conclude this opening chapter, I share Pym's (2013) remarks about TC models, originally penned while commenting on the EMT model of translation competence (Gember, 2009). He says:

"There is nothing particularly wrong with such [TC] models. In fact, they can be neither right nor wrong, since they are simply lists of training objectives, with no particular criteria for success or failure. How could we really say that a particular component is unneeded, or that one is missing? How could we actually test to see whether each component is really distinct from all the others? How could we prove that one of these components is not actually two or three stuck together with watery glue? Could we really object that this particular model has left out something as basic and important as

translating skills, understood as the set of skills that actually enable a person to produce a translation i.e., what some other models term “transfer skills” (see for example Neubert 2000)? There is no empirical basis for these particular components, at least beyond teaching experience and consensus. At best, the model represents coherent thought about a particular historical avatar of this thing called translation.”

I find them to be applicable in the context of more fully implementing Skopos Theory in TC models because, in a way, these models are subject to their own skopos of training objectives.

CHAPTER 2: RESEARCH STUDY

RESEARCH QUESTIONS

1. What translation error types are common among English-Spanish bilinguals with X degree of language experience? To what degree and in what ways do they differ when considering the native language of bilingual speakers of both English and Spanish?
2. To what degree does formal education via language and translation courses at the university level affect bilingual language competence and translation competence?
3. Are there significant differences in TC regarding direction of translation?

HYPOTHESES

With respect to the first question, I expect that most bilingual speakers of English and Spanish share common translation error types at least to some degree. These errors can result from either lack of comprehension of the source text, possibly due to a lack of language competency or unfamiliarity with the subject, or the inability to produce a viable equivalent in the target language. The types and frequency of errors can be quantified to determine the TC gap between groups of participants with different degrees and types of language experiences.

Regarding the second question, I expect that participants without formal language education and translation training at the university level will exhibit certain error patterns during translation to a greater degree than those with such language education, and even more than those with translation training. Logically, we can expect participants' ability to translate to be more developed as they receive more language education and translation training. I hypothesize that this increase in TC will not only be proportional, but also compounded, meaning that there will be substantial differences between groups of bilingual speakers that have received formal language education and translation training and those that have not. Although students in

university translation programs receive training and gain experience regarding other translation competences (technical/tool, extralinguistic, knowledge about translation, etc.), this study seeks to focus on the linguistic competence of translation.

With regards to the third question, I expect a significant difference in competence regarding direction of translation. For example, I anticipate that a native Spanish speaker will have more difficulty working from Spanish into English than a native English speaker working from Spanish to English. I also expect native English speakers with less formal Spanish language education to commit more serious errors of comprehension when working from their L2 Spanish into their L1 English. Regarding speakers who consider themselves native speakers of both English and Spanish, I expect them to be more capable of source text comprehension and target text generation but I still foresee clear patterns of language transfer (meaning influence from another language, not to be confused with the concept of transfer as a translation skill).

METHODOLOGY

Participants

I chose to include students at Brigham Young University because of the school's unique and long history with language learning and translation.¹ According to the University, approximately 65% of students speak a second language and 131 languages are spoken by students on campus (Brigham Young University, 2021). With a student body of over 33,000 students, 65% is no small number. Unsurprisingly, and reflecting national trends in the United States, Spanish has consistently ranked #1 in second languages among students at BYU and

¹ BYU's sponsoring institution is The Church of Jesus Christ of Latter-day Saints, which maintains a considerable missionary program with tens of thousands of ecclesiastical volunteers, many of who live abroad and learn the language of the country they live in. The University has dedicated many resources to language teaching and learning for decades. Additionally, machine translation was developed in part at BYU during the 1970's, as recorded by Dr. Alan Melby, who first wrote on the subject in 1979.

other universities throughout the U.S. (U.S. Census, 2019; Brigham Young University, 2018). The history and quantity of Spanish speakers and Spanish students, as well as the Spanish Translation program, strongly influenced my decision in choosing the type of participants for this study.

Participants in this study are current BYU students or recent graduates from the last 3 years. I asked participants to complete a language history survey and a translation test. There are three main groups that I include in this study: 1.) L1 English/L2 Spanish speakers that have completed intermediate or advanced Spanish classes at BYU, 2.) L1 Spanish speakers not enrolled in translation courses, and 3.) English-Spanish bilinguals that have taken or are currently enrolled in Translation-specific courses. Since many students do not receive an official ACTFL score regarding linguistic competence until their final semester as part of their capstone course, I am assuming that students enrolled in upper division Spanish courses or higher approximate the Advanced rating on the ACTFL scale. Given the disruption of BYU students' traditional learning environments (in high schools, at university, and on ecclesiastical missions) caused by the COVID-19 pandemic, I have decided to include BYU graduates within the last three years from the beginning of this study, which would include graduates from 2018 to 2021. I expect to find a broad range of language experience and ability, as well as patterns of error types, among each of the three groups. I also expect that students and recent graduates that completed the Spanish Translation program will present the least amount of errors.

Data Collection & Materials

Participant data was collected and analyzed through a Qualtrics survey and a translation test, which are included Appendix A and B, respectively. The survey is divided into two sections: one section with ten demographic questions, and another with eleven questions about

language experience, formal language education and translation training. The survey included questions about factors that are traditionally considered and examined while studying bilingualism, e.g. residence abroad or in an immersive environment, education, university-level language courses, and language frequency and use. In addition to these questions, I ask participants about what translation specific courses they have taken at university. All of these questions are multiple choice or fill in the blank, and most participants completed the survey within 5-10 minutes. The final question of the survey invited students to participate in the translation test and asked for their email so that they could receive the materials for the second phase of the study.

The translation test was sent to participants that completed the survey. The source text chosen for translation, referred to here as the “Taco Text,” is a 2021 article about tacos in space from *El Universal*, a newspaper from Mexico City, Mexico. I chose it due to the combination of general accessibility of the text and the potential translation problems presented by the source language. Prior to sending the source text to participants, I made some slight modifications to simplify the format and correct minor orthography errors for consistency. The “Taco Text” is included in Appendix B.

All identifying information collected throughout the entire study was de-identified and securely stored in password-protected programs, and access to the information was restricted to myself as the principal investigator and my faculty advisor. I anticipated correctly that more participants would fill out the survey about Spanish speakers’ language learning and use than those that will complete the translation test.

Procedures

Upon receiving IRB approval, I posted the survey link to my personal social media as well as pages and groups related to the Hispanic community and translation students on BYU campus. I also shared the survey link with various professors that teach Spanish, Spanish Translation, and Translation specific-courses, who then shared the link with their students so that those interested could choose to participate.

Once participants completed the survey and indicated interest in continuing in the study, I sent them a Word document containing the source text for translation along with the following instructions that indicated language pair, direction, text type, audience, and delivery instructions:

- 1.) Read the text, a newspaper article from Mexico, all the way through.
- 2.) Translate the text into American English using a word processing program (Word, Google Doc, etc.). Do NOT use any translation programs (Google Translate, DeepL, etc.) or Computer Assisted Translation tools. Your intended audience are U.S. university students that speak English.
- 3.) Email your translated text to cjwest95@byu.edu with your name (first and last) and the information for your desired method of electronic payment (Venmo, PayPal, etc.).

Upon completion of the translation test, participant information and their target text were logged, de-identified, and prepared for evaluation by renaming them according to the numerical order in which the participants completed the survey. Participants completed the translation test on their own devices and were allowed to use resource materials, although no specific resource was recommended in the instructions. Participants that completed both the survey and the translation test received \$15 for their time and target text.

Since this study seeks to focus on the linguistic competence of translation, I explicitly requested participants to not use machine translation programs or CAT tools. Additionally, participants were instructed to read the text all the way through before starting translation, a standard practice in the profession. However, they were not instructed about any revision

processes nor the intended use of the target text. The rationale for this decision is explained below.

Translation Evaluation

Regarding the translation evaluation stage, this study differs from Gasca Jiménez's (2019) study in several ways. First, I focus on bilingual speakers of English and Spanish with advanced proficiency in both languages, whereas she only includes speakers with a level of intermediate high. Second, I only ask participants to translate one longer text from Spanish to English instead of shorter texts in both directions. Third, I use the Multidimensional Quality Metric (MQM) grading framework to identify and mark errors, whereas she employs Hurtado Albir's (1999) two category system and organizes their data according to Fairclough & Mrak's (2003) classification of error types. Fourth, and perhaps most importantly, I use multiple evaluators during the translation evaluation process, whereas her experiment only used one evaluator.

Three evaluators evaluated the participant translations: 1.) myself, a native English speaker and graduate of BYU's Spanish Translation program 2.) a BYU graduate student in the MA Spanish Pedagogy program, who also previously completed the Spanish Translation program and is a native English speaker, and 3.) an adjunct faculty member of the BYU Spanish & Portuguese Department, who is also a professional translator and a native Spanish speaker. The academic training and professional experience of the evaluators, as well their advanced or superior proficiency in both English and Spanish, were deciding factors in their selection.

After developing translation specifications and an evaluation metric, I trained the other evaluators on how to use the MQM grading framework in addition to resources under development by the BYU Translation Research Group, a project with which I am also currently

involved. The translation specifications and MQM metric created and used in this evaluation of target texts for this study, which include the definitions and examples of each error type, are in Appendix C. For the complete MQM error typology, consult the MQM resources (MQM).

Before the evaluators performed any annotations of the target texts, they were given training materials to practice the procedures and ensure understanding of the error metric used in the project. Evaluators completed their training using the MQM Scorecard, an open source web-based translation quality evaluation tool, and were not given access to Taco target texts until they matched all of the expected errors that I planted in the training target text and after we examined the source text to identify potentially problematic areas and the possible errors that participants might commit in those situations. Evaluators were instructed to evaluate and annotate the target texts with error type and severity level.

Unfortunately, the server hosting the MQM Scorecard that housed the project for this study failed during preparation of the Taco target texts and due to technical restrictions and time restraints, I was unable to replace and reset the server. Fortunately, I had back up copies of all of the files needed for the translation quality evaluation and we were able to complete the annotation of errors and translation evaluation another way. To do this, I converted target text files to Word documents, made two additional copies of each target text file and placed them in separate folders so that each evaluator could annotate their own version of each target text without interference from the other evaluators. As such, the final names of the target texts that were analyzed and annotated by the evaluators followed the format “Taco 1A” or “Taco 111C”, according to the participant number and evaluator performing the annotation. Even though we were not able to use the MQM Scorecard, we still used the MQM metric with the error types and severity levels that were used in the evaluator training process.

Inter-rater Reliability

Another important consideration for the procedure of this study was inter-rater reliability (IRR). Although more useful in other contexts when translation stakeholders desire more detailed information about the overall quality of the translation product, I was more concerned about what error types are presented and not necessarily with penalty scores or severity levels of errors. As such, I decided that I would only include errors in the error counts that were marked by two or more evaluators in the Taco target texts to increase reliability of the results. In instances where different evaluators marked the same error but with a different error code, I split the error between the different categories (e.g., in the case that one evaluator marks an error as a mistranslation and another marks the same error as an undertranslation, the error is marked as 0.5 mistranslation and 0.5 undertranslation). In instances where all three evaluators marked the same error with different error codes, I chose to split the error between the two categories within the same error dimension.

Error Severity Levels and Critical Errors

It is necessary that I address and define severity levels of errors within the context of this study and their relation to the intended use of the target text. The definitions of severity levels that I chose to use originate from a document in development by the BYU Translation Research Group and the American Society for Testing and Materials and have been modified for use in different materials regarding translation quality. In this document, an error severity level is defined as “one of a small set of error severity designations, ranging from neutral to critical, reflecting the effect of the error on the usability of the text.” According to MQM Scorecard training materials in development with the BYU Translation Research Group, which we used in the training of evaluators of this study, translation errors are “issues that impact usability or

understandability of the content.” When we consider both of these definitions regarding translation errors and error severity levels, we see a clear connection with intended use and Skopos Theory in translation evaluation.

Naturally, this raises the question as to why participants in this study were not more explicitly informed of the intended use of the target text. On one hand, participants were aware that they were participating in a study that sought to research “what error types different groups of bilinguals make during translation, and how different language experiences, including formal training, affect translation ability” (as stated in the informed consent at the beginning of the survey) and that their translations would be analyzed to that end. This statement acts as the *de facto* intended use of the target text, even if not explicitly mentioned in the translation instructions. Even so, I recognize that by not providing an explicit intended use of the target text for the participants I may have influenced their decisions during the translation process. On the other hand, I did not wish to confuse participants, most of whom had no translation training and little to no translation experience, by including a full set of translation specifications with the source text and its accompanying instructions. Additionally, I chose not to include an explicit introduction of an intended use in the instructions as I wanted to isolate the bilingual competence as much as possible, and I felt that a full set of translation specifications overlaps too much with other competences like knowledge about translation.

In doing so, I expected that participants would be able to intuit the intended use of the source text, which I understand to be to inform the public about advances related to living organisms in space, and imagine the same intended use for their target audience of English speaking U.S. university students. Using Reiss’s (1989) distinctions of communicative acts, I feel that we can confidently classify both the source text and target text purposes to be

informative, and not expressive or appellative. The evaluators were trained with this understanding of the text type and were instructed that for this project an error would constitute an issue that impacted both the “usability and understanding” of the target text whose function was to convey a denotative equivalence of the source text’s sharing of information. As such, evaluators marked errors that they felt betrayed or impeded the text’s informative purpose. In another situation with the same texts but with a different intended purpose, they may or may not have marked an error as the purpose affects the acceptability of a given target text option.

Applying skopos to severity levels, we can also see that the intended use of a target text might affect an evaluator’s perception of an error’s severity level. This extension is particularly relevant for critical errors, which the MQM Scorecard training materials further describe as

“issues that render the content unfit for use. For example, a particularly bad grammatical error that changes the meaning of the text would be considered critical. If the error prevents the reader/user from using the content as intended or if it presents incorrect information that could result in harm to the user it MUST be categorized as critical. In general, critical errors have to be fixed prior to use of the text since even a single critical error is likely to cause serious problems.”

Once again, this definition highlights an error’s effect on the target text’s fitness for use. A critical error completely renders the target text unusable, which for the evaluators of this study meant it failed severely to accurately communicate the information in the source text.

To further illustrate the magnitude of a critical error, I have included two examples from participants:

(1) Taco Text: La astronauta al fin logró preparar sus “mejores tacos”, los cuales tenían fajitas de res, tomates deshidratados, alcachofas y chiles Hatch frescos.

Taco 15: Finally, she had successfully prepared her “best tacos”, which had strips of beef, dehydrated tomatoes, spices, and fresh Hatch chilies.

(2) Taco Text: La sugerencia para preparar unos deliciosos tacos fue de los terricolas, pues semanas atrás la astronauta McArthur les preguntó que, a pesar de tener pocas opciones culinarias, cuál sería la mejor forma en que podrían comer los chiles espaciales que llevaban meses cultivando.

Taco 25: The process for preparing a delicious taco was from the rainforest, when weeks before the astronaut MacArthur asked that, even though she had few culinary options, that they were the best form in which they could eat the special chiles that had been cultivating for months.

In both of these examples, the unfaithfulness of the translation in relation to the source text betrays the informative function of the target text. If either of these target texts were to be used to inform an English speaking audience, they would convey inaccurate details of the news article. Although these examples were chosen to show what might be considered a critical error and why, the great majority of the critical errors that participants produced were from grave omissions or leaving words untranslated in the target text that would not be accessible to an English speaking audience.

Even though I originally was not concerned with severity level and was not planning on writing about them in my analysis, I decided to include critical errors because compelling trends in the data were relevant enough to not ignore them. Similar to counting the number of errors, I decided to include critical errors in the error count of target texts only if at least one evaluator marked an error as a critical error and another marked the same error as a major error. Full

descriptions of the severity levels in the training materials used by the evaluators are included in Appendix C.

DELIMITATIONS OF STUDY

It is not in the scope of this study to deeply analyze language competency among different types of bilinguals, such as simultaneous bilinguals (those who learned both languages at the same time) and consecutive bilinguals (those who learned one language first and then the second later), since my definition a native speaker is more related to if a participant self-identifies as one. However, I do hope that initial findings will direct possible future scholarship on the topic, especially in an environment like BYU where many students speak a second language, most of them having learned their L2s later in life either through ecclesiastic volunteer service or moving to the United States for college.

Similarly, the scope of this study is limited in that it only considers translation from Spanish to English. In the future, I would also like to explore the results from English to Spanish, in addition to other language pairs. I believe that such studies would be of great interest and value to many both in academia and in the language-service industry. Such an extensive project would be an important research field within the discipline with much room for additional scholarship.

I do not intend to address other translation sub-competences proposed by translation scholars. Although not in the scope of this project, it is possible that the results from this research could better inform an emerging model of TC, briefly mentioned above, with a deeper understanding of bilingual competence. Additionally, this project is limited in the text type, using a more accessible, general informative source text instead of a specialized or creative text. Future studies could focus on competences within specific domains such as medicine and law, or even

creative works such as literature and audio-visual translation, like the PACTE group has also indicated (2017).

CHAPTER 3: RESEARCH RESULTS

SURVEY RESULTS

Survey Participants

A total of 111 participants completed the survey about language learning experience and language use, which is included in Appendix A. Of the 111 participants that completed the survey, 94 indicated their willingness to complete the translation test in the second phase of the study. Of the 94 participants that received the source text and translation instructions, 60 completed and returned a target text. Instead of providing an analysis of the results of all of the participants that completed the survey, I will focus on the survey results of the participants that also completed the translation test. Of these 60 participants that delivered a target text, there are three that have been labeled as outliers. I discuss the reasoning for this decision below and include their data as well, but separate them from the other 57 participants used to calculate the totals and percentages used throughout the rest of the study.

Survey Results of Translation Test Participants

This section lists the demographic and personal information of the 57 participants that completed the translation test and whose data is included in the translation test results. These variables, although insightful, are not used in the analysis of translation test results because of time and space constraints; they do, however, offer possible areas of further investigation. The self-identified results of 57 participants are divided into the following categories:

Gender: 37 female (64.91%) and 20 male (35.09%), which loosely reflects the industry trends in the U.S. (Data USA)

Age: ranged from 20 to 29 with an average of 23.95 years old

Graduation status: 36 current students (61.1%), 13 graduates not enrolled in a graduate program (29.8%), and eight graduate students (14.1%)

Ethnicity: 38 White/Caucasian (66.7%), 10 Hispanic/Latino (17.5%), and nine mixed (15.8%; 7 White/Hispanic, 1 White/Pacific Islander, 1 White/Asian)

Place of Birth: 47 in the U.S. (82.5%), nine in a Spanish-speaking country (15.8%), and one in Australia (1.7%)

Age of Moving to the U.S.: of the 10 participants that moved to the U.S., their ages were 2, 7, 8, 9, 12, 16, 16, 18, 18, 21; average age of 12.7 years old

Place of High School Completion: 50 in the U.S. (87.8%), 5 in Spanish speaking countries (8.8%), and two split between Spanish-speaking and other Romance language-speaking countries (3.5%)

Additional languages: 23 reported speaking another language besides Spanish and English (38.3%), including Portuguese (13, or 56.5%), French (6, or 26.1%), Italian (2, or 8.7%), American Sign Language (2, or 8.7%), German (1, or 4.3%), Mandarin Chinese (1, or 4.3%), Russian (1, or 4.3%) and Arabic (1, or 4.3%), with some participants reporting more than one. Unlike Spanish or English, there was not a section in the survey for participants to indicate language level or use of their additional languages.

The second section of the survey asked students about their language experiences and language use. These questions also gathered valuable data about participants' supposed language competence, measured by questions about past educational and personal experiences, as well as their self-perceived use levels of each language. Again, these variables were not closely analyzed alongside their translation test results because of time and space constraints, but future work can

use this data and research similar topics in BYU students, particularly when it comes to linguistic performance reflected by language use.

Language Use: The first question of the survey regarding language use asked participants to rate how much English and Spanish they use or really understand in the following contexts: family interactions; church or religious gatherings; listening to music; school; work; reading printed materials; consuming digital media (TV, streaming, internet, etc.); recreation (sports, hobbies, etc.); and community gatherings or events. Participants indicated their levels of use and understanding with a sliding scale of 1-100.

LDS Missions: In this study, 28 (49.1%) participants went to Spanish-speaking countries, while another 13 (22.8%) reported going to a Spanish-speaking mission in the U.S. where they spoke in Spanish. Many BYU students have served as ecclesiastical representatives for The Church of Jesus Christ of Latter-day Saints on full-time missions for a period of 18-24 months, either prior or during their university education. In many instances, this experience is completely immersive in the native language of that country, and BYU students routinely return with Advanced-level competency on the ACTFL scale, trending towards Advanced Low because of their somewhat limited grammar skills, lack of vocabulary outside of general or religious settings, and ability to maintain extended discourse and discuss abstract topics or situations without struggling. Most students enrolled in the Spanish Translation program either lived abroad or in a Spanish-speaking area of the U.S. for an extended period of time.

Formally Studied Spanish in School: 54 participants (94.7%) reported formally studying Spanish in school at least to some degree. Of the remaining three participants, two (3.5%) learned Spanish on an LDS mission without prior or subsequent language education. The other was a native Spanish speaker who attended school in Spanish but reported not formally

studying Spanish in school; we can effectively count this response as a user error or misunderstanding of the question, bringing the total to 55 participants (96.5%) having formally studied Spanish in school.

When asked a follow-up question about the settings in which they learned Spanish in school, they provided the following results: nine (15.8%) reported attending school in a Spanish speaking country (10, or 17.5%, if we add the one participant mentioned above in this paragraph); one (1.8%) participated in a dual language immersion program in grades 9-11; 21 (36.8%) took Spanish classes in junior high/middle school; 39 (68.4%) took Spanish classes in high school or its equivalent; and 46 (80.7%) completed university Spanish courses. Additionally, 8 (14%) also reported having participated in a study abroad program at university.

Translation/interpretation experience: More than two-thirds (39, or 68.4%) of the participants reported that they had some kind of experience with informal translation or interpretation. Additionally, about half had volunteer experience with translation (27, or 47.3%) or interpretation (30, or 52.6%). However, numbers sharply dropped when asked about internship work with translation (8, or 14%) or interpretation (4, or 7%), as well as employment or paid work experience as a translator (7, or 12.3%) or an interpreter (6, or 10.5%). Eight participants (14%) reported no previous experience with either. It's possible that many participants have performed informal or volunteer translation and interpretation as heritage speakers in language brokering situations or during service as LDS missionaries or for BYU translation courses.

TRANSLATION TEST RESULTS

The translation test results directly answered several of the research questions regarding the types and degrees of translation errors, formal language education and translator training, and

differences between language directions. There are three specific participant variables that I wish to highlight in detail and provide further analysis: the number of university translation classes completed, the number of university Spanish classes completed, and native language. The differences among these variables are most apparent regarding accuracy, especially mistranslations, and linguistic conventions, especially grammar and spelling, as well as the overall number of errors and the number of critical errors.

Although evaluators marked errors according to the metric developed for this study, which is included in Appendix C, different groups of bilinguals showed noticeable differences across the three error types mentioned above. The MQM definitions of these error types are listed below with examples from the target texts received during this study.

Mistranslation (MT)

Definition: Target content that does not accurately represent the source content.

(3) Taco Text: La astronauta al fin logró preparar sus “mejores tacos”, los cuales tenían fajitas de res, tomates deshidratados, alcachofas y chiles Hatch frescos.

Taco 25: The astronaut at last could prepare her “best tacos”, they had rice fajitas, dehydrated tomatoes, anchovies and fresh Hatch chiles.

(4) Taco Text: La sugerencia para preparar unos deliciosos tacos fue de los terricolas, pues semanas atrás la astronauta McArthur les preguntó que, a pesar de tener pocas opciones culinarias, cuál sería la mejor forma en que podrían comer los chiles espaciales que llevaban meses cultivando.

Taco 80: The suggestion to prepare the delicious tacos came from the agriculture scientists, for weeks before Astronaut McArthur asked them, despite having few culinary options, what would be the best way in which they could eat the special chilies that took months growing.

In both examples (3) and (4), the TTs translate *fajitas de res* as “rice fajitas” instead of “beef fajitas”, *alcachofas* as “anchovies” instead of “artichokes”, *terricolas* as “agriculture scientists” instead of “Earthlings”, and *chiles espaciales* as “special chiles” instead of “space chiles.” All the errors in these examples objectively fail in accurately representing the source content and

were marked as mistranslation errors by all three evaluators. Participants were not expected to produce a certain target text option and evaluators were instructed to consider other viable options that accurately represented the source text as acceptable. The practice of only including errors in the error counts that were marked by multiple translators helped reduce the impact of individual evaluators, not only with mistranslations, but all other error types as well.

Grammar (GR)

Definition: Error that occurs when a text string (sentence, phrase, other) in the translation violates the grammatical rules of the target language.

(5) Taco Text: ... además de tener características que aumentan la posibilidad de que crezcan con éxito en la microgravedad.

Taco 7: In addition, they have characteristics that allows them to successfully grow in a lower gravity environment.

(6) Taco Text: McArthur compartió que todos los integrantes de la tripulación estaban entusiasmados por probar los chiles de su propia cosecha en el espacio

Taco 32: McArthur shared that all of the member of her group were excited to try the chiles from their own garden in space.

Examples (5) and (6) exhibit grammar errors that violate the number agreement rules in English.

Other types of issues like disagreement between nouns, adjectives and verbs, incorrect use of prepositions, or unwieldy target text syntax were considered grammar errors in this evaluation.

Spelling (SP)

Definition: Error occurring when the letters in a word in an alphabetic language are not arranged in the normally specified order.

(7) Taco Text: El pasado 5 de noviembre, la astronauta de la NASA Megan McArthur publicó en su cuenta de Twitter un emocionante mensaje.

Taco 100: November 5th, the astronaut of Nasa Megan McArthur published an emotional message on twitter. “After months of not having fresh alimentos, it is the moment of taco night!”

(8) Taco Text: ...pero al final se eligió al chile Hatch, una especie cultivada por primera vez en Nuevo México.

Taco 105: They ended up deciding on the hatch chili, a species that was first cultivated in New Mexico.

Examples (7) and (8) both show cases in which proper nouns were not capitalized in accordance to target language rules. Other common examples of spelling errors made by participants included inconsistent spellings of “chile/chili” in addition to simple spelling errors that impacted readability in varying degrees.

With these definitions and examples of these categories under consideration, I present the data of the translation tests by variable. The averages for all the error types are included in Appendix D. Hereafter, I will provide a descriptive analysis of the translation test results. Although the overall number of participants might have produced statistically significant data, I decided to perform a descriptive analysis instead of a statistical analysis because of the small sample sizes of some of the groups when divided by variable. Future research using this data or data from a similarly designed study would benefit from a statistical analysis.

Number of Translation Classes at BYU

The first variable that I examined in this study is translation training, quantified by the number of translation classes a participant has taken at the university level. BYU has offered a degree in Spanish Translation for more than 35 years. The current program requirements include a core of translation courses that must be taken in sequence over the course of two years, culminating in a final translation project. In these courses, students learn about translation and interpretation theory and processes while obtaining experience through practical assignments and volunteer work. They also must complete coursework in various fields like linguistics, literature and culture in addition to the translation core. Furthermore, the program requires that each

student complete another major or minor, effectively making them all interdisciplinary. The Intro to Translation course is also a requirement for Spanish majors and may be taken as an elective credit for Spanish minors.

In this study, 22 participants (38.5%) stated that their major was Spanish Translation. However, only 16 participants (28.1%) reported having completed a Spanish translation course, and of those 16, only 11 were Spanish Translation majors. This means there were 11 participants who have recently entered the program but have not yet completed a translation course. As such, I have decided to not compare Spanish Translation majors against non-majors, but rather to measure the differences in participants that had taken at least one translation course. In Table 1, we observe that participants that had completed at least one translation course had lower error counts in the five categories under special consideration: number of errors, number of critical errors, mistranslations, grammar, and spelling.

Table 1. Average Error Counts with and without Translation Classes

MT = Mistranslation GR = Grammar SP = Spelling

	Overall n = 57	No Translation Classes n = 41	Translation Classes n = 16
# Errors	17.53	19.12	13.38
# Critical Errors	2.37	2.83	1.19
MT	7.11	8.17	4.41
GR	3.08	3.28	2.56
SP	2.80	3.07	2.09

Notably, participants that had taken a translation course made an average of 5.74 (30%) fewer errors than those without any translation training at the university level. The difference was also apparent in the number of critical errors, with participants with translation training

making an average of 1.64 (58%) fewer critical errors. Participants who have completed at least one translation course also have lower averages for grammar errors (0.72, or 22%), spelling errors (0.98, or 31.9%), and mistranslation errors 3.76 (46%). The positive influence of translation training is even more apparent when we further divide those that have taken translation courses into subgroups based on their progress in the translation program. The division into these more specific groups is shown in Table 2.

Table 2. Average Error Counts by Progress in the Translation Program

MT = Mistranslation GR = Grammar SP = Spelling

	No Translation Classes n = 41	Intro to Translation Only n = 5	Current Translation Program Students n = 6	Translation Program Graduates n = 5
# Errors	19.12	13.80	14.50	11.60
# Critical Errors	2.83	2.20	1.33	0
MT	8.17	4.60	4.33	4.30
GR	3.28	2.00	3.83	1.60
SP	3.07	2.80	2.00	1.50

By comparing the subgroup averages against those without any translation training, we can see how translation quality, and by extension, translation competence, improves in participants as they progress in the Spanish Translation program. Unsurprisingly, Spanish Translation graduates had the best results in the five categories under special consideration out of any group discussed in the analysis of this study. Participants that graduated from the Spanish Translation program made 51% fewer grammar and spelling errors, 47.4% fewer mistranslation errors, and 39.3% fewer overall errors than participants that had not taken any translation courses. Perhaps the most convincing data point is that none of the program graduates made any critical errors while current Spanish Translation students still made an average 1.33 critical

errors. In Table 2, we can also see positive trends that suggest that more translation classes proportionally equate to fewer errors in every one of these five categories except for grammar.

Number of SPAN classes at BYU

The BYU Department of Spanish & Portuguese also offers a Spanish major, a Spanish Studies second major, and a Spanish Teaching major. In addition to the 22 Spanish Translation majors, another 21 participants (36.8%) were also enrolled in another Spanish program in the department, and seven (12.2%) had declared a Spanish minor. Given the extensive Spanish course offerings available at BYU, I decided to organize classes into class categories, meaning that all 3rd year literature courses were grouped together and all 3rd year pedagogy classes were grouped together, etc. I did, however, keep more linguistics classes separate because of the meta-linguistic value that may aid bilingual speakers to increase their linguistic competency.

Table 3. Average Error Counts by Number of University Spanish Classes Completed

MT = Mistranslation GR = Grammar SP = Spelling

	No SPAN classes n = 8	1 SPAN class n = 6	*0-1 SPAN classes n = 14	2-6 SPAN classes n = 25	6-12 SPAN classes n = 11	13-24 SPAN classes n = 7
# Errors	17.00	22.00	19.14	18.12	16.76	13.43
# Critical Errors	3.75	5.17	4.36	2.28	1.36	0.29
MT	8.69	10.75	9.57	6.86	6.41	4.21
GR	3.25	2.92	3.11	3.00	3.00	3.43
SP	1.69	2.42	2.00	3.62	2.68	1.64

*The averages from the 0-1 SPAN column come from the combination of the participants in the first two columns.

While reviewing the data, I observed positive trends like those seen when comparing progress in the Spanish Translation program; the more Spanish classes a participant had completed, the fewer errors in the five categories under special consideration. Although this was

expected to a certain degree, the data from the translation tests help us quantify the effect Spanish classes have on translation competence. Participants were divided into groups based on the number of university Spanish classes that they completed, which can be seen in Table 3. There were multiple reasons behind the division of groups by the number of Spanish classes taken by participants. For each group, I explain the reasoning behind each range of numbers of each Spanish class and provide analysis.

No SPAN classes: The lower averages of participants that had not completed any Spanish classes at BYU, which resemble numbers between the 2-6 and 6-12 Spanish classes taken at university, are clarified when we consider two of the eight participants in this group. One of those participants was a native English-Spanish bilingual who was born outside of the U.S. in a Spanish-speaking country and lived in both the United Kingdom and United States as a child before attending high school in Argentina and Brazil. That participant is also completing an MA Linguistics at BYU and reported speaking Portuguese, French, and Russian. The other participant that had not taken Spanish classes at university indicated growing up speaking Spanish in their community, despite reporting themselves as a native English speaker, as well as family/personal travel to Spanish speaking-countries and a Spanish-speaking LDS mission. The combination of the variables and experiences exhibited by these two participants favors greater linguistic competency, which explains how their lower error counts affected the group's average. The other six participants without any Spanish classes at the university level had fewer language experiences and reported less use of Spanish in their daily lives.

1 SPAN class: Participants that reported only having completed one Spanish class at BYU can further be divided between lower division and upper division courses because of the substantial distance between the language abilities present in each level. Two participants had

completed one lower division course whereas four had completed the intermediate course SPAN 321: Third-Year Spanish Reading, Grammar and Culture. SPAN 321 is traditionally the first class taken by returned missionaries, and most often their first experience with Spanish at the university level. Since SPAN 321 is a prerequisite for virtually any other subsequent Spanish class in the department, it is most often the first class that native Spanish speakers take as well. Every participant that completed two or more Spanish classes at BYU completed SPAN 321 before moving on to other upper division courses.

Participants that only completed one Spanish class at the university level averaged more errors, more critical errors and more mistranslation errors than any other group. They

0-1 SPAN classes: When these two previous groups are considered together, we have a better idea of what kind of translation product participants with minimal formal language education at the university level produce. When compared with participants with more language education, we can observe that participants with zero or one university level Spanish classes produced greater averages of overall errors, critical errors, and mistranslations, whereas the averages for grammar and spelling are similar to participants that have formal language education. Throughout the rest of the analysis, I will refer back to this group of participants that have completed 0-1 Spanish classes at university when examining groups that have more fully incorporated language study into their curriculum.

2-6 SPAN classes: The upper limit of the range of Spanish classes for this group, which was the largest group of participants at 25 (43.9%), was chosen because the Spanish minor requires 18 credits, or six upper-division classes, of coursework. It is also worth noting that the BYU Center for Language Studies offers a Spanish language certificate to students that complete SPAN 321, SPAN 330 (Introduction to Hispanic Literature), and either SPAN 345 or SPAN 355,

which are Iberian or Latin American culture courses. When compared to those that had taken 0-1 Spanish classes, participants in this group made an average of 2.71 (13%) fewer errors overall, 2.72 (54.4%) fewer critical errors and 4.12 (37.5%) fewer mistranslation errors. As mentioned above, spelling and grammar error averages were rather similar. While these numbers show some degree of increased translation competency related to formal language education, we can see that it is only incremental when compared with participants that have completed more Spanish courses.

6-12 SPAN classes: 11 participants (19.3%) had completed 6-12 Spanish classes at university at the time of the study. The lower limit of this range was chosen because of the number of classes needed for a Spanish minor, while the upper limit was chosen because of the number classes needed for the Spanish Studies second major. When compared to participants with 0-1 Spanish classes completed, participants with 6-12 Spanish classes averaged 4.07 (19.5%) fewer errors overall, 3.64 (72.8%) fewer critical errors, and 4.47 (41.6%) fewer mistranslations. Grammar error averages between the two groups were nearly identical, while those with 6-12 Spanish classes actually averaged 0.91 (34%) more spelling errors.

13-24 SPAN classes: There were 7 participants (12.3%) that had completed 12-24 university Spanish classes. The lower limit of this range was chosen because 13 is one more than the required number of classes for the Spanish Studies second major, and the upper limit of 24 was the highest value reported in the data. When more closely examined, all of the participants in this last group were either Spanish Translation program graduates or in their last semester of the program. It is quite possible, however, that some students that double major in Spanish Translation and another Spanish-related field where Spanish courses count for credit (like

European Studies or Latin American Studies) may take upwards or even more than 30 Spanish classes at BYU.

When comparing the translation results and error averages of this last group of participants with 13-24 Spanish classes completed with those with 0-1 Spanish classes, the effect of Spanish courses is most apparent: 7.4 (35.5%) fewer overall errors, 4.41 (94.2%) fewer critical errors and 6.77 (61.7%) fewer mistranslations. When compared against participants who had taken 6-12 Spanish classes, those with more formal language education again presented considerable patterns of improved translation competence, as demonstrated by an average of 3.33 (19.9%) fewer overall errors, 1.07 (78.7%) fewer critical errors, and 2.21 (34.3%) fewer mistranslations. As with other groups, spelling and grammar error averages remain about the same regardless of the number of Spanish classes a participant has taken.

Native Language

The final variable that I closely examined in this study is native language. The demographics of students that participated in this study generally reflect the demographics of the student population at BYU, with perhaps a slightly greater percentage of non-English speakers in my data set. The data from the translation tests sorted by native language is presented in Table 4, and show differences worth commenting on in each category except for spelling.

L1 English: Given that the L1 English participants of this study make up the vast majority of the data, it is logical that their error type averages for the five categories under special consideration closely resemble the averages of all participants. It is also logical that L1 English speakers make up a similar majority in terms of participants with translation training, with 12 participants reporting at least one translation course, as well as 3 Spanish Translation program graduates.

Table 4. Average Error Counts by Native Language

MT = Mistranslation GR = Grammar SP = Spelling

	Overall n = 57	L1 English n = 47	L1 English - Spanish bilinguals n = 4	L1 Spanish n = 6
# Errors	17.53	17.66	14.50	18.50
# Critical Errors	2.37	2.66	0.75	1.17
MT	7.11	7.69	4.88	4.08
GR	3.08	2.76	2.50	6.00
SP	2.80	2.79	2.25	3.25

Despite the higher numbers of Spanish classes from these Spanish Translation graduates, the large number of participants in this category pulls the group's average number of Spanish classes down to 5.28. When examining the data, we can see that native English speakers' averages were close to the total averages as well as one or both of the other groups, depending on the category. However, L1 English speakers clearly made more critical errors than both English-Spanish bilinguals (1.91, or 71.8%) and L1 Spanish speakers (1.49, or 56%), as well as mistranslation errors, 2.81 (36.5%) and 3.61 (46.9%).

L1 English-Spanish: Four participants reported both Spanish and English as their L1, and of these 4 English-Spanish bilinguals, only one was a Spanish Translation program graduate. The average number of Spanish classes for this group was 7.5, similar to the L1 Spanish speakers and greater than L1 English speakers. On average, native Spanish and English bilinguals made the fewest errors and fewest critical errors. When compared to L1 English speakers, English-Spanish bilinguals made an average of 3.16 (17.9%) fewer errors overall, 1.91 (78.1%) fewer critical errors, and 2.81 (36.5%) fewer mistranslation errors. Similarly, when compared to L1 Spanish speakers, these native speakers of both languages made an average of 4 (21.6%) fewer

overall errors, 0.42 (35.9%) fewer critical errors, 3.5 (58.3%) fewer grammar errors, and 1 (35.7%) fewer spelling errors.

L1 Spanish: Although only 6 native Spanish speakers completed the translation test, 3 of them had received translation training and 2 were Spanish Translation program graduates. This does not tell the whole story; besides the two Spanish Translation graduates, the remaining 4 L1 Spanish speakers in this data set only averaged 3 Spanish classes each. While L1 Spanish speakers in this study averaged slightly more overall errors than L1 English speakers (0.84, or 4.8%), they showed greater differences in two of the other categories under special consideration with an average of 1.49 (56%) fewer critical errors and 3.61 (46.9%) fewer mistranslation errors. In fact, native Spanish speakers had the lowest average of mistranslation errors, at 4.08, which was 16.4% fewer than the next closest group, the English-Spanish bilinguals. However, L1 Spanish speakers made more than double the amount of grammar errors than both L1 English speakers and native speakers of both Spanish and English.

Outliers

As mentioned above, there were three participants whose translation test results radically differ from the rest of the data set. As such, I have chosen to label them as outliers and exclude them from any of the previous data, including the overall total averages. These outliers were all L1 English speakers who had not taken a university Spanish class or translation course. The complete data set of averages per error type for these outliers are included in Appendix D, along with the averages of each variable for all error types included in the metric for this study. In Table 5, I show the outliers' average error counts by category and compare them with the groups on either end of the spectrum of the regular data set: participants with no translation training and Spanish Translation program graduates.

Although not certain of the details, I suppose that a possible explanation for the outliers' performance could be a combination of several “psycho-physiological components” such as a lack of time dedicated to the translation task or high stress (perhaps caused by other commitments), low stakes of participation in this study, or distraction during translation (PACTE, 2003, 2008). I have attempted to contact them to ask about how much time they spent on the translation task, but I have yet to receive a response. A future study could explore this variable with a post-translation survey aimed towards measuring translation conditions.

Table 5. Average Error Counts of Outliers Compared with Other Groups

MT = Mistranslation GR = Grammar SP = Spelling

	Outliers n = 3	Overall n = 57	No Translation Classes n = 41	Translation Program Graduates n = 5
# Errors	68.67	17.53	19.12	11.60
# Critical Errors	43.00	2.37	2.83	0
MT	27.17	7.11	8.17	4.30
GR	5.83	3.08	3.28	1.60
SP	5.17	2.80	3.07	1.50

Summary of Results

The data from the translation tests provide valuable insights regarding the variables of formal professional language preparation in the way of translation courses and Spanish classes, as well as native language. Although the relatively small sample size of some participant groups may not lead to statistically significant conclusions, there are clear trends in these data that indicate a difference between variables.

For example, participants with formal translation training performed better in all of the categories under special consideration, with BYU Spanish Translation graduates averaging 51%

fewer grammar and spelling errors, 47.4% fewer mistranslation errors, and 39.3% fewer errors when compared to the overall averages. Perhaps the most notable data point in the whole study is that Spanish Translation graduates made no critical errors.

When considering the level of formal language education at the university level, we also see that participants that have taken more Spanish classes perform better in the five categories at an incremental rate. Notably, participants that have completed 13 or more Spanish classes made 35.5% fewer overall errors, 94.2% fewer critical errors, and 61.7% fewer mistranslations than participants with 0 or 1 Spanish classes.

Native language also played an important factor in the data. As could be expected, bilinguals who identified themselves as native speakers of both English and Spanish committed an average of 17.9% fewer errors overall, 78.1% fewer critical errors, and 36.5% fewer mistranslation errors than L1 English speakers. Similarly, when compared to L1 Spanish speakers, native English-Spanish speakers made an average of 21.6% fewer overall errors, 35.9% fewer critical errors, 58.3% fewer grammar errors, and 35.7% fewer spelling errors. Notably, L1 Spanish speakers struggled with English grammar, more than double the amount of grammar errors than both L1 English and L1 English-Spanish speakers.

While the differences in the number of errors and the errors under the Linguistic Conventions dimension (grammar and spelling) are straightforward and easy to understand, it is worth exploring the mistranslation error type more deeply in the context of the data. While the MQM Typology defines a mistranslation error as one where the “target content that does not accurately represent the source content,” there are two main explanations that I offer as an explanation with the data in mind. First, the root cause of mistranslation errors can be a misunderstanding of the source text. Second, mistranslation errors may be the result of the

inability to produce a viable target text option. These explanations are connected to the transfer stage, an important point in TC models since their introduction by Wilss (1976) and Koller (1979), which still informs TC models and translation theory today.

One major trend in the data was the tendency to calque words by using a cognate or false cognate of a word with an existing counterpart in the target language that lost or misrepresented original source text meaning. Sadat et al. (2016) explain that bilingual speakers experience bilingual costs like slower reaction times in lexical retrieval tasks while also show strong lexical connections between cognates. However, these strong lexical connections, when not completely defined nor employed in proper contexts, could lead to the successful lexical access of a word at the cost of unknowingly employing a calque and therefore a mistranslation (Hamel, 1998; Waltermire & Valtierrez, 2019). McGregor's (2016) statement about a strong tendency of L2 transfer (meaning influence) in L1 production appears to be true in the data as well, despite the great majority of participants working into their native language. Since this study only examines Spanish to English translation, I would expect these numbers to be more pronounced when working from English to Spanish, especially among L2 Spanish speakers.

CONCLUSIONS

This study adds to the field of Translation Studies by attempting to determine the distance in translation competency between bilingual speakers of English and Spanish in the BYU community through a language-experience-and-use survey and a translation test from Spanish to English. In this study, evaluators used MQM translation quality evaluation materials to evaluate and annotate target texts using translation specifications and an MQM metric. Five categories (number of errors, number of critical errors, mistranslations, grammar, and spelling) showed substantial differences that support the hypothesis that translation training and language education at the university level, as well as native language, have marked effects on the translation quality of target texts produced by those with formal training and education and those without. Substantial trends in the data collected and produced during this study corroborate the claim that translation competence “is different from bilingual competence and is a competence acquired either through personal experience as a translator (self-taught) or as a result of a learning process” (PACTE, 2017: 281). The data in this study indicate the strengths and needs of past, current, and potential translation students, which can be used by university translation programs and industry professionals to improve training and resulting competency of nascent translators.

To conclude, bilingualism is a base that must be built upon with significant language experiences, language education, and translation training in order to provide translators with necessary language skills, upon which further translation competences, like cultural, technical, and subject knowledge, can be developed to produce expert translators and language professionals.

Limitations and Future Studies

In addition to those mentioned above in the Delimitations of Study section in Chapter 2 related to research design, the data and results of this study also pose intriguing questions for the field of translation competency and translator training. I believe that future studies on this topic would do well to use this study and the recent examples cited herein as points of departure in quantifying the differences and distances of translation competence among different types of bilinguals and bilinguals with different experiences. Potential areas include the effect of passive languages (those with receptive competency but limited or non-existent productive competency, also referred to as “C languages” in translation and interpretation) on translation and translation conditions, as well as the tendencies of translation strategies or procedures employed during the translation process (Vinay & Darbelnet, 1958/2004). Understanding the differences in translation competence by text types would better prepare translation students to enter the industry. I personally would like to explore Khodos & Moskovsky’s (2021) conclusion that “some of the cognitive consequences of bilingualism are a function of bilingual experiences” by diving into the differences of translation competence presented in speakers of different immersive experiences like residence abroad or travel to Spanish-speaking countries. Additionally, a longitudinal study of translation students and non-translation students would further help identify the needs and strengths of different groups of bilinguals, as well as the needs and strengths of a given translation program.

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Appendix A: Survey Questions

Title of the Research Study: Bilingualism as a Translator's Competence

IRB ID#: IRB2022-035

My name is Calvin Westfall, a graduate student at Brigham Young University, and I am conducting this research under the supervision of Professor Daryl Hague, from the Department of Spanish & Portuguese. You are being invited to participate in this research study about bilingualism and translation.

I am interested to learn more about what error types different groups of bilinguals make during translation, and how different language experiences, including formal training, affect translation ability. Being in this study is optional.

If you choose to be in the study, you will be asked to complete a survey, which should take approximately 5-15 minutes of your time. There are some questions about possibly sensitive topics like language use and migration. You can stop the survey at any time for any reason.

The data from the survey will be de-identified, meaning that no one will be able to link your answers back to you. Please only include your name or other information that could be used to identify you in the survey responses for questions that explicitly ask for your name and contact information.

At the end of the survey, you may indicate if you would like to complete a translation exam of a short text (approximately 350 words) from Spanish to English, which should take 30-60 minutes to complete. By entering your email, you agree to participate in the second stage of the study and you will be sent the translation test materials. If you complete the translation test, you will be compensated \$15 for your time.

Questions? Please contact Calvin Westfall at cjwest95@byu.edu. If you have questions or concerns about your rights as a research participant, you can call the BYU Human Research Protections Program at 801-422-1461 or BYU.HRPP@byu.edu.

Consent

By selecting "yes", I am consenting to participation in this study, which includes the collection of personal information. If such information is used in the analysis, it will be de-identified and/or generalized during reporting. By consenting, I agree to the use of my personal information (such as language experiences and language habits) to be used in the analysis.

- Yes
- No

Q1. What is your name?

Q2. What is your gender?

- Female
- Male
- Non-binary
- Prefer not to say
- Other

Q3. What is your ethnicity? Check all that apply.

- Asian
- Black/African
- Caucasian/White
- Hispanic/Latino
- Native American
- Pacific Islander
- Other

Q4. How old are you?

Q5. Where were you born?

Q6. If you were born outside of the United States, how old were you when you moved to the U.S.? (If you were born in the U.S., write N/A)

Q7. Where did you attend high school (or equivalent)?

Q8. What best describes your current school year?

- 1st year/Freshman
- 2nd year/Sophomore
- 3rd year/Junior
- 4th year/Senior
- 5th year + undergraduate
- Graduate student
- Recent graduate (within the last 3 years) not enrolled in a university program
- Other

Q9. What is/was your major(s)?

Q10. What is/was your minor(s)?

Q11. What do you consider to be your native language(s)?

- English
- Spanish
- Both English and Spanish
- Other

Q12. Do you speak another language besides English and Spanish? If so, which one(s)?

- Yes _____
- No

Q13. For this question, please indicate how much English you use or really understand in the following contexts. If you do not use or hear English in a certain context, mark "Not Applicable". *(Participants marked their use/understanding on a slider scale from 0 -100)*

Family interactions

Church or religious gatherings

Listening to music

School

Work

Reading printed materials

Consuming digital media (TV, streaming, internet, etc.)

Recreation (sports, hobbies, etc.)

Community gatherings or events

Q14. For this question, please indicate how much Spanish you use or really understand in the following contexts. If you do not use or hear Spanish in a certain context, mark "Not Applicable". *(Participants marked their use/understanding on a slider scale from 0 -100)*

Family interactions

Church or religious gatherings

Listening to music

School

Work

Reading printed materials

Consuming digital media (TV, streaming, internet, etc.)

Recreation (sports, hobbies, etc.)

Community gatherings or events

Q15. What is your experience with Spanish in Spanish speaking countries or Spanish speaking areas of the U.S.? Please mark all that apply.

- Grew up speaking Spanish at home
- Grew up speaking Spanish in the community
- Grew up in Spanish speaking country/ies that is/are not the U.S.
- From the U.S., but lived abroad with family in Spanish speaking country/ies
- Personal or family travel to Spanish speaking country/ies
- Foreign Exchange/Study Abroad in Spanish speaking country/ies
- LDS mission in a Spanish speaking area in the U.S.
- LDS mission in a Spanish speaking country/ies
- My only experience with Spanish is from school
- Other _____

Q16. Have you formally studied Spanish in school?

- Yes
- No

Q17. If you answered yes to the previous question, in which of the following settings have you formally studied Spanish? Mark all that apply.

- School in a Spanish speaking country
- Dual immersion program in the U.S. (specify what grades) _____
- Junior High/Middle School
- High School (or equivalent)
- College/University

Q18. If you have studied or currently are studying Spanish at the College/University level, in which of the following settings have you formally studied Spanish? Mark all that apply.

- Traditional in-person classroom
- Online courses
- Hybrid courses (part in-person, part online)
- Study Abroad program(s)
- N/A

Q19. Please carefully review the following list of SPAN courses offered at BYU. Then, indicate what Spanish classes have you taken, meaning completed (do not mark classes in which you are currently enrolled), at BYU (or equivalents at another college/university). Please mark all that apply.

- N/A: I have not nor am not currently studying Spanish at the university level.
- 100-Level SPAN Courses (101, 102, 105, 106, etc.)
- 200-Level SPAN Courses (205, 206, 211R, 212R, etc.)
- 300-Level SPAN Conversation Courses (311R, 312R)
- 400-Level SPAN Conversation Course (411)
- SPAN 321 - Third-Year Spanish Reading, Grammar, and Culture
- SPAN 322 - Third-Year Spanish Composition
- SPAN 323A/B/C - Spanish for the Professions
- SPAN 325 - Survey of Hispanic Linguistics
- SPAN 326 - Spanish Phonetics and Pronunciation
- SPAN 421 - Fourth-Year Grammar
- SPAN 423- Border Spanish
- SPAN 520 - Problems in Spanish Grammar
- SPAN 521 - Romance Philology
- SPAN 522 - History of the Spanish Language
- SPAN 529R - Special Topics in Spanish Linguistics
- SPAN 330 - Introduction to Hispanic Literature (formally 339)
- SPAN 335 - Survey of Hispanic Literature for Spanish Teachers
- 300/400 Level SPAN Literature Courses (341/441, 351/451, 437, 439, 440, 444, 450, 452, etc.)
- 300 Level SPAN Culture Courses (345, 355, 395, etc.)
- 300/400 Level SPAN Pedagogy Courses (376, 377, 378, 380, 376, 378, 496, 577, 585)
- SPAN 399R/599R - Academic Internship: Spanish Language Field Experience/Internship
- SPAN 480R - Directed Research in Spanish
- SPAN Capstone Related Courses (491, 493)
- SPAN 480R/581R/582R/583R/680R - Minicourse
- SPAN 360 - Introduction to Translation (formally 414)
- SPAN 462A/B - Beginning Translation and Interpretation (formally 415A/B)
- SPAN 463A/B - Intermediate Translation and Interpretation (formally 416A/B)
- SPAN 464A/B - Advanced Translation and Interpretation (formally 417A/B)
- SPAN 465 - Spanish for Medical Interpretation (formally 365)
- SPAN 469 - Translation and Interpretation Project (formally 418)

Q20. Have you completed any other Translation specific courses at university? Please mark all that apply.

- PLANG 380 - Computer-Assisted Translation (formally cross-listed as SPAN 419/LING 480)
- PLANG 399R - Translation & Localization Internship
- PLANG 414 - Introduction to Translation
- PLANG 460 - Software Localization
- PLANG 470 - Web Localization
- PLANG 480 - Advanced Computer-Assisted Translation
- PLANG 540 - Professional Language: Project Management

Q21. Please indicate your experience with translation and interpretation. Mark all that apply.

- No experience with either
- Informal translation/interpretation
- Volunteer work with translation
- Volunteer work with interpretation
- Internship work with translation
- Internship with interpretation
- Paid work/employment as translator
- Paid work/employment as interpreter
- Other

Q22. Thank you for completing the survey, which is the first part of the study. If you would like to participate in the next phase of research, which will include a translation test from Spanish to English, please enter your email below. The test will be approximately 350 words and should take about 30-60 minutes to complete. Those that participate in the translation test will be compensated.

Email: _____

Appendix B: Source Text for Translation Test

Tacos espaciales

El pasado 5 de noviembre, la astronauta de la NASA Megan McArthur publicó en su cuenta de Twitter un emocionante mensaje. "Después de meses sin tener alimentos frescos era momento de una ¡noche de tacos!"

McArthur compartió que todos los integrantes de la tripulación estaban entusiasmados por probar los chiles de su propia cosecha en el espacio. La astronauta al fin logró preparar sus “mejores tacos”, los cuales tenían fajitas de res, tomates deshidratados, alcachofas y chiles Hatch frescos.

La sugerencia para preparar unos deliciosos tacos fue de los terrícolas, pues semanas atrás la astronauta McArthur les preguntó que, a pesar de tener pocas opciones culinarias, cuál sería la mejor forma en que podrían comer los chiles espaciales que llevaban meses cultivando.

Luego del anuncio de la emocionante noche de fiesta con tacos en el espacio, la NASA puntualizó que tomó más de dos años seleccionar un tipo de chile y pimiento para cultivarlo, pero al final se eligió al chile Hatch, una especie cultivada por primera vez en Nuevo México. Pero ¿por qué cultivar chiles? La NASA detalló que los pimientos, pertenecientes a la familia de los chiles, son una fuente de nutrientes clave y de vitamina C, además de tener características que aumentan la posibilidad de que crezcan con éxito en la microgravedad.

Por otra parte, el chile Hatch es una de las pocas verduras que se pueden consumir en su etapa de crecimiento, ya sea cuando está de color verde o rojo. Una de las curiosidades del experimento fue que los astronautas pueden llegar a perder su sentido del gusto y olfato, por lo que los alimentos picantes son buena opción para estimularlos.

Cabe decir que normalmente los astronautas consumen alimentos envasados y liofilizados (deshidratados) para reducir su tamaño y volumen. No obstante, si se requiere llegar a realizar misiones espaciales más prolongadas (como un viaje a Marte que tomaría hasta tres años) será necesario contar con alimentos que no pierdan su valor nutricional.

La llegada de los tacos al espacio se convirtió en un motivo más para enorgullecerse de uno de los antojitos característicos de México y que ahora podrán ser disfrutados por astronautas preparados como en la Tierra: ¡con ingredientes frescos!

Appendix C: Translation Specifications, MQM Metric & Severity Levels

These materials were used by the evaluators in their evaluation and annotation of target texts.

Standardized Translation Specifications

A. Linguistic work product parameters [1–13]

Source-content information [1–5]

1. General characteristics

(a) **source language:** es-MX (Mexican Spanish from Mexico City)

(b) **text type:** adaptation of informative newspaper article accessible through digital platform

(c) **audience:** general Mexican audience

(d) **purpose:** to inform the public about advances related to living organisms in space

2. Specialized language

(a) **subject field:** mostly general with some agriculture/space travel terminology

(b) **terminology:** n/a

3. Volume: 368 words

4. **Complexity:** average, written by native Spanish speaker for other native Spanish speakers

5. **Origin:** newspaper article

Target content requirements [6–13]

6. Target language requirements

(a) **target language:** en-US (American English)

(b) **target terminology:** -Spelling of *chiles* as *chilis* or *chiles*, as long as they are consistent. NOT *chilies*.

-However, for the specific name *Hatch chile*, it must be spelled *chile*.

-*NASA* does not need to be written out, since it is a common acronym, but it should be in all caps every time.

-Since *la Tierra* is capitalized as a proper noun, *Earth* (the planet) should also be capitalized.

7. **Audience:** U.S. university students that speak English

8. **Purpose:** 1. To be scored and evaluated as part of MA thesis on bilingualism and translation, as such there is no specific score threshold, and 2. (implied, same as ST purpose) to inform the public about advances related to living organisms in space

9. **Content correspondence:** full segment-by segment translation, no special localization required

10. **Register:** familiar

11. **Format:** Word document

12. **Style:**

- (a) style guide: n/a/
- (b) style relevance: high degree of readability is important

13. Layout: standard Word layout as presented in source file

B. Process tasks [14–15]

14. typical tasks

- (a) **Preparation of files:** already completed by lead investigator
- (b) **Initial translation:** human translation performed by study participants
- (c) **Quality inspection steps after initial translation:** n/a

15. Additional tasks: Analysis by graders using MQM Scorecard to analyze types of errors among different groups of participants.

C. Other parameters

Project Environment [16–18]

16. Technology: Use of CAT tools is explicitly prohibited. Translation should be produced in Word and delivered through email

17. Reference materials: The only permitted reference material for this project is Linguee

18. Workplace requirements: Remote.

Stakeholder Relationships [19–21]

19. Permissions

- (a) **Legal factors:** Target texts are to only be used for analysis for MA thesis of lead investigator.
- (b) **Recognition:** Translations will not be published, although some de-identified segment examples may be used in analysis.
- (c) **Restrictions:** No translation memory files will be produced.

20. Submissions

- (a) **Qualifications:** Participants must be BYU students or recent graduates and have completed the language survey prior to translation
- (b) **Deliverables:** Word document
- (c) **Delivery method:** Email lead investigator, Calvin Westfall cjwest95@byu.edu
- (d) **Delivery deadline(s) or turnaround time:** Translation should take about an hour to complete, hopefully within one week of survey completion. Final deadline for delivery will be around March 1 in order to be included in MA thesis analysis.

21. Expectations

- (a) **Compensation:** Participants will be compensated \$15 for their translation.
- (b) **Communication:** Email lead investigator Calvin Westfall cjwest95@byu.edu

Taco Text MQM Metric

Terminology: Errors arising when a term does not conform to normative domain or organizational terminology standards or when a term in the target text is not the correct, normative equivalent of the corresponding term in the source text.

-Inconsistent use of terminology (INC TERM): Use of multiple terms for the same concept in cases where consistency is desirable. Example: The text refers to a component as the brake release lever, brake disengagement lever, manual brake release, and manual disengagement release.

-Wrong term (WT): Use of term that is not the term a domain expert would use or because it gives rise to a conceptual mismatch. Example: The word *river* in an English source text is translated into French as *rivière*. But the river in question flows into the sea, not into a lake or another river, so the correct French translation should have been *fleuve*.

Accuracy: Errors occurring when the target text does not accurately correspond to the propositional content of the source text, introduced by distorting, omitting, or adding to the message.

-Mistranslation (MT): Target content that does not accurately represent the source content. Example: A source text states that a medicine should not be administered in doses greater than 200 mg, but the translation states that it should be administered in doses greater than 200 mg (i.e., negation has been omitted).

-Over-translation (OT): The target text is inappropriately more specific than the source text. Example: The source text refers to a boy, but is translated with a word that applies only to young boys rather than the more general term.

-Under-translation (UT): The target text is inappropriately less specific than the source text. Example: The source text uses words that refer to a specific type of military officer, but the target text refers to military officers in general.

-Addition (A): Target content that includes content not present in the source. Example: A translation includes portions of another translation that were inadvertently pasted into the document.

-Omission (O): Target content that does not include content present in the source. Example: A paragraph present in the source is missing in the translation.

-Untranslated (UT): Errors occurring when a text segment that was intended for translation is left untranslated in the target content. Example: A sentence in a Japanese document translated into English is inappropriately left in Japanese.

Linguistic conventions: Errors related to the linguistic well-formedness of the text, including problems with, for instance, grammaticality and mechanical correctness.

-Grammar (GR): Error that occurs when a text string (sentence, phrase, other) in the translation violates the grammatical rules of the target language. Example: An English text reads: The man was seeing *the his wife*.

-Punctuation (PU): Punctuation incorrect for the locale or style. Example: An English text uses a semicolon where a comma should be used.

-Spelling (SP): Error occurring when the letters in a word in an alphabetic language are not arranged in the normally specified order. Example: The German word *Zustellung* is spelled *Zustetlugn*.

Style: Errors occurring in a text that can be grammatical but are inappropriate because they deviate from organizational style guides or exhibit inappropriate language style.

-Register (R): Errors occurring when a text uses a level of formality higher or lower than required by the specifications or by common language conventions. Examples: A translation refers to a court decision but does not accurately reflect the language of the decision; A target text translates text that should have been quoted from an existing text.

-Inconsistent style (INC STYLE): Style that varies inconsistently throughout the text, often due to multiple translators contributing to the target text. Example: One part of a text is written in a light and terse style while other sections are written in a more wordy style.

-Unidiomatic style (UNI STYLE): Style that is grammatical, but unnatural, often due to interference from the source language. Example: The following text appears in an English translation of a German letter: “We thanked him with heart” where “with heart” is an understandable, but non-idiomatic rendering, better stated as “heartily”.

Locale conventions: Errors occurring when the translation product violates locale-specific content or formatting requirements for data elements.

-Date format (DF): Inappropriate date format for its locale. Example: A German text has 06/07/2012 for 7 June 2012 instead of 07.06.2012.

Definitions of Severity Levels from MQM Training Materials

Each error instance is assigned a severity level. The descriptions of each severity level is included in this section.

Neutral: Issues with the severity level none are items that need to be noted for further attention or fixing but which should not count against the translation. This severity level can be conceived of as a flag for attention that does not impose a penalty. It should be used for “preferential errors” (i.e, items that are not wrong, per se, but where the reviewer or requester would like to see a different solution), systematic repeated errors that can be easily fixed (e.g., a translator has systematically used an incorrect domain term but it is a simple matter of search and replace to correct them all). Because no penalty is assessed for this level, it is not discussed in the scoring formulae.

Minor: Minor issues are issues that do not impact usability or understandability of the content. For example, if an extra space appears after a full stop, this may be considered an error, but does not render the text difficult to use or problematic (even if it should be corrected). If the typical reader/user is able to correct the error reliably and it does not impact the usability of the content, it SHOULD be classified as minor. Since minor errors do not impact the usability of the content, resolution of them is at the discretion of those responsible for the content.

Major: Major issues are issues that impact usability or understandability of the content but which do not render it unusable. For example, a misspelled word may require extra effort for the reader to understand the intended meaning, but do not make it impossible. If an error cannot be reliably corrected by the reader/user (e.g., the intended meaning is not clear) but it does not render the content unfit for purpose, it SHOULD be categorized as major. While it is generally advisable to fix major errors prior to use of the content, the inclusion of major errors may not, by themselves, render the text unfit for purpose.

Critical: Critical issues are issues that render the content unfit for use. For example, a particularly bad grammatical error that changes the meaning of the text would be considered critical. If the error prevents the reader/user from using the content as intended or if it presents incorrect information that could result in harm to the user it MUST be categorized as critical. In general, critical errors have to be fixed prior to use of the text since even a single critical error is likely to cause serious problems.

Appendix D: Translation Test Result Averages

Category	Overall n = 57	No Translation Classes n = 41	Intro to Translation Only n = 5	Current Translation Program Students n = 6	Translation Program Graduates n = 5	0-1 SPAN classes n = 14	2-6 SPAN classes n = 25	7-12 SPAN classes n = 11	13-24 SPAN classes n = 7	L1 English n = 47	L1 English / Spanish n = 4	L1 Spanish n = 6	*Outliers n = 3
# Errors	17.53	19.12	13.80	14.50	11.60	19.14	18.12	16.73	13.34	17.66	14.50	18.50	68.67
# Critical Errors	2.37	2.83	2.20	1.33	0	4.36	2.28	1.36	0.29	2.66	0.75	1.17	43.00
INC TERM	0.14	0.23	0.30	0.17	0.20	0.14	0.26	0.32	0.29	0.20	0.50	0.42	0.50
WT	0.25	0.09	0.10	0.33	0.40	0.11	0.14	0.09	0.29	0.11	0.25	0.33	0
MT	7.11	8.17	4.60	4.33	4.30	9.57	6.68	6.41	4.21	7.69	4.48	4.08	27.17
OT	0.54	0.48	0.50	0.50	1.10	0.43	0.50	0.55	0.86	0.54	0.63	0.42	0.17
UT	0.43	0.44	0.80	0.25	0.20	0.54	0.50	0.23	0.29	0.39	0.13	0.92	2.33
A	0.41	0.45	0.30	0.25	0.40	0.36	0.48	0.41	0.29	0.39	0.75	0.33	2.00
O	0.73	0.83	1.10	0.33	0	0.61	0.82	1.14	0	0.79	0.88	0.17	1.83
UNT	0.40	0.44	0.20	0.50	0.20	0.75	0.38	0.09	0.29	0.43	0	0.50	19.33
GR	3.08	3.28	2.00	3.83	1.60	3.11	3.00	3.00	3.43	2.76	2.50	6.00	5.83
PU	0.63	0.70	.20	0.33	0.90	0.43	0.64	0.68	0.93	0.46	1.50	1.42	0.50
SP	2.80	3.07	2.80	2.00	1.50	2.00	3.62	2.68	1.64	2.79	2.25	3.25	5.17
R	0.25	0.18	0.20	0.58	0.40	0.18	0.16	0.41	0.43	0.24	0.25	0.25	0.33
INC STY	0.04	0.02	0	0.08	0.10	0.04	0.04	0	0.07	0.04	0	0	0
UNI STY	0.61	0.67	0.5	0.67	0.20	0.82	0.60	0.64	0.21	0.71	0	0.25	3.17
DF	0.11	0.07	0.20	0.33	0.10	0.07	0.12	0.09	0.21	0.12	0	0.17	0.33

*Outliers' data are not included in any other category.