

Second language use at work and school: A study of errors, satisfaction, and stress appraisals

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ABSTRACT

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The main purpose of this study was to examine how miscommunications may be perceived as stressors by people who do not have the common business language at their workplace as their first language, and how this can affect job satisfaction. It also examined if these relations will be different when people perceive stressors related to speaking a second language as a challenge and/or a hindrance. I hypothesized that employees' job satisfaction is negatively related to their second language use and communication error frequency. I further hypothesized that hindrance stress appraisals and challenge stress appraisals are moderators of these negative relations, where hindrance stress appraisals strengthen the relations and challenge stress appraisals weaken the relations. A secondary purpose of this study was to test these same hypotheses in the school domain. This study was done by gathering data from a sample of undergraduate students ($N = 250$), some of whom were employed ($N = 219$ for work domain analyses and $N = 179$ for school domain analyses). In the work domain, regression results showed that communication error frequency is negatively related to job satisfaction, consistent with the hypothesis, but with no moderating effect of stress appraisals, in contrast to the hypotheses. Results also showed that the relation between second language use and job satisfaction is negative and significant when second language use challenge appraisal is low and it becomes non-significant when second language use challenge appraisals increase, which was in line with the hypothesis. In the school domain, regressions demonstrated that school satisfaction has no significant relation with second language use, in contrast to the hypothesis. However, in line with the hypotheses, the relation

between communication errors and school satisfaction is negative and significant when communication error challenge appraisal is low, and it becomes non-significant when communication challenge appraisal increases. These results suggest that it is important to find ways to make people feel that making communication errors are educational and promote their personal growth. Future research directions are discussed.

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Introduction

It is common in today's organizations for people who speak different languages to work together. Although it may be difficult, and potentially stressful, for all workers to use one common language, this may be necessary for them to communicate with each other. In this study, I aim to examine how miscommunications may be perceived as stressors by people who do not have the common business language at their workplace as their first language, and how this can affect job satisfaction. At the same time, I also aim to examine if there will be different relations when people perceive stressors related to speaking a second language as either a challenge and/or a hindrance. Additionally, a second goal of this study is to look at the same issues in a school context. The study will hopefully contribute to knowledge of managing employees from multi-lingual backgrounds, and to findings that can be applied to enable better workplace relationships and promote employees' psychological well-being.

First of all, it is necessary to define "second language." In this research, I adopted the definition for a first language used by Statistics Canada as a language learned at home in childhood and still understood, and of a second language as a language learned outside the home and/or after childhood (Statistics Canada, 2017). There are other definitions of first language and second language that emphasize the origin of a person or their family (Brown, 2008), but I chose to adopt the Statistics Canada definitions as they focus on the ability to communicate with the language and not where a person was born.

This study focuses on the satisfaction of employees who speak second languages at work. Spector (2022) described job satisfaction in terms of whether people like or dislike their jobs, and it is related to the physical and psychological well-being of people in an organization (Pyc et al., 2016; Van Katwyk et al., 2000). Caring about employees' well-being at work plays a

significant role in human resource management, not only because low job satisfaction is related to negative emotions and mental health issues, such as anxiety and depression (Van Katwyk et al., 2000; Pyc et al., 2016), but also because job satisfaction plays an important role in job performance (Spector, 1997). For these reasons, it is important that we understand the factors that influence it.

One issue that can influence satisfaction is communication at work. In this study, I am interested in the effects of communicating in a second language at work in a Canadian context. Canada welcomes hundreds of thousands immigrants (Statistics Canada, 2019) every year and many of these individuals end up in workforce. Further, it is noteworthy that Canada is a bilingual country, with both English and French as its official languages. In the French-speaking regions, such as Quebec and New Brunswick, where French is one of the main languages used in businesses in these provinces, anglophones who live in these regions may need to use French, which is their second language, at work. Similarly, francophones who live in other regions of Canada may need to use English, which is their second language, at work. This is because, in the field of business, English is widely used and people often communicate in English in doing business, especially with people from other parts of the world. For example, Henderson (2005) noted that even in countries or regions that are unilingual in a language other than English, English remains the “*lingua franca*” in the field of business. Therefore, Francophone Canadians may need to speak English in organizational settings to communicate with their colleagues, clients, suppliers, and so on. Using second languages may decrease satisfaction because lack of second language proficiency may prevent people from expressing themselves or from understanding others correctly.

In situations when people are using a second language at work, stress can occur. Research has reported that stress can be associated with quality of communications between teachers and students or between members of couples (Ledermann et al., 2010; Redmond & Bunyi, 1993). It is reasonable to suggest that the same should apply in organizations. There have been a few empirical studies on the relations between communication errors and stress in the context of language diversity in organizations, and the results were varied. For instance, Miller et al. (1989) argued that communicative behaviours are related to stress and burnout, whereas Chen et al. (2006) examined the relation between organizational communication and stress and found that the relation was not statistically significant among accountants in the USA and Taiwan, and the results were the same in both countries.

Current studies on miscommunications have not applied a clear stress framework. However, Henderson (2005) examined communication difficulties in detail in her study done with employees from multiple companies in France, who were either French or English speakers. The difficulties identified included lack of sociolinguistic competence, errors in interpreting due to cultural differences, and miscommunication between English-speaking higher-level team members with French-speaking lower-level employees. The most basic issue of miscommunication stemmed from errors in pronunciation and grammar. However, this was not reported as the main issue among the participants in the study. They thought that the major issue stemmed from a lack of sociolinguistic competence. For example, miscommunications arose when the listener and the speaker had different expectations about where the main point should be addressed during speech, which Henderson referred to as lack of intercultural context. People also had different social norms, as they considered certain phrases as impolite or polite in an opposite way to the other speaker. The participants also showed doubts if they had made

themselves clear. Due to social and cultural differences, they could not fully understand each other and they lacked a way to verify if information was clearly conveyed. In addition, people also found small talk difficult, and they were only able to discuss technical topics. Henderson stated different difficulties were faced by French speakers and English speakers. In her study, most of the management team members were English speakers, and they tended to have a false impression that their cultural distance was minimal from other speakers as both sides were communicating with English. They also needed to cut idioms and slang for transparency, however, they found it challenging to do so. As for the employees, who were mostly French speakers, they were trying to show their competence in English and were reluctant to ask for clarification, even when the discussions were not clear. In her study, Henderson reported a lot of issues faced by these speakers. However, she did not try to create a typology or to examine how these difficulties were perceived from a stress appraisal frame. Henderson's (2005) study was inspiring to me that I can analyse these problems and try to find out a rationale.

My study aims to discover how satisfied people are with their job or school when they use second languages in these domains, or make errors when communicating using second languages. I also aim to examine if stress appraisals related to using a second language or making communication errors moderate the relations between the frequencies of using second languages or making communication errors and individuals' satisfaction. Whereas many past studies assume communication errors are always a hindrance (Henderson, 2005; Brown, 2008), in my study, the framework of challenge and hindrance stress appraisals is applied.

Literature Review

Job satisfaction

Early definitions of job satisfaction date back to Vroom (1964) and to Locke (1969), who sought to establish an epistemological foundation by connecting emotions to job satisfactions. Vroom (1964) defined job satisfaction as positive feedback from the work that one is doing presently. Locke (1969) described it as an emotionally pleasant state from achieving job values. In other early studies, job satisfaction was defined to include several facets, such as pay, promotional opportunities, supervision, work, and coworkers (Porter, 1962; Smith et al., 1969), which can be measured using the Job Descriptive Index (JDI). In my study, I focused on job satisfaction as an attitudinal variable, defined in line with Spector (1997, p. 2) as “a global feeling about the job and a related constellation of attitudes about various aspects or facets of the job.” Specifically, I included the facets of work itself, co-workers, supervision, and communication because they are closely related to communication and stress appraisals.

Job satisfaction is important because it has various effects on multiple aspects of organizational behaviour, such as job performance, burnout, withdrawal behaviours, and personal well-being (Spector, 1997). Job satisfaction is believed to affect individuals’ job performance as an employee can be motivated to perform better at their job due to high levels of job satisfaction according to the job characteristics theory (Hackman & Oldham, 1976). Further, Harter et al. (2002), and Taris and Schreurs (2009), argued that the better performance of individuals that results from higher job satisfaction impacts on organizational performance. In addition, higher job satisfaction can also help reduce unwanted behaviours, such as aggression, sabotage, and theft (Spector, 2022). Low job satisfaction also causes absence and turnover (Rubenstein et al., 2018). Further, job satisfaction is related to mental health. Lower job satisfaction can increase an employee’s level of anxiety and neuroticism (Faragher et al., 2013).

There are various theories regarding factors that influence job satisfaction, starting from connecting emotion to jobs (Vroom, 1964; Locke, 1969) to developing facets of job satisfaction (Porter, 1962; Smith et al., 1969; Spector, 1997). Schleicher et al. (2011) summarized the main antecedents of job satisfaction, including employment status, job climate, job complexity, justice, job involvement, and organizational commitment. Other antecedents that are related to this study are professionalism of the employees, leader climate, organizational climate, role conflict and ambiguity, task identity, support from coworkers and supervisors, and work group climate. Among these factors, role ambiguity, support, and work group climate are closely related to communication. For example, Oetzel (2005) argued that communication is related to satisfaction through group climate. His model demonstrated that the group inputs affect communication processes, including group climate, and outcomes, including satisfaction. Ploeger-Lyons & Kelley (2017) argued that coworkers' communication was an essential function of social support, which is related to satisfaction. Cunningham and Eys (2007) also found that better intra-team communication resulted in less role ambiguity among male sports players and Brunetto et al. (2011) found that communication was related to role ambiguity in their study of 900 nurses, with participants experiencing more role ambiguity when they had lower communication satisfaction. Therefore, it seems reasonable to infer that worse communication leads to more role ambiguity, thus less job satisfaction. Empirical studies have also found that job satisfaction may be influenced by communication activities (Foehrenbach & Rosenberg, 1982; Ruch & Goodman, 1983; Pincus, 1986) and communication quality (Frone & Major, 1988; Orpen, 1997). Taken together, communication is an important factor influencing employees' satisfaction with their job.

Second Language Use and Satisfaction

In this study, second language use (SLU) refers to the frequency of a person using second languages, either written or orally. Using second languages at work can influence the communicator's satisfaction. For example, studies have found that language barriers can affect interpersonal relationships (Lagerström & Andersson, 2003), and second language use may also introduce conflicts into the working environment (Iles & Kaur Hayers, 1997). Yashima et al. (2004) found that, among second language users, their willingness to communicate was positively related to their motivation to learn a second language and their satisfaction with second language communication. Varona (1994) conducted a study to examine school satisfaction among different groups of students, and found that satisfaction of the second language group was significantly lower than the first language group. A possible explanation could be that the proficiency of their language skill influenced their capability of learning, and frustration among the second language group may have further lead to lower educational satisfaction. Related to this, Bloemen (2013) found that, among migrant workers in the Netherlands, a lack of language skills lead to low job satisfaction.

Depending on their level of fluency with their second languages, individuals may face different problems when trying to express themselves. These problems can range from explicit issues, such as pronunciation and grammar, to implicit issues such as the inability to understand a speaker's culture. According to a study by Powell (1986) on the relation between satisfaction and using a second language with Japanese students participating in an English class, he found out that while using a second language in conversations, satisfaction was related to the person's English skill. The relation between satisfaction and speakers' English level was negative. He argued that when a native speaker communicates with a second language speaker, the native speaker tends to assume the second language skill as a prerequisite. However, not every second

language speaker has perfect language skills in having a conversation, and other than language skills, there are other matters in using a second language, such as understanding of popular cultures and communication patterns, that can cause difficulties. Therefore, the ability to communicate in second languages affects communication quality in second language conversations and should further influence satisfaction.

Based on the above, I propose the following hypothesis:

H1: There is a negative (linear) relation between second language use at work and job satisfaction.

Communication Errors and Satisfaction

Naturally, when individuals communicate with others in their second language, there can be communication errors and misunderstandings. For example, there can be mispronounced words and misspellings, or there can be a failure to understand certain cultural facts, slangs and idioms, or jokes, as discussed earlier (Henderson, 2005). Explicit errors, such as mispronunciations, misspellings, and grammar mistakes may prevent individuals from understanding each other correctly, and such errors can be carried over and cause mistakes at work, thus, impacting job performance. Implicit errors, which are related to culture, can also impact interpersonal relationships at work. Second language users who have a good grasp of the language usually do not make explicit errors, but when it comes to work that involves a high level of interpersonal communication and understanding, implicit errors can obstruct communication regardless of the individual's second language proficiency.

Linguists have distinguished two levels of communication errors. For example, Austin's (1975) Speech Act theory separates the meaning of the words used in a phrase (one level) and

the intention of the speaker in uttering the phrase (another level). Speech act theory explores what words are used in discourse, what the speaker intends to say, and how other people in the communication (in his words “the interlocutors”) perceive the speech. An example from Green (2020), refers to saying “is there any salt?” which has an explicit force of asking about the presence of salt at that moment (the meaning of the words), but it could have the implicit force of asking the listener to pass the salt (the intention of the speaker). The listener can either understand it as “the speaker is asking me to pass the salt” or “the speaker wants to know if there is any salt here.” Speech act theory highlights how differences can arise between the intention of the speaker and the perceived intention by the listener. Cultural differences between second language speakers at work and their colleagues can produce the above types of misunderstandings, even when the words themselves are conveyed correctly to the listener. As such, contextualization impacts how people make sense of speech. People from different cultural or linguistic backgrounds contextualize utterances in different ways (Burns & Coffin, 2001). Hassan (2014) in his study about using cultural contextualization in language teaching provided some examples of how contextualization cues alter the sense of an utterance. For example, in English, the phrases “could you” or “would you” may be used to express imperatives even though they do not seem to be imperatives given their literal meaning of asking about a possibility. For example, a person ordering a sandwich at a restaurant might say “Could you please give me a sandwich” which has a literal meaning of “Are you capable of giving me a sandwich?” but is generally interpreted as “Give me a sandwich.” In some cultures, individuals might more directly order others by saying “I want a sandwich,” which might be considered less polite in English. In some cultures, people may get confused when hearing the phrase “Could you...” because they do not expect a question from those who are trying to make an order (and

of course, they know that the other person can make the sandwich!). All these examples show that while people are speaking second languages, misunderstandings in languages are highly possible to occur due to the different understanding of phrases in different cultures.

Communication errors at work, which refers to the frequency of occurrence of communication errors, including both implicit and explicit levels of communication errors in this study, can impact communication quality negatively. They can cause errors directly in work activities, and influence the result of the communication. As well, serious errors can lead to anxiety and frustration, thus, negatively affecting the satisfaction of the speakers. Brown (2008) found that ESL students suffer from anxiety, shame and inferiority during communications because of their lack of proficiency in English and errors made in conversations. Wendt (2017) found that international students in Sweden faced communication problems and that misunderstandings during their communications caused frustration and negatively impacted well-being. Further, even if information is passed through correctly, there can still be misunderstandings that are caused by cultural barriers. These differences can cause misunderstandings, which may influence satisfaction with people negatively.

Based on the above, I propose the following hypothesis:

H2: There is a negative (linear) relation between communication errors at work and job satisfaction.

Stress Appraisals

Traditionally, stress has been defined in terms of stimuli and how one responds to them (Kahn & Byosiere, 1992), or in terms of relations between an individual and their environment (Edwards & Potter, 1992; Lazarus, 1966). For a long time, job stress was viewed as

unidimensional (Jamal, 2014), but there are also more complex models of the construct. Further, studies on stress have yielded inconsistent results concerning the relationship between stress and job performance, with many studies finding negative relations, but not all (see discussion of this issue by Cavanaugh et al., 2000). According to Lazarus & Folkman (1987), their transactional theory emphasised appraisals of stressful events as harms, hindrances, or challenges. They argued that the degree of stress experienced as a result of external stressors depends on an individual's assessment of the situation, which involves a determination of whether internal or external demands exceed their resources, as well as their capacity to cope when demands exceed resources (Lazarus & Folkman, 1984). Based on transactional theory, Cavanaugh et al. (2000) suggested a model that was specific to the workplace based on two aspects of job stress appraisals: challenge-related stress appraisals and hindrance-related stress appraisals. Cavanaugh et al. (2000) defined challenge stress appraisals as stressors related to positive work outcomes and hindrance stress appraisals as stressors related to negative work outcomes. More specifically, according to Cavanaugh et al. (2000), hindrance stressors include office politics, role ambiguity, and role conflict, whereas challenge stressors include workload, responsibility, and work demands. Searle and Auton (2015) reviewed research that assigns certain stressors to the categories of challenge and hindrance without asking how the person who is facing the stress how they appraise those stressors (as in the approach of Cavanaugh et al., 2020), and then they took a different approach based on how the person appraised the stressors. Searle and Auton (2015) argued that people should decide whether a stressor is a challenge or hindrance, instead of having predetermined appraisals. Similarly, Li et al. (2020) criticized the model of stress that assumes workers perceive stressors similarly, and they claimed that the appraisal process should be considered in studies that are on stress and job well-being. In this study, I follow the approach

recommended by Searle and Auton (2015), and adopt the model that appraisals are not predetermined.

In terms of evidence, a meta-analysis by Podsakoff et al. (2007) found that hindrance stressors are negatively related to job satisfaction, and challenge stressors are positively related to job satisfaction. More recently, Mazzola & Disselhorst (2019) did a meta-analysis on challenge and hindrance appraisals also based on the model published by Cavanaugh et al., (2000) and found that hindrance stressors (as defined by Cavanaugh) are strongly and negatively correlated to job satisfaction. However, they did not find that challenge stressors have a significant relation with job satisfaction. In what follows, I discuss the role of challenge appraisals and hindrance appraisals as it pertains to second language use and communication errors.

Challenge Appraisal, Second Language Use, and Satisfaction. In Hypothesis 1, I argued that the relation between using second languages at work and job satisfaction is negative. However, if a person perceives using second languages as a challenge, which means they think that using a second language is considered as an educational experience that helps their personal achievement, then the person should not perceive using second languages as a factor that negatively influence job satisfaction as much. It is reasonable to suggest that second language use challenge appraisal might mitigate the negative effect of using second languages on job satisfaction. In other words, when the challenge appraisal is lower, job satisfaction should be negatively related to second language use, whereas if the challenge appraisal is higher, the negative effect should be weaker. Thus, second language use challenge appraisal should moderate the negative relation between second language use at work and job satisfaction.

Based on the above, I propose the following hypothesis:

H3: Challenge appraisals moderate the negative relation between second language use at work and job satisfaction, such that the relation becomes weaker as challenge appraisals increase.

Hindrance Appraisal, Second Language Use, and Satisfaction. Hindrance appraisals should also moderate the relation between second language use and job satisfaction. If a person perceives using second languages as a hindrance, which means that using a second language impedes the person's achievement, the hindrance will amplify the negative relation between second language use and job satisfaction. In other words, when the hindrance appraisal is low, job satisfaction should be negatively related to second language use at work, whereas when hindrance appraisal is high, the relation between second language use at work and job satisfaction could be even stronger. Thus, second language hindrance appraisal should moderate the negative relation between second language use at work and job satisfaction.

Based on the above, I propose the following hypothesis:

H4: Hindrance appraisals moderate the negative relation between second language use at work and job satisfaction, such that the relation becomes stronger as hindrance appraisals increase.

Challenge Appraisals, Communication Errors, and Satisfaction. Although making communication errors may result in lower job satisfaction, this relation can be decreased in magnitude if one does not take misunderstandings as something that prevents communication from being a positive experience. For example, a person can take an error as an opportunity to improve their second language proficiency instead of thinking of themselves as being incapable of communicating properly. When people feel that communication errors are opportunities to

learn, their attitude towards making communication errors might not be negative. In this way, challenge stress appraisals should moderate the relation between communication errors at work and job satisfaction, making the relation weaker when errors are seen as more challenging.

Based on the above, I propose the following hypothesis:

H5: Challenge appraisals moderate the negative relation between communication errors at work and job satisfaction, such that the relation becomes weaker as challenge appraisals increase.

Hindrance Appraisals, Communication Errors, and Satisfaction. For the same reasons argued above that hindrance appraisal moderates the negative relation between second language use and job satisfaction, such that the relation becomes stronger when the hindrance appraisals are high, it seems reasonable to suggest that if a person considers making communication errors as a hindrance, the relation between communication error and their job satisfaction might show a stronger negative relation than when the person does not consider communication errors as a hindrance.

Based on the above, I propose the following hypothesis:

H6: Hindrance appraisals moderate the negative relation between communication errors at work and job satisfaction, such that the relation becomes stronger as hindrance appraisals increase.

Application of the Theoretical Model to the School Domain

Although the primary aim of this study was to discover the relations between job satisfaction, second language use, and communication errors in the work domain, this study was

conducted using a sample of working university students (as described below in the method section). This provided me with favourable conditions to test my hypotheses in the school domain as well, to examine if the proposed relations vary between work and school. Based on the logic above and presuming the same relations will hold, I propose the following hypotheses for the school domain:

H7: There is a (linear) negative relation between second language use at school and school satisfaction.

H8: There is a (linear) negative relation between communication errors at school and school satisfaction.

H9: Challenge appraisals moderate the negative relation between second language use at school and school satisfaction, such that the relation becomes weaker as challenge appraisals increase.

H10: Hindrance appraisals moderate the negative relation between second language use at school and school satisfaction, such that the relation becomes stronger as hindrance appraisals increase.

H11: Challenge appraisal moderates the negative relation between communication errors at school and school satisfaction, such that the relation becomes weaker as challenge appraisals increase.

H12: Communication error hindrance appraisal moderates the negative relation between communication errors at school and school satisfaction, such that the relation strengthens as hindrance appraisals increase.

A diagram of the theoretical models in the work and school domains respectively are shown in Figures 1 and 2.

Method

Sample

Participants were recruited from the Management Department subject pool that is open to all students taking an introductory course in Organizational Behaviour at Concordia University. This course is required of all students who are completing the Bachelor of Commerce degree. The eligibility criterion for this study was that participants had to speak a second language either at work and/or at school.

Three hundred and ten individuals voluntarily signed up to participate. Among them, 30 individuals were not eligible because these individuals did not speak a second language either at school or at work. Twenty-eight respondents were deemed as careless. I filtered out the careless participants in several ways. First, I analyzed participants' answers to see if there was any patterned responding (e.g., 1,1,1,1,1,1,1,1,1) and I looked at how much time they spent on the questionnaire. The participants who spent under 6 minutes on the questionnaire were eliminated from the analyses. Two directed questions (e.g., Choose 2 here) were also included in the survey and those who answered at least one of the directed questions wrongly were investigated further to determine if their answers were careless (e.g., looking more closely at patterns and demographics). The sample with eligible participants included 250 individuals, of whom 219 were included in analyses for the work domain and 179 individuals were included in analyses for the school domain. The difference in sample size is because certain participants used a second language only at school or only at work, or they did not have a paid job in the past 12 months

making them ineligible to answer the portion of the survey on work variables. Of all 250 individuals, 102 were male (40%) and 139 were female (56%). Other respondents identified as transgender male, gender-variant or non-conforming, and 1 respondent preferred not to say their gender. The minimum age of the participants was 18 years old, and the maximum was 46 years old. The mean age was 22.46 years old (SD = 3.14).

Table 1 shows the first languages used by the participants. For the 250 valid participants, 120 of them answered that they spoke English as their first language, which is the most spoken first language. There were certain participants who chose more than one language as their first or second language. Table 2 shows the second languages used by the participants. One hundred forty-eight participants reported French as a second language and 130 participants reported English as a second language. This is normal because the survey was conducted in a English university in the French-speaking province of Quebec. It is noteworthy that 143 participants were born in Canada (57%), and the remaining 96 students were born elsewhere (38%), 10 students did not respond. The large majority of participants were full-time students (93.56%), and the remainder were part-time students (6.44%). Among the participants, the majority of them were majoring in finance (28%), accountancy (24%), or marketing (13.6%).

For the students who currently had a job, or who had been employed in the past 12 months (N = 250), 46% of them worked in a small business, 16% worked in a medium business, 29% worked in a large business, and 2% of them were self-employed. The rest of the participants did not report. Participants reported working in diverse industries, including accommodation and food services (18%), finance and insurance (15%), retail trade (14%), health care and social assistance (5%), arts, entertainment and recreation (4%), among others. The average working

hours per week of the participants who had a paid job was 18.61 hours (SD = 9.37). The average organizational tenure of the participants who had a paid job was 1.67 years (SD = 1.73).

Procedure

The data were collected through an online questionnaire that was accessed through the Management Department subject pool system. The eligibility criterion was listed on the system and interested participants signed up for the study through the subject pool's online platform. Then, they would have access to the survey website by following an embedded web link. At the start of the survey, participants were asked to give their consent. They were informed that participation in the study was confidential and voluntary, and they had the right to withdraw from the study at any time without consequences. They could only continue if they consented to participate in the study. After the survey was finished, participants were granted course credit, with the amount of credits depending on whether they used a second language at school only, at work only, or both at school and at work, as well as their carefulness when answering the questions. Participants who had a job and used a second language at work, and who answered carefully were granted one credit. Participants who did not have a job only responded to questions about the school domain and the survey was much shorter; therefore, careful respondents in that case received 0.5 credits. Careless participants had their credits reduced and their data were not included in the analyses. All the answers were downloaded from the Qualtrics server where the questionnaire was created and imported into SPSS for analysis.

Measures

Job satisfaction. Sixteen items from the Job Descriptive Index (JDI; Smith et al., 1969) pertaining to work itself, co-workers, supervision, and communication were used. Sample items

include: “I like the people I work with” and “I like doing the things I do at work.” One question regarding overall job satisfaction was also included. Participants were asked to respond on a scale from 1 (strongly disagree) to 7 (strongly agree). All the questions were shown in a random order, except the question for overall satisfaction, which was always shown as the first question.

School satisfaction. The same 16 items used to measure job satisfaction were adapted to measure school satisfaction. For example, the word “co-workers” was changed to “classmates”, and the word “supervisor” was changed to “teacher” (see Appendix). Participants were asked to respond on a scale from 1 (strongly disagree) to 7 (strongly agree). All the questions were shown in a random order, except the question for the overall satisfaction, which was always shown as the first question.

Second Language Use (SLU) at Work. SLU at work was measured with eight questions. These questions were adapted from Collins (2014) and were divided into two sections (see Appendix). Section one asked about the frequency of communicating orally with different types of people: (a) coworkers, (b) supervisors, (c) clients, (d) subordinates. Section two asked about the frequency of communicating with the same groups of people but in written format. Participants responded using a 5-point frequency scale, ranging from 0 (Never or almost never, around 1% of the time or less) to 4 (Always or almost always, around 99% of the time or more). A “not applicable” option was included in case the participant did not communicate with a particular group (e.g., they did not have clients in their job).

Second Language Use (SLU) at School. Following the same manner for measuring SLU at work, six questions for SLU at school were asked in two sections (see Appendix). In section one, participants were asked how often they communicate orally with their (a) schoolmates, (b) teachers, (c) University staff. Section two asked about the frequency of communicating with the

same groups of people but in written format. The same 1 to 5 response scale, with a not applicable option, was used as for SLU at work.

Communication Errors at Work. Communication errors at work were measured with ten questions. The content of the questions was adapted from Yus (1999) regarding two categories of communication errors (see Appendix). The categories include (a) explicit errors (e.g. errors in pronunciations) and (b) implicit errors (e.g. misunderstanding in proverbial languages.) Participants responded using a 5-point frequency scale, ranging from 1 (never or almost never) to 5 (always or almost always).

Communication Errors at School. Communication errors at school were measured with ten questions. The content of the questions was adapted from Yus (1999) regarding two categories of communication errors (see Appendix). The categories include (a) explicit errors (e.g. errors in pronunciations) and (b) implicit errors (e.g. misunderstanding in proverbial languages.) Participants responded using a 5-point frequency scale, ranging from 1 (never or almost never) to 5 (always or almost always).

Stress Appraisal. The list of the questions used to measure stress appraisals appears in the Appendix. All appraisal items used a 7-point response scale, ranging from 1 (strongly disagree) to 7 (strongly agree). Items were adapted from existing scales. To minimize repetition, different scales were used for second language use and communication errors.

SLU Challenge Stress Appraisal at Work. SLU challenge stress appraisals were measured with four questions (see appendix). The questions were adapted from Searle & Auton, (2015).

SLU Hindrance Stress Appraisal at Work. SLU hindrance stress appraisals were measured with four questions (see appendix). The questions were adapted from Searle and Auton, (2015).

Communication Error Challenge Stress Appraisal at Work. Communication error challenge stress appraisals were measured with five questions (see appendix). The questions were adapted from Sirsch (2003) and Spector (1997).

Communication Error Hindrance Stress Appraisal at Work. Communication error hindrance stress appraisals were measured with three questions (see appendix). The questions were adapted from Peacock and Wong (1990).

SLU Challenge Stress Appraisal at School. SLU challenge stress appraisals were measured with four questions (see appendix). The questions were adapted from Searle and Auton (2015).

SLU Hindrance Stress Appraisal at School. SLU hindrance stress appraisals were measured with four questions (see appendix). The questions were adapted from Searle and Auton (2015).

Communication Error Challenge Stress Appraisal at School. Communication error challenge stress appraisals were measured with five questions (see appendix). The questions were adapted from Sirsch (2003) and Spector (1997).

Communication Error Hindrance Stress Appraisal at School. Communication error hindrance stress appraisals were measured with three questions (see Appendix). The questions were adapted from Peacock and Wong (1990).

Positive and Negative Affect. At the end of the survey, participants were asked 8 questions about their emotions felt while completing the survey. Negative emotions included afraid, angry, and guilty, sad. Positive emotions included happy, self-assured, attentive, and calm. The response scale for these items ranged from 0 (not at all) to 4 (very much).

Open-ended question on second language experiences. One open-ended question was included in the last section of the survey regarding participants' experiences with using second languages at work and school. The question was "Do you have any comments that you wish to share about the experience of communicating in a second language, either at work or at school? If yes, then please type them in the space provided."

Results

Analytic Approach

Before starting the main analyses, exploratory factor analyses were done to examine if items from different variables were grouped together as expected. The factor analyses were done separately for questions in the work domain versus the school domain. Firstly, questions from each variable were tested alone to see if each variable had only one factor. For these analyses, with the exceptions of school and job satisfaction, all the variables in both domains were unidimensional based on the Eigenvalue > 1.0 criterion. For example, the school satisfaction items were split across three different factors. The factors seemed to correspond to general school satisfaction, general school dissatisfaction, and satisfaction with people at school. In order to further explore these factors and decide if they should be treated separately in the remainder of the analyses, reliability analyses were done with Cronbach's alpha. The alphas for the separate school satisfaction factors were low in two of three cases (general satisfaction $\alpha = 0.89$,

dissatisfaction $\alpha = 0.57$, and satisfaction of people $\alpha = 0.65$), whereas the Cronbach's alpha for the full set of school satisfaction questions was high ($\alpha = 0.88$). Given that the theoretical model included overall satisfaction, I decided to keep all the satisfaction items together for each of school and work domains to represent overall school satisfaction and overall job satisfaction, respectively. This is in line with theories of job satisfaction, which say that facets can be added to make a total score. The last factor analyses included all the questions for each domain (one analysis for all school items and one analysis for all work items) to see if the questions loaded as expected on 7 separate factors or if there were any unexpected findings or groupings. According to the Eigenvalue > 1.0 criterion, there were 9 factors in all the items together for school domain and 10 factors in all the items together for work domains. When the number of factors was set to 7, items grouped together mostly as expected with some exceptions, especially the satisfaction questions were not grouped as expected (see Tables 3a and 3b for factor loadings in the two 7-factor models for the work and school domains respectively). Cronbach's alphas were also calculated for all variables (see Table 4 for work variables and Table 5 for school variables), and the lowest among them was 0.64 for communication error hindrance appraisal at school. Taking all these results together, I felt the scales were valid.

Prior to conducting the hypothesis tests, I also calculated descriptive statistics and bivariate correlations. Then, H1, H2, H7 and H8 were tested through linear OLS regression in SPSS. Then, H3, H4, H5, H6, H9, H10, H11, and H12 were tested using the PROCESS macro add-on for SPSS (Hayes, 2022). These analyses were done in two-steps, with the first step including the two independent variables as predictors, and the second step adding in the moderators. For the moderation hypotheses, PROCESS Model 2, which includes both moderators at the same time, was used. The testing of each moderation hypothesis was done

twice, the first time without any covariates, and the second time with the other IV as the covariate. For example, when the moderation of the relation between communication errors and satisfaction by communication error stress appraisals was tested, SLU was added as a covariate. I chose to report the regressions with the covariates because the relation between the two independent variables was significant. When participants reported spending more time using second languages, they also tended to report making more communication mistakes, presumably due to the increased usage. Although the ratio between the SLU frequency and communication error frequency may remain the same, the participants who speak more in second languages may perceive that they make more mistakes than those who do not speak second languages as much. Results with and without the covariates were similar and differences are noted below.

Preliminary Analyses—Work Domain

Table 4 shows descriptive statistics, Cronbach's alphas, and correlations for the main variables in this study in the work domain. Of note, job satisfaction is negatively related to communication errors ($r = -0.22, p = 0.001$), but not related to SLU ($r = 0.04, p = 0.54$). Job satisfaction is also positively related to communication error challenge appraisal ($r = 0.14, p = 0.43$), communication error hindrance appraisal ($r = 0.19, p = 0.004$), and second language challenge appraisal ($r = 0.25, p < 0.001$). Also of note, communication errors are positively related to communication error challenge appraisal ($r = 0.14, p = 0.42$) and second language challenge appraisal ($r = 0.13, p = 0.47$), whereas communication errors are negatively related to communication error hindrance appraisal ($r = -0.45, p < 0.001$) and second language hindrance appraisal ($r = -0.55, p < 0.001$). As well, communication error challenge appraisals at work are positively related to SLU challenge appraisals at work ($r = 0.42, p < 0.001$) and, similarly,

communication error hindrance appraisal at work is positively related to second language hindrance appraisal at work ($r = 0.35, p < 0.001$).

Preliminary Analyses – School Domain

Table 5 shows descriptive statistics, Cronbach's alphas, and correlations for the main variables in this study in the school domain. Of note, school satisfaction is not related to either communication errors at school or SLU at school ($r = -0.62, p = 0.41$, and $r = 0.29, p = 0.70$, respectively). However, school satisfaction is positively related to both communication error challenge appraisals at school ($r = 0.34, p < 0.001$) and second language challenge appraisal at school ($r = 0.35, p < 0.001$). Communication errors at school are negatively related to communication error hindrance appraisals at school ($r = -0.65, p < 0.001$) and second language hindrance appraisal at school ($r = -0.62, p < 0.001$). As well, communication error challenge appraisal at school is positively related to SLU at school challenge appraisal ($r = 0.45, p < 0.001$), and communication error hindrance appraisal at school is positively related to SLU at school hindrance appraisal ($r = 0.48, p < 0.001$).

Main Analyses—Work Domain

H1 stated that there is a linear negative relation between SLU at work and job satisfaction. As shown in Table 6 (Model 1), the coefficient for SLU at work in predicting satisfaction was non-significant (coefficient = 0.04, $p = 0.54$). Thus, H1 was not supported.

H3 stated that the negative relation between SLU at work and job satisfaction is moderated by SLU challenge appraisal, such that the relation weakens as challenge appraisals increase. As shown in Table 6 (Model 5), the coefficient on the interaction of second language challenge appraisal and SLU at work was marginally significant (coefficient = 0.06, $p = 0.09$).

This interaction was probed using the Johnson-Neyman technique. As shown in Figure 3, the relation between SLU and job satisfaction is negative and significant when SLU challenge appraisal is less than 3.0 (on a scale from 1 to 7) and it becomes non-significant when SLU challenge appraisals are greater than 3.0. Thus, H3 was supported. Note that, when the regression was done without adding the communication error frequency at work as a covariate, the interaction was non-significant (coefficient = 0.06, $p = 0.14$).

H4 stated that the negative relation between SLU at work and job satisfaction is moderated by SLU hindrance appraisal, such that the relation strengthens as hindrance appraisals increase. As shown in Table 6 (Model 5), the coefficient on the interaction of second language hindrance appraisal and SLU at work was non-significant (coefficient = 0.01, $p = 0.76$). Thus, H4 was not supported. Of note, the coefficient on SLU hindrance appraisal as a predictor of job satisfaction was negative (coefficient = -0.11, $p = 0.03$; Model 3). However, this relation is flipped in sign from the positive (non-significant) bivariate correlation ($r = 0.11$, $p = 0.88$; See Table 4) Thus, this coefficient could be a statistical artifact and this result should be interpreted with caution.

H2 stated that there is a linear negative relation between communication errors at work and job satisfaction. As shown in Table 6 (Model 1), the coefficient for communication errors at work in predicting satisfaction was negative and significant (coefficient = -0.28, $p < 0.001$). This supports H2.

H5 stated that the negative relation between communication errors at work and job satisfaction is moderated by communication error challenge appraisal, such that the relation weakens as challenge appraisal increases. As shown in Table 6 (Model 4), the coefficient on the interaction of communication errors and communication error challenge appraisals at work was

non-significant (coefficient = -0.06, $p = 3.52$). Thus, H5 was not supported. However, of note communication error challenge appraisal was positively related to job satisfaction (coefficient = 0.14, $p = 0.04$).

H6 stated that the negative relation between communication errors at work and job satisfaction is moderated by communication error hindrance appraisal, such that the relation strengthens as hindrance appraisals increase. As shown in Table 6 (Model 4), the coefficient on the interaction of communication errors and communication error hindrance appraisal at work was non-significant (coefficient = -0.08, $p = 0.24$). Thus, H6 was not supported. However, of note communication error hindrance appraisal was positively related to job satisfaction (coefficient = 0.19, $p = 0.004$).

Main Analyses – School Domain

H7 stated there is a linear negative relation between SLU at school and school satisfaction. As shown in Table 7 (Model 1), the coefficient for SLU at school in predicting satisfaction was non-significant (coefficient = 0.03, $p = 0.70$). Thus, H7 was not supported.

H9 stated that the negative relation between SLU at school and school satisfaction is moderated by SLU challenge appraisal, such that the relation weakens as the challenge appraisal increases. As shown in Table 7 (Model 5), the coefficient on the interaction of SLU at school and second language challenge appraisal was non-significant (coefficient = -0.02, $p = 0.61$). Thus, H9 was not supported. However, of note, SLU hindrance appraisal at school was positively related to school satisfaction (coefficient = 0.35, $p < 0.001$).

H10 stated that the negative relation between SLU at school and school satisfaction is moderated by SLU hindrance appraisal, such that the relation strengthens as hindrance appraisals

increase. As shown in Table 7 (Model 5), the coefficient on the interaction of SLU and second language hindrance appraisal was non-significant (coefficient = -0.01, $p = 0.73$). Thus, H10 was not supported.

H8 stated that there is a linear negative relation between communication errors at school and school satisfaction. As shown in Table 7 (Model 1), the coefficient for communication errors at school in predicting satisfaction was non-significant (coefficient = -0.06, $p = 0.41$). Thus, H8 was not supported.

H11 stated that the negative relation between communication errors at school and school satisfaction is moderated by communication error challenge appraisal, such that the relation weakens as challenge appraisal increases. As shown in Table 7 (Model 4), the coefficient on the interaction of communication errors and communication errors challenge appraisals at school was marginally significant (coefficient = 0.11, $p = 0.08$). This interaction was probed using the Johnson-Neyman technique. As shown in Figure 4, the relation between communication errors and job satisfaction is negative and significant when communication error challenge appraisal is less than 4.0 (on a 1 to 7 scale), and it becomes non-significant when communication challenge appraisal is above 4.0. Thus, H11 was supported.

H12 stated that the negative relation between communication errors at school and school satisfaction is moderated by communication error hindrance appraisal, such that the relation strengthens as the hindrance appraisal increases. As shown in Table 7 (Model 4), the coefficient on the interaction of communication error and communication error hindrance appraisal at school was non-significant (coefficient = 0.01, $p = 0.93$). Thus, H12 was not supported.

Discussion

The main goal of this study was to examine the relation between job satisfaction and second language use at work, as well as the relation between job satisfaction and communication errors at work. Another main goal of this study was to explore whether stress appraisals of second language use and communication errors moderate the relations said above. The secondary goal of this study was to test a parallel model to the work setting in a school setting. I hypothesized negative relations of job (school) satisfaction with the frequencies of making communication errors at work (school) and of speaking a second language in the work (school) domain. I also hypothesized that challenge stress appraisals weaken these negative relations, whereas hindrance stress appraisals strengthen these relations.

Overall, some results were consistent with the hypotheses, but others were not. As predicted, I did find some moderation effects related to challenge appraisals, but these findings were not consistent across predictors or domains. There were other interesting findings, such as the positive relation between challenge appraisals and satisfaction. In this section, I will review the results and discuss the findings, as well as point out the limitations of this study, directions for future research, and practical implications.

Second Language Use, Stress Appraisals, and Job Satisfaction

Hypothesis 1 stated that the relation between second language use at work and job satisfaction is negative. In other words, the more a person communicates (written or oral) in a second language at work, the less satisfied they should be with their work. In contrast to this prediction, no significant relation between second language use at work and job satisfaction was observed overall. This result is inconsistent with past empirical findings that second language use

causes dissatisfaction (Bloemen, 2013; Varona, 1994). However, Hypothesis 3 predicted that second language challenge appraisal moderates the relation between second language use at work and job satisfaction. I expected that, if someone considers speaking second languages at work to be a positive experience, such that they think they can learn and grow from the experience, then that person might not be more dissatisfied when they speak second languages at work more frequently. Consistent with this prediction, a marginally significant interaction was found between second language use at work and second language challenge appraisal in predicting job satisfaction. More specifically, the relation between second language use at work and job satisfaction was negative when communication error challenge appraisal at work was low, and it became non-significant as communication error challenge appraisal at work increased beyond 3.0, on a scale from 1 to 7. This means that when a person strongly believes that speaking second languages is a challenge, their job satisfaction is not affected by how often they speak second languages at work. On the other hand, when an individual thinks that speaking second languages offers little opportunity for growth, then the more they speak second languages, the less satisfied they are. Some comments from the participants were in line with this result. One of the participants commented that “Learning a second language and even a third or fourth (one) is a great achievement which will help me accomplish more in life,” and another commented that “Using a second language such as English helps me to focus even more on my work than if it was in French. It is stimulating!” This interaction explained 1% of the variance in satisfaction, which is a small effect (Bosco et al., 2015; Ferguson, 2016).

Hypothesis 4 predicted that second language hindrance appraisal at work moderates the relation between second language use at work and job satisfaction. I expected that if someone considers speaking second languages to be a negative experience, such that they think the

experience generates an obstacle on their way to accomplishment and brings more difficulties in their daily interactions with others, then that person will be less satisfied the more they speak second languages at work. On the other hand, when an individual thinks that speaking second languages does not thwart their achievement or does not create difficulties, their satisfaction should be less affected by how much time they spend using second languages. In contrast to this prediction, no significant interaction was observed between second language use at work and second language hindrance appraisal at work on job satisfaction. One possible explanation for the lack of an interaction for hindrance appraisal could be that hindrance appraisal does not affect people who speak second languages at work as much as challenge appraisal does. It could also be that the language proficiency of participants in the sample who had a job that required using second languages was high enough for them not to be influenced by hindrance appraisals even when the hindrance appraisal is high. This could be related to the special situation of English and French in Quebec, as discussed in more detail later.

Communication Errors, Stress Appraisals, and Job Satisfaction

Hypothesis 2 stated that the relation between communication errors at work and job satisfaction is negative. In other words, the more a person makes communication errors at work, the less satisfied they should be with work. Consistent with this hypothesis, I found a significant negative relation between communication errors at work and job satisfaction. This is consistent with the past studies that found communication errors cause frustration and anxiety for the speaker (Brown, 2008; Wendt, 2017).

Hypothesis 5 predicted that communication error challenge appraisal moderates the relation between communication errors and job satisfaction, such that the negative relation between them gets weaker as communication errors are perceived as more challenging.

Hypothesis 6 predicted that communication error hindrance appraisal at work moderates the relation between communication errors at work and job satisfaction, such that the negative relation between them gets stronger as communication errors are perceived as more hindering. Results were not consistent with either of these predictions, as no significant interaction was observed via either communication error challenge appraisal or communication error hindrance appraisal. These results were not consistent with past research (Podsakoff et al., 2007). However, the results for challenge appraisal are consistent with the meta-analysis by Mazzola and Disselhorst (2019) that also did not find moderating effects for challenge appraisal. This result may be explained by the possibility that errors are an ongoing disturbance that interferes with communication and thus the negative feelings toward such disturbances is too strong to be affected by appraisals. It is also worth noting that communication errors at work were positively related to communication errors challenge appraisals at work ($r = 0.14, p = 0.04$), and negatively related to communication error hindrance appraisals at work ($r = -0.45, p < 0.001$). This means that as a person makes more errors, the person appraises them as more challenging and less hindering. Possibly, the reverse causation that when a person appraises communication errors as challenging, then they are willing to make more mistakes, and when they appraise them as hindering, they are less willing to make them, might also explain the lack of moderation effects of challenge and hindrance appraisals on the relation between communication errors at work and job satisfaction.

Second Language Use, Stress Appraisals, and School Satisfaction

Hypothesis 7 stated that the relation between second language use at school and school satisfaction is negative. In other words, the more a student uses a second language at school, the less satisfied they should be with their school. In contrast to this prediction, no significant

relation between SLU at school and school satisfaction was observed overall. This result is not consistent with either the hypothesis or past research (Powell, 1986; Varona, 1994; Yashima et al., 2004; Bloemen, 2013). This result might be explained by the fact that second language proficiency was not taken into consideration, because if a student has a firm grasp of a language, which can be true for most of the participants as they attend an English university, the frequency of their second language usage at school might not affect their communication quality. For example, a person who has an intermediate level of English proficiency should not experience more difficulties than one who has an advanced level of proficiency, as in most occasions, an intermediate level of English is enough. Although students who speak second languages at school at an intermediate level may not be able to understand every cultural aspect of the language, for example, idioms and slangs, this may not impede them from expressing and receiving information through alternative ways, such as paraphrasing. As a result, SLU may not impact school satisfaction. I did include a self-reported measure of second language proficiency in my questionnaire that asked participants to indicate if their proficiency was basic, intermediate or advanced, but when this second language proficiency variable was tested as a covariate, it did not change the pattern of results. However, this measure was not detailed, and it is still possible that proficiency matters because, in my study, only 17 students reported having a basic level of the second languages used at school, whereas 69 of them reported intermediate and 129 of them reported to be advanced (12% did not report.) Other than that, school satisfaction is determined by a lot of factors. For example, the facilities, the courses, and the ranking of the school can have a huge impact on a student's satisfaction and might be more impactful than communication.

Hypothesis 9 predicted that second language challenge appraisal moderates the relation between second language use and school satisfaction, such that the negative relation between

them gets weaker when SLU is perceived as more challenging. Hypothesis 10 predicted that the second language hindrance appraisal moderates the relation between second language use and school satisfaction, such that the negative relation between them gets stronger when SLU is perceived as more hindering. In contrast to these hypotheses, neither moderation was supported. These results were not consistent with past meta-analyses (Podsakoff et al., 2007; Mazzola & Disselhorst, 2019). This finding is puzzling and it may need to be looked at in future studies to see if it can be replicated and to find out the reason behind this phenomenon.

Communication Errors, Stress Appraisals, and School Satisfaction

Hypothesis 8 stated that the relation between communication errors at school and school satisfaction is negative. In other words, the more a student makes communication errors at school, the less satisfied they should be with school. In contrast to this prediction, no significant relation between communication errors at school and school satisfaction was observed overall. This is not consistent with past meta-analyses (Podsakoff et al., 2007; Mazzola & Disselhorst, 2019). However, Hypothesis 11 predicted that communication error challenge appraisal at school moderates the relation between communication errors at school and school satisfaction. I expected that if someone considers making communication errors to be a positive experience, such that they think they can learn and grow from the experience, then that person might not be dissatisfied the more that communication errors occur. Consistent with this prediction, a marginally significant interaction was found (similar to the one found in the work domain). More specifically, the relation between communication errors at school and school satisfaction is negative when communication error challenge appraisal at school is low, and it becomes non-significant when communication error challenge appraisal at school passes the mid-point of the 1 to 7 scale at 4.0. This means that when a person strongly believes that making communication

errors at school is a challenge, their satisfaction with school is not related to how often they make errors. On the other hand, when they think that making communication errors at school may not offer much opportunity for growth, then the more they make errors, the less satisfied they are. In line with this, one participant commented that: “It’s okay to make mistake because you will eventually learn form that mistake and quickly improve the language you speak. So, do not be discouraged when you make communication errors. There are people who will always be willing to help you.” Another commented that “I became very fluent in English thanks to my university experience as I was forced to speak the language. Therefore, it hasn't been easy at the beginning, but I am now comfortable speaking English and use it quite often, even with my friends with which I could easily speak other languages.” This interaction explained 2% of the variance in satisfaction, which is a small effect (Bosco et al., 2015; Ferguson, 2016).

Hypothesis 12 predicted that communication error hindrance appraisal at school moderates the relation between communication errors at school and school satisfaction. I expected that if a student considers making communication errors to be a negative experience, such that they think their space to grow is obstructed, then that person will be less satisfied the more that communication errors occur. In contrast to this prediction, no significant interaction was observed between communication errors at school and communication error hindrance appraisal at school on school satisfaction. However, communication errors at school were negatively related to communication error hindrance appraisal at school. Thus, the more a person appraises communication errors to be a hindrance, the less communication errors they tend to make. This could be because students who think that making errors is a hindrance will try to speak less to avoid making mistakes if their language level is not good enough. On the other

hand, when they do not see it as hindrance, they might make more mistakes as they are not afraid of making mistakes.

Differences between School and Work Domain

I found that second language hindrance appraisals at work are negatively related to job satisfaction, whereas second language hindrance appraisals at school are positively related to school satisfaction (Model 3 of Table 6 and Table 7). This first relation is in line with the past studies, but the second relation is odd. Usually, when people perceive speaking second languages as a hindrance, their satisfaction towards communication should be negatively affected, and this should be negatively related to overall satisfaction. One reason for the positive relation at school could be that although the second language speakers realize that speaking second languages at school might obstruct their achievement or hinder how much they can learn, they may enter the university with that information already known and digested. Thus, they may be prepared for possible issues they will be facing and may try not to let it get them down. Instead of letting their satisfaction be influenced by their second language hindrance appraisal, they might focus on other aspects which can be more important to them, such as their relationships with fellow students, teaching quality, and school facilities. Thus, their satisfaction could be associated with the school's teaching quality and other factors, instead of whether using second languages at school makes some things more difficult. Related to this, it is possible that when a student appraises using second languages to be more hindering, they may also think that the higher level complexity used in the language at school means that the teaching is more professional and this may be positive for their satisfaction.

I also observed that communication errors at work are negatively related to job satisfaction regardless of how those errors are appraised, whereas communication errors at

school were negatively related to school satisfaction only when communication error challenge appraisal at school is low. It could be that communication errors at school are generally tolerated by the second language speakers as they are, after all, at a university to improve their second language at the same time as they do their majors. Therefore, their school satisfaction may not be affected by communication errors when communication error challenge appraisals are high. However, at work, the requirement of the level of second languages is usually higher and people are generally expected to not make too many communication errors, as job performance and organizational outcomes can be negatively affected by errors. This may explain the different result that was observed for job satisfaction versus school satisfaction in relation to communication errors.

Strengths and Limitations of the Study

This study is a field study, which is a strength of the study. The variables were measured in a real setting so that the results should reflect how the relations between the variables are in real life. Another strength of this study is that it examined the same research questions in two different domains and the data from both domains were collected at the same time from largely overlapping samples. This enables comparison between the two domains and provides insights about how people's satisfaction is affected under different circumstances. There was one open-ended question at the end of the survey and participants were able to tell their opinions on using second languages or making communication errors. Their responses facilitated a better understanding of the outcomes of the quantitative results. The measures were mostly adapted from past validated measures, which helps increase the rigour of the study.

This study also has several limitations. The sample size was small and it was a convenience sample where the participants were all university students, which makes the sample

somewhat homogenous and it may not be generalizable to the population of all the people who speak second languages at work or school. Second, determining causality is also a concern because this was a cross-sectional study, and I was only able to show the correlations between the variables instead of demonstrating if there were any causal links. Due to the cross-sectional design, the study results may also have been affected by the emotions of the participants when taking the survey. If a participant was unhappy during the time of answering the questions, this may have affected their responses to all the questions. In order to counter the issue that all survey answers may be related to the emotions of the participants, questions to measure their emotions at the time of answering the survey were included as described in the method section. I repeated all my regression analyses including positive affect and negative affect as covariates, and I found that adding emotions did not change the pattern of results, with the exception of the interaction between communication errors and communication error challenge appraisal in predicting school satisfaction that became non-significant when positive and negative affect were included. Therefore, I do not think that emotions were a spurious cause of the observed relations. Third, all the measures were self-reported, and it is possible that these reports had some error. The participants were asked to indicate how often they make mistakes or speak second languages and their perceptions may not be totally accurate. For example, a person might be too confident to detect their own communication errors and report lower frequency than occurred in reality, or two people may report the same description of frequency (e.g., 50% of the time), but it might still mean different things to each person. Another issue that could lead to errors is that the two sets of questions for the school and work domains were repetitive, and it may have caused some participants to mix up the domains since the questions were alike, or they could have deliberately answered the questions in a similar way because they wanted to be consistent with themselves.

Directions for Future Research

The study design can be improved by using a larger sample size with participants from the general public. Future studies can also be done in other regions as the situation of English and French is special in Quebec. People who speak English as their first language in Quebec are required to learn French in elementary school and high school, and they have an immersive language environment surrounding them, which should help them learn the second language of French. Some comments from the participants also confirmed this. One of the participants commented that: "I work as a Valet at the Hotel Birks. In terms of communication, I am fully bilingual as learned French in school." Another participant commented that "I learned my second languages pretty early on in life so they rarely constraint me in my day-to-day life," and another said that "I went to a French high school which forced me to become better at it." Future studies could focus on regions where people learn a second language mostly in adulthood, outside of a formal school environment to see if their experiences using a second language at work are different than what I found.

More substantively, another factor that may affect relations between second language use, communication errors, and satisfaction is a person's language proficiency level. As explained previously, it is possible that language levels play an important role. If a person is not proficient with a language, their satisfaction should be lower upon using the language compared to those who are proficient. When a person only speaks a language at a basic level compared to those who speak at an intermediate (or advanced) level, their ability to express is fairly limited so that they may face more difficulties that can affect the quality of their communication. Possibly, language proficiency levels are related to appraisals or there could be a three-way interaction with language proficiency levels being the second moderator. Past research has shown that

satisfaction with communication is related to language level (Yashima et al., 2004) and future research could use better measures of language proficiency to examine these suggestions.

More in-depth analyses comparing work and school domains could also be done in future research. Although I gathered data about both domains, I did not make any statistical comparisons between the two domains. It may be intriguing to further explore relations in my data, or other studies, between how individuals appraise communication errors and second language use in work and school domains.

A final direction for future research is related to the study of Yus (1999), who proposed a more complicated theory of communication errors, that divided errors into three different types including technicalities, errors related to cultural factors, and errors related to interpersonal factors. Future research could examine if different types of communication errors are related to satisfactions in different ways and if stress appraisals moderate the relations in other ways than I observed. This could be an interesting approach to deepen the understanding of communication errors at work and school.

Practical Implications for Individuals and Organizations

This study provides an increased understanding of how speaking second languages and making communication errors are related to satisfaction at work and school. One of the most important findings of this study was that making more communication errors at work results in less job satisfaction. This effect was not observed in the school domain. This finding in the work domain corresponds with past studies that found communication errors are related to ambiguity (Burns & Coffin, 2001) and mental health (Wendt, 2017). Based on this, it would be beneficial for individuals to make fewer communication errors in working environments. Companies could

consider policies that promote working in multiple languages and bilingualism so that individuals can use their first language most of the time. There are also ways for second language users to decrease communication errors, such as asking for clarification of the information if needed, without being afraid, and communicating in writing for important issues. The general principle is to encourage direct and explicit communication to avoid misunderstandings (Yus, 1999). In this way, fewer communication errors should help to improve satisfaction, which may further help job performance.

Another important finding was that in both the domains of work and school, challenge appraisals mitigated negative relations between satisfaction and second language factors, whereas hindrance appraisals did not affect these relations. Further, challenge appraisals were also directly positively related to satisfaction both at work and at school. In light of this, it is important to find ways to make people feel that making communication errors are educational and promote their personal growth. Yeager et al. (2021) found that an intervention targeted at manipulating stress appraisals, which aimed at increasing positive views of being stressed (e.g., increasing challenge appraisals), was beneficial in reducing stress levels and enhancing psychological well-being. Related to this, it is important to recognize that appraisals are not stable traits that are unchangeable. As shown in Table 4, for instance, the correlation between communication error challenge appraisal at work and SLU challenge appraisal at work is $r = 0.42$ ($p < 0.001$). Thus, there is only a partial overlap between these two challenge appraisals, and similar correlations were found for hindrance appraisals, as well as for appraisals in the school domain. If appraisals were unchangeable, these correlations would be much higher, which was not the case. Considering this, companies could provide training interventions that target employees' (challenge) stress appraisals for speaking second languages and making

communication errors, which might help to increase their satisfaction. For example, employees should be encouraged to give positive feedback to their coworkers who speak second languages, and to be tolerant of others when they make communication errors, which can help second language users to learn from their mistakes. In this way, second-language users' satisfaction with their school or their job may not decrease as much while they make mistakes. Companies should also provide tools to make people feel challenged while using second languages. These tools can be providing free second language classes or associating certain bonuses with language learning.

Conclusion

This study examined the relation between satisfaction and second language use, and the relation between satisfaction and communication errors in both work and school domains. Results supported the expected negative relation between satisfaction and communication error frequency in the work domain, as well as the moderating effect of second language challenge appraisal on the relation between second language use at work and job satisfaction, and the moderating effect of communication error challenge appraisal on the relation between communication errors at school and school satisfaction.

This study was conducted in Quebec, a Canadian province where employees use English, French, or other languages as second languages at work. It extended from previous studies on second language communication (Henderson, 2005) and used the lens of the transactional model of stress to try to discover how using second languages and making errors affect job and school satisfaction, and how the relations may be moderated by stress appraisals. It is worth looking into these issues because the difficulties to express oneself and to understand others are real challenges that many people face when working or studying in a second language.

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Table 1. First Languages Used by the Participants

Language	N
English	120
French	76
Chinese	28
Arabic	26
Italian	12
Spanish	10
Punjabi	7
Hindustani (Hindi/Urdu)	7
Tagalog	6
Greek	5
Armenian	4
Tamil	3
Bengali	3
Russian	2
Vietnamese	2
Korean	2
Romanian	2
Portuguese	1
Somali	1
Twi	1
Hausa	1
Malagasy	1
Mauritian Creole	1
Khmer	1
Gujarati	1
Haitian Creole	1
Cameroon Patois	1
Igbo	1
Bulgarian	1

Note. N = 250. The total N in the table adds up to more than 250 because some participants reported more than one first language

Table 2. Second Languages Used by the Participants

Language	N
French	148
English	130
Spanish	35
Italian	18
Hindustani (Hindi And Urdu)	9
Chinese	6
Hebrew	5
Arabic	4
Greek	3
German	2
Vietnamese	2
Portuguese	1
Tagalog	1
Korean	1
Syriac	1
Russian	1
Japanese	1
Punjabi	1

Note. N = 250. The total N in the table adds up to more than 250 because some participants reported more than one first language

Table 3a. Results of Exploratory Factor Analyses for All Variables in the Work Domain

Pattern Matrix - Work Domain	Component						
	1	2	3	4	5	6	7
EJS_7 I like doing the things I do at work	0.929	0.033	0.047	0.138	0.002	-0.040	0.108
EJS_13 Job is enjoyable.	0.878	0.005	-0.020	0.037	0.096	0.062	-0.010
EJS_11 Pride in doing my job.	0.748	-0.024	-0.004	0.013	-0.006	-0.168	-0.117
EJS_2 Overall, I am satisfied with my job.	0.669	-0.066	-0.164	0.003	0.059	0.038	-0.239
EJS_9 Enjoy my co-workers.	0.649	-0.069	0.006	-0.093	-0.192	0.167	0.058
EJS_3 I like the people I work with.	0.609	-0.086	-0.026	-0.032	-0.128	0.014	-0.204
EJS_4R Job is meaningless.	0.510	-0.003	-0.028	0.059	-0.096	0.179	-0.263
A2W_4_R speak/listen using second languages with subordinates.	0.018	0.951	-0.015	0.023	0.044	-0.006	0.013
A2W_8_R write/read using second languages with subordinates.	-0.047	0.948	0.009	-0.028	0.046	0.015	-0.003
A2W_6_R write/read using second languages with boss.	-0.036	0.936	-0.007	0.018	0.041	-0.067	-0.030
A2W_2_R speak/listen using second languages with my boss.	0.001	0.931	0.012	0.030	0.039	0.000	0.020
A2W_5_R write/read using second languages with colleagues or peers.	-0.066	0.915	-0.037	0.080	0.004	-0.082	-0.085
A2W_1_R speak/listen using second languages with colleagues or peers.	0.007	0.912	-0.028	0.024	0.031	0.011	0.015
A2W_7_R write/read using second languages with clients or customers.	-0.067	0.841	-0.020	-0.111	-0.054	-0.063	-0.098
A2W_3_R speak/listen using second languages with clients or customers.	0.028	0.784	-0.053	-0.043	-0.114	0.086	0.099
CW_9 Confused because I use wrong word	0.080	0.041	0.745	0.105	-0.053	-0.060	0.096
F2W_6R second languages at work restricts capabilities.	-0.118	0.035	-0.734	0.010	-0.157	0.009	0.026
CW_6 Make grammar mistakes make people misunderstand	-0.065	-0.060	0.717	0.006	-0.012	-0.040	-0.036
CW_3 Fail to understand because idioms slang	-0.068	0.073	0.716	-0.003	-0.047	0.107	0.163
F2W_7R second languages at work limits how well I can do.	-0.140	0.098	-0.716	-0.074	-0.188	0.054	-0.007

F2W_5R second languages at work obstacle to my achievement.	-0.037	0.067	-0.706	-0.091	-0.240	0.147	0.140
CW_2 Ask clarify because sentences long or complicated	-0.292	-0.096	0.704	0.176	-0.047	0.063	0.027
CW_4 Misunderstand intentions understood literal meaning	-0.074	0.097	0.669	-0.050	0.031	0.020	0.120
CW_7 Misunderstand people pronounce	-0.262	-0.061	0.661	0.027	-0.183	0.037	-0.067
CW_5 Paraphrase my speech to others.	-0.017	-0.061	0.658	0.101	-0.063	-0.134	0.093
CW_1 Ask repeat because pronunciation	-0.338	-0.120	0.579	-0.076	-0.242	0.067	-0.035
F2W_8R second languages at work prevents me dealing difficulty	-0.212	0.015	-0.438	0.109	0.026	0.020	0.043
CW_8 Tasks carried out not meet expectations due to misunderstandings.	0.002	-0.006	0.358	-0.043	-0.166	-0.298	0.221
FCW_3 Communication errors at work helps me stronger.	0.025	0.026	0.079	0.819	-0.103	0.002	-0.075
FCW_4 Communication errors at work improve personal growth.	0.047	-0.094	-0.010	0.789	-0.016	-0.052	-0.113
FCW_5 Communication errors at work promotes personal accomplishment.	0.027	0.084	0.121	0.759	-0.074	0.009	0.013
FCW_1 Communication errors at work positive impact	-0.092	-0.052	0.065	0.753	-0.042	-0.007	-0.043
FCW_2 I eager tackle when Communication errors at work.	0.233	0.130	0.026	0.430	-0.242	0.123	0.048
F2W_1 second languages at work helps me learn.	0.040	-0.014	-0.013	0.144	-0.801	0.058	-0.018
F2W_3 second languages at work shows I can do something new.	0.052	0.067	0.033	0.020	-0.799	-0.101	-0.023
F2W_2 second languages at work educational experience.	-0.015	-0.154	-0.064	0.102	-0.739	-0.023	-0.228
F2W_4 second languages at work me focused on doing my job well.	0.086	0.180	-0.127	0.235	-0.500	-0.051	0.136
FCW_6R Communication errors at work thwarts personal growth.	-0.015	-0.123	-0.110	0.045	0.169	0.723	0.102
FCW_7R Communication errors at work hinders personal accomplishment.	-0.031	-0.005	-0.269	0.314	0.103	0.660	0.127
EJS_14R Assignments not fully explained.	0.094	-0.004	0.030	-0.165	-0.249	0.569	-0.025
EJS_6R Work harder because of incompetence of other	0.054	-0.033	0.018	-0.180	-0.114	0.474	-0.323
FCW_8R Communication errors at work constrains achievement of goals.	0.062	-0.137	-0.366	0.273	0.097	0.467	0.113
EJS_12R Too much arguing and fighting at work	0.099	0.189	0.163	0.006	0.129	0.428	-0.366
EJS_17 I like my supervisor.	0.183	0.032	-0.064	-0.047	-0.140	-0.096	-0.747
EJS_15 Supervisor is competent	0.117	-0.008	0.000	0.067	-0.007	0.029	-0.746
EJS_8R Goals of organization not clear	-0.043	-0.038	-0.232	0.132	0.074	-0.184	-0.686

EJS_16R Supervisor unfair	0.061	0.061	-0.044	-0.006	-0.186	0.130	-0.684
EJS_5 Communications good, organization.	0.307	0.143	0.180	0.064	-0.036	0.253	-0.451
EJS_10R What is going on with the organization??	0.115	0.038	0.165	0.079	-0.047	0.289	-0.420

Note. N = 179. R = reverse-coded item. EJS = Job satisfaction; A2W = Second language use at work; CW = Communication errors at work; FCW = Communication errors appraisals at work; F2W = Second language use appraisals at work. Values reported are factor loadings from the pattern matrix of an exploratory factor analysis set at seven factors with an oblique rotation.

Table 3b. Results of Exploratory Factor Analyses for All Variables in the School Domain

Pattern Matrix - School Domain	Component						
	1	2	3	4	5	6	7
CS7 Grammar mistakes, misunderstand me	0.879	0.024	-0.016	-0.077	0.104	0.052	0.012
CF7R Communication errors at school hinders personal accomplishment.	-0.879	-0.024	0.016	0.077	-0.104	-0.052	-0.012
CS3 Ask slow speaking.	0.866	-0.004	-0.065	-0.092	0.133	0.223	-0.004
CS1 Ask repeat because pronunciation	0.847	-0.034	-0.004	-0.122	0.009	0.033	-0.030
CS2 Ask clarify, sentences long or complicated	0.829	-0.039	0.040	-0.045	-0.005	0.036	-0.042
CS10 Confused other, I choose wrong word	0.825	0.033	0.029	-0.089	0.067	0.008	-0.071
CS4 Fail to understand, idioms or slang.	0.772	-0.048	-0.028	0.078	-0.045	0.083	0.018
CS5 Misunderstand intentions / literal meaning	0.759	-0.070	-0.036	-0.116	0.051	-0.097	0.069
CS8 Misunderstand pronounce	0.726	-0.027	-0.002	0.066	-0.088	-0.055	-0.041
CS6 Paraphrase my speech	0.688	0.098	-0.038	0.124	-0.014	-0.016	-0.134
CS9 Tasks not meet expectations, misunderstandings.	0.653	0.180	-0.026	0.086	-0.094	-0.156	-0.123
CF6R Communication errors at school thwarts personal growth.	-0.432	-0.031	0.122	-0.016	0.329	0.347	-0.227
CF8R Communication errors at school constrains achievement of goals.	-0.425	-0.078	-0.049	-0.204	0.229	0.313	0.106
SS8 Enjoy classmates and teachers.	-0.084	0.843	-0.009	0.000	0.034	0.030	-0.119
SS10 Sense of pride, schoolwork.	0.088	0.772	-0.002	0.000	-0.039	0.029	0.056
SS16 I like my teachers.	-0.026	0.756	0.050	0.150	-0.116	0.085	-0.088
SS6 I like doing the things I do at school.	0.105	0.747	-0.010	-0.082	-0.023	-0.004	0.103
SS2 I like the people I study with.	-0.210	0.740	-0.026	-0.119	0.116	-0.161	0.000
SS12 Schoolwork is enjoyable.	0.127	0.731	0.107	-0.094	-0.007	-0.055	0.179
SS1 Overall school satisfaction	-0.013	0.731	-0.067	-0.141	0.067	-0.078	-0.035
SS4 Communications good university.	0.066	0.660	0.032	0.035	-0.031	0.103	0.002
SS14 Teachers competent	0.029	0.570	-0.049	0.100	-0.076	0.177	-0.092
SS3 School work is meaningless. R	0.085	0.421	-0.038	-0.061	-0.124	0.401	0.078
A2S_5_R write/read using second languages with professors	0.020	-0.039	0.988	-0.017	-0.002	-0.027	-0.005
A2S_2_R speak/listen using second languages with professors	0.011	0.005	0.982	0.002	-0.004	0.001	-0.018

A2S_4_R write/read using second languages with fellow students	0.001	-0.009	0.972	0.002	-0.005	-0.028	0.005
A2S_6_R write/read using second languages with university staff	0.011	-0.007	0.964	-0.012	-0.015	-0.061	0.006
A2S_3_R speak/listen using second languages with university staff	-0.014	0.019	0.947	0.020	-0.027	0.020	-0.034
A2S_1_R speak/listen using second languages with fellow students	-0.094	0.016	0.873	0.045	-0.122	0.009	0.037
CF1 Communication errors positive impact on me.	0.100	-0.106	0.028	-0.883	0.093	0.106	0.062
CF5 Communication errors at school promotes personal accomplishment.	0.060	-0.051	0.040	-0.842	-0.017	0.005	0.035
CF4 Communication errors at school improve personal growth.	-0.026	0.145	-0.040	-0.818	-0.121	-0.123	-0.102
CF3 Communication errors at school helps me stronger.	0.040	0.112	-0.088	-0.788	-0.200	-0.043	-0.045
CF2 I eager tackle it when Communication errors at school.	-0.013	0.120	0.024	-0.648	-0.202	-0.023	-0.047
S2F_2 second languages at school is an educational experience.	-0.040	-0.047	0.051	-0.185	-0.780	0.116	-0.060
S2F_1 second languages at school helps me learn.	-0.119	-0.004	0.197	-0.058	-0.777	0.165	-0.018
S2F_3 second languages at school shows I can do something new.	-0.087	0.038	0.069	-0.197	-0.770	0.023	-0.147
S2F_4 second languages at school me focused on study well.	-0.098	0.168	0.158	-0.089	-0.628	0.027	0.148
SS13 Assignments not fully explained R	0.290	0.083	0.206	-0.009	0.077	0.646	0.147
SS15 Teachers unfair R	-0.078	-0.004	-0.004	-0.055	-0.251	0.628	-0.233
SS11 Too much arguing and fighting at school R	-0.260	0.071	-0.121	0.027	-0.018	0.625	-0.223
SS7 Goals of my schoolwork not clear. R	0.075	0.136	-0.037	0.021	-0.128	0.590	0.192
SS9 Do not know what is going on, university R	0.020	0.269	-0.042	-0.094	-0.056	0.414	0.236
S2F_8R second languages at school prevents dealing difficulty	-0.290	0.032	0.034	0.003	0.183	-0.067	0.576
S2F_5R second languages at school obstacle to achievement.	-0.457	0.013	0.115	0.000	0.049	0.208	0.570
S2F_7R second languages at school limits how well I can do.	-0.443	0.008	-0.097	0.096	0.019	0.176	0.548
S2F_6R second languages at school restricts capabilities.	-0.492	0.082	-0.113	0.077	-0.051	0.216	0.516
SS5 Work harder, incompetence of classmates. R	-0.202	0.194	0.086	-0.070	0.275	0.254	-0.346

Note. N = 179. R = reverse-coded item. CS = Communication errors at school; CF = Communication error appraisals at school. SS = School satisfaction. A2S = Second language use at school. S2F = Second language use appraisals at school. Values reported are factor loadings from the pattern matrix of an exploratory factor analysis set at seven factors with an oblique rotation.

Table 4. Descriptive Statistics and Bivariate Correlations for Work Domain Variables

	Mean	SD	1	2	3	4	5	6	7
1. Job Satisfaction	5.15	0.96	0.90						
2. Communication Errors	2.02	0.72	-0.22**	0.89					
3. Communication Error Challenge Appraisal	4.30	1.13	0.14*	0.14*	0.82				
4. Communication Error Hindrance Appraisal	4.45	1.28	0.19**	-0.45**	0.06	0.76			
5. Second Language Use	2.41	1.35	0.41	-0.10	0.05	-0.12	0.80		
6. Second Language Challenge Appraisal	5.13	1.17	0.25**	0.13*	0.42**	-0.11	0.14*	0.80	
7. Second Language Hindrance Appraisal	4.79	1.39	0.11	-0.55**	-0.08	0.35**	0.16*	-0.05	0.97

Notes: N=219. Cronbach's alphas are reported in bold on the diagonal. For second language use, a 5-point frequency response scale was used, ranging from 0 (Never or almost never, around 1% of the time or less) to 4 (Always or almost always, around 99% of the time or more). For communication errors, a 5-point frequency response scale was used, ranging from 1 (never or almost never) to 5= (always or almost always). For other variables, a 1-7 Likert response scale was used, ranging from 1 (Strongly disagree) to 7 (Strongly agree). * p <.05. ** p <.01.

Table 5. Descriptive Statistics and Bivariate Correlations for School Domain Variables

	Mean	SD	1	2	3	4	5	6	7
1. School Satisfaction	4.49	0.87	0.88						
2. Communication Error Frequency	1.87	0.75	-0.06	0.94					
3. Communication Error Challenge Appraisal	4.21	1.29	0.34**	0.12	0.90				
4. Communication Error Hindrance Appraisal	5.10	1.01	0.14	-0.65**	-0.08	0.64			
5. Second Language Use	2.84	1.52	0.03	-0.06	0.10	0.04	0.98		
6. Second Language Challenge Appraisal	5.06	1.24	0.35**	-0.06	0.45**	-0.07	0.34**	0.85	
7. Second Language Hindrance Appraisal	4.85	1.45	0.14	-0.62**	-0.14	0.48**	-0.05	-0.04	0.85

Notes: N=179. Cronbach's alphas are reported in bold on the diagonal. For second language use, a 5-point frequency response scale was used, ranging from 0 (Never or almost never, around 1% of the time or less) to 4 (Always or almost always, around 99% of the time or more) For communication errors, a 5-point frequency response scale was used, ranging from 1 (never or almost never) to 5= (always or almost always). For other variables, a 1-7 Likert response scale was used, ranging from 1 (Strongly disagree) to 7 (Strongly agree). * p <.05. ** p <.01.

Table 6. Linear Regression Results for Job Satisfaction as the Dependent Variable

Predictors	Dependent Variable: Job Satisfaction									
	Model 1		Model 2		Model 3		Model 4		Model 5	
	B	Std	B	Std	B	Std	B	Std	B	Std
Constant	5.74**	0.23	4.78**	0.45	5.44**	0.47	3.56**	0.94	6.26**	0.70
Communication Errors	-0.28**	0.09	-0.26*	0.10	-0.46**	0.10	0.36	0.42	-0.47**	0.10
Communication Error Challenge Appraisal			0.13*	0.05			0.25†	0.14		
Communication Error Hindrance Appraisal			0.07	0.06			0.23	0.14		
Second Language Use	0.01	0.05	0.02	0.05	-0.01	0.05	0.02	0.05	-0.37	0.25
Second Language Challenge Appraisal					0.24**	0.05			0.09	0.10
Second Language Hindrance Appraisal					-0.11*	0.51			-0.12	0.09
Interaction: Communication Error X CE Challenge Appraisal							-0.06	0.07		
Interaction: Communication Error X CE Hindrance Appraisal							-0.08	0.14		
Interaction: Second Language Use X SLU Challenge Appraisal									0.06†	0.04
Interaction: Second Language Use X SLU Hindrance Appraisal									0.01	0.03
R Square	0.05		0.08		0.15		0.09		0.16	
Change in R Square			0.03		0.10		0.01		0.01	
Model Compared for Change in R Square			Model 1		Model 1		Model 2		Model 3	

Note: N=219. CE = communication error. SLU = Second Language Use † p < 0.1. * p < 0.05. ** p < 0.01.

Table 7. Linear Regression Results: School Satisfaction as the Dependent Variable

Predictors	Dependent Variable: School Satisfaction									
	Model 1		Model 2		Model 3		Model 4		Model 5	
	B	Std	B	Std	B	Std	B	Std	B	Std
Constant	4.65**	0.23	2.73**	0.61	2.48**	0.53	3.62**	1.14	2.06*	0.93
Communication Errors	-0.72	0.09	0.01	0.11	0.09	0.11	-0.53	0.54	0.09	0.11
Communication Error Challenge Appraisal			0.25**	0.05			0.05	0.12		
Communication Error Hindrance Appraisal			0.14†	0.08			0.14	0.16		
Second Language Use	0.15	0.04	-0.01	0.04	-0.05	0.04	-0.01	0.41	0.09	0.26
Second Language Challenge Appraisal					0.28**	0.05			0.32**	0.11
Second Language Hindrance Appraisal					.123*	0.06			0.18	0.18
Interaction: Communication Errors X CE Challenge Appraisal							0.11†	0.07		
Interaction: Communication Errors X CE Hindrance Appraisal							0.01	0.01		
Interaction: Second Language Use X SLU Challenge Appraisal									-0.01	0.03
Interaction: Second Language Use X SLU Hindrance Appraisal									-0.02	0.03
R Square	0.004		0.15		0.16		0.16		0.16	
Change in R Square			0.14		0.16		0.01		0.001	
Model Compared for Change in R Square			Model 1		Model 1		Model 2		Model 3	

Note: N=179. CE = communication error. SLU = Second Language Use † p < 0.1. * p < 0.05. ** p < 0.01

Figure 1. Proposed Model for the Work Domain

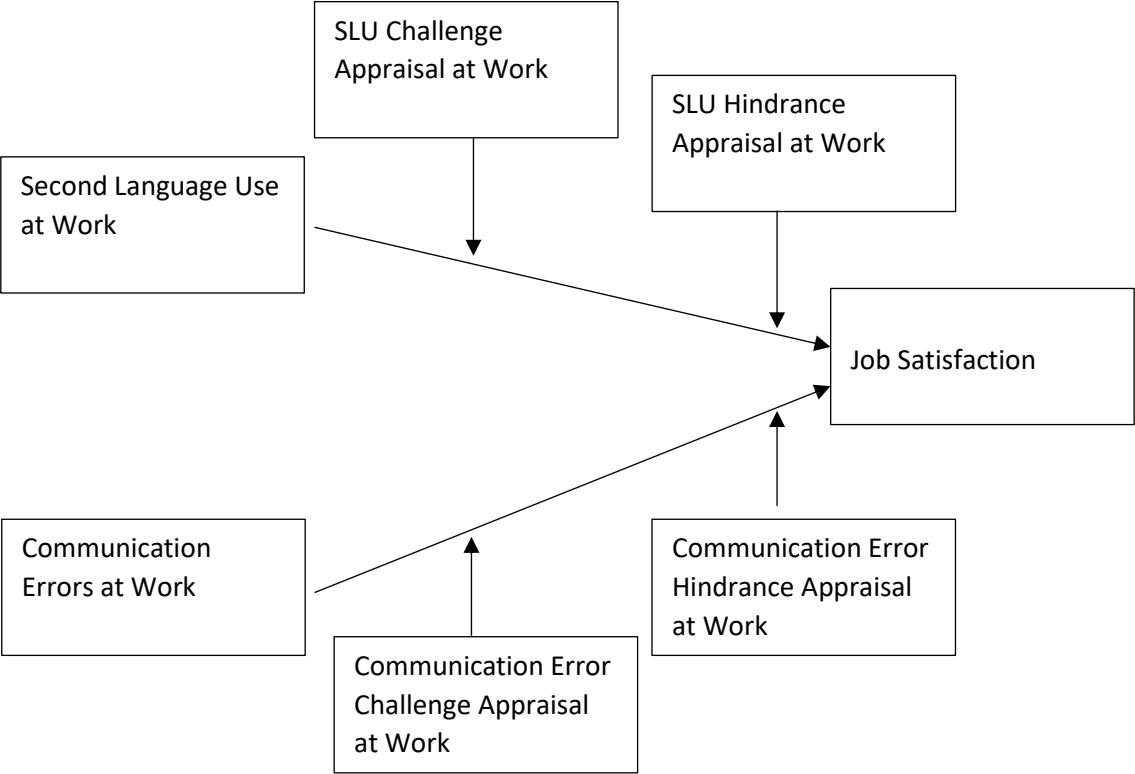


Figure 2. Proposed Model for School Domain

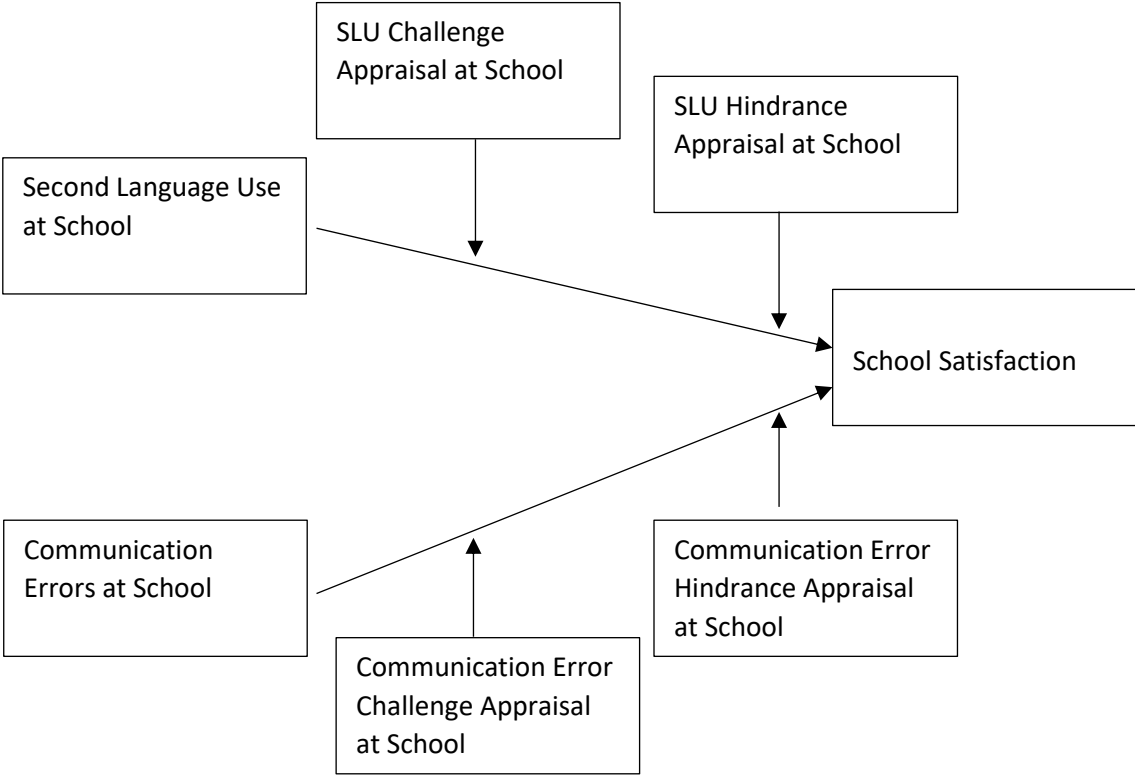
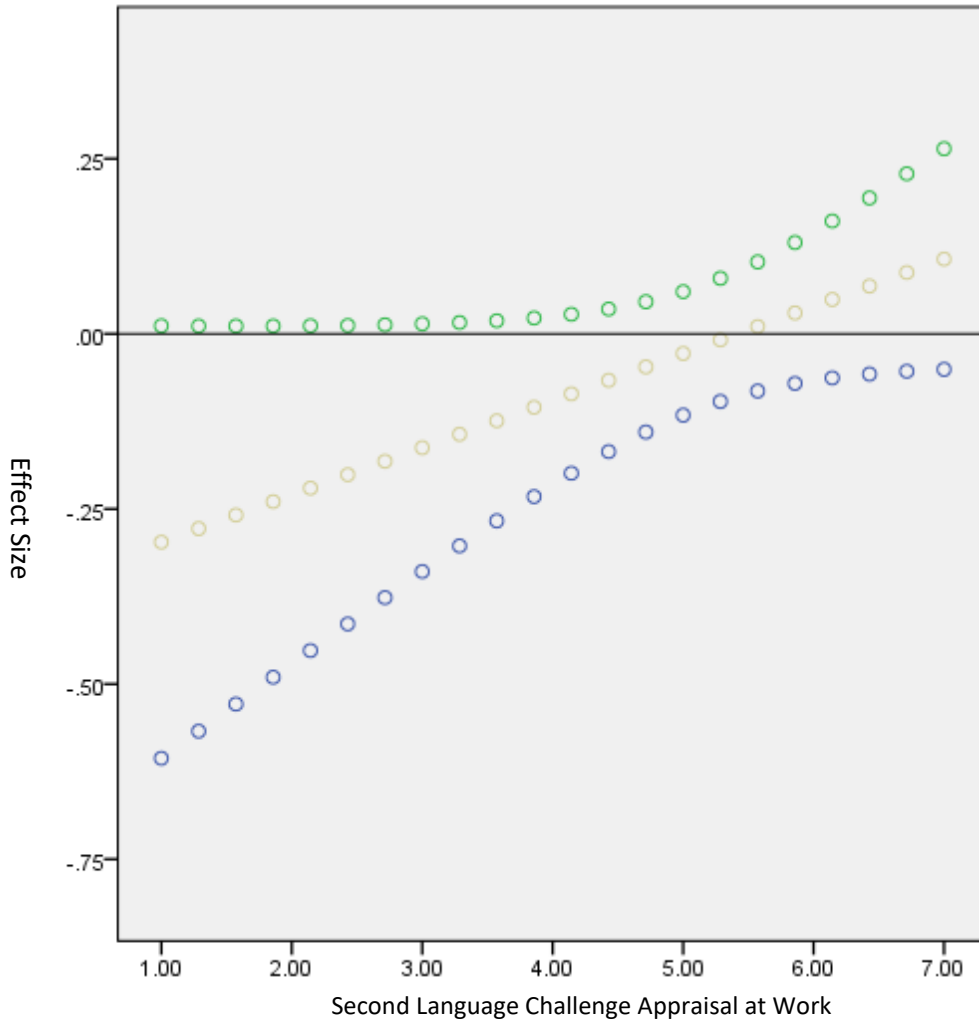
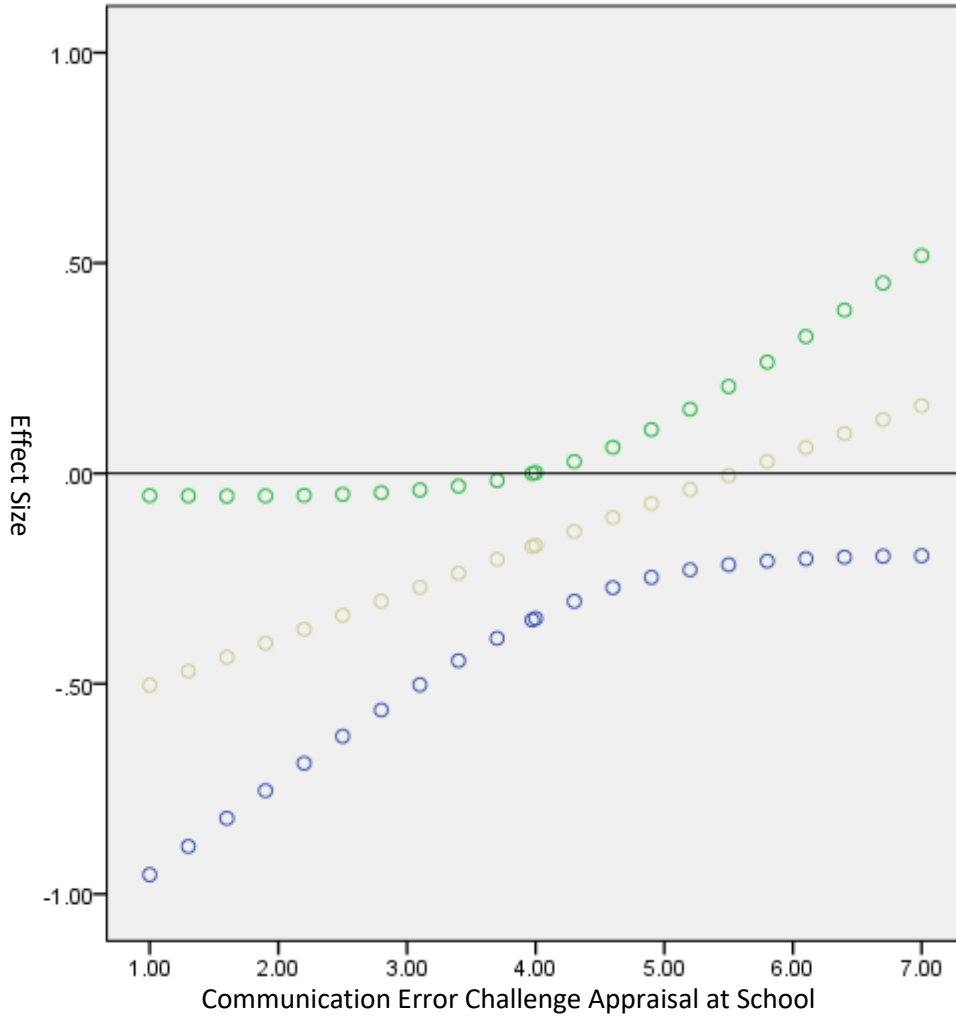


Figure 3. Plot of Effect Sizes for Relation of Second Language Use and Job Satisfaction at Different Levels of Second Language Challenge Appraisal at Work



Notes: N=219. The green dots represent the upper bound confidence interval of the effect size. The yellow dots represent the estimated effect sizes of second language use on job satisfaction. The blue dots represent the lower bound confidence interval of the effect size.

Figure 3. Plot of Effect Size for Relation of Communication Error and School Satisfaction at Different Levels of Communication Error Challenge Appraisal at School



Notes: N=179. The green dots represent the upper bound confidence interval of the effect size. The yellow dots represent the estimated effect size of communication errors on school satisfaction. The blue dots represent the lower bound confidence interval of the effect size.

Appendix

School Satisfaction Questions

1. I like the people I study with.
2. I feel my school work is meaningless.
3. Communications seem good within this university.
4. I find that I have to work harder at my schoolwork than I should because of the incompetence of my classmates.
5. I like doing the things I do at school.
6. The goals of my schoolwork are not made clear to me.
7. I enjoy my classmates and teachers.
8. I often feel that I do not know what is going on with the university.
9. I feel a sense of pride in doing my schoolwork.
10. There is too much arguing and fighting at school about trivial matters.
11. Doing my schoolwork is enjoyable.
12. Class assignments are often not fully explained to me.
13. My teachers are quite competent in doing their jobs.
14. My teachers are unfair to me.
15. I like my teachers.

Second Language Use (SLU) at Work Questions

1. I speak or listen to a second language when interacting with my colleagues or peers.
2. I speak or listen to a second language when interacting with my boss.
3. I speak or listen to a second language when interacting with my clients or customers.
4. I speak or listen to a second language when interacting with my subordinates.
5. I write or read (including email) in a second language at work to my colleagues or peers.
6. I write or read (including email) in a second language at work to my boss.
7. I write or read (including email) in a second language at work to my clients or customers.
8. I write or read (including email) in a second language at work to my subordinates.

Second Language Use (SLU) at School Questions

1. I speak or listen to a second language with my fellow students
2. I speak or listen to a second language with my professors
3. I speak or listen to a second language with the university staff
4. I write or read (including email) in a second language to my fellow students
5. I write or read (including email) in a second language to my professors
6. I write or read (including email) in a second language to the university staff

Communication Error Questions

1. I have to ask others to repeat because I do not understand the pronunciation of their words.
2. I have to ask others to clarify their speech because their sentences are too long or too complicated in structure.
3. I have to ask others to slow down when they are speaking.
4. I fail to understand others because they are using too many idioms or slang.
5. I misunderstand others' intentions even when I have understood the literal meaning of what they say.
6. I need to paraphrase my speech to others.
7. I make grammar mistakes that are serious enough to make people misunderstand me
8. I misunderstand how other people pronounce things.
9. I find that the tasks carried out by others do not meet my expectations due to misunderstandings.
10. People are confused because the words I choose to use are wrong.

School Challenge Appraisal Items on Communication Errors

1. Making communication errors at school has a positive impact on me.
2. I am eager to tackle it when I make communication errors at school.
3. Making communication errors at school helps me become stronger.
4. Making communication errors at school helps to improve my personal growth.
5. Making communication errors at school promotes my personal accomplishment.

School Hindrance Appraisal Items on Communication Errors

1. Making communication errors at school thwarts my personal growth.
2. Making communication errors at school hinders my personal accomplishment.
3. Making communication errors at school constrains my achievement of my goals.

School Challenge Appraisal Items on SLU

1. Using a second language at school helps me learn.
2. Using a second language at school is an educational experience.
3. Using a second language at school shows me that I can do something new.
4. Using a second language at school keeps me focused on study well.

School Hindrance Appraisal Items on SLU

1. Using a second language at school is an obstacle to my achievement.

2. Using a second language at school restricts my capabilities.
3. Using a second language at school limits how well I can do.
4. Using a second language at school prevents me from dealing with a difficulty with my school.