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2017-01

Vincze , L , Joyce , N & Vehkalahti , K 2017 , ' Military L2 immersion : Language learning motivations among Finnish-speaking conscripts in a Swedish language garrison ' ,
Language, interaction and acquisition , vol. 8 , no. 2 , pp. 276-290 . <https://doi.org/10.1075/lia.16002.vin>

<http://hdl.handle.net/10138/231976>
<https://doi.org/10.1075/lia.16002.vin>

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Military L2 immersion: Language learning motivations among Finnish-speaking conscripts in a Swedish language garrison

The purpose of the present research report was to examine some of the motivations, and longitudinal consequences, of doing military service in Swedish as an L2 among Finnish-speaking conscripts in Finland. Questionnaire data was collected in January and July 2015 in Finland's only Swedish language garrison. The cross-sectional data ($N = 42$) was analysed with Bayesian path analysis. The results indicated that promotional instrumentality enhanced participants' L2 ideal selves, but integrative orientation did not. L2 ideal self predicted L2 learning efforts in the army, but only among those who had poor skills in the L2 at the beginning of the military service. The longitudinal data ($N = 17$) was analysed with a Bayesian model selection procedure. The results showed that participants reported higher levels of L2 proficiency, lower levels of L2 use anxiety and more positive attitudes towards L2 speakers after six months in the army than at the beginning of military service.

Key words: L2 acquisition, Swedish in Finland, military service

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1. Introduction

Finland is a bilingual country with two national languages, Finnish and Swedish. Although the Swedish language group comprises merely 291,000 speakers constituting 5.6% of the population of the country, the Swedish language enjoys high status and broad institutional support. In Finland, both Finnish and Swedish speakers have separate school systems in their own language, but they learn each other's language as a compulsory second language (L2), often beginning in grade 7 of elementary school.

However, on the whole Finnish speakers appear to have a complicated relationship with the Swedish language. For example, while political and civil initiatives to abolish Swedish as an obligatory L2 in Finnish-speaking schools have been common for decades (e.g. Pöyhönen and Saarinen, 2014; Saari, 2012), many Finnish speakers have a positive attitude towards the Swedish language. Some Finnish parents seem to strongly value their children mastering the Swedish language, and enroll them in Swedish speaking schools (e.g. Holm, Londen and Mansikka, 2015); approximately 4% of pupils in Swedish-speaking elementary schools come from monolingual Finnish homes (Utbildningsstyrelsen, 2014). Also, Finnish speakers frequently pursue studies in Swedish-speaking higher educational institutions; for instance, Finnish-speaking students make up 15% of the students at Åbo Akademi, the largest Swedish language university in Finland (Yle, 2013). One particularly strong indicator of positive Finnish attitudes towards the Swedish language is that some young Finnish-speaking men choose to do the compulsory military service in a Swedish speaking regiment.

In Finland, military service is compulsory for all males above 18 years of age. The country's only Swedish language garrison, Nylands Brigad, is situated in Dragsvik at the southern coast of the country about 90 km from Helsinki. As part of the Finnish Navy, the task of the unit is to train conscripts for coastal duties. Whereas Nylands Brigad is a natural training place for Swedish-speaking conscripts, statistics indicate that 10-15% of conscripts are usually Finnish speakers from all over Finland (Puolustusvoimat, 2013).

The Swedish language garrison offers an environment where Finnish speakers may develop their skills in Swedish in a natural, untutored way, and at the same time it provides also an excellent laboratory where the motivational background and the outcomes of uninstructed L2 acquisition may be examined. While research around L2 acquisition has predominantly focused on instructed language learning among school children, we argue that examining natural, untutored L2 acquisition may provide exceptional insights into the relationship between language, interlinguistic contact, and L2 acquisition. Because this language learning is voluntary and requires a real behavioral commitment from the Finnish-speaking conscripts, it also allows for an ecologically sound examination of the underlying motivations of L2 acquisition.

The purpose of the present paper is twofold, and therefore it includes two distinct but related studies. Study 1 is a cross-sectional study, where we aim to shed some light on the motivational background of doing

military service in L2. Study 2 is a longitudinal study, where we examine some longitudinal effects of this particular form of L2 immersion.

2. Study 1 – Cross-sectional study

2.1 Theoretical background

The first part of the study was undertaken to map the motivational background of doing military service in the L2. The conceptual model we tested (Figure 1) was inspired by Dörnyei's L2 motivational self-system model (Dörnyei, 2006). Although, the L2 motivational self-system is tailored to the educational context of L2 learning, instructed language acquisition and classroom motivation, we aim to test whether the approach, with some modifications, is applicable even in the particular context of the present study.

The central construct in our model is the core component of the L2 motivational self-system, the *L2 ideal self*. L2 ideal self reflects an individual's belief about who they might become through learning a second language. It involves hopes, ambitions, and desires and so is closely related to an individual's imagery capacity and vision (e.g. Dörnyei and Chan, 2013). Dörnyei argues that a stronger L2 ideal self promotes L2 learning efforts because L2 learners typically want to reduce the discrepancy between their actual and idealized L2 selves (Dörnyei, 2009; see also Henry, 2012).

The L2 motivational self-system also asserts that the development of L2 ideal self is supported by promotional instrumentality. That is, individuals who have clear goals to be personally or professionally successful via learning the L2 (e.g. Dörnyei, 2009; Taguchi, Magid and Papi, 2009) can create more positive L2-speaking self-images. At the same time, we suggest that in the particular context of this study not only promotional instrumentality, but also integrative orientation, i.e. the goal to get psychologically and socially closer to the L2 group by acquiring the L2 (Gardner, 2010) may be an important factor to enhance one's idealized L2 self. Specifically, given Finland's two national language groups, it is possible that there are Finnish speakers who seek opportunities to acquire Swedish to access and open doors towards the Swedish language group, and live their lives more comfortably in bilingual environments. That said, we hypothesize that both promotional instrumentality and integrative orientation will increase the L2 ideal self.

Next, drawing on the L2 motivational self-system and the related empirical works (e.g. Taguchi et al., 2009; Busse, 2013; Lamb, 2012), we hypothesize that L2 ideal self will predict L2 learning efforts. In other words, we expect that individuals with a clear vision of their future Swedish skills will be more motivated to put efforts into learning Swedish in the army.

Yet, we also anticipate that L2 proficiency will moderate the relationship between L2 ideal self and L2 learning efforts. Specifically, we argue that L2 learning in the army will be most prevalent among those who perceive a large discrepancy between their actual L2 proficiency and the L2 proficiency their idealized

L2 self should possess. Swedish proficiency may vary considerably among Finnish-speaking conscripts, and it is also probable that Finnish-speaking conscripts with different Swedish skills chose to do their military service in the Swedish unit for different reasons. For instance, it is likely that those who had good Swedish skills at the beginning of the military service chose the Swedish-speaking unit for logistical (e.g. the army base's proximity to their dwelling) or social reasons, rather than for the purpose of language acquisition. However, it is probable that those who had poor Swedish skills at the beginning of the military service might come to the Swedish-speaking unit more specifically to improve and strengthen their Swedish skills. Consequently, we expect that the L2 ideal self will predict L2 learning efforts more among those who had poor Swedish skills when entering the army than among those who had good Swedish skills when commencing the military service.

2.2. Method

2.2.1. Participants

Paper-and-pencil questionnaire data was collected among all conscripts with Finnish as their registered mother tongue in January 2015, at the beginning of the military service ($N = 88$). Participants who were coming from bilingual families (and therefore had excellent skills in Swedish) were excluded from the analysis ($n = 39$); this resulted in a final sample of $N = 42$ for the purpose of the study. The average age of the participants was under 20 years ($M = 19.36$, $SD = .53$), demonstrating that they typically entered the military service right after finishing secondary school. Only 7% came from predominantly Swedish dominated municipalities, while 54% from majority Finnish bilingual municipalities, and the rest from monolingual Finnish municipalities (e.g. Rauma, Liperi, Lakuaa) often located several hundred kilometers from the garrison. Roughly 90 % of participants reported that they intended to pursue studies in higher education after military service.

2.2.2. Measures

L2 ideal self. Five 5-point items were used to assess L2 ideal self as described in Dörnyei and Chan (2013). The scale included items such as “I can imagine myself being a very competent speaker of Swedish” and “When I think of the future, I can imagine myself using Swedish in a variety of ways”. The scale had a good reliability ($\alpha = .77$) and the mean value indicated a relatively strong L2 ideal self ($M = 3.99$, $SD = .79$).

L2 orientations. Participants were asked for what purposes they intended to utilize Swedish. Four 5-point items measured promotional instrumentality (e.g. “Because one day it will be useful in getting a good job”, “In order to attain a higher social respect”) borrowed from Taguchi et al. (2009). The reliability of the scale was low ($\alpha = .58$), and could not be improved by removing items. Still, the construct was used in the analysis in its present form by averaging the four items. The mean value indicated a moderate extent of promotional instrumentality ($M = 3.65$, $SD = .73$). Integrative orientation was measured with five items (e.g. “Because I will be able to interact more easily with Swedish speakers”) based on the integrative orientation scales described in Gardner

(2010) and Clément and Baker (2001). The scale had a good reliability ($\alpha = .86$), and the mean value indicated a high extent of integrative orientation ($M = 4.06$, $SD = .75$).

Perceived L2 proficiency. Respondents were asked to indicate how they evaluate their proficiency in Swedish with respect to speaking, listening, writing and reading. A response format from 1 = poor to 5 = excellent was used. The scale had a good reliability ($\alpha = .91$), and the mean value indicated moderate skills in Swedish ($M = 3.38$, $SD = .96$).

L2 learning efforts. With respect to the particular context of the study, a special measure was developed to assess L2 learning efforts in the army. The scale consisted of six 5-point items (e.g. “I came to Dragsvik because I wanted to improve my Swedish skills”, “I came to Dragsvik because it is a unique possibility to make a progress in Swedish”). The reliability of the scale was good ($\alpha = .88$), and the mean value indicated relatively high L2 learning efforts in the army ($M = 4.03$, $SD = 1.01$).

2.2.3. Analysis

The proposed model was examined with Bayesian estimation in Mplus version 7.4. (Muthén and Muthén, 1998-2015) following the guidance provided by Depaoli and van de Schoot (2016, forthcoming).

The Bayesian approach was chosen because of the considerably small sample size. Explicitly, the Bayesian estimator produces accurate evaluations of a parameter even with small samples (Asparouhov and Muthén, 2010; van de Schoot, 2014), i.e. where the sample size is 2-3 times the number of parameters (Lee & Song, 2004), while in maximum likelihood estimation the sample size should be at least 5 times the number of parameters (Kline, 2011, pp. 11-12). As the model we test includes 19 parameters and 42 cases, we rely more on the Bayesian approach.

The analysis used a seed value of 200 and starting values based on the ML-estimates. Four Markov chains were implemented for each parameter and the Gelman and Rubin convergence diagnostic (Gelman and Rubin, 1992) was applied with a convergence criterion of 0.01. A total of 100,000 iterations were used to ensure convergence. Default, non-informative priors provided by Mplus were used. Model fit was assessed using posterior predictive checking (Gelman, Carlin, Stern, and Rubin, 2004), which is based on a χ^2 test comparing the observed data with model estimates. A model can be considered to fit the data well when the posterior predictive p -value is between .05 and .95, and the corresponding confidence interval includes zero (Gelman et al., 2004). Bayesian analysis also provides a 95% credibility interval for each estimated parameter; a true effect would likely exist if an interval did not encompass zero.

2.4. Results

The results of the path analysis are summarized in Figure 2. The model fit the data well, posterior predictive p -value = .49, posterior predictive 95% CI [-19.51, 20.61]. Instrumental orientation predicted L2 ideal self, but integrative orientation did not. L2 ideal self predicted L2 learning efforts but this effect was moderated by L2 proficiency. The moderated indirect effect via the L2 ideal self is graphically depicted with a loop plot in Figure 3. As can be seen, when L2 proficiency is low, the indirect effect via L2 ideal self is true and positive,

-1 SD: $\beta = .32$, 95% CI [.03, .79]. However, when L2 proficiency is higher, the effect is not true anymore: at the mean value of L2 proficiency, $\beta = .04$, 95% CI [-.14, .28] and at +1 SD: $\beta = -.22$, 95% CI [-.68, .02]. In other words, L2 ideal self predicted L2 learning efforts in the army only among those who had poor skills in L2.

2.5. Discussion

The results of the first part of the study provided ample support for our hypotheses. Specifically, in line with existing research (e.g. Lasagabaster, 2015; Papi and Teimouri, 2012; Taguchi et al, 2009), it was shown that promotional instrumentality enhanced L2 ideal self, such that the clearer objectives Finnish-speaking conscripts had to become individually and professionally successful by learning Swedish the more positive self-images they built with respect to their future Swedish skills. At the same time, it was also demonstrated that integrative orientation did not contribute to L2 ideal self. This finding is especially remarkable because researchers often argue that L2 ideal self and integrativeness (Gardner, 2010) tap similar constructs, and the former may even substitute or replace the latter in L2 motivation research (e.g. Ryan, 2009; Taguchi et al., 2009). A possible explanation for the missing link between integrative orientation and L2 ideal self may be attributed to the particular context of the study. Military service lasts just a couple of months and reaching language learning outcomes in the army may be most realistic for those who have concrete, short-term goals to learn Swedish. To put it otherwise, it is likely that promotional instrumentality presumes a more focused and intensive learning process, which may be a pertinent stimulus even in such a limited time interval. At the same time, integrative orientation may imply a long-term language learning process, where individuals must be enduringly exposed to the L2 to be able to adjust linguistically and culturally to the L2 group. In other words, we believe that the dissimilar internal nature of the two types of L2 learning orientations might account for that promotional instrumentality predicted L2 ideal self at time 1 (when intergroup group exposure was more limited) but integrative orientation did not.

In addition, it was also revealed that L2 ideal self predicted L2 learning efforts, but this effect was true only among those who reported low levels of Swedish language skills at the beginning of the military service. This finding is novel and significant from a theoretical perspective. Although, the L2 motivational self-system is grounded in the idea that L2 ideal self boosts L2 learning because individuals want to reduce the gap between their actual L2 skills and the L2 skills their desired future self-image possesses, empirical works usually fail to address the combined effect of actual and aspirational L2 skills. Here, supporting our expectations, the findings indicated that L2 ideal self did not increase L2 learning efforts among all participants but only among those who had poor Swedish skills when entering the army. Even if this finding might occur because of the relatively large variation in L2 skills among our participants, we suggest that researchers should consider addressing the interactive effects between actual L2 proficiency and L2 ideal self when predicting L2 learning efforts. It appears the closer language learners get to a goal, the less those goals start to guide them.

3. Study 2 – Longitudinal study

3.1. Theoretical background

The purpose of the follow-up study was to examine longitudinal consequences of doing military service in L2. Even if the military service does not contain ordinary language lessons, military training is given in Swedish, and both native Swedish and Finnish speakers cohabitate in the army base for several months. Consequently, Finnish-speaking conscripts are provided with the opportunity to have frequent and close contact with Swedish and Swedish speakers.

Consistent with the propositions of the social context model of L2 acquisition (e.g. Sampasivam and Clément, 2014), it is reasonable to argue that Finnish-speaking conscripts will possess better communicative skills in Swedish after six months in the army than at the beginning of military service. More explicitly, it is likely that the training and everyday interactions will contribute to improving Finnish speakers' proficiency in Swedish and reduce their anxiety to speak Swedish in different communication situations.

Theoretically, these types of interactions may also have the added benefit of improving intergroup attitudes. Integrating members of different social groups within organizations like the military has typically had the effect of reducing prejudice and improving intergroup attitudes (e.g. Brophy, 1946; Kephart, 1957). Intergroup contact theory (Allport, 1954), suggests that interactions between different groups is most effective in improving intergroup relations when members of those different groups have equal status, are cooperating towards common goals, and that getting along is institutionally supported. Meta-analytic research has demonstrated that each of these conditions significantly increases the positive effects of intergroup interaction (Pettigrew & Tropp, 2006). Military service traditionally encompasses all of these conditions as well. As a result, over time Finnish conscripts should develop more positive attitudes towards Swedish speakers over the course of their military service. Additionally, intergroup contact has also been shown to decrease anxiety about communicating with the other group (Stephan & Stephan, 1992). While intergroup anxiety is not a direct analogue of language anxiety, they are conceptually linked enough that reducing intergroup anxiety may also contribute to less language use anxiety. Perhaps as a result, past research has found that increased intergroup interactions can lead to increased L2 confidence (Clément, Baker, & MacIntyre, 2003).

Taken together, we hypothesize that participants will report a higher level of L2 proficiency, a lower level of L2 use anxiety and more positive attitudes towards L2 speakers after six months in the army than at the beginning of the military service.

3.2. Method

3.2.1. Participants

A follow-up paper-and-pencil survey was conducted among conscripts with Finnish as their registered mother tongue in July of 2015 ($N = 46$). Participants, who were coming from bilingual families were excluded from

the analysis ($n = 29$); this resulted in a final sample of $N=17$ for the purpose of the second part of the study. The questionnaire included three constructs; each was measured with exactly the same items as in the first part of the study.

3.2.2. Measures

L2 proficiency. L2 proficiency was measured with four 5-point items as described in the first part of the study. The reliability of the scale was $\alpha = .93$ in both January and July.

L2 use anxiety. L2 use anxiety was measured with eight 5-point items (e.g. “When I make a telephone call, I get mixed up if I have to speak Swedish”, “I feel uneasy whenever I speak”) adapted from Clément and Baker (2001) and Gardner (2010). The reliability of the scale was $\alpha = .91$ in January, and $\alpha = .88$ in July.

Attitude towards L2 speakers. This scale was measured with three 5-point items (e.g. “Swedish speakers are usually very social and friendly”, “The more I get to know Swedish speakers, the more I like them). The reliability of the scale was $\alpha = .78$ in January and $\alpha = .75$ in July.

3.2.3. Analysis

We converted our expectations into informative hypotheses, that is, hypotheses that are constructed using equality and inequality constraints among the parameters of interest (Hoijtink, 2012). We put constraints on the mean values. For instance, with respect to L2 proficiency, we compared the hypothesis as $M_{July} > M_{January}$ and the competing null hypothesis $M_{July} = M_{January}$. The hypotheses were evaluated with a Bayesian model selection procedure by means of BIEMS (Mulder, Hoijtink, and Klugkist, 2010; Mulder, Hoijtink, and de Leeuw, 2012). BIEMS provides Bayes factors (BF ; Kass and Raftery, 1995) to demonstrate the degree of support for an informative hypothesis compared to the unconstrained alternative given the observed data. The resulting BF s show the relative support for one hypothesis over another. Comparing two hypotheses, a $BF > 1$ indicates that there is more support for the first hypothesis than for the second, while $BF < 1$ means that the second hypothesis outperforms the first. The Bayesian way of hypothesis testing is often preferred because it allows evaluating expectations more directly than the traditional way of null hypothesis testing (e.g. van de Schoot, Verhoeven, & Hoijtink, 2013). In addition, we chose the Bayesian method even so that our analytical approach will be consistent with that in the cross-sectional study.

3.3. Results

Descriptive statistics are summarized in Figure 4. As can be seen, participants reported higher level of L2 proficiency, lower level of L2 anxiety and more positive attitudes in July than in January.

With respect to L2 proficiency, the Bayesian model selection demonstrated approximately 10 times more support for the inequality constrained hypothesis ($BF = 1.99$) than for the competing null hypothesis ($BF = 0.21$). In other words, L2 proficiency is about 10 times more likely to increase during six months' military service than to remain the same as at the beginning of military service.

With respect to L2 use anxiety, the results indicated that there was about 40 times more support for the inequality constrained hypothesis ($BF = 2.0$) than for the competing null hypothesis ($BF = 0.05$). That is, L2 use anxiety is roughly 40 times more likely to decrease during six months of military service than to remain the same as at the beginning of the military service.

With respect to attitude towards L2 speakers, the analysis demonstrated that there was also about 33 times more support for the inequality constrained hypothesis ($BF = 2.00$) than for the competing null hypothesis ($BF = 0.06$). To put it differently, attitude towards L2 speakers is 33 times more likely to improve during six months of military service than to remain the same as at the beginning of the military service.

3.4. Discussion

The results of the second part of the study supported our hypotheses regarding the possible longitudinal effects of doing the military service in the L2. Indeed, our participants reported higher levels of L2 proficiency, lower levels of L2 use anxiety, and more positive attitudes towards L2 speakers after six months in the army than at the beginning of their military service. Without doubt, this specific form of Swedish immersion our participants volunteered for proved to be an effective way to improve their Swedish skills and reduce their prejudice towards the Swedish language group. Language is often one of the most salient divides in intergroup conflict (Giles, Taylor, & Bourhis, 1977; Rakić, Steffens, & Mummendey, 2011). An experience that improves attitudes about not only the outgroup, but the use of the language represent hitting two birds with one stone.

4. General discussion

The purpose of the present research was to investigate the motivational background and some longitudinal consequences of doing the military service in Swedish as an L2 among Finnish-speaking conscripts. Taken together, our findings indicated that promotional instrumentality predicted L2 ideal self but integrative orientation did not, whereas L2 ideal self, in turn, predicted L2 learning efforts, but only among those conscripts who reported low levels of Swedish language skills at the beginning of the military service. In addition, it was also revealed that the conscripts reported higher levels of L2 proficiency, lower levels of L2 use anxiety, and more positive attitudes towards L2 speakers after six months in the army than at the beginning of their military service.

Taken at face value, the findings presented here have several implications. From a theoretical perspective, our findings suggest implications for the applicability of the L2 motivational self-system in natural (as opposed to structured instruction) L2 acquisition. Specifically, we demonstrated that the L2 motivational self-system may be a pertinent tool to approach L2 learning motivation in untutored, natural L2 learning setting. This is of importance, because research in the field paid attention mostly to instructed L2 learning among school children, rather than to natural, self-motivated, and uninstructed L2 acquisition overlooking the significance of “out of school” L2 acquisition. Also, our results extend Dörnyei’s model with introducing the moderating effect of perceived L2 proficiency between L2 ideals self and L2 learning efforts. Indeed, ours

findings suggest that given a noticeable variation in L2 skills among language learners, a stronger L2 ideal self will increase L2 learning efforts only among those who had poor skills in the L2 in question.

Our findings have also an important methodological contribution, namely, the innovative use of Bayesian statistics – in form of both path analysis and hypothesis selection procedure – in applied language research. Applied language research is often littered with some important and interesting circumstances that should be studied, but affect a comparatively smaller population. Having a quantitative way to approach this is good for variety but sometimes hampered by limitations in standard statistical analysis. Bayesian analysis provides an avenue forward that then allows for these smaller scale contexts to be directly compared with others (which a qualitative analysis would not allow).

Finally, the study at hand has two important practical implications. First, some young people leaving the school bank are still interested in the L2, and seeking special methods to acquire it. Future research should pay more attention to these language learners, since the process of L2 acquisition sometimes does not end just because formal schooling has. Second, our results clearly indicate that a natural way of L2 acquisition based on, and coupled with, contact and interaction with native L2 speakers has a positive outcome not only on language skills but also attitudes towards the L2 group. In other words, this way of extending L2 learning experiences may have an important contribution to positive intergroup relations.

Both parts of this study have important limitations. Although, the cross-sectional data collected in January was a complete sample (i.e. the whole population was included), the small sample size did not allow us to develop a more extended conceptual model (because of the requirement for a minimum case-to-parameter ratio, see van de Schoot et al., 2014). Furthermore, the cross-sectional data was also handicapped by the low reliability of the promotional instrumentality measure. While we are aware of that instrumentality measures often have low reliabilities (Gardner, 2010), and also that promotional instrumentality measures are typically designed for school contexts, where more diverse ways of promotion (e.g. good marks, a good school report or certificate) are conceivable, it is necessary to bear in mind that a more reliable measure would increase the validity of our findings. When it comes to the second part of the study, it is important to note that we were provided with the opportunity to collect data in July, when several participants had already finished their military service and left the unit. Even if the sample size did not have negative consequences on the statistical inference, the sample used in the longitudinal analysis was smaller than we would have preferred. Importantly though, the setting of the present research was especially interesting and worth studying, and a small sample size was an inevitability.

Nevertheless, despite these limitations, we believe that the research at hand offered some important insights into a special way of L2 learning. We recommend that future studies should further test the applicability of the L2 motivational self system in other natural, uninstructed L2 learning contexts. Also, we hope that other researchers in the field will be motivated to use Bayesian statistics so that it will reach a greater popularity in applied language studies.

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Figure 1. The proposed model. The moderating effect (i.e., the interaction of L2 ideal self with L2 proficiency) is depicted as an arrow from L2 proficiency to the path from L2 ideal self to L2 learning efforts.

Figure 2. Results of the Bayesian path analysis. The figure shows standardized coefficients.

Figure 3. Loop plot depicting the indirect effect as a function of the moderator. The solid line shows the indirect effect, while the dashed lines show the 95% credibility interval. Values for the moderator variable range from -1 to +1 standard deviations from the mean.

Figure 4. Results of the longitudinal analysis. The figure shows posterior sample means ($N = 17$).