# I *ought-to* learn a language, but it's not *ideal*: Motivation in learners of German

# Ich *sollte* eine Sprache lernen, aber *ideal* ist es nicht: Motivation und Deutsch-Lerner

by

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I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

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**Abstract**

This study aids in understanding language learning motivation and its interaction with multilingualism. In light of both rising levels of multilingualism in Canada and falling enrollment in language courses, I identified language learning motivation as a key factor in understanding trends in language learning. I carried out an investigation of the influence of previously learned languages on language learning motivation using Zoltán Dörnyei's *L2 Motivational Self System* (*L2MSS*) as the theoretical foundation. Participants were students enrolled in German language courses at the University of Waterloo, Canada. Using a mixed-methods research (MMR) approach, I combined a quantitative stream using inferential statistics to examine numerical questionnaire data with a qualitative stream including both cluster analysis of questionnaire data and theme analysis of interviews with a sub-sample of participants. This MMR approach deepens understanding of motivation in the participant group. Additionally, it allows for triangulation between methods and data sources, significantly increasing reliability and generalizability of conclusions, which can be used in the development of lesson plans, course curricula, and marketing campaigns.

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**Dedication**

I dedicate this thesis to my parents, Elaine and Gary, who have always believed in and supported me in all my endeavours.

Thank you.

**Table of Contents**

**List of Figures**

**List of Tables**

## List of Abbreviations

a) SLA – Second language acquisition

b) MMR – Mixed-methods research

c) QUAL + QUAN – A study involving two roughly equal components, one qualitative and one quantitative

d) L2 – Second language, referring to any language after first language

e) L2MSS – L2 motivational self system

f) RQ – Research question

## 1. Introduction

It is evident that the way people view language learning is continuing to change. Any trend, including popular areas of study, will change with time, but the signs of decreasing interest in formal language learning suggest repercussions for the future of language departments at post-secondary universities worldwide. In 2013, *The Guardian* published an analysis of foreign language degree programs available at universities in the UK (Bawden 2013). What it found was a drastic decrease in offerings from 1998 to 2014. German programs in particular saw availability halved, from 87 to 44, and French programs faired similarly, dropping from 93 to 55 total programs. Even more alarming, the investigation found that 24 universities in the UK had eliminated all specialty language degrees since 2007 alone. This marked decline is not exclusive to the UK. Enrollment in foreign-language studies has dropped significantly for the first time in decades (ICEF Monitor 2015). According to the MLA survey referenced in the report, the total number of students enrolled in foreign-language programs at universities in the U.S.A. dropped by 6.7% between 2009 and 2013. This considerable drop in program offerings is a well-known cause for concern in language departments.

The decline is also evident in less formal media. A Change.org petition was recently started, urging both the incoming chancellor and the president at the University of California's Berkeley campus to repeal budget cuts threatening language program offerings (Change.org 2017). Student and academic blogs are also reporting on the negative trend in language programs. According to one such post, the University of Southern California dropped their German program down to a minor only due to low enrollment, a diminishing faculty, and an administration that put a low priority on language education (Chrystle 2012). Following these reports, the decline in foreign-language study, and German in particular, is difficult to ignore.

Research in language learning motivation also suggests changing trends. A large-scale longitudinal study carried out in Hungary investigated changes in secondary school learners of foreign languages. Among the many insights the study revealed was a negative trend in the overall motivation of students to learn any foreign language (Dörnyei, Csizér, & Németh 2006, p. 143). This aligns with the drop in university language program availability, with its results suggesting globalizing factors as significant contributors in declining language learning motivation.

Further evidence of change is seen in Canadian bilingualism research. Monica Heller, a prominent Canadian anthropologist, published an article outlining transformation in how people in Canada view bilingualism (Heller 2002). As she explains, being bilingual in Canada was once primarily associated with identity, specifically identification with anglophone and francophone communities. However, bilingualism has experienced a change as economic and social globalizing factors progress. She goes on to underline the new utilitarian focus on language skills, as well as the negative societal impacts that accompany it: "The economic shifts that gave rise to modernization have unfolded in ways which only serve to underscore this paradox, and to move language increasingly away from a symbol of community to the form of a commodity" (Heller 2002, p. 62). Although her focus is on the particular relationship between French and English in Canada, it can be seen as part of a global trend when examined alongside the other evidence presented above.

However, despite changes in language learning trends, multilingualism is on the rise in Canada. According to a report based on the national census data, 14.2% of Canadian residents (~4.5 million people) spoke at least two languages at home in 2006. Only five years later, the 2011 census revealed that the percentage had risen to 17.5%, representing roughly 5.8 million

people (Statistics Canada 2012). This trend is particularly noteworthy considering the decline in foreign-language programs. A closer examination of students enrolled at the University of Waterloo reveals potentially corroborating evidence of rising numbers of multilingual students. University of Waterloo student headcounts show that Canadian permanent resident and international student counts rose from 5,608 in 2008 to 9,172 in 2016, an increase of over 63% (University of Waterloo 2017). When we compare this to the overall change in enrollment of just over 33%, the trend is distinct. Although Canadian permanent resident and international students are not inherently multilingual, it is common.

When we consider that enrollment in language programs is declining, multilingualism is rising, and the way we see languages has changed, a problem becomes visible. Although language learning motivation research is on the rise, the potential impact of multilingualism on language learning motivation has yet to be thoroughly investigated. Many studies over the last decade have investigated motivation in a variety of contexts. Japan, China, Iran, and Hungary have featured in large studies, but these contexts are all traditionally monolingual (Taguchi, Magid, & Papi 2009; Ueki & Osamu 2013; Dörnyei, Csizér, & Németh 2006). Furthermore, a meta-analysis of language learning motivation research showed that almost 76% of empirical studies published between 2005 and 2014 focused on English language acquisition (Boo, Dörnyei, Ryan 2015, p. 151). Based on their findings, Boo & associates warned that:

> "[t]his trend raises concerns as to whether the theoretical basis of L2 motivation might be affected by the L2-specific bias, and also whether the geographic shift in motivation research may lead to an unintended lack of attention to forms of language learning other than the learning of English in primarily monolingual settings" (2015, p. 151).

Although they also report that overall publishing on language learning motivation is rising (ibid. p. 148), a heavy focus on English learning in primarily monolingual contexts limits generalizability, specifically in the case of better understanding language learners in Canada.

In addition to the concerns I raise above, the development of this study was influenced by an unpublished language learning motivation study I performed in Germany. In it, I investigated motivational differences in German secondary school students (Sullivan 2016), a topic to which I was brought through personal experience teaching English in a German secondary school. The school had a high number of students who spoke languages other than German, the majority being immigrants or the children of immigrants. In this context, my interest in a possible interaction between multilingualism and the motivation to learn an additional language was sparked. With that in mind, I carried out a quantitative analysis of *ideal* and *ought-to L2 self* measurements. Although the results were inconclusive, further research suggested that increasing sample size and integrating additional forms of analysis would improve the reliability of results in future studies (see Dörnyei et al. 2006). Since I was no longer located in Germany when I carried out the present study, the context was changed to Canada. However, the focus remained on investigating motivational differences based on languages spoken by participants.

Considering the high volume of foreign language speakers available to institutions like the University of Waterloo, it is essential that we improve our understanding of multilingualism and its potential influence on language learning motivation. In order to address this problem, I will present a study designed to investigate differences in language learning motivation based on mono- and multilingual status. I selected my home university, the University of Waterloo, as the context for this research. The University of Waterloo's German program is one of the largest of its kind in the country. This enabled me to make use of Boo & associates' advice and expand

outside French and English, resulting in a study that examines an under-researched language, German, in a multilingual context. This study also makes use of a mixed-methods design, which incorporates both quantitative and qualitative research methods. This was chosen to increase understanding of the research objective, as well as generalizability of any results.

What follows is an examination of student motivation to learn German as a foreign language, the focus of which is on investigating possible differences in motivation based on two sub-groups: mono- and multilinguals. I begin with a review of language learning motivation research, starting with the foundational work in the Canadian context, and leading up to the basis of this investigation, the *L2 motivational self system*. A description of the methodology follows, divided into three main sections pertaining to the three methods of analysis. I then present the results of the analysis, beginning with quantitative methods, and ending with qualitative. After discussing the results in terms of my research questions, I outline their limitations before describing the implications of the results. Finally, I suggest future research directions based on observations made during and after this investigation.

## 2. Theoretical Foundation

Investigating motivation as it pertains to second language acquisition is not a new trend. And although this investigation is based on the recent work of Zoltán Dörnyei, an understanding of how this field has developed allows us to see the benefits gained from using this framework. For over half a century, researchers from a variety of backgrounds have been interested in the complex relationship between learner motivation and the process of learning a new language, and in that time studies around the world have investigated learners who are varying greatly in age, language, and geographic location. This trend, however, can be traced back to the work of Robert Gardner and Wallace Lambert in the late 1950s when they published a short paper in the Canadian Journal of Psychology (Gardner & Lambert 1959). This initial publication is notable for many reasons, one of which being the clear connection to the field of psychology shown in the choice of journal. Secondly, this paper begins with an acknowledgement that, until that point, most research had focused on investigating achievement in a second language as a function of linguistic aptitude. This, as is widely seen today, ignored a multitude of other important factors on the language learning experience. By proposing an additional influencing factor (in this case "motivation"), Gardner and Lambert opened the door for future research to incorporate psychological, social, and environmental factors in the study of second language acquisition. As research progressed, the initial claim that second language motivation is drawn from essentially the same sources as first language motivation was eventually dropped, but interest in this new field has increased steadily until today.

**The *socio-educational method***

In the following decades Gardner and Lambert continued their investigation of motivation and began to implement social aspects into their developing theory. This work resulted in the production of the *socio-educational model*, a theory which described three major factors in the language learning experience (Gardner 1985 and Gardner 2001). These three factors were: integrativeness – representing a desire to become closer to or to identify as a member of a given language community, attitudes toward the learning situation – representing the degree to which the learner enjoys the language class and teacher, and motivation – representing the driving force in learning a language, being supported by the previous two factors (MacIntyre, Mackinnon, & Clément 2009). Considering the narrow focus of success in language acquisition research previous to Gardner & Lambert's publication in 1959, the inclusion of how learners feel about the language learning experience, as well as the language communities connected to it, was a major step in the development of motivational research. Additionally, in broadening the scope of possible influences to extend beyond the classroom itself, the *socio-educational method* opened the discourse to investigating learners as complex individuals, since laboratory tests are limited in their ability to quantify such complicated influences (MacIntyre et al., p. 44).

As research in motivation progressed, some complimentary theories for the *socio-educational model* were developed. Perhaps the most researched among these theories were *motivational orientations*, the conscious intent to learn a language for either *integrative* or *instrumental* purposes (e.g. Noels, Pelletier, Clément, & Vallerand 2003). This conceptualization came with an inherent hypothesis based on earlier research in *affect* which predicted that those learners who were *integratively* oriented would be more successful in acquiring the target L2

than those who were *instrumentally* oriented (Noels et. al, p. 36). However, early research into orientations saw conflicting findings, resulting in some scholars suggesting four new orientations to replace the original dichotomy: travel, friendship, knowledge, and instrumental (Dörnyei 2003a, p. 37). Although the concept of *motivational orientations* was originally brought to Second Language Acquisition (SLA) by Gardner and Lambert, the primary proponents of this complimentary theory were scholars like Kimberly Noels who, with a number of colleagues, published heavily on the topic in the 1990s and early 2000s, during which time other complimentary theories appeared.

The *self-determination approach* (SDA), much like early work in orientations, also consists of two possible sources for motivation, *intrinsic* and *extrinsic* (e.g. Ryan & Deci 2000). Unlike the previous line of research, however, the SDA divided each side of into smaller realms of influence to more accurately measure the source of motivation. *Intrinsic motivation* pertains to the three realms of knowledge, accomplishment, and stimulation, and refers to the general goal of personal enjoyment or satisfaction when performing an action (Ryan & Deci, p. 56). *Extrinsic motivation*, on the other hand, refers to motivational sources outside of the learner in question and pertains to the three realms of external regulation, introjected regulation, and identified regulation (Ryan & Deci, p. 60). Although these terms were inherently difficult to discuss and often had overlap when identifying sources of motivation, one clear advantage in this line of research was the existence of motivational sources on a continuum of interrelatedness. This stood in contrast to the earlier dichotomy of *integrative* or *instrumental*, allowing for a more nuanced understanding of learner motivation as a complex aspect of a complex individual.

**Questions of validity**

Although the *socio-educational method*, including *integrativeness* and the implementation of *orientations*, remained the standard model for motivation until recently, it was not unanimously accepted. Even as theories relating to motivation in second language acquisition became more widespread, some were called into question as they failed to take into account advances in psychology and pedagogy. The most prominent of these claims was made by Crookes and Schmidt (1991) and Dörnyei (1994), claiming that the dominance of *integrativeness* as a model for motivation inhibited the progress of research in the field (MacIntyre et al., p. 45). The theory was used so pervasively that competing ideas for motivation from outside SLA were not given ground to contest Gardner's ideas. This led to a stagnation in the field where, although the *socio-educational method* was almost universally used, it had very little competition driving development or refinement. Interestingly, these claims were noted by Gardner and were subsequently put to the test. An article published by Robert Gardner and Paul Tremblay (1995) found that they were able to improve their understanding of motivation by incorporating new measures into their investigation of French language acquisition. Tremblay and Gardner's confirmation of earlier criticisms, and in particular their integration of new measures, can be seen as a major turning point in motivation in SLA research, cracking open the door for further exploration outside of the established *socio-educational model*.

Aside from including additional measures and aspects into the *integrativeness* model, the calls mentioned previously also invited entirely new conceptualizations of motivation in SLA. Although Tremblay & Gardner 1995 opened the door for modifications to the established system, it still relied on the same foundation. This still begged the question of accuracy for the pervasive *socio-educational model*. A meta-analysis of 75 different studies examined the

reliability and accuracy of the five dominant factors being researched: motivation, integrativeness, attitude toward the learning situation, integrative orientation, and instrumental orientation (Dörnyei 2003; Masgoret & Gardner 2003). Contrary to the commonly held belief at the time, motivation was found to correlate more strongly with success in language acquisition than any of the other factors examined, including *integrativeness*. Moreover, the concepts of *orientation* were shown to be the least reliable in their prediction of student success in language acquisition, with the analysis identifying *instrumental orientation* as the least reliable of all components in the meta-analysis. The results of this paper suggested that a new conceptualization of motivation was necessary as motivation was identified as more significant than previously considered, and the reliability of *orientation* as a construct was called into question: "When we consider the results with respect to orientations and achievement, the results are less substantial […]" (Masgoret & Gardner 2003, p. 154).

**A return to psychology for motivation**

Keeping in mind the established need for new conceptualizations of motivation in SLA, as well as the recommendation of scholars like Crookes and Schmidt, researchers once again turned to psychology for insight. In doing so Dörnyei identified *possible selves* theory as a prime candidate to aid in redefining motivational research in SLA. First published in the journal "American Psychologist" more than a decade earlier, this work proposed conceptualizing motivation as being inherently connected to the variable of time, or more specifically the future (Markus & Nurius 1986). This theory identified three primary components used in evaluating the motivation of an individual: *ideal, feared,* and *possible selves*. The *ideal self*, pertaining to versions of the self that are appealing to a person, could be versions such as successful, rich, or

loved selves. *Feared selves*, as one might expect, are versions such as lonely, unemployed, or alcoholic selves (Markus & Nurius 1986). However, as Dörnyei notes, the third, *possible self*, originally described by Markus and Nurius, is difficult to conceptualize given the polar relationship of the other two selves, suggesting that it could be interpreted as *generic selves* or *likely selves* (Dörnyei 2009, p. 12).

The concept of *selves* in motivation, though not without criticism, was then built upon by Higgins in 1987. He further refined the idea of *possible selves* by distilling three primary categories of possible versions. The plurality of *selves* proposed by Markus and Nurius, essentially unlimited in number and form, became the *ideal*, *ought*, and *actual selves* (Higgins 1987, p. 320; Dörnyei 2009, p. 12). He goes on to define each self:

> *"(a) the **actual** self, which is your representation of the attributes that someone (yourself or another) believes you possess; (b) the **ideal** self, which is your representation of the attributes that someone (yourself or another) would like you, ideally, to possess (i.e., a representation of someone's hopes, aspirations, or wishes for you); and (c) the **ought** self, which is your representation of the attributes that someone (yourself or another) believes you should or ought to possess (i.e., a representation of someone's sense of your duty, obligations, or responsibilities)."*
> (Higgins 1987, pp. 320-321)

Although the many possibilities for future selves remain available, as in Markus and Nurius' initial proposal, Higgins creates distinct categories which facilitate the analysis of an individual's motivation based on both general trends and specific sources. Another significant development put forward by Higgins is the actual source of motivation being defined as a discrepancy between what he calls *self guides* (own perception of *ideal* and *ought selves*) and *self concept* (own perception of *actual self*) (Higgins 1987, p. 321). By implicating both the individual's

desires and fears, as well as the factor of time (through the inclusion of possible *selves* in the future) the theory is not only more robust in terms of what included in analyses, but also more intuitive thanks to the three defined *possible selves*.

**A new model emerges – the L2MSS**

Zoltán Dörnyei, who had been working on motivation in SLA since the 1990s, turned to the psychological work on motivation. Specifically, he was focusing on *possible selves theory* and *future self guides* as mentioned previously with the goal of updating the underlying *socio-educational theory* that was used so widely in the field. To accomplish this, Dörnyei identified his native country, Hungary, as a prime location for carrying out an extensive investigation of motivation and language attitudes. Considering its relative cultural isolation even after the fall of the Iron Curtain, many Hungarian learners of foreign languages had limited exposure outside of the classroom to influence their language attitudes or provide an incentive for *integrative motivation* (Dörnyei 2006, p. 4). Along with colleagues from Eötvös University in Budapest, he conducted an extensive survey of Hungarian secondary school students with over 13,000 total participants in order to statistically verify (or reject) the established motivational paradigms, as well as to test his own developing model (Dörnyei 2006, p. 23). In keeping with the comprehensive nature of their project Dörnyei, Csizér, and Németh examined the data according to seven primary components drawn from motivation in SLA research: (a) integrativeness, (b) instrumentality, (c) attitudes toward the L2 speakers / community, (d) milieu, (e) linguistic self-confidence, (f) cultural interest, (g) vitality of the L2 community (Dörnyei 2006, p. 10). Through a detailed analysis, this project provided key insight into the Hungarian context and the influence of many factors on motivation to acquire a second language. Perhaps most importantly for future

scholars, it was able to substantiate Dörnyei's new theoretical framework, the *L2 Motivational Self System* (L2MSS) (Dörnyei 2006, p. 92). A noteworthy success of this research was establishing a new conceptualization of motivational factors that did not necessitate cultural contact or associations, a particularly important advancement in a time of language globalization (Dörnyei 2006, p. 94).

The L2MSS came forward in the mid-2000s as an alternative to the prevailing theories of *integrativeness*. As eluded to previously, theories tended to discuss motivation to learn a language as the sum of one's desire to be a part of that language community and one's prospects in utilizing the language for personal benefit, with the inclusion of some other variables depending on the researcher. The *L2MSS*, however, conceptualized it as the result of competing *possible selves*, where motivation is a product of comparing these *possible selves* to one another (Dörnyei 2009, p. 18). This comparison does not need to be explicit, and according to self-discrepancy theory, is a natural method people use for determining many of the actions they take. In addition to the central role of *future self guides*, the L2MSS incorporated a third major element upon examining the data from Hungary, one representing the learning environment itself. As Dörnyei noted, studies in the early 1990s had proven the importance of factors such as curriculum and peer group in contributing to motivation, and building on these findings the environmental factors were made a key component of the new framework (Dörnyei 2009, p. 29).

In structure, the L2MSS closely resembled the *future self guides* work of Higgins. It was comprised of three primary components, the *ideal* and *ought-to L2 selves* as well as the *L2 learning experience*. As was to be expected, the *ideal* and *ought-to L2 selves* represented future projections of the self, desired or otherwise, but tied specifically pertaining to the L2 in question. Although an individual may have countless dreams associated with *future selves*, only those

relating to learning the new language (i.e., travelling to where they speak the language, reading original works) were considered in the L2MSS. The *L2 learning experience*, unlike in Higgins' work, was a special adaptation for language acquisition and represents a key difference between the original psychological framework and the final L2MSS. According to this system, the *ideal* and *ought-to L2 selves* operated on an equal level as *future self guides*, guiding a learner to- or away from possible states. The exact influence of the *L2 learning experience*, however, was less defined, perhaps owing to its complex social nature (Dörnyei 2009, p. 29).

**An overview of the L2MSS**

As previously stated the L2MSS comprises three major components which contribute to the motivation to acquire a second language. These three components refer to the dominant motivational factors associated with language learning motivation as identified by Dörnyei and his colleagues. Motivators previously identified as integrative and internalized instrumental generally correlate to the *ideal L2 self* (Dörnyei 2009, p. 29). This future self guide represents what the (in the eyes of the learner) ideal result of learning the language would be. This could be academic, like becoming proficient enough in German to read Nietzsche in original, or it might be for fun, like travelling to Germany and Austria. These two very different *ideal L2 selves* are what two different learners may want out of their new language, and as such are equally important in the respective motivations to learn that language.

The *ought-to L2 self* is conceptualized as a counterpart to the *ideal L2 self*, in that it primarily refers to meeting expectations and the influence of traditionally externalized instrumental factors (Dörnyei 2009, p. 29). An example of this category is pressure from family

members to learn a heritage language. The desire to meet this expectation is not for a personal goal, but instead to appease external sources and therefore it refers to the *ought-to L2 self*. Another classically externalized instrumental example is the pressure to have competency in both English and French to work in some fields in Canada. Due to the country's status as officially bilingual, those wishing to work in government would feel pressure to avoid the consequences of not speaking both languages (limited job prospects), represented in their *ought-to L2 self* image.

Dörnyei and his colleagues proposed the *L2 learning experience* as a way to integrate the extensive impact of factors outside of the *ideal* and *ought-to L2 self guides*. As he explains, it "concerns situated, 'executive' motives related to the immediate learning environment and experience (e.g. the impact of the teacher, the curriculum, the peer group, the experience of success)" (Dörnyei 2009, p. 29). The importance of this factor is underlined by evidence suggesting that *L2 learning experience* motivators can even be the primary driving force in learning the second language (Dörnyei 2009, p. 29). Research in the field of language attitudes has also independently suggested the importance of factors in the learning environment. A study on attitudes toward learning the French language among students in the UK found that classroom factors were among the most significant in affecting attitudes toward learning a language (Wright 1999, 206).

The efficacy of the L2MSS is, however, related to a number of conditions outlined by Dörnyei. Specifically, these conditions pertain to differentiating *future self guides*, which are inherently motivated, from *possible self images*, which are not (Dörnyei & Ryan 2015, pp. 92-93). Although these conditions are extensively described, they generally require that the *future self guides* be attainable, desired future states that differ from the current state sufficiently enough so as to require marked effort.

**Lessons from complex dynamic systems theory**

The newest trend in Dörnyei and his colleagues' motivational research is work on *complex dynamic systems theory* (CDST) and its application to SLA. This research came as a successor to the original work on the L2MSS to investigate the complex nature of language learner motivation, going further to consider the many contributing factors in language acquisition. As noted by Dörnyei and Ryan, the complex nature of motivation to learn a language has been pointed out by scholars in CDST as a weak point in the static *future self guides* of the L2MSS (Dörnyei & Ryan 2015, p. 94). According to CDST research, investigations of motivation to learn a second language would benefit from incorporating shifting goals and the interaction of learner progress over time.

Although the argument mentioned above has merit in that the influence of change over time could certainly aid in understanding learner motivation, there are noted concerns in applying research from dynamic systems to SLA. Some of the most prominent issues with incorporating CDST into SLA research were in fact pointed out by Dörnyei in an overview of psychology in SLA research before he continued on to release an edited volume on the topic. In particular he noted that dynamic systems theory, although excellent in explaining unpredictability, lacks in its ability to discovery regularities (Dörnyei 2009a, p. 111). Since the goal of this study is to investigate the possibility of group motivational tendencies, such an approach would be a poor choice. Secondly, he pointed out that modeling and conducting empirical studies using complex dynamic systems also poses a problem, mentioning difficulties in monitoring complete systems rather than individual units as a key concern (Dörnyei 2009a, p. 111).

Some areas of research related to CDST are, however, relevant to this study. Ushioda's *person in context* approach, though originally proposed along with the L2MSS, has been developed further with new research in CDST (see: Ushioda 2015). This approach emphasizes the importance of keeping individual context and experience in mind when examining motivation (Dörnyei 2009a, p. 216). As she explains, considering the context as an individual variable does not equate to evaluating motivation of a person in a unique context. This is to say that the context and person have a mutually constitutive relationship, as both person and context change in reaction to each other. As such, both need to be considered thoroughly in an examination (Ushioda 2009, p. 218). Ushioda's more recent work has elaborated on the complex nature of this research, emphasizing the complex dynamic relationship between learner and context (Dörnyei & Ryan 2015, p. 86). A recent survey of trends in second language research also concluded that understanding macro- (such as beliefs) and microlevel factors (such as personal history) are integral in a thorough investigation (King & Mackey 2016, p. 220). In learning from these suggestions, this study hopes to avoid the concerns related to CDST mentioned above by incorporating the importance of Ushioda's *person in context approach*, and thereby benefit from the advances in motivational research since the establishment of the L2MSS.

## 3. Research Questions and Design

The primary goal of this study is to shed further light on motivation in second language learning, specifically the possible impact of previously learned languages. This research focuses on investigating differences in language learning motivation as conceptualized in the L2MSS, most prominently the *ideal* and *ought-to L2 self* constructs. This is done using a combination of methods and data sources, including both questionnaires and interviews. For the purposes of this study, the terms *multilingual* and *monolingual* will be used to refer to two groups of participants. "Multilingual" will be used to refer to students who reported using more than one language for communication outside of language learning classrooms. Monolingual, then, will refer to students who reported using only one language in communication outside of language learning classes. Although this is a simplification of language competency, for the purposes of this research these categories will suffice.

Three research questions guide the analysis. One question is aimed at both the qualitative and quantitative approaches as well as one overarching question that integrates both research strands:

1. How do monolingual and multilingual learners of German compare in measurements of *ideal* and *ought-to L2 self* motivation?

2. Do previously learned languages (or language learning experiences) influence the motivation to learn another language?

3. Do multilingual university student learners of German display different motivational patterns as compared to monolingual learners? If so, how?

### 3.1. Research Design

The methods used in L2 motivational studies vary greatly. Like many fields within the sphere of the social sciences, quantitative research designs, the most common research strand, uses inferential statistics to help in understanding group differences. As Boo, Dörnyei, and Ryan found in their review of L2 motivational studies in recent years, 178 of 335 (~53%) empirical papers published between 2005 and 2014 used exclusively inferential statistics in their analysis of L2 motivation (Boo, Dörnyei, & Ryan 2015, p. 151). Although this still constitutes a majority, stark increases in those studies classified as qualitative or mixed-methods demonstrate a methodological shift. While only two qualitative studies were found in the sample in 2005, twenty-one were published in 2014 (Boo, Dörnyei, & Ryan 2015, p. 152). Similarly, the rate of mixed-methods publications jumped from four to twenty-three (Boo, Dörnyei, & Ryan 2015, p. 153). It is worth noting, however, that Boo and colleagues define a mixed-methods approach as "the addition of a qualitative component to a quantitative study" (Boo, Dörnyei, & Ryan 2015, p. 153). This conceptualization of a mixed-methods approach underlines the primacy of quantitative research streams in SLA.

King and Mackey's analysis of research trends in second language studies uncovered similar findings. In a review published in 2016, they noted that the field has undergone an expansion and subsequently "blossomed" in recent years, leading to a methodological turning point (King & Mackey 2016, p. 212). They went on to suggest that researchers would do well to carefully consider the questions that could be addressed in second language research, as well as the ways in which they could be addressed, noting that researchers displayed a greater awareness of incorporating varying perspectives (King & Mackey 2016, p. 214). Like in Boo and

colleagues' review, this is both evidence of methodological progress and a sign that more can be done.

King and Mackey also emphasize the importance of replication studies in second language research, pointing out difficulties in replicating circumstances and publishing (King & Mackey 2016, p. 212). Although this argument has merit, Ema Ushioda discusses contradictory trends within the specific field of L2 motivation study in a proposed research agenda for motivation in SLA. She notes that conceptual reproductions of purely quantitative motivation studies are particularly popular as an M.A. research topic (Ushioda 2016, p. 565). These studies are, however, limited both in generalizability and in their contribution to the field, owing to their nature as small-scale reproductions. Although conceptual reproductions do not equate to actual reproductions, they do further highlight a problem with continuing the purely quantitative study of motivation (King & Mackey 2016, p. 212).

With regard to MMR, the benefits over purely quantitative or qualitative studies are tangible. Where each research strand has its own benefits relating to the questions and answers that can be addressed, MMR allows for a research project to be both explanatory and exploratory (Riazi 2017, p. 23). This can be seen in the formulation of research questions in this study, where questions pertaining to group differences in motivation constructs and exploratory investigations of learners both contribute to investigating the overarching question of motivation. The use of MMR can also be seen as one way to help mitigate investigator bias, utilizing the detached nature of quantitative research to offset the inherently more involved qualitative research. The use of MMR designs was also endorsed by the developer of the L2MSS for improving the quality of any conclusions resulting from research in applied linguistics (Dörnyei 2007, p. 47).

Following the aforementioned call by King and Mackey to concentrate on research questions and the ways in which researchers can best address them, this makes use of the pragmatic approach to MMR. Although it seeks to incorporate both quantitative and qualitative strands on equal standing, the driving force behind the choice of this methodology is its ability to best address the questions at hand. As such, the logic underlying this project can be best understood on a continuum, using inductive knowledge in qualitative analysis, deductive logic in quantitative analysis, and abductive logic in the blending of both research streams to address the overarching research question (Riazi 2017, p. 37).

The pragmatic approach lends itself particularly well to the goal of improving research validity. Since the purpose is established as utilizing the most appropriate methods to come to the most convincing conclusions, the research design of pragmatic MMR inherently includes several strands to triangulate, findings. Triangulation, however, can occur on several different levels resulting in more or less substantiated claim of credibility: data triangulation, methodological triangulation, investigator triangulation, and theory triangulation (Riazi 2017, p. 21). In using this particular MMR design, it can be shown that this study displays not only data, but also methodological triangulation, stemming from the multiple sources and approaches to analysis (Riazi 2017, p. 60).

This study's approach makes use of multiple data sources which are then analyzed in different streams. Each stream of investigation deals with one research question, drawn from previous research in motivation in SLA. RQ1 (see above or Table 1 below) is the focus of the quantitative stream. The use of questionnaires in assessing and investigating motivation among different groups has been strongly established for decades (see Gardner & Lambert 1959, Wright 2010). Given that research in motivation has already shown the importance of factors such as

language attitudes and personal history (Dörnyei et al. 2006), investigating the influence of previously learned languages themselves is a natural extension to the current body of research. RQ2 (see above or Table 1 below) is associated with the qualitative stream of research in this study. Building on research by Ushioda in her *person in context* approach, this study aims to use a thorough understanding of the learners' contexts by examining interviews and comparing learner trends to better understand their motivations. Lastly, RQ3 (see above or Table 1 below) makes use of the analysis from both research streams to shed light on the specific impact, if any, of previously known languages on language learning motivation.

Given the strong influence of language attitudes and previous learning experiences, it is expected that monolingual and multilingual learners of German will display differing motivational patterns, though it is difficult to predict in which way. Considering the strong practical use for languages in a globalized world, however, multilingual learners may perceive less externally sourced motivation to learn a language (lower *ought-to L2 self*).

Practical examples of incorporating MMR design into motivational studies were also examined in developing a suitable design. Wesley's exploration of motivation in immersion students using Gardner's *socio-educational model* was identified as an excellent illustration of an MMR design that integrates interchanging levels of analysis (Wesley 2010). Her design acted as a model in the development of this study's method. A key difference between the methodologies in Wesley and this study, however, is the use of a conversion design. Rather than use a QUAL + QUAN structure, where two separate data sources are used in two separate analyses and subsequently compared, some qualitative data will be extracted from the questionnaire answers in addition to the quantitative data. Although similar, this change allows for the integration of both strands in the analysis stage (Riazi 2017, p. 94). A cross-sectional investigation lies at the

core of this study, supplemented with the integration of context from the qualitative stream following Ushioda's *person in context* approach. The structure of this investigation is illustrated in Table 1.

| Research Questions | Analysis Procedures | Data Sources |
|---|---|---|
| RQ 1: How do monolingual and multilingual learners of German compare in measurements of *ideal* and *ought-to L2 self* motivation? | Quantitative: Calculation of multi-item scale variables and comparison in *t*-test / Mann-Whitney U-test | Questionnaire data |
| RQ 2: Do previously learned languages (or language learning experiences) influence the motivation to learn another language? | Qualitative: Theme analysis of interviews | Student interviews |
| | Qualitative: Hierarchical cluster analysis to identify significant groupings | Questionnaire data |
| RQ 3: Do multilingual university student learners of German display different motivational patterns as compared to monolingual learners? If so, how? | Mixed-methods: Exploration of findings in each stream on investigation | Questionnaire data<br>Student interviews |

Table 1: An outline of the research questions, analysis procedures, and data sources for each stream of investigation.

### 3.2. Data

As mentioned above, both quantitative and qualitative research strands feature in this study, as well as two primary sources of data: questionnaire responses and student interviews. The context in which these data were collected is significant. The data collection for this research took place at the University of Waterloo in Waterloo, Ontario between January and April of 2017. Although Canada is an officially bilingual country (English and French), the area in which this study was conducted is traditionally anglophone. The University of Waterloo, however, is notable for the number of students who speak languages other than French or English. No official statistics of languages spoken are collected by the university, but 7,009 of 30,997 undergraduate students in 2017 were either classified as international or Canadian permanent residents (University of Waterloo 2017). Many students at the University are also dual citizens or Canadian citizens who speak a heritage language, adding to the potential number of foreign language speakers on campus.

#### Participants

The target group for recruitment into this study was students enrolled in German language courses at the University of Waterloo in the Winter 2017 semester (January to April 2017). These courses ranged from an introductory course in the German language to an advanced culture and literature course taught in German, and four of the solicited courses were taught online. The full course list is as follows: GER 101, GER 101 online, GER 102, GER 102 online, GER 201, GER 201 online, GER 202, GER 202 online, GER 212, GER 334. Two participants provided email addresses from Wilfrid Laurier University, a neighbouring institution. The researcher assumed these were students taking a course at the University of Waterloo through a partnership between the two universities.

In identifying a target group for this research, difference in age as well as geographical context was considered in comparison to my previous study of language learning motivation (Sullivan 2016). Since it is conceivable that university students in Canada may have learned additional languages under a multitude of circumstances outside of their families, this may impact language learning motivation differently than the secondary school participants in Germany. For practical reasons, only students who identified speaking a language other than English with family would be treated as *multilingual*, as virtually all students in Canadian German classrooms have taken language classes and could otherwise be classified as multilingual. Although this excludes students who learned a language in a formal setting unrelated to their family history from the *multilingual* group, I made this distinction to maintain focus on the target group identified in my previous study.

The total participant count in round one of the questionnaire was $N = 43$. Age of participants ranged from 18 to 68, with a mean of 21.65. Gender disbursement was determined to be 24 female and 19 male participants (55.8% and 44.2% of the total sample respectively), and no participants identified using an alternate gender. Languages spoken by participants were as follows (in no particular order): Mandarin, Cantonese, Polish, German, Farsi, Hindi, Punjabi, French, Russian, Ukrainian, Tagalog, Chinese*, Korean, Hungarian (*Several participants indicated "Chinese" as a language which they speak without further specification). Using the reported languages spoken, the participants were grouped into *monolinguals* ($n = 21$, 48.8% of $N$) and *multilinguals* ($n = 20$, 46.5% of $N$), with two participants who did not supply an answer. The number of courses in the German program taken in total by participants ranged from 1 to 7, with a mean of 1.86 courses. The participant fields of study were as follows (in no particular order): Computer Science, Accounting, Engineering, Mathematics, Biology, Liberal Studies,

Psychology, Business, History, German Studies, Applied Health Sciences, Undeclared Arts, Undeclared Science, Physics, Environmental Science, Music, and Classics.

Participants in this research were solicited in person by the primary researcher before a meeting of their German language course. They were given a brief description of the research design, omitting the focus on motivation, and directed to check a post on their class' LEARN (a university operated tool for class management) page for a link to the study. Students in online courses were contacted exclusively on LEARN in an announcement on the main page. This was done in accordance with ethics clearance from the University of Waterloo (ORE#21765 - Investigating Motivation to Learn German as a Foreign Language).

### 3.3. Questionnaire

I developed a questionnaire using Dörnyei's combined grouped item pool (Dörnyei & Taguchi, 2010). Items were adapted to relate to German culture as the target and refer to participant culture with no specific terms, which differs from direct references to Iranian, Chinese, and Japanese culture of participants as seen in Dörnyei & Taguchi (2010). It solicited responses to 66 Likert-scale items, as well as a variety of demographic questions regarding such things as age, languages spoken, and German language courses taken (See appendix A). No open-ended questions were used in the study, instead opting for interviews as a more appropriate source of data (Dörnyei & Taguchi 2010, p. 10).

The questionnaire was completed in three consecutive rounds over the course of the Winter 2017 semester (January to April 2017). Participants had a window of approximately two weeks to complete the questionnaire on their own time. The timeframes for collection were as follows: round one – January 16th to January 29th, round two – February 27th to March 8th, round 3 – April 15th to April 27th. The total participant count for round one of the questionnaire was 42. One participant provided answers only to the first section of questionnaire items and was therefore not included for analysis. Another participant answered '3' for nearly all responses and the researcher determined that those data were unreliable. Therefore, the working count for round one is $N = 40$. Round two had a count of $N = 20$, and round three at $N = 19$, with no need for exclusions.

The questionnaire itself was administered by contacting participants with the Google Forms platform, a free-to-use data collection service offered by Google. This service automatically collects answers and stores them in spreadsheet format using Google Docs. The initial page of the questionnaire contains information which informs participants on how the data

would be used and stored, as well as instructions on how to answer Likert-scale questions. This is followed by three sections of Likert-scale items and a fourth section for demographic information. The questionnaire was designed to take 15 to 20 minutes to complete and all instructions and items were presented in English.

These data were minimally processed, only omitting two participant answer sets from the first round as described above. I opted to include submissions with minimal missing values in order to make the most use of data at hand. Since agglomerated variables using means are the focus of the quantitative stream, some missing values were acceptable (Dörnyei & Taguchi 2010, p. 89).

The questionnaire items were used to collect data on several agglomerated variables deriving form the *L2MSS*. For this investigation, the relevant categories were: *criterion measures*, *ideal L2 self*, and *ought-to L2 self*. Criterion measures were collected to aid in determining validity and reliability of cluster analysis results by gauging commitment and interest to studying German. An example item from this category is "I would like to spend lots of time studying German." *Ideal* and *ought-to L2 self* categories pertain to the constructs from the *L2MSS*, and use items such as "I can imagine a situation where I am speaking German with native speakers" and "If I fail to learn German, I will be letting other people down" respectively. Each variable is agglomerated from 5+ items that have been drawn from previous research in examining motivational constructs (see Table 2). All items answers (in the form of 1-7 on a Likert scale) pertaining to each category (*criterion*, *ideal L2 self*, and *ought-to L2 self*) are averaged for each learner and used to understand the sources of their motivation. RQ1 investigates possible statistical differences in the measurements of these variables between monolinguals and multilinguals.

| *Ideal L2 self* | *Ought-to L2 self* | *Criterion measures* |
|---|---|---|
| • I can imagine myself writing German emails fluently.<br>• Whenever I think of my future career, I imagine myself using German.<br>• I can imagine a situation where I am speaking German with native speakers.<br>• I can imagine myself as someone who is able to speak German.<br>• I can imagine myself living abroad and having a discussion in German.<br>• Learning German is important to me because I am planning to study abroad.<br>• Studying German is important to me in order to achieve a special goal. | • If I fail to learn German, I will be letting other people down.<br>• It will have a negative impact on my life if I do not study German.<br>• My family believes that I must study German to be an educated person.<br>• I consider learning German important because the people I respect think that I should do it.<br>• I have to study German because, if I do not study it, my parents will be disappointed in me.<br>• I study German because close friends of mine think it is important.<br>• I have to study German because otherwise I think that I can't be successful in my future career.<br>• I have to study German because without passing the German course I cannot graduate.<br>• Studying German is important because I would feel ashamed if I got bad grades in the course.<br>• I have to study German because I don't want to get bad marks in university. | • If a German course was offered at the university or somewhere else in the future I would like to take it.<br>• I would like to spend lots of time studying German.<br>• If my instructor gave the class an optional assignment I would complete it.<br>• I'm working hard at learning German.<br>• I would like to study German whether it is required for my degree or not. |

Table 2: A list of the items associated with each agglomerated variable in this study.

The questionnaire was piloted on a German language and culture class in November 2016 to test for usability of the platform ($N = 8$). Analysis of results and feedback from participants in the form of emails was used to rephrase and clarify instructions. Chronbach's alpha tests were also performed on the responses to measure internal consistency, verifying the reliability of all agglomerated variables with the following results: *ideal L2 self* $\alpha = 0.77$ with 7 items, *ought-to L2 self* $\alpha = 0.79$ with 10 items. Since all values exceeded the general level of acceptability ($\alpha = 0.7$), no changes were made. Following the first round of questionnaire data collection,

Chronbach's alpha tests were performed again to confirm reliability of the constructs to be used on a larger sample size, leading to the elimination of one item from the *intercultural attitudes* variable to enhance reliability. The final results were as follows: *ideal L2 self* $\alpha = 0.70$ with 7 items, *ought-to L2 self* $\alpha = 0.78$ with 10 items. These results once again met requirements for internal consistency and data collection moved forward.

I also examined the data for normality in order to assess which types of statistical tests to use. Both *ideal* and *ought-to L2 self* measurements were tested. *Ought-to* measurements returned a *p*-value of 0.05689 on a Shapiro-Wilk normality test, which the researcher deemed was sufficiently low to justify the use of parametric independent samples *t*-tests. *Ideal L2 self* measurements, however, returned a *p*-value of 0.2396. Since this does not satisfy the requirements for normal distribution, I determined that a non-parametric Welch-test would be used for *ideal L2 self*, and that the non-parametric nature of the test would be considered in assessing the results. The choice of tests was made in accordance with previous work in the *L2MSS* (Dörnyei 2007, p. 215).

Due to the nature of this research and data collection, some limitations must be considered. Firstly, given that this research investigates motivation, it must be acknowledged that students who are generally more motivated may be more likely to participate in a research project outside of their curriculum. Since the incentives involved for participants related to increasing awareness relating to their language learning experience, fewer of the less-motivated students would be expected to take part. Although this is not optimal, the main interest of this study is not identifying amounts of motivated and unmotivated students and therefore this limitation is acceptable. As previously mentioned, the participants in rounds two and three were much lower than in round one. This limits the generalizability of results from the smaller groups

and may have further concentrated motivated students, since the most motivated students would be expected to continue participation more often. Owing to the lower number of participants in later rounds, the second and third rounds of interview data will not be used in this investigation.

### 3.4. Interviews

I conducted semi-structured interviews, drawing from a list of guiding questions (see appendix C) which I used to identify topics that interview participants resonated with. I formulated these questions after examining the sources of motivation discussed in the L2MSS, the *socio-educational method*, and the motivational theories discussed previously. The first question was aimed at the language learning experience, specifically what the participants thought about the German class they were taking. Although wording differed in each case, each participant was asked about what pressures they felt in terms of language learning. This is meant to triangulate with the *ought-to L2 self* in the quantitative stream of study. Questions about plans and goals with German, as well as a discussion of what they like about learning German, were used to triangulate with *ideal L2 self* in the qualitative stream. I also asked why each participant was learning German to see what factors they identify as particularly important in their motivation. The participants were encouraged to elaborate on their own thoughts and to discuss topics that they saw as important in their language learning experience. This resulted in the interviews drifting away from direct motivational factors. This was, however, done intentionally to consider factors that may be specific to each learner as recommended by the *person in context* approach (Ushioda 2009, p. 218). RQ2 uses the answers to these questions to explore the influence of previously learned languages and learning experiences on the motivation to learn German. The opportunity for participant-directed discussions was a strong influencing factor in designing the interviews. This approach was the best method for obtaining the quality of information desired while remaining targeted on the language learning experience of the participant.

The participants were selected after the second round of the questionnaire based on their answers and linguistic backgrounds. I contacted participants who displayed differing motivational patterns, resulting in a small but varied group of interview participants ($N = 3$). The interviews for this research took place in early April 2017. Although they were estimated to be 20 minutes in length, interviews ranged from approximately 32 minutes to 40 minutes. Since participants were encouraged to discuss anything they saw as important in their language learning experience, this resulted in longer interviews. These interviews were audio recorded, and I took field notes on relevant themes as the discussions progressed. Each participant influenced the direction of their interview and therefore topics covered in each case varied. The core questions, however, did aid in keeping the focus of the interviews relevant to this research and some common themes discussed were experiences learning languages in the past, future plans with German, and perceived pressures with language learning.

## 4. Analysis

This study's analysis makes use of two primary strains, one quantitative and one qualitative in nature. It begins with the quantitative examination of questionnaire data. This focuses on differences among mean variable levels in *ideal* and *ought-to L2 self* motivation. A qualitative examination of questionnaire data using cluster analysis is then followed by a thematic analysis of interviews, with special attention paid to internal and external motivational factors. All statistical tests, including independent samples *t*-tests, Welch *t*-tests, and cluster analyses are performed using R, an open source statistical computing program freely available for download (The R Project 2017).

### 4.1. Quantitative Analysis

The quantitative stream of investigation for this study involved examining questionnaire answers for differences, specifically between the subgroups of *multilingual* ($n$ = 19) and *monolingual* ($n$ = 21) participants from the total participant group ($N$ = 40). This examination focuses on investigating *ideal* and *ought-to L2 self* values and does not include any other variables.

As mentioned previously in this study, the *ideal* and *ought-to L2 self* measurements differ in their normality, and as such are appropriate for different statistical tests. For this reason, I ran a non-parametric Welch-test to compare measures of *ideal L2 self* between *monolinguals* and *multilinguals*, with the goal of investigating possible significant differences between the two groups.

```
        Welch Two Sample t-test

data:  mydata$ideal by mydata$lingual
t = -0.74872, df = 37.123, p-value = 0.4587
alternative hypothesis: true difference in means is not equal to 0
95 percent confidence interval:
 -0.7045604  0.3243241
sample estimates:
 mean in group mono mean in group multi
          4.306122            4.496241
```

Figure 1: Welch-test result comparing *monolinguals* and *multilinguals* based on *ideal L2 self* measurements.

As seen in Figure 1, this test returned a $p$-value of 0.4587 and a $t$-value of -0.74872. I also calculated Cohen's $d$, determining it to be $d$ = 0.237575. Generally speaking, $d$-values higher than 0.2, 0.5, and 0.8 display small, moderate, and large effect sizes respectively. However, since the $p$-value is too great to be considered statistically significant, the null hypothesis is not

rejected and the two groups are seen to display no significant differences in mean *ideal L2 self* measurements. For this reason, the effect size is considered irrelevant. Furthermore, the two overall group means are shown to be very close, differing by less than 0.2 on a 1 to 6 scale. This further suggests a lack of discernable difference between the two groups.

Since I determined that the data were sufficiently normal, *ought-to L2 self* measurements were analyzed using a parametric independent samples *t*-test. This test is more informative, as it requires more normally distributed data to be carried out and is therefore more generalizable.

```
        Two Sample t-test

data:  mydata$ought by mydata$lingual
t = 1.7331, df = 38, p-value = 0.09119
alternative hypothesis: true difference in means is not equal to 0
95 percent confidence interval:
 -0.06662064  0.85932462
sample estimates:
 mean in group mono mean in group multi
          2.206878           1.810526
```

Figure 2: Independent samples *t*-test result comparing *monolinguals* and *multilinguals* based on *ought-to L2 self* measurements.

Here, the independent samples *t*-test returned a *t*-value of 1.7331 and a *p*-value of 0.09119. This *p*-value is not lower than 0.05 and therefore does not satisfy the standard 95% confidence level. However, I identified it as low enough to be of interest in the analysis. Cohen's *d*-value was then calculated to determine the effect size, returning a moderate result of $d = 0.555222$. As the *p*-value was sufficiently low, the effect size is important in interpreting the results of the analysis.

### 4.2. Qualitative Analysis

#### 4.2.1. Cluster Analysis

To supplement the quantitative analysis in this study, I performed a cluster analysis (*N*= 40) on the questionnaire data to investigate possible trends in motivation scores. Participants were clustered according to *ideal* and *ought-to L2 self* agglomerated values from the first round of questionnaires; no other values were used in this calculation. Although there are other possible influences on motivation, I isolated factors relating to *ideal* and *ought-to L2 self* motivation in the analyses. This was done to maintain the focus of all methods of inquiry on the same phenomena.

This study utilizes hierarchical cluster analysis, an exploratory method that creates groups within a data source based on similarity to other data points. Although cluster analysis has been used in *L2MSS* research like the large-scale Hungary study (Dörnyei et. al. 2006, p. 96), this study differs in the specific method of clustering. Hierarchical clustering works by finding the two most similar cases (participants) and using them as a baseline for comparisons. The specific method of calculation causes problems when the number of cases becomes too large, although it is effective for smaller numbers (Dörnyei 2007, p. 237). Where the Hungary study had participant numbers in the thousands, this study's data pool is well within the acceptable range for hierarchical clustering. It is important to understand the exploratory nature of clustering, meaning that all calculations made by the computer must be substantiated by a researcher. Although statistical patterns may appear, they are only meaningful if a researcher can display meaningful connections in the groups.

In this case, the calculation compared participants along scores in *ideal* and *ought-to L2 self*. The first step in carrying out a cluster analysis is to determine the appropriate number of clusters to use, and only after this, organizing the data into clusters. The methods for determination can vary, with the R software supplying 30 different tests. As it is possible for these tests to suggest different numbers of clusters, this study used the recommended method which performs all 30 calculations, allowing me to use the most recommended number for the highest reliability (STHDA 2017).

```
* Among all indices:
* 6 proposed 2 as the best number of clusters
* 4 proposed 3 as the best number of clusters
* 8 proposed 4 as the best number of clusters
* 2 proposed 5 as the best number of clusters
* 1 proposed 9 as the best number of clusters
* 6 proposed 10 as the best number of clusters

                  ***** Conclusion *****

* According to the majority rule, the best number of clusters is  4
```

Figure 3: Readout of meta-calculation recommending four clusters.

As seen in Figure 3, majority rule indicated four clusters as the best match. The next step after determining the number of clusters is to cluster the data. In this study, I performed hierarchical clustering using R and selected a dendrogram output to visualize the groupings (see Figure 4). The resulting chart shows the similarity of individual participants in terms of *ideal* and *ought-to L2 self* scores, represented by the intersecting lines connecting at different heights. Generally speaking, the higher the connection, the lower the similarity between (groups of) participants. Colored boxes representing the four clusters are overlaid on top of the dendrogram, visually identifying the assignment of participants to clusters. In this case, all groups are well-fit

as there are no outlying members in the form of single-participant branches with low similarity to the rest of the group.

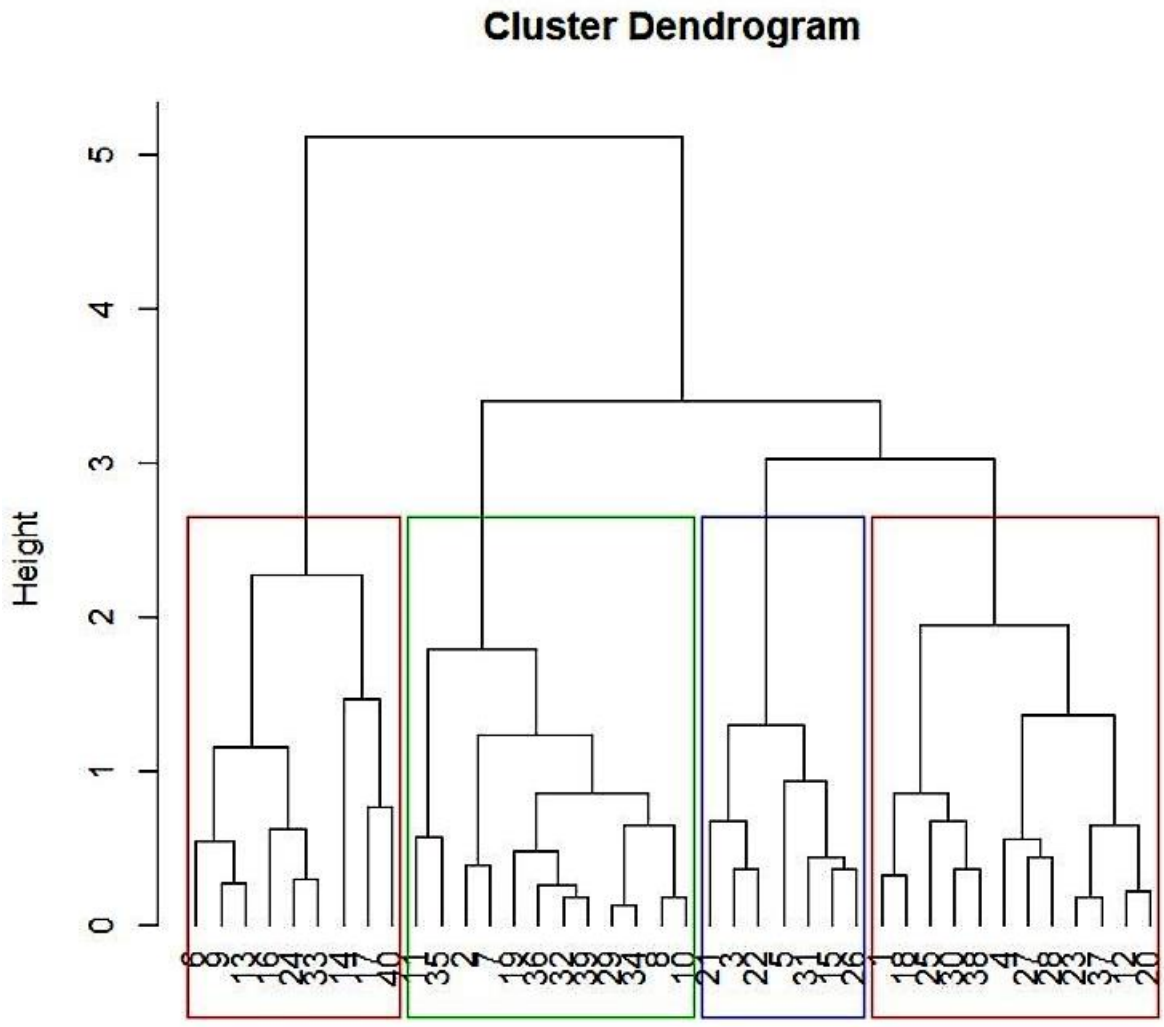


Figure 4: A cluster dendrogram displaying four clusters and the relative similarity of each participant.

After visually examining the clusters, they must be statistically tested to support the claim of meaningful connections. In line with previous work on the *L2MSS*, this study uses measures external to motivational values to do this (Dörnyei 2007, p. 238). *Criterion measures* relating to factors such as "intent to work hard" and "intent to continue learning German" were compared

between clusters using a one-way ANOVA in R (see Figure 5). Although several values in ANOVA results can be important for interpretation, in this case the *p*-value (indicating a significant difference between groups) and the *F*-value are the primary focus. A *p*-value is used to calculate the critical value for *F*, the lowest value it can be and still reject the null hypothesis (which assumes mean levels of *ideal* and *ought-to L2 self* are the same for all clusters). Since according to an *F*-table for *p*-values up to 0.05 the critical value for *F* is 2.866, the null hypothesis is rejected by the returned *F*-value of 3.101 and the means are assumed to be different based on cluster (Engineering Statistics Handbook 2017). The Post-hoc tests on the ANOVA elaborated on the differences, showing a significant difference between clusters 1 and 4 in *criterion measures* (see Figure 6). This means that although the groups are shown to significantly differ, the most significant difference is seen between groups 1 and 4, which is important when interpreting results. Interestingly, the clusters display a near-significant difference when compared based on the identification of *multi-* or *monolingual* in a one-way ANOVA (see Figure 7). Although this is not significant according to a 95% confidence level, an examination of an *F*-table for *p*-values up to 0.10 reveals that the *F*-value returned in this test ($F = 2.428$) surpasses the critical value ($F = 2.243$). Since this would reject the null hypothesis even with the heightened *p*, these results are noteworthy. Post-hoc tests further specified the difference, showing the greatest difference between clusters 2 and 3 (see Figure 8).

```
Response: criterion
           Df  Sum Sq Mean Sq F value  Pr(>F)
fCluster    3  4.0198 1.33992   3.101 0.03867 *
Residuals 36 15.5552 0.43209
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

Figure 5: One-way ANOVA result comparing *criterion measures* between clusters.

```
  Tukey multiple comparisons of means
    95% family-wise confidence level

Fit: aov(formula = criterion ~ fCluster)

$fCluster
          diff        lwr         upr     p adj
2-1 -0.4833333 -1.2639860  0.29731931 0.3552882
3-1 -0.7142857 -1.6064602  0.17788874 0.1551377
4-1 -0.8500000 -1.6306526 -0.06934735 0.0284046
3-2 -0.2309524 -1.0729236  0.61101880 0.8807945
4-2 -0.3666667 -1.0894106  0.35607725 0.5280602
4-3 -0.1357143 -0.9776855  0.70625689 0.9721968
```

Figure 6: Post-hoc tests showing between-group differences based on *criterion measures.*

```
            Df Sum Sq Mean Sq F value Pr(>F)
cluster      3  1.666  0.5553   2.428 0.0813 .
Residuals   36  8.234  0.2287
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

Figure 7: One-way ANOVA result comparing number of multilingual participants between clusters.

```
  Tukey multiple comparisons of means
    95% family-wise confidence level

Fit: aov(formula = multilingual ~ cluster)

$cluster
                diff         lwr       upr     p adj
one-four    0.1388889 -0.42908489 0.7068627 0.9118260
three-four -0.1309524 -0.74353924 0.4816345 0.9387026
two-four    0.4166667 -0.10917487 0.9425082 0.1618082
three-one  -0.2698413 -0.91895416 0.3792716 0.6800053
two-one     0.2777778 -0.29019600 0.8457516 0.5582995
two-three   0.5476190 -0.06496781 1.1602059 0.0936944
```

Figure 8: Post-hoc tests showing between-group differences based on number of multilingual participants.

After confirming that the clusters identified were meaningful in the context of this study, I then examined the groups with the help of descriptive statistics to assess the specific trends of each cluster (see Figure 9 & Figure 10). Since this examination relies on differentiating groups, the absolute values are not the focus. Instead, the values are examined in relation to each other,

revealing interesting tendencies in each cluster. After examination, I assigned the following attributes to each of the clusters:

- Cluster One: high *ideal* and *ought-to L2 self*
- Cluster Two: high *ideal*, low *ought-to L2 self*
- Cluster Three: low *ideal*, high *ought-to L2 self*
- Cluster Four: low *ideal*, low *ought-to L2 self*

```
 Descriptive statistics by group
group: 1
         vars n mean   sd median trimmed  mad  min  max range  skew kurtosis   se

ideal       2 9 5.22 0.39   5.14    5.22 0.42 4.71 5.86  1.14  0.29    -1.47 0.13
ought       3 9 2.92 0.57   2.70    2.92 0.44 2.40 3.90  1.50  0.64    -1.42 0.19
------------------------------------------------------------
group: 2
         vars  n mean   sd median trimmed  mad  min  max range  skew kurtosis   se

ideal       2 12 4.86 0.36   4.86    4.83 0.32 4.43 5.57  1.14  0.62    -0.78 0.10
ought       3 12 1.57 0.31   1.58    1.58 0.32 1.10 2.00  0.90 -0.32    -1.44 0.09
------------------------------------------------------------
group: 3
         vars n mean   sd median trimmed  mad  min  max range  skew kurtosis   se

ideal       2 7 4.18 0.26   4.14    4.18 0.21 3.86 4.57  0.71  0.23    -1.69 0.10
ought       3 7 2.56 0.36   2.70    2.56 0.44 2.10 3.00  0.90 -0.18    -1.86 0.14
------------------------------------------------------------
group: 4
         vars  n mean   sd median trimmed  mad  min  max range skew kurtosis   se

ideal       2 12 3.44 0.39   3.36    3.41 0.42 3.00 4.14  1.14 0.45    -1.33 0.11
ought       3 12 1.48 0.39   1.40    1.45 0.30 1.00 2.20  1.20 0.48    -1.17 0.11
```

Figure 9: Descriptive statistics of clusters, including mean levels for *ideal* and *ought-to L2 self*.


F

Figure 10: A chart comparing mean *ideal* and *ought-to L2 self* scores between the four clusters.

There are many insights provided by an examination of the data visualized in Figures 9 and 10. It is noteworthy that clusters one and four represent the most and least motivated groups of participants respectively. When this is considered in light of the results in Figures 5 and 6, it can be seen that the motivation scores correspond to the relatively high and low *criterion measure* scores. Since criterion measures are used to confirm the accuracy of motivation scores, these findings support the validity of the clusters. It is also interesting that clusters three and four (which display high *ideal*, low *ought-to L2 self* and low *ideal*, high *ought-to L2 self* scores

respectively) also display the largest difference in the proportion of multilingual cluster members. This near-significant difference (see Figure 7; Figure 8) suggests that clusters with a higher proportion of multilinguals display higher *ideal L2 self* but lower *ought-to L2 self* when compared to clusters with a lower proportion of multilinguals. Even without comparing to the other streams of analysis, these results suggest interactions between multilingualism and *ideal* and *ought-to self* motivation, perhaps due to factors inherent to multilingualism such as increased exposure to languages or awareness of the known languages as beneficial skills.

The identification of these attributes allows for better understanding of groups in the interpreting of results. Furthermore, when compared to the selection of interview participants, the cluster results strongly support the variation of attributes initially determined by a cursory of questionnaire answers. Each interview participant is located in a different cluster: Catherine (participant 14) in cluster one, Jessica (participant 29) in cluster two, and Jacob (participant 21) in cluster three (see Figure 4).

### 4.2.2. Theme Analysis

Following the cluster analysis, I examined all three interviews and coded them for points relevant to the research questions in this study. After this initial examination, the relevant topics were explored to search for trends. Since all relevant topics were in some way related to the motivation to learn a language, I opted to create categories of motivations based specifically on how these motivations were discussed by participants in the interviews. After several iterations of categories, they were finalized as the following: internally generated motivations, externally generated motivations, language learning experiences, attitude toward L2 community, and intercultural attitudes. This analysis will focus on internally- and externally-generated motivations.

It is noteworthy that, despite the focus on participant-generated topics, the motivational factors discussed closely align with those in the *L2MSS*. Although it is possible I was influenced by familiarity with the *L2MSS*, the deliberate focus on the three interviews at hand and the indirect nature of questions during the interview process limited the influence of that theory on the interview data. Furthermore, topics relating to attitudes toward L2 culture and language were almost exclusively participant-generated. This lends support to the importance and salience of these aspects in language learning motivation. Most of all, the similarity between the final categories and the *L2MSS* addresses a common concern in mixed-methods approaches. Difficulties arise when examining data from multiple sources as there can be challenges in confirming that the same phenomena are being examined in both cases. The identification of highly similar categories, like internally / externally generated motivations as compared to *ideal* and *ought-to L2 self*, in both sources of data supports the claim that both qualitative and quantitative strains are indeed investigating the same phenomena.

After establishing categories for the sources of motivation in the interviews, the individual interviews were revisited, this time with the additional demographic information from the first round of the questionnaire. I used the categorized topics, as well as the demographic information, to construct profiles of the interviewed participants. The analyses reveal the nature of these participants as individuals. As is made clear in examining their responses, individual language learners can have widely differing points of view on motivational influencers, as well as reasons to learn a second language at all. Examining motivations in this way provides a better understanding of motivational factors at an individual level, which strengthens understanding of larger trends.

#### 4.2.2.1. Profile – Catherine

Catherine is an undergraduate student at the University of Waterloo. At the time of this interview, she was enrolled in a Bachelor of Arts program with a major in History and a second major in German Studies. She grew up speaking English with limited exposure to other languages outside of school. Therefore, she is a member of the *monolingual* participant group for the purpose of the analysis. She learned French starting in elementary school, but did not continue with it into university. She described her family as being culturally mixed. Her mother was born in Venezuela and raised in Quebec, and her step-father is from Mexico. Her step-father and his family speak Spanish, and Catherine discussed feelings of pressure to learn Spanish in a language course. She chose to learn German, however, and highlighted the freedom associated with learning German without external pressures as a positive factor in learning the language. Learning German is closely tied to Catherine's long-term goal of studying History, since she became particularly interested in the history of German-speaking countries. She has taken many courses with the German program.

Catherine has felt passionate about history for several years, and this interest led her to an interest in German history, which then led her to the German language:

> *Okay, so what happened is, like, I said I'm in History so I read a lot of historical fiction. And I read a book; it's called 'Fall of Giants' by Ken Follett. And it shows World War I from a variety of perspectives. And I love World War I [..] learning about it […]. I felt that Canadian history had always taught it very subjectively, like Canada was good and Germany was bad, and England is always the greatest blah, blah, blah. I always found that frustrating. And so reading it from the German perspective I thought 'Wow, this is more interesting. It* ***is*** *more objective because they don't feel good about what happened.' But there's also […] a lot more explanation to why. […] I thought that the people sounded very resilient […] and I just wanted to learn more. (C 9:10 – 10:30)*

Here, Catherine recounts how she initially became interested in studying German. The clarity with which she was able to describe her growing interest was immediately noticeable. Aside from actually being motivated to learn German, she was also conscious of this motivation to the degree that she could identify the point at which this motivation began. Moreover, she states that she "just wanted to know more" about German history and society. With such a clear connection to her scholarly interests, along with her own description of her motivation, we can identify the source of her motivation to learn German, at least initially, as internally generated and relating to future plans and goals.

It is interesting to note here that a trend in her experience with the German language is already becoming visible. Although German is not her primary field of study, or what she would identify as her passion, it is something that is closely connected to her primary interest of History. Even when the source of the motivating factor shifts from internal to being external and practical in nature, the goal of learning the German language is sometimes still framed positively:

> *I don't know if I feel pressure to learn German, but I feel pressure to learn a second language. […] I feel like I couldn't succeed where I wanted to go if I didn't learn a second language in general. (C 1:00 – 1:25)*
>
> *You have to do a language requirement in an Arts degree here, like in undergrad. I said I wanted to do German and, my mom took German in high school […] and she said "you know, it's a difficult language and we have a Spanish speaker anyways. It'd be nice if you could speak with his family that can't speak English." Which is all true. I'd still love to learn Spanish, but there's just something telling me to take German. (C 13:10 – 13:45)*

In these examples Catherine describes external factors in her motivation to learn German. The first excerpt is particularly revealing because it was given when asked what she thought about after filling out the questionnaire. She thought about what pressures she feels relating to

language learning, and her first reaction was that she does feel pressured to learn another language but not necessarily German. In this case, she is identifying a pressure to be bilingual so she can be successful. One of these is the language requirement, which establishes a need to take credits in at least one language other than English as a requirement for degree completion. As she had already become interested in German history at this point, Catherine told her mother about her intention to take courses in German. The way she frames this intention is meaningful. Although taking a language course is a requirement possibly at odds with what courses she would like to take, she does not say that she is "going to" take German or had "chosen" to take German. In saying that she "wanted to do German" she is further displaying a desire, an internal motivation, to learn the German language rather than a response to external pressures. On the contrary, Catherine even chooses learning German over Spanish. Due to the use of Spanish among members of her family, as well as its standing as a popular language worldwide, it would appear to be an appealing option. However, the language more closely incentivised by her own aspirations and interests is chosen, giving evidence for the strength of this association over external, pressuring motivators.

At the time of this interview, Catherine had taken many classes in the German program at the University of Waterloo. Despite her general positive evaluation of German language and culture, she did discuss some challenges that she had in her experience learning German:

> *There was a period in time during the semester that I said 'I can't do it. Maybe I need to drop to a minor because reading [German] is so hard.' I hadn't been hearing back from the […] exchange program I applied to so I was like maybe it's too hard." (C 17:45 – 18:10)*

From this description, it is clear to see the difficulties associated with learning a new language, in particular applying that language to the study of literature and history. Additionally, Catherine

mentions unease rooted in the unknown status of her exchange program application. These difficulties stand in opposition to realizing her goal of learning German, which is itself connected to her stronger goal of studying History, and therefore must be acknowledged as significant in potential impact.

> *Like, today sitting in my History tutorial when we were talking about Germany I felt like I could add so much more to the conversation. So I was like 'No, I have to keep doing this. (C 18:30 – 18:40)*

In response to the doubts or fears relating to learning German, she once again refers to her established goal to study History, as well as the positive impact of studying German on this goal. This clearly establishes the incentive to learn German as not only more impactful than the external pressures mentioned earlier, but also the fears associated with failing to learn it or being unable to use it for an exchange program in Germany. Catherine goes on to say that she considered dropping to a minor in German Studies to alleviate some of the difficulty, citing a classmate that had recently done the same. Although she says that "he can still get by in German" (20:42-20:46) she insisted on staying with a double-major program as it would potentially be more beneficial. In contrasting the possibility of "getting by in German" with the implied "excelling in German," Catherine maintains a strong commitment to the goal of studying History to the best of her abilities and in doing so reaffirms her motivation to continue learning German.

One other motivational factor featured prominently in Catherine's interview is attitudes toward L2s and their language communities. Her attitude toward the German language community was already hinted at in one of the examples above as she identified the Germans as depicted in the historical fiction book *Fall of Giants* as being "very resilient." In fact, she

detailed several associations with and opinions of the German language community throughout the interview:

> *I feel North America is kinda uptight, a lot, about time and getting things done very quickly […] but there was just so much fun and relaxation [in Germany] and the people seemed really relaxed. And I felt maybe that's something I could bring home. (C 4:15 – 4:45)*
>
> *[The German-speaking region in Europe] is just like a happy area. It's really clean and safe. And there's so much. Why wouldn't I go back? I can do that really easily, because I can communicate with people. (C 11:55 – 12:05)*

These positive assessments of German (and German-speaking) culture help to explain her interest in German as connected to the study of History. Lastly, these two examples also help demonstrate a connection to Catherine's overarching goals. She identifies aspects of German speaking culture as positive and explicitly states a desire to learn from this in order to "bring home" these positive attributes.

For Catherine, learning German is not the most obvious choice based on the external pressures that she identifies, but owing to its ability to help in very clear long-term goals, she describes a strong motivation to pursue German Studies further: to grant her better access to historical materials for study, as a language requirement, and to learn from the culture. This can be more deeply examined in light of the other methods in the MMR design. For example, Catherine's cluster assignment grouped her with high *ideal* and *ought-to L2 self* participants. The corroboration between her answers in the interview and her cluster assignment helps us better understand the clusters themselves. Since clusters are based on numerical scores in abstract constructs, it is difficult to imagine what a learner would be like based on numbers alone. In this case, Catherine acts as a clear example of what a student motivated highly by both *ideal* and *ought-to L2 self* would be, grounding our cluster and quantitative analyses in something more tangible.

#### 4.2.2.2. Profile – Jessica

At the time of this interview, Jessica was an undergraduate student at the University of Waterloo. She had already taken GER 101 in a previous semester and was nearing the end of an Online GER 102 class. She was not enrolled in either a major or minor in German Studies. Although language courses are not the focus of her studies, Jessica expresses a high level of interest in many languages. She identifies Cantonese and English as her primary languages, speaking them from a young age at home, and both Mandarin and French as languages she learned in formal settings (at a language school and through French immersion schooling respectively). Therefore, Jessica is a member of the *multilingual* group for the analysis. She goes on to mention that she had begun learning Japanese in high school. She also describes her family as being culturally diverse, with Swiss family members who speak French and German in addition to her Cantonese-speaking family.

The number of languages Jessica identifies as speaking, as well as the contexts in which they were learned, are significant. Her linguistic experience covers a wide range of sources, ages, and motivations, which all contribute to her specific language learning context.

> *I think my first language was Chinese […] because I did grow up living with my grandparents, and they only speak Chinese. (Je 22:00 – 22:15)*
>
> *Yeah, I think English might have been the second language, because I'm pretty sure that's what I learned in pre-school. (Je 22:30 – 22:40)*

Although Jessica was raised in a Cantonese-Chinese speaking household initially, her family moved to Canada when she was still very young. She remembers that she "learned" English at preschool, but in this context the learning is not formalized language class and is much more like first language acquisition, taking place passively in interaction with her environment. French and

Mandarin-Chinese, however, were learned in formal language class settings. Furthermore, in opting to learn Japanese at a later age, she displayed interest in continuing exposure to additional languages. No pressures from family or peers were given relating to learning Japanese, and in fact Jessica expresses interest in Japanese culture and language:

> *I do travel to Japan a lot. Like, I love the culture and the country so I thought it'd be useful to learn the language. (Je 30:10 – 30:20)*

Here she talks about her reasons for learning Japanese initially. As she goes on, she describes how she had taken courses in the French department in the first year of undergraduate studies, but stopped when she chose to pursue a minor in Legal Studies. Due to the many courses required for the minor, she decided that there was not enough room in her schedule to continue with French courses.

Later in her studies however, she had the opportunity to take another language credit. Instead of returning to French, Jessica planned on taking a Japanese course. When this did not fit into her schedule, she turned to online German courses:

> *I'd much rather take a new language, which is why I'm learning German. (Je 3:55 – 4:00)*

This example points at a trend in Jessica's language learning motivation. In preferring to take courses in Japanese, and even German, over the already known language French, she displays preference to internally-generated motivations.

> *[My parents] said I should continue either with French or take Chinese classes, because Waterloo also offers Chinese courses. (Je 5:55 – 6:00)*
>
> *I don't feel as pressured to speak German […] Even my family in Switzerland, they're all able to speak English fluently, and they prefer speaking French. (Je 25:50 – 26:05)*

This preference is further shown as she identifies pressure from family members to continue with French or Chinese, both languages that she knows to some degree and which are spoken in her family. For German, however, Jessica describes feeling little pressure. Since the potential familial pressure to learn German does not appear to be a major influencer, the most relevant motivating factor she identifies for it is its novelty.

The preference to learn German and Japanese, due to their status as novel languages, exemplifies the major influencing abilities of internally-generated motivators in Jessica's language learning. Despite acknowledging several pressures to learn a variety of languages, she does not cite one such pressure as a convincing motivator to learn a language. Instead, she identifies her own curiosity and interest as primary influencing factors in her choices.

When Jessica is discussing her reasoning for choosing certain language courses to study at the university level, she touches onto an interesting topic. As she describes it, not only are Japanese and German more "new" and therefore more interesting, but they are also languages that she perceives as being more difficult to learn outside of a formal classroom. This is not due to a perceived inherent difficulty, but instead is related to the languages that she feels are available to her outside of university:

> *For Chinese, in some sense, I think it might be easier [to learn], because I'd have my family. They'd be able to help me with studying and homework and stuff. I guess with my family there to help me it wouldn't really feel like I'm learning as much. Because I know if I ever ran into trouble I could just go to them and ask them for help, whereas with German they're not able to help so I have to figure it out on my own. And that way it forces you to learn. (Je 27:55 – 28:40)*

Here she describes feeling a sense of challenge in undertaking a language "on [her] own," and connects that to learning. She directly opposes this to the idea of taking a Chinese language class.

Since French is also a language that is easily available within her family, it is reasonable to assume that she would think about it in a similar manner. She also hints at a cost-benefit analysis when choosing language courses:

> *[…] it might not be as worth it to take a class in school, like spend that money studying Chinese when I can just practice at home. (Je 28:55 – 29:05)*

The presence of Chinese (and possibly French) within her family is identified as a source of pressure to learn those languages, but the presence itself also de-incentivises learning them in a formal setting. Since Jessica would be unable to learn German from family members on her own, she sees it as being more worth the investment. In this sense, Jessica's preference to learn novel languages may not reflect a lack of interest in continuing with previously encountered languages, but possibly a desire to learn as many languages as possible since the potential to continue with French or Chinese outside of formal settings always exists. This possibility may itself detract from the perceived pressure to learn these languages in formal settings, as choosing to learn German in university does not preclude learning French or Cantonese at home.

Similar to Catherine, Jessica's profile acts as an anchor point for the cluster analysis. Visualizing a learner who is motivated highly by *ideal* but very little by *ought-to L2 self* factors poses a challenge. However, by examining the results of the theme analysis using the MMR design of this study, I can use Jessica's answers to deepen my understanding of her cluster. Her identification of novelty as a strong motivator could help to understand the higher number of multilinguals in her cluster, since it may be a common trend. Knowing that group means tend toward different levels can be revealing, but understanding how those differences in levels would manifest in a real person is much more revealing.

#### 4.2.2.3. Profile – Jacob

When this interview took place, Jacob was an undergraduate student at the University of Waterloo. His program of study was a Bachelor of Engineering in Mechanical Engineering and Mechatronics. Both of Jacob's paternal grandparents immigrated to Canada from Germany and German is a heritage language in Jacob's family, which he identifies as a motivator to learn German. Jacob learned French starting in elementary school, but did not continue with it in university. By the time this interview took place, Jacob was nearing the end of GER 102, but had not taken any German courses at the university level before that. Instead, he had experience with German from a weekend language school that he attended for several years growing up which allowed him to skip GER 101. Although German is present in Jacob's family, his exposure to the language was primarily limited to formal schooling and he was still in a relatively early stage of language learning (GER 102). For this reason, he is considered a *monolingual* participant for the purpose of this study.

As Jacob discusses his experience learning German, he identifies his family and heritage as an important motivating factor. He is very knowledgeable about his German grandparents, and describes how both his grandmother and grandfather came separately from Germany and met in Canada. He then emphasizes the importance of the German language on the paternal side of his family:

> *So my father is fluent in German, and that was prevailing in their family so when all of my opa's children started their own families they wanted their kids to go into German school and to have that as part of their culture. So it was important for my dad to put me in German school for my grandparents' sake. (Ja 2:20 -2:45)*

With this explanation, Jacob points to an influence of his German heritage on his motivation to learn German. He explains that he sees it as important to both his father and his grandparents that he learns German, and furthermore, he adds that it is "part of their culture." In bringing culture into the description, he strengthens identification with his German heritage. When talking about his father, he continues to describe the role of German language and culture in his family:

> *It was important to him that his kids went to German school. Like, just the act of going to German school. Because it did make his parents happy that he was making an effort, I suppose. (Ja 16:35 – 16:55)*

This excerpt illustrates the continued emphasis on the importance of the German language in Jacob's family. Although his grandparents are the only family members who are from Germany, exposing the subsequent generations to German culture and heritage (in the weekend German language school) is identified as important.

When discussing his experience at the weekend German language school, Jacob mentions that the children in his family were expected to take German up to the "credit course" (the point at which you gain school credit for achievement), but could choose to leave after that. He mentions that he continued for some time, but that he eventually faced a dilemma involving the German courses. The time for weekend German lessons was limiting his ability to pursue other interests, like cross-country skiing with his father, eventually leading to Jacob leaving the language school. Although he still clearly identified an interest in German by saying that he felt a struggle between the options, the motivation to pursue his other interests were greater at the time. Since he had already passed the minimum expected level of German, it is conceivable that he felt significantly less pressure to continue. Since he also did not identify clear plans or goals with the language, his overall motivation to learn German at that point is assumed low.

Jacob, however, did return to learning the German language at university. He goes on to describe several key changes in his personal context that led to him taking a German course at the University of Waterloo. He identifies a week-long exchange program to Germany in grade 11 of high school as particularly influential. Although it was brief, Jacob's time in Germany made him aware of the possibility to do a longer program:

> *So when I came to university, and myself going on exchange was an option I wanted to do that. And where else to go but Germany. I've been there twice and I know the language. I have German heritage, so why not go there. (Ja 19:30 – 19:50)*

Jacob explains that at the University of Waterloo, students must show competence in a foreign language to go on exchange to the country, and that is normally done by completing language courses. The identification of a goal involving German establishes an internally-generated motivator for his language learning. In this case, the motivation for learning German is identified as stemming from personal desire to take part in an exchange program. Since he "know[s] the language" already, learning German is a naturally appealing option as he has already partially completed the prerequisites for his goal.

The strength of Jacob's motivation is also seen as he describes the challenges in taking German. Particularly, he admits to having very little choice in terms of electives, since those students studying Engineering typically have very busy schedules and many required courses that may cause conflicts. In fact, he says that he only had one elective which he could use for a German course, or for any other elective he may have been interested in. Jacob goes on to state that he originally planned to continue German at the weekend language school he visited as a child, but changed his mind when he considered the benefits of taking a course at university:

> *But now […] I have the opportunity to do it at school and get credit for it and learn, especially with the looming prospect of going on exchange. (Ja 11:40 – 11:50)*

He identifies the practical incentive to taking German courses at university, getting university credit as he prepares for an exchange, as being convincing enough to use his only elective on it. This action displays the influence of practical motivators for Jacob. Although this topic centers around an internally-generated goal, the influence of university credit requirements and the practicality of using his time wisely influence as external factors.

In fact, there is a trend in efficacy of external motivating factors for Jacob. Throughout the discussion of his German heritage, his desire to take part in an exchange, and into the topic of French education, an emphasis is placed on those factors external to himself. This is not to say that he does not display internally-generated motivation, but that externally-generated motivation is identified as more impactful or significant in his language learning:

> *Being able to speak a language […] is valuable. (Ja 37:25 – 37:35)*
>
> *There was always the feeling that I wish I'd done more German, and that's why now I'm doing more German. (Ja 9:55 – 10:05)*

In the first excerpt, the emphasis again rests on the practicality of being bilingual. Although not necessarily perceived as a pressure, the desire to gain a "valuable" advantage in a job market is a response to an external factor. The second topic continues to show a trend in internalized-external factors. Although this example could be interpreted several ways if taken on its own, when examined in the context of the interview it points toward a desire to align with a self-image, such as the one alluded to when he discussed his German heritage:

> *I want to be able to speak German. Whether that's because German is important to me because the culture has been impressed on me or just because it's an opportunity*

> *that I have, because I've spent so much time already learning German, it's like, I can do it. I'm almost there. (Ja 10:25 – 10:40)*

This final example displays the importance of learning German to Jacob, regardless of the source of his motivation. In his statement, he reaffirms his desire to learn German and points to externally-generated motivating factors in his language learning. Although they are internalized, his use of a German course to facilitate a year abroad and his desire to align with his German identity ultimately stem from external factors. In this context, externally-generated motivations are not only significant, but more significant than those that are internally-generated.

Jacob's profile is particularly useful for my MMR approach in understanding both the cluster and quantitative analysis results. Although the sources of his motivation are not clean-cut, the strong trend of practicality as a motivator to learn German could identify his cluster as those students who are primarily concerned with learning German as a skill. This is very similar to the trend identified by Heller with French in Canada (2002). Furthermore, the societal pressure to be bilingual is echoed in Jacob and Catherine's profiles. Since both participants are members of the monolingual group in the quantitative analysis, this provides insight into the specific shared factors within *ought-to L2 self* that may differ between mono- and multilingual participants.

## 5. Discussion

Although each participant in the interviews displayed described very different motivations for learning German, there were some commonalities. For example, the MMR approach gave insight into possible differences between mono- and multilingual participants in terms of *ideal* and *ought-to L2 self* scores. Triangulation suggested that the higher perceived societal pressure to be bilingual may be seen in both *ought-to L2 self* scores of monolinguals for quantitative analysis, as well as in strong motivators identified by both Catherine and Jacob during interviews. Jessica's lack of emphasis on external pressures also revealed possible differences in how the pressure is perceive based on previously learned languages. These points suggest interesting triangulations, but for the sake of clarity, the exploration of analysis results must proceed by examining each stream in terms of its research question. Given that this study aims to answer three research questions, the following discussion is divided into three sections based on the order of research questions.

### Research Question 1

Overall, mean *ideal* and *ought-to L2 self* measurements were not proven to be significantly different between monolingual and multilingual participants in this study. *Ideal L2 self* measurements displayed high variation among all participants, and the Welch test returned a high *p*-value of 0.4587. This result suggests that a relationship between *ideal L2 self* measurements and the status of a learner as multilingual or monolingual is unlikely. The *ought-to L2 self* scores, however, are less definitive. Although the *t*-test did not return a statistically

significant *p*-value according to the standard 95% confidence level, the low value it did return ($p = 0.09119$) is suggestive when examined with the moderate effect size ($d = 0.555222$).

There is a substantial amount of research documenting language learning motivation in the Canadian context (Gardner & Lambert 1959; Tremblay & Gardner 1995; Mady 2003; Noels et al. 2003). Much of this is thanks to the significant contributions of Gardner and his associates who have performed numerous studies investigating Canadian learners of French and English. Outside of Canada, research in language learning motivation is also gaining popularity, but as mentioned previously, the majority of these studies focus on learners of English in locales chosen specifically for their status as primarily monolingual (Dörnyei et al. 2006; Ueki & Osamu 2013; Taguchi, Magid, & Papi 2009). This study enhances our understanding of language learning motivation by focusing on a language other than French or English in the Canadian context. Considering the lack of extant research examining non-official languages in Canada, the suggestive *ought-to L2 self* results are a valuable extension to research on motivation in language learning.

The *ideal L2 self* measures were not able to show any relation with monolingual or multilingual status of participants. The *ought-to L2* self measures were also not conclusively shown to have any relation with previously learned languages. Although the greatest care was taken in the preparation of materials and collection of data, some limitations merit comment. In terms of *ideal L2 self*, some possible explanations were noted during the process of this study. Firstly, due to availability of participants, this study did not make use of random sampling. All students in the language courses were informed of the study and all interested students were permitted to take part. It is reasonable to expect that a skewed sample of inherently more (*ideal L2 self*) motivated students opted to take part in the research with very few less-motivated

students. This explanation is supported by the high mean *ideal L2 self* measurements in both the monolingual and multilingual groups (4.31 and 4.5 on a 1-6 scale, respectively). Secondly, the final number of participants was lower than desired to return definitive results without very high impact factors (representing a very high correlation between the motivational construct and the status of the participants as either monolingual or multilingual).

Surprisingly, despite their suggestive results, *ought-to L2 self* means also displayed low variability. Unlike *ideal L2 self*, however, the mean scores for *ought-to L2 self* were notably close to the lower bounds of the measurement. Both monolingual and multilingual means were approximately 1.5 standard deviations away from the lower bound of the Likert-scale, pointing to a possible issue with the scale used in data collection. One possible explanation is that, due to the nature of German as a low-prominence language in Canada, the 7-point Likert-scale was insufficient in accounting for the lower mean externally-sourced motivation. The majority of extant research has focused on English, a prominent world language, and French, both historically prominent and recognized as an official language by the Government of Canada. It is plausible that the relatively high-status of these languages, coupled with the larger sample sizes, explain the mean values further from the lower bound. Furthermore, Dörnyei and Al-Hoorie noted the potential danger of using materials designed to investigate English language learning in studies focused on languages other than English (see Dörnyei & Al-Hoorie 2017). As they explain, this practice may not accurately measure language learning motivation. Since English holds a unique position as a global language, the motivational factors associated with learning it cannot be directly attributed to less prominent languages. For this reason, it is possible that the research materials were insufficient in measuring German language learning motivation.

**Research Question 2**

Triangulation between these cluster and theme suggests that previously learned languages do influence language learning motivation and supports the generalizability of the results. Hierarchical cluster analysis returned four clusters of participants, which were then identified according to relative high and low mean *ideal* and *ought-to L2 self* scores. A one-way ANOVA returned a suggestive *p*-value ($p = 0.0813$) when comparing these groups according to status as monolingual or multilingual. Furthermore, the post-hoc tests showed the greatest difference in the proportion of multilingual cluster members between clusters two and three (see Figure 8). These results are particularly revealing in light of the clusters' mean *ideal* and *ought-to L2 self* scores (see Figure 10), which showed that clusters with a higher proportion of multilinguals displayed higher *ideal* and lower *ought-to L2 self* motivation. Since the *F* was also larger than the critical value for *p* of up to 0.10, the results are very suggestive. Even without rejecting the null hypothesis according to a 95% confidence level, values of this significance merit further consideration and investigation.

Theme analysis also revealed wide variation between participants in the identified motivational sources. Where internally-generated motivational factors showed a limited connection multilingualism, the connection between externally-generated factors and multilingualism was more evident. Perceived pressure to be bilingual was a key influence mentioned prominently by both monolingual participants. Catherine and Jacob both perceive being bilingual as particularly valuable, and as such feel significant externally-generated motivation to attain that status. On the other hand, Jessica displays very little externally-generated motivation, even explaining that a possible external source for motivation to learn German (Swiss family members) was not significant since those family members preferred to

speak in English or French. Since Jessica has already attained status as a multilingual, it is reasonable to believe that she experiences reduced pressure to continue learning languages. By comparing these findings to the cluster analysis identifications for each interview participant, I found convincing evidence for accurate and informative clusters. Catherine, who revealed considerable internally- and externally-generated motivation in the interview, was assigned to cluster one (high *ideal* and *ought-to L2 self*). Jessica identified almost exclusively internal sources for motivation and was assigned to cluster two (high *ideal,* low *ought-to L2 self*). Finally, Jacob revealed primarily externally-generated sources for motivation, along with limited internal sources, and was assigned to cluster three (low *ideal*, high *ought-to L2 self*).

The results from the qualitative stream build on the work of Ema Ushioda. As she cautions, individual learner contexts vary greatly from person to person, but they are also integral in understanding language learning motivation (Ushioda 2009, p. 218). These results corroborate the variance in individual contexts, but extend on the interpretation of in-depth analyses with the addition of cluster analysis. In triangulating the results, the intricate (and imposing) web of motivations identified with theme analysis can be refined and made much more accessible to generalization. Additionally, these results add to the growing pool of research on motivational factors in the Canadian context. Although Gardner and his associates target French and English language learning, it is plausible that the effect of a bilingual expectation (possibly associated with *instrumental* motivation in the *socioeducational model*) is present universally in the Canadian context, though this could also be a universal trend related to globalization (Heller 2002, p. 62). As Heller explains, the modernizing economic effects that accompany globalization are shifting bilingualism away from community identification and toward a profitable commodity. Especially in a country with a long-standing discourse surrounding bilingual status

such as Canada, it is reasonable to expect that increased societal identification of multilingual status as an economic commodity would mean that pressure to attain multilingual status would be significant.

Keeping the promising results in mind, there are limitations on the qualitative strand that warrant exploration. The cluster analysis is only partially corroborated by the cluster analysis results of the Hungarian study. In their investigation, four clusters were also created from the pool of participants. This supports the initial findings in the cluster analysis which identified four as the optimum number of clusters. However, the motivational patterns in the Hungarian clusters do not match the findings in this study (see Figure 9 & Figure 10). Where among this sample group the four clusters were shown to vary based on relative high or low mean values in *ideal* and *ought-to L2 self*, the Hungarian study's clusters are better described as four tiers, with successively higher *integrativeness* and *instrumentality* means in each cluster (Dörnyei et al. 2006, p. 99). Although the number of clusters is the same, this trend is considerably different. The most important observation on this discrepancy is that, although *ideal* and *ought-to L2 self* are partially comparable to *integrativeness* and *instrumentality*, they do not measure the same phenomena. This difference alone could account for the lack of corroboration in cluster trends. Secondly, it is possible that the small-scale nature of this study resulted in different, unrepresentative cluster assignments. However, I see this as less likely considering the suggestive results of the ANOVA in identifying meaningful clusters.

The relative importance of pressures and *ought-to L2 self* scores is not well supported in previous research in the *L2MSS*. Furthermore, more general research in language learning motivation also deemphasizes the importance of externally sourced motivations. This is seen in Masgoret and Gardner's meta-analysis, which confirmed that instrumental orientation had a

"slight to less than medium" effect size on achievement (Masgoret & Gardner 2003, p. 151). It is noted that this study is not investigating achievement, but an emphasis on perceived pressure to learn a language by the learners suggests that further examination is warranted.

**Research Question 3**

There is evidence that multilingual and monolingual university student learners of German display different motivational patterns. In answering RQ1, I concluded that there was suggestive (though not statistically significant) evidence of a negative relationship between status as multilingual and *ought-to L2 self* scores. RQ2 also revealed that participant clusters based only on *ideal* and *ought-to L2 self* scores displayed a suggestive relationship with the proportion of mono- and multilingual participants. Clusters with higher *ought-to* and lower *ideal L2 self* mean scores were more likely to contain monolingual participants, with clusters containing more multilinguals showing higher *ideal* and lower *ought-to L2 self* scores. Furthermore, both monolingual interview participants highlighted their perceived pressure to learn a second language (compare to *ought-to L2 self*), where the multilingual interview participant revealed no such pressure. Since all three of these methods of analysis can be seen to measure *ideal* and *ought-to L2 self*, their agreeance represents a robust triangulation. Both the quantitative and qualitative strands, including all three methods of analysis, provided at least suggestive evidence that motivational patterns differ between monolingual and multilingual participants.

Moreover, by including the qualitative strand of analysis, I was able to interpret the quantitative results in a way that would be impossible in a purely quantitative study. The results

of both theme and cluster analysis allowed for a much more nuanced picture of motivation among participants in general. Using MMR, the profiles of interview participants grounded the cluster analysis groups by providing a relatable (and human) representative. Similarly, the clusters provided example trends to contrast with the results of the quantitative analysist. Whereas *t*-tests were only able to suggest differences in *ought-to L2 self* based on mono- or multilingual status, the clusters proposed a different paradigm, focusing on trending high or low scores in *ideal* and *ought-to L2 self*. Both gave insight into the influence of previously learned languages, and understanding the complicated nature of language learning motivation (seen in the many methods of interpretation) is fundamental in this study's approach.

The positive relationship between *ideal L2 self* and multilingualism suggested in the cluster analysis could be interpreted using the results from theme analysis. Clusters one and two displayed both the highest *ideal L2 self* scores and the highest proportions of multilingual participants. By examining Jessica's interview (*multilingual* in this study and a member of cluster two), we can identify factors that could contribute to the trend in higher *ideal L2 self* scores. One possible factor is Jessica's increased awareness and understanding of how additional languages can impact her life. A more robust understanding such as this would make clear future *ideal L2 self* images more available, since she is more likely to be familiar with the ways in which learning languages can enrich her life or compliment her other goals. The negative relationship between *ought-to L2 self* and multilingualism, suggested in both cluster analysis and inferential statistics, can also be explored with the help of the interview analyses. Since Jessica was already *multilingual*, she would be much less likely to be influenced by the pressure to be bilingual, identified by both Catherine and Jacob in the interview. Catherine and Jacob, however, do not perceive themselves as being bilingual. They both cite the pressure to avoid possible

disadvantages in the future as a motivating factor to learn German, which suggests that those participants who already meet or exceed the goal to be bilingual experience reduced *ought-to L2 self* motivation.

The MMR analysis of this study's results acts to both corroborate and extend previous research on both language learning motivation and bilingualism in Canada. Specifically, by making use of the quantitative methods most often found in *L2MSS* research in the past, supplemented with both cluster and theme analysis, this study helps to bridge the gap between the established research on monolingual contexts and Canadian English and French language learning motivation. It also improves on the generalizability of typical small-scale motivation studies which Ema Ushioda warns that "survey-type studies of motivation at M.A. level can often be fairly bland and superficial, lack a tight focus or deep engagement with a research issue, and offer few insights" (Ushioda 2016, p. 566). By integrating three different methods of analysis and situating the research in the Canadian context using language learning motivation and bilingualism research, this study offers valuable insights that add to extant research.

Given that this study can be seen as a bridge between several established areas of research, the limitations must be clearly explained. The theoretical basis of this research is the work by Zoltán Dörnyei and associates on the *L2MSS.* This system was influenced by the *socioeducational model* put forward by Gardner and Lambert (1985), and there are useful comparisons that can be made, but the two systems do not share an identical conceptualization of language learning motivation. Although I made use of research by Gardner and associates to situate this study, my results are not directly comparable to any individual study they have published because we do not make use of the same theoretical basis for evaluating motivation. Work by Monica Heller is also referenced in establishing the societal importance of bilingual

status in Canada (2002). This article's scope includes globalization, an inherently global trend, but it is very much situated within Canada. Modernizing economic and societal factors are discussed through a lens that is not universally generalizable. For this reason, the treatment of bilingual and multilingual status in this study is similarly limited by context, as I base my understanding of how Canadian society views language on this interpretation. If another context is shown to display similar trends in societal view of language, however, this would not be a limitation. Finally, the target language of this study is German, unlike much of extant language learning motivation publications. When studies do (even partially) focus on German language learning, the context, theoretical basis, and research methods differ significantly. Perhaps the largest individual study on language learning motivation, the Hungary study, includes German as one of many languages examined. My study contrasts in participant education level, size, and theoretical basis. Canada also differs starkly in terms of linguistic and cultural diversity when compared to Hungary. Being adjacent to a German-speaking country, Hungarians are possibly more incentivised to learn German, where Canadians are geographically distant from German-speaking countries. This means that, although my study itself is generalizable, there are limited direct comparisons in extant publications.

## 6. Conclusions

To my knowledge, this is the first study to examine language learning motivation using a combination of inferential statistics, cluster analysis, and theme analysis. In doing so, it also expands the scope of the established language learning motivation and bilingualism research in Canada. The triangulation of results firmly suggests a negative relationship between multilingualism and *ought-to L2 self* motivation in language learning, a phenomenon which has until now been unobserved.

These results are of direct practical relevance. When examined, they reveal a trend that can be targeted and addressed by university language departments with the goal of increasing retention of students. The results suggest that *multilingual* students experience lower *ought-to L2 self* motivation when learning German at university. There is also some evidence suggesting that *multilingual* students experience higher levels of *ideal L2 self* motivation, although this is less conclusive. Previous research has already established the positive influence of *ought-to L2 self* motivation on language learning achievement, even if it is less significant than the influence of *ideal L2 self* motivation (Dörnyei et al. 2006). Furthermore, departments offering foreign language courses at the university level have been shrinking almost everywhere. This can be seen in petitions to save language departments, blog posts, and analyses published in mainstream media (Christ & Napolitano 2017; Chrystle 2012; Bawden 2013). It follows that, since fewer students are continuing in their language studies, university language departments, including the University of Waterloo, could benefit by targeting an identified deficit in motivation.

Since *ought-to L2 self* motivation is primarily associated with external, perceived pressures to learn a language and potential repercussions for failing to learn the language, these aspects could be emphasized in advertisements and course instruction. This is not to say that

students ought to be lectured on the importance of being multilingual, or that they will be risking failure by choosing not to continue with German. However, *ought-to L2 self* images could be made more available to (potential) German students, which would increase the likelihood of students forming their own clear *ought-to L2 self* images. For example, the University of Waterloo has a high number of students in Engineering. Given the prominence of German technical engineering firms worldwide, emphasizing the benefits of a German exchange or work term (with a focus on creating relatable possible self images) and juxtaposing the potential disadvantages of not speaking German in this context could help improve motivation.

Similarly, students who display lower *ideal* and higher *ought-to L2 self* motivation, who in this study were more likely to be *monolingual*, could benefit most from increased understanding of the ways in which language learning can enrich their lives outside avoiding economic repercussions. For example, students in departments such as History could benefit from exposure to the ways in which German linguistic and cultural knowledge can compliment their other interests. Since *monolinguals* would be less likely to have had this exposure, *ideal L2 self* images relating to German would be made both clearer and more relevant for learners who would otherwise be unaware of the possibilities. This would be a benefit to both the students and the Department of Germanic and Slavic Studies.

Although these results are intriguing, more research in this area is needed. Future studies could examine the relationship between monolingual and multilingual *ideal* and *ought-to L2 self* levels in relation to the progress of globalization. The specific interaction between multilingualism *ideal* and *ought-to L2 self* motivation could also be further investigated in other linguistically diverse contexts such as the U.S.A. or Germany. Studies exploring this interaction could also benefit from integrating more varied qualitative approaches as part of their MMR

design. For example, an ethnographic analysis of participants in a linguistically diverse group could allow much more informed conclusions about motivational trends in diverse regions.

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## 8. Appendices

### 8.1. Appendix A – Full list of questionnaire items (in order administered)

**Likert-Scale Questions**

1) If a German course was offered at the university or somewhere else in the future, I would like to take it.
2) Studying German is important to me because it offers a new challenge in my life.
3) I can imagine myself writing German emails fluently.
4) I enjoy reading German books.
5) Studying German is important to me because with it I can work with companies in Europe.
6) My parents encourage me to study German.
7) As multiculturalism advances I think people are in danger of losing their cultural identities.
8) I have to study German because otherwise I think that I can't be successful in my future career.
9) I find it difficult to work with people who have different values and customs.
10) Whenever I think of my future career, I imagine myself using German.
11) If I make an effort, I am sure I can learn German.
12) I like the atmosphere of my German classes.
13) I get nervous and confused when I have to speak German in class.
14) I think that multiculturalism is a danger to preserving my culture.
15) I really enjoy learning German.
16) If I fail to learn German, I will be letting other people down.

17) My parents encourage me to study German in my free time.

18) I am proud of my cultural identity.

19) I am interested in the way German is used in conversation.

20) I would like to spend lots of time studying German.

21) I would get tense if a foreigner asked me for directions in German.

22) I usually like the people who live in German-speaking countries.

23) If my instructor gave the class an optional assignment I would complete it.

24) I have to study German because without a passing the German course I cannot graduate.

25) Learning German is important to me because I am planning to study abroad.

26) It will have a negative impact on my life if I do not study German.

27) I'm working hard at learning German.

28) Being successful in German is important so that I can please my parents / relatives.

29) Studying German is important because I would feel ashamed if I got bad grades in the course.

30) My family believes that I must study German to be an educated person.

31) I think some languages are being corrupted by multiculturalism.

32) I consider learning German important because the people I respect think that I should do it.

33) I always look forward to my German classes.

34) I am very interested in the customs and values of other cultures.

35) Learning German is important to me because I want to travel internationally.

36) I enjoy German TV programs.

37) I think I would be happy if other cultures were similar to mine.

38) I think that people who move to Canada should adapt their cultural practices.

39) I can imagine a situation where I am speaking German with native speakers.

40) I believe I will be capable of reading and writing German if I keep studying it.

41) I like the rhythm of German.

42) I would feel uneasy speaking German with a native speaker.

43) I enjoy listening to German music.

44) I like meeting people from German-speaking countries.

45) I would study like to study German whether it is required for my degree or not.

46) I have to study German because, if I do not study it, my parents will be disappointed in me.

47) I'm sure I have a good ability to learn German.

48) Studying German is important because I think someday it will help me get a good job.

49) I can imagine myself as someone who is able to speak German.

50) Studying German is important to me in order to achieve a special goal.

51) I respect the customs and values of other cultures.

52) I have to study German because I don't want to get bad marks in university.

53) Studying German is important because I don't like to be considered a poorly educated person.

54) I can imagine myself living abroad and having a discussion in German.

55) My parents encourage me to take every opportunity to use my German.

56) I find learning German very interesting.

57) Without German, I would not easily be able to travel to places that I want to go.

58) I think that the influences of other languages and cultures are a danger to my own culture.

59) I would like to know more about people from German-speaking countries.

60) It would be better if everybody lived like my culture.

61) I study German because close friends of mine think it is important.

62) I feel excited when I hear German being spoken.

63) I would like to travel to German-speaking countries.

64) I find the differences between English and German interesting.

65) I enjoy watching German movies.

66) If I met a native German speaker, I would feel uneasy.

**Demographic Questions**

1) Age
2) Gender
3) Degree program (Faculty, Program Name, Year of Study)
4) German class taken this semester (Course name and number, Section)
5) Please list any other German classes you are taking or have taken online at the University of Waterloo
6) Nationality(ies)
7) Non-English languages spoken at home or with family
8) Have you studied French in the Canadian school system?
9) If you have, was it a good experience?
10) Years spent in Canada (if not born here)
11) Would you identify as being Canadian?
12) Have you ever spent an extended period of time in a German-speaking country (at least a total of 3 months)?

13) Do you have German-speaking relatives?

14) University of Waterloo email address (Required for participation!) Example:

    a3sulliv@uwaterloo.ca

15) Would you like to receive a copy of the study's results once they are published?

## 8.2. Appendix B – List of semi-structured interview questions

1) What stuck out to you when you completed the questionnaire the first time? Second time?
2) What questions do you have about the questionnaire?
3) How do you like your German class(es)?
4) Why are you learning German?
5) What pressures, if any, do you feel to learn German?
6) How has your drive to learn German changed over the semester?
7) How have the pressures to learn German changed over the semester?
8) What do you think caused these changes?
9) How much contact did you have with languages other than English growing up?
10) Describe your culture.
11) What does multicultural mean to you? Multilingual?