

Running head: Online Contact and Multilingualism

Online Contact, Face-to-Face Contact and Multilingualism:

Young Swedish-speaking Finns Develop Trilingual Identities

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### Abstract

Based on the tenets of the social context model of second language acquisition, the present paper examined the combined effect of online and face-to-face contact in developing multilingual skills and identities among young Swedish-speaking Finns ( $N = 304$ ). The hypotheses were tested for Finnish as a second language, and English as a third language using parallel models. The results were largely identical for both languages. Specifically, online contact enhanced language confidence, which, in turn, contributed to language identity. However, online contact had a more substantial effect on confidence as well as identity among those who had little face-to-face contact with speakers of the given language. Findings and their implications are discussed.

*Keywords:* online contact fa-to-face contact, multilingualism, Swedish in Finland

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The social context model of second language acquisition (Clément 1980; for a recent review, see Sampasivam & Clément 2014) posits that in bilingual settings, where the second language is present in the surrounding environment, contact with members of the second language group becomes a central factor in second language acquisition. In particular, the model advocates that contact can enhance speakers' confidence in the second language, which will in turn be a key precursor of linguistic identification. By definition, second language confidence reflects individuals' beliefs about their ability to communicate in the second language (see Clément, Noels & MacIntyre, 2007), and entails low levels of second language anxiety and high levels of perceived second language competence. As a whole, the social context model addresses the process of natural language acquisition that occurs as a result of social diversity.

Early studies focused typically on face-to-face contact with second language speakers and its consequences (e.g. Clément, 1986; Clément & Kruidenier, 1985). However, social contexts are no longer just face-to-face, but also facilitated through technology, drastically expanding the scope and diversity of the social context. To address this changing social context, this study will consider how both mediated and face-to-face exposure to both dominant local and international languages affects linguistic confidence and identity.

Recent studies have recognized the relevance of mediated contact in second language acquisition, and have found longitudinal effects of increased mediated exposure to a second language lead to increases in second language confidence, and as a result second language identity (Clément, Baker, Josephson & Noels, 2005). Research has begun to address how mediated and face-to-face exposure to second languages interact and work in concert. For example, Gaudet and Clément found that face-to-face and mediated contact work hand-in-

hand to boost language learner's confidence in the second language (2005; 2009). At the same time, research has demonstrated how media effects may contextually depend on everyday contact with native second language speakers (Vincze, 2015; Vincze & Gasiorek, 2016). These findings, are interesting, but not entirely in tune with one another, and therefore bear further scrutiny.

One theoretical framework that can help us disentangle the interactive roles of mediated and face-to-face contact on second language confidence and identity is intergroup contact theory (Allport, 1954). Intergroup contact theory suggests that when individuals from different groups (language groups in the case of this study) are exposed to one another, that intergroup attitudes and relations improve. While the original theorizing was focused mostly on effects of face-to-face interactions, researchers soon extended contact theory to other communication channels (Wright, Aron, McLaughlin-Volpe, & Ropp, 1997), and have found similar effects for contact through imagined interactions (Crisp & Turner, 2009; 2013), media (for review see Vezzali, Hewstone, Capozza, Giovannini, & Wölfer, 2014), and computer mediated interactions (Amichai-Hamburger, 2012).

Researchers have also turned their attention to when and how contact is effective in producing pro-social outcomes. In his original theorizing Allport further suggested that contact was most likely to be effective when members of those different groups are cooperating towards common goals, have equal status, and that interaction is institutionally supported, a suggestion supported by recent meta-analytic research (Pettigrew & Tropp, 2006). In addition to these classic moderators research has found three major mediators, or mechanisms, through which contact seems to have positive intergroup effects: increasing empathy, increasing knowledge, and decreasing anxiety (Pettigrew & Tropp, 2008). These last two seem to relate to a mental rehearsal function (e.g. Choi, Honeycutt, & Bodie, 2014) that may explain some of the effects of imagined, and mediated forms of contact as well. For

example, one study found that exposure to mediated depictions of an intergroup interaction led to increased feeling of self-efficacy regarding intergroup communication which in turn led to more positive affect and attitudes towards the outgroup, and an increased desire for future face-to-face contact (Mazziotta, Mummendey, & Wright, 2011). This type of mental rehearsal, knowledge building, and anxiety reduction that leads to improved efficacy in different forms of contact, suggests that different forms of contact likely work together and should be considered simultaneously.

Interestingly, this intergroup self-efficacy variable neatly parallels Clément's concept of linguistic confidence (1980). Although the outgroup attitudes, empathy, and affect variables are not a direct match for linguistic identification, other research on mediated contact has found that effects of mediated contact on attitudes are statistically mediated by increased outgroup identification (Lienemann & Stopp, 2013). All of this is to simply say that the social context model of language acquisition and intergroup contact theory may actually be describing the same, or at least very similar, theoretical underpinnings. This becomes useful, given that research on intergroup contact has given more thorough examination of how face-to-face and mediated contact experiences interact. A number of studies have found that while both face-to-face and mediated exposure have positive effects on the previously mentioned variables, mediated contact's effects only occur strongly in the absence of face-to-face experiences (for review, see Vezzali et al., 2014).

However, as previously mentioned, the reason to investigate mediated and face-to-face exposure to other language goes beyond simply understanding their theoretical interaction. The expansion of the social context through the globalizing forces of media and the Internet means that the local linguistic arena is no longer the sole consideration, and yet that is all that has been considered in this literature. Individuals can engage in mediated contact not only with the surrounding local languages but also with physically distant, foreign

languages. English, for example, has become a dominant language in the media landscape in several countries and cultures, and represents the most widely used language on the internet (Leppänen & Peuronen 2012; Thurlow & Mroczek 2011). As the Internet constitutes one of the most vital channels of communication as well as means of conveying other forms of media English is now a part of most linguistic landscapes and/or social contexts.

As a result, in monolingual settings, English can be regarded as the relevant second language in the linguistic map and media landscape. However, in settings that are already bilingual English has the position of a third language preceded by the two local languages. For instance, for minority language speakers, who often live in traditionally bilingual environments, the local majority language is set up and serves as a default second language, while English may, act as the third language. Accordingly, minority language speakers may find themselves under unique linguistic circumstances: they may have easy access to three languages, and a chance to be multilingual and behave multilingually. With respect to the social context model of second language acquisition, this implies that minority language speakers can have contact, can be confident and can identify themselves with both the local majority language as a second language and English as a third language. It remains an open question, which we begin to address in this paper, if the social context models that have been tested for local language maps will also apply to broader more globalized maps.

To operationalize this research question, we examine the social context of the Swedish minority in Finland. Although, Swedish is one of Finland national languages, Swedish speakers constitute just a small minority in Finland with a size of 290,000 persons or 5.4 % of the population of the country. The rights of each of the national languages are ensured by the language act (423/2003), according to which Finnish or Swedish can be used officially in municipalities where the speakers of the language make up at least 3,000 persons or 8% of the local population. Despite its high status, the size of the Swedish language group

has declined slowly but steadily since the Second World War. Today, almost the half of Swedish speakers live in Swedish dominated municipalities (Finnäs, 2013), but many Swedish speakers are immersed in an increasingly Finnish society, and as a result usually have very good skills in the dominant language of their country.

English is the most important foreign language in Finland, which fills a distinct and specific position in Finnish society with respect to several social domains such as education, media and professional life (Leppänen, 2007; Sjöholm, 2004; Taavitsainen & Pahta, 2003). According to international statistics (Education First English Proficiency Index, 2016), Finland places among the top five countries in the world when it comes to the fluency of English. Proficiency in English is a result not only of language education but also the frequent exposure to English via mass media. For instance, since the 1950s English language TV contents have been subtitled rather than dubbed, retaining the original, mostly English, soundtrack (e.g., Hyrkstedt & Kalaja, 1998; Leppänen, 2007) providing a vital channel towards English and the Anglo-American culture.

#### PLEASE PLACE FIGURE 1 ABOUT HERE

In this research context, we set forth three hypotheses (see Figure 1 for an integrated conceptual model). The first two reflect the tenets of the social context model and related research (author 2016, Gaudet & Clément, 2005, 2009; Clément et al., 2005). First, we hypothesize that both face-to-face and online contact will be positively related to language confidence. In other words, we expect that those who have contact with Finnish and English via the internet or through interpersonal interactions will report higher levels of confidence with Finnish and English, respectively. Second, we hypothesize that this increased linguistic confidence will be predictive of increase linguistic identification. Our third hypothesis, integrates research on mediated contact (e.g. Fujioka, 1999; Schiappa et al., 2005) and empirical findings on the relationship between mediated linguistic contact and language

confidence (Vincze & Gasiorek, 2016) into the social context model. Specifically, we predict the effect of online contact on language confidence will vary according to the amount of face-to-face contact. More specifically, we anticipate that online media contact will have a more substantial effect on Finnish and English confidence among those who lack or have little contact in everyday life with Finnish speakers and English speakers, while among those who have extensive contact with Finnish and English speakers, language confidence will be more strongly associated with face-to-face contact experiences than mediated ones. We test all three of these hypotheses as they relate to both the local (Finnish) and global (English) social context.

## Method

### Participants

Questionnaire data was collected among students in the Swedish secondary schools in Pargas/Parainen and Jakobstad/Pietarsaari ( $N = 304$ ). The average age of the participants was 18 years ( $SD = .86$ ). About 57 % of the participants were female, and 43 % male. Participants reported using the internet more than four hours a day on average ( $M = 4.12$ ,  $SD = 2.12$ ).

### Measures

**Online language contact.** Participants were asked to assess the proportion (%) of the use of Swedish, Finnish and English in four domains representing major internet based behaviours (browsing, social media, information seeking and interpersonal communication). The subscales were added up to represent the total amount of the use of the three languages. The internal consistency of the composed scales was good (for Swedish  $\alpha = .80$ , for Finnish  $\alpha = .88$ , and for English  $\alpha = .82$ ). Descriptive statistics about the subscales is presented in the Results section.



**Linguistic identity.** Identification with Swedish, Finnish and English was measured with four five-point items, respectively. The items were chosen so that they measure comparable aspects of linguistic identification, and as such, the four items were the same for Swedish, Finnish and English. For instance, regarding Swedish, the items were “Swedish is an important part of my identity”, “I have a lot in common with Swedish speakers”, “I feel a strong affinity with Swedish speakers”, “I identify myself with the Swedish language”. The internal consistency of the three scales was good (for Swedish  $\alpha = .79$ , for Finnish  $\alpha = .89$ , and for English  $\alpha = .83$ ). Higher values indicate higher identification with the given language. Participants identified themselves most highly with Swedish ( $M = 4.51$ ,  $SD = .56$ ), next with English ( $M = 3.28$ ,  $SD = .89$ ) and least with Finnish ( $M = 3.01$ ,  $SD = 1.10$ ),  $F(2, 594) = 276.30$ ,  $p < .001$ ,  $\eta^2 = .48$ . All pairwise comparisons were statistically significant ( $p < .001$ ).

**Language confidence.** Confidence with Finnish and English was measured with 10 five-point items combining perceived linguistic competence and language use anxiety as described by Clément (1986; see also Clément & Baker 2001). Participants were asked how well they evaluate their skills (reading, speaking, writing and understanding) in Finnish and English (1 = very poor, 5 = very good). Language use anxiety included six items. For instance, regarding Finnish, sample items were such as “I feel uneasy whenever I have to speak Finnish” or “When I make a telephone call, I get mixed up if I have to speak Finnish.” As language anxiety items were reversed, higher scores indicate higher language confidence. The reliability of the scales was good (for Finnish  $\alpha = .96$  and for English  $\alpha = .92$ ). Participants reported greater confidence with English ( $M = 4.39$ ,  $SD = .61$ ) than with Finnish ( $M = 3.50$ ,  $SD = 1.16$ ),  $t(294) = 11.29$ ,  $\eta^2 = .30$ .

**Face-to-face contact.** Amount of contact with Finnish speakers and English speakers in everyday life were measured with four five-point items, respectively. Participants were asked how often they have contact with Finnish speakers and English speakers in their own

family, among their friends and acquaintances, in school and in the city (1 = never, 5 = very often). With respect to contact with Finnish speakers, the reliability of the scale was good ( $\alpha = .75$ ). Although, with respect to contact with English speakers, the reliability of the scale ( $\alpha = .59$ ) was below the conventionally accepted cut-off criterion, and even dropping items could not improve reliability, we kept the scale in the analysis in order to be able to make relevant comparisons between Finnish and English. Participants reported more frequent contact with Finnish speakers ( $M = 2.49, SD = .99$ ) than with English speakers ( $M = 1.71, SD = .58$ ),  $t(301) = 13.23, \eta^2 = .37$ .

## Results

### Descriptive statistics

A two-way within-subjects analysis of variance with language (Swedish, Finnish and English) and domain (browsing, social media, information seeking and interpersonal communication) as factors was performed to assess the differences in online language contact across the four domains. The main effect of language was significant,  $F(2, 602) = 288.32, p < .001, \eta_p^2 = .49$ , but the main effect of domain was not,  $F(3, 903) = 1.64, p = .18$ . The interaction between language and domain was also significant,  $F(6, 1806) = 213.23, p < .001, \eta_p^2 = .42$ . The pairwise comparisons indicated that the use of English varied significantly across the four domains at the level  $p < .001$ . Also, the use of Swedish differed significantly across most domains but the difference between social media and browsing was not statistically significant. With respect to Finnish, it was only language use in social media that significantly differed from language use in the other three domains at the level  $p < .05$ . The results are depicted in Figure 2.

PLEASE PLACE FIGURE 2 ABOUT HERE

As can be seen, English is the first language in browsing and social media use, exceeding the use of Swedish and Finnish, while Swedish is the strongest language in interpersonal communication. The use of Swedish and English are at the same level when it comes to information seeking. Interestingly, Finnish is the weakest language in all four domains of internet use.

Correlation coefficients for the relationships between confidence, identity, and both online and face-to-face contact for each of the languages are summarized in Table 1. Most relationships suggest the plausibility of the proposed model.

PLEASE PLACE TABLE 1 ABOUT HERE

### **Main analysis**

First-stage moderated mediation analyses were calculated using Mplus (Muthén & Muthén, 2016). Online language contact was defined as the independent variable, face-to-face contact as moderator of the effect of online language contact, language confidence as a mediator, and language identity as a dependent variable.

In the first model a robust maximum likelihood estimator was employed because the face-to-face contact with English speakers was a highly skewed variable. The initial model did not fit the data well,  $\chi^2(2) = 53.50, p .01, RMSEA = .29, CFI = .75, SRMR = .07$ . Modification indices suggested a path from the interaction term to English language identity. As this was consistent with our theoretical view, the path was added to the model together with the direct path from face-to-face contact to identity. As a consequence, the revised model was saturated, and therefore model fit indices could not be computed. The model accounted for 22% of the variance in English confidence and 36% of the variance in English language identity. Model coefficients are summarized in Figure 3.

PLEASE PLACE FIGURE 3 ABOUT HERE

In line with hypothesis one, online as well as and face-to-face contact with English predicted English confidence. Also, as anticipated in hypothesis two, English confidence predicted English language identity. Finally, and consistent with our third hypothesis, the path between online contact with English and English confidence was moderated by face-to-face contact with English speakers. The interaction was decomposed by the means of the PROCESS macro (Hayes, 2013), and it is depicted in Figure 4. As can be seen, English online contact had a smaller effect on English confidence among those participants who have relatively more contact with English speakers in everyday life, while the effect is greater for those who reported less contact with English speakers. In addition, and referring to the modification of our initial model, the direct effect of online English contact on English language identity was also moderated by face-to-face contact with English speakers. As depicted in Figure 5, English online contact had a smaller effect on English language identity among those participants have relatively more contact with English speakers in everyday life, whereas the effect is greater for those who reported less contact with English speakers. In accordance with this, among those having little face-to-face contact with English speakers, the indirect effect of online English contact on English language identity was greater,  $-1SD, B = .14, 95\% CI [.08 .19]$ , while among those having much face-to-face contact with English speakers the indirect effect was smaller,  $+1SD, B = .09, 95\% CI [.03 .14]$ .

PLEASE PLACE FIGURE 4 AND FIGURE 5 ABOUT HERE (IN THE SAME LINE)

With respect to Finnish, the initial model did not fit the data well,  $\chi^2(1) = 24.53, p < .01, RMSEA = .19, CFI = .95, SRMR = .02$ . Similar to the English model, modification indices proposed a path from the interaction term to Finnish language identity, and as before the path was added to the model in conjunction with face-to-face contact with Finnish speakers. The revised model accounted for 61 % of the variance in Finnish confidence and 64

% of the variance in Finnish language identity. Model coefficients are summarized in Figure 6.

PLEASE PLACE FIGURE 6 ABOUT HERE

As predicted in hypothesis 1, both online and face-to-face contact with Finnish predicted Finnish confidence. Next, and consistent with our second hypothesis, Finnish confidence predicted Finnish language identity. Finally, as predicted in hypothesis 3, the path between online contact with Finnish and Finnish confidence was moderated by face-to-face contact with Finnish speakers. The interaction is depicted in Figure 7; as can be seen, Finnish online contact had a smaller effect on Finnish confidence among those participants have relatively more contact with Finnish speakers in everyday life, whereas the effect is greater for those who reported less contact with Finnish speakers. Furthermore, the direct effect of online Finnish contact on Finnish language identity was also moderated by face-to-face contact with Finnish speakers. As depicted in Figure 8, Finnish online contact had a smaller effect on Finnish language identity among those participants have relatively more contact with Finnish speakers in everyday life, while the effect is greater for those who reported less contact with Finnish speakers. In accordance with this, among those having little face-to-face contact with Finnish speakers, the indirect effect of online Finnish contact on Finnish language identity was greater,  $-1SD$ ,  $B = .29$ , 95% CI [.20 .38], whereas among those having much face-to-face contact with Finnish speakers the indirect effect was smaller,  $+1SD$ ,  $B = .20$ , 95% CI [.10 .30].

PLEASE PLACE FIGURE 7 AND FIGURE 8 ABOUT HERE (IN THE SAME LINE

## Discussion

Based on the tenets of the social context model of second language acquisition (Clément, 1980), the purpose of the present paper was to examine the combined and

interacting effects of online and face-to-face contact in developing multilingual skills and identities among young Swedish-speaking Finns.

We tested two identical models in parallel, one for contact with Finnish (the dominant local language) and one for contact with English (the dominant language of the internet). Descriptive statistics reflected the dominance of English on the Internet. For instance, when browsing or using social media, Swedish speaking Finns were much more likely to engage in online communication in English, rather than Swedish or Finnish. Indeed, out of the four examined domains, it was only interpersonal communication that was primarily, and unsurprisingly, conducted in Swedish. While the opposite was born out in face-to-face contact, participants still reported being more confident and identified with English than Finnish, suggesting that the internet is perhaps a more powerful component of the linguistic social context than past researchers have given it credit for being. This suggests that future research into social contexts of second language acquisition should more consistently consider online communication patterns in addition to face-to-face ones.

Despite this potential dominance of English over Finnish in internet use, the social context models of language acquisition were structurally identical. In consistent with existing research (e.g. Clément et al., 2005; Gaudet & Clément, 2005, 2009), online contact enhanced language confidence, which, in turn, contributed to language identity. A more in-depth look into this finding provides a number of interesting and novel insights. Correlation coefficients indicated (see Table 1) exposure to English online and face-to-face was negatively associated with confidence and identification in Finnish, suggesting that when it comes to secondary linguistic identities there is a competition for resources. However, it was also shown that Swedish language identity was positively correlated with both English and Finnish identification. So, while language skill acquisition might reflect a zero-sum game, identity in total seems to work differently. Specifically, this suggests that the process of linguistic

identification is not only one of acculturation, but also one of global citizenship and multilingualism. There are a number of theoretical reasons why this might be the case. Social identity theory describes a superordinate form of identity in addition to individual social identities (Tajfel & Turner, 1986). It is possible that multilingual and multicultural exposure has the potential to make people feel more like a citizen of the world, and therefore makes salient this superordinate “human” identification. Relatedly, research on both face-to-face (Tausch et al., 2010) and mediated contact (Joyce & Harwood, 2014) has also shown a pattern of secondary transfer of contacts effects. It is not yet entirely clear what drives these effects, if it is a process of reducing ethnocentrism, or if it is about abstract modelling to other conceptually related identities, and this paper provides no definitive further commentary on that debate. However, it does reinforce that it is important to look at identity in a broader sense. Social identity theory (Tajfel & Turner, 1986) suggests that we have many modular identities, and what this and other research suggests is that it is important to look at the simultaneous interplay between them.

One of the other goals of this research was to examine the interactive effects of both local and online social contexts. In line with research on mediated contact more generally (e.g. Fujioka, 1999) and some of the studies on social context (author, 2015), our results demonstrated online contact had a greater impact on language confidence among those who had little face-to-face contact with speakers of the given language than among those who had more contact with them. These findings, combined with what we have discussed above, suggest that while the internet is a potent linguistic social context, and can serve as a functional replacement in many regards, people are still more influenced by their face-to-face interactions that happen within the local context. Regardless, the effects of both face-to-face and online contact are not a simply additive one.

Interestingly, we also found that face-to-face contact moderated the effect of online contact not only relating to language confidence but also to language identity. That is, online language contact also appeared to directly, and positively related to language identity, especially for those with little face-to-face exposure. In this sense, our findings also link back to the research on intergroup contact theory, which has considered the role of contact on identity. Most studies around the social context model focused primarily on the indirect effects of contact on language identity via language confidence (e.g. Clément et al., 2005; Clément, Baker & MacIntyre, 2003). Yet, the findings presented here make it clear that contact may also have a direct effect on language identity, not mediated by the communicative skills one acquires in the other languages. That said, it seems likely that there are non-linguistic factors (e.g. developing positive intergroup attitudes, adopting cultural features of the outgroup), which may heighten the identification with linguistic outgroups. Taken together, this makes for a compelling argument to further synthesize the social context models with contact theory more broadly. Social context model researchers would gain a wealth of non-linguistic variables that are important in this process (such as intergroup understanding, intergroup anxiety, outgroup trust and empathy), and intergroup contact theory researchers would gain a stronger understanding of the role of language, which research has shown is one of the strongest forms and indicators of social identity (Rakić, Steffens, & Mummendey, 2011).

While the identical structure of our English and Finnish models, which parallels similar models in other cultures is suggestive of a more universal underlying process, it is worth noting that was one interesting difference between the models that begs more questions than answers. All in all, both fully saturated models predicted a large amount of variance in the both linguistic confidence and identity. However, whereas the model for English ended up predicting 22% of confidence and 36% of identification, the model for Finnish predicted



61% and 66% respectively. This considerably higher number suggests that there may be something particular about the research context. Although, face-to-face exposure was somewhat higher for Finnish than for English, it was still below the half-way point of the scale, and therefore it cannot account entirely for the discrepancy in effect sizes. At the same time, it is likely that there are important differences in the both content and context of Finnish and English face-to-face exposure.

Finnish is the major language of the country – historically, legally and culturally – and about 92% of Finnish citizens speak it as their mother tongue. The existence of Finnish and Finnish-speakers in the physical environment of our participants may imply a different level of intimacy, closeness and familiarity of interactions with Finnish speakers than that with English speakers. In addition, to some extent, these intimacy-related differences of face-to-face exposure to Finnish and English may be transmitted even to online exposure. It is probable that, independently of the amount of exposure to the two languages, our participants perceive a distinct mental distinction between Finnish and English: Finnish is a second language and a domestic language, whereas English is a foreign language. That said, it is possible that our participants may have a more natural and coherent relationship with Finnish than with English, and this can, at least partly, account for why the social context model was more predictive for Finnish than for English. Obviously, future research may wish to examine not only the interactions between local and online contexts, but also some of their most specific and distinctive qualities, such as the content and quality of face-to-face interactions, and also factors such as intergroup threat, symbolism, or socio-political factors.

In addition, to some unanswered questions, this research also has a number of limitations that are important to note. Some, like the lack of reliability of the face-to-face English contact measure, may be easily explained in terms of the demographic situation of Finland, but still represent a non-ideal state of affairs when constructing these models. Still,

there is another aspect regarding measurement problems which should be acknowledged. While our focus was on contact with native English speakers in everyday life, it is possible that our participants are engaged occasionally in contact with foreigners who are not native English speakers, but use English as a bridge language just to get by in a foreign country.

Another important caveat is due to the correlational design, which does not allow for the ascertainment of causality or its direction. Consequently, we cannot claim that the relationships tested here provide definitive evidence regarding the causal role of specific variables, and it is quite possible that alternative relations among the variables could be specified. For instance, the social identity gratifications approach (Harwood, 1997, 1999) suggests that social identity may steer media selection. Similarly, it is probable that a higher identification with English influences individuals to search for contact with English when online in order to gratify their linguistic needs. However, these forces of contact and identification are intertwined and mutually reinforcing processes, the examination of which could be achieved by using feedback loops in non-recursive models and through longitudinal analysis.

Lastly, it is necessary to bear in mind that we did not have an opportunity to test our modified model in a new, independent sample; therefore, the validity of the revised model should be examined by future research. Nevertheless, we believe that the results presented here are valuable and demonstrate clearly the relevance and usefulness of the social context model in understanding the development of multilingual skills and identities in a trilingual context. This may be a rewarding extension of the model, which we regard to be an important contribution of the paper. In the end, what our research can tell us is that both online and face-to-face exposure are associated with greater linguistic confidence and identification. The interaction between these two communication channels suggests a powerful role for both. Because of the power of the modern, global, internet driven, social context, people aren't

merely exposed to their own language, but rather a multitude of languages. While this multitude of voices may find themselves in competition, the result of exposure is a more multilingual audience than would otherwise be observed.

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Table 1

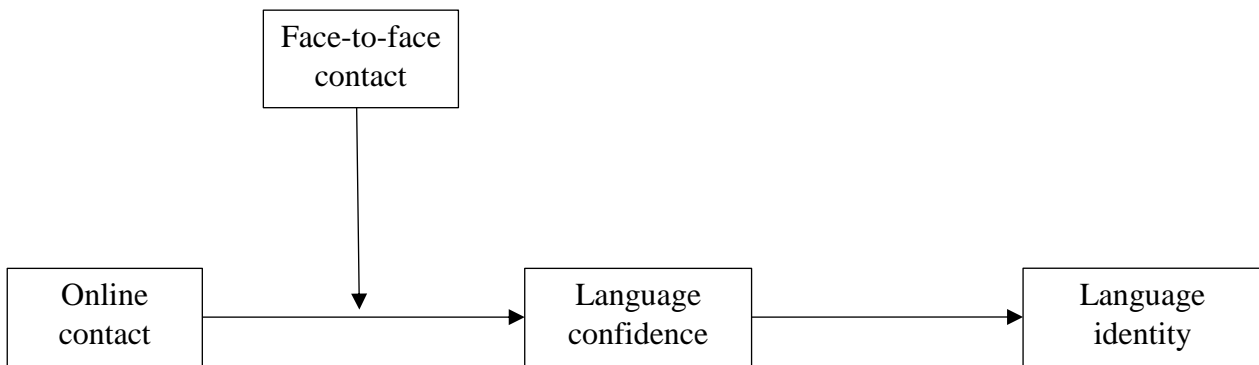
Zero-order Correlations among Study Variables.

	Face-to-face Finnish contact	Face-to-face English contact	Confidence with Finnish	Confidence with English	Swedish language identity	Finnish language identity	English language identity
Online Swedish contact	-.18**	-.12*	-.16**	-.37**	.22**	-.14*	-.29**
Online Finnish contact	.66**	.07	.59**	-.17**	-.04	.60**	-.20**
Online English contact	-.16**	.08	-.14*	.43**	-.19**	-.17**	.38**
Face-to-face Finnish contact		.24**	.72**	-.11	-.02	.68**	-.11
Face-to-face English contact			.05	.16**	-.01	.07	.37**
Confidence with Finnish				-.07	-.00	.76**	-.12*
Confidence with English					-.01	-.20**	.45**
Swedish language identity						.17**	.26**
Finnish language identity							.01

Note.

\*  $p < .05$

\*\*  $p < .05$



*Figure 1.* The conceptual model tested in the study.

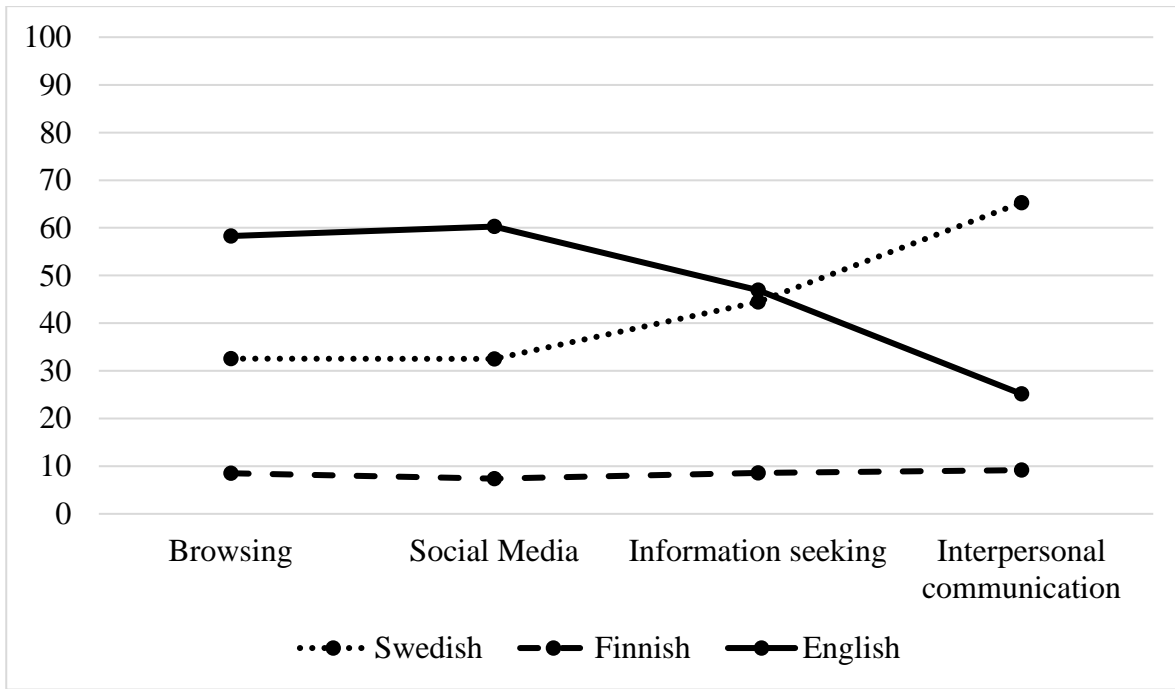


Figure 2. Contact with the different languages across the domains. The figure shows the mean values.

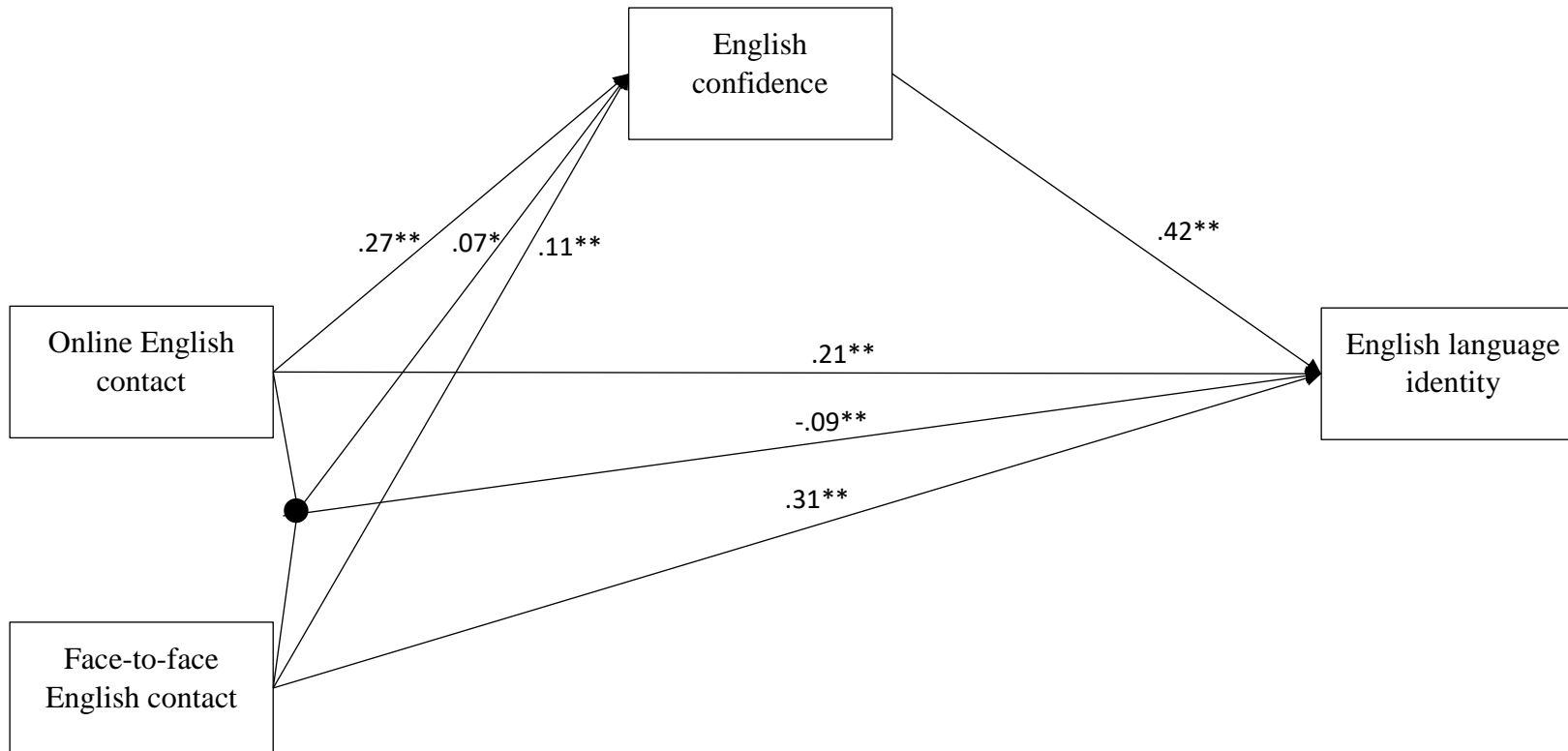


Figure 3. Results of the model on English. The figure shows unstandardized coefficients. The interaction between online contact and face-to-face contact is depicted as a node.

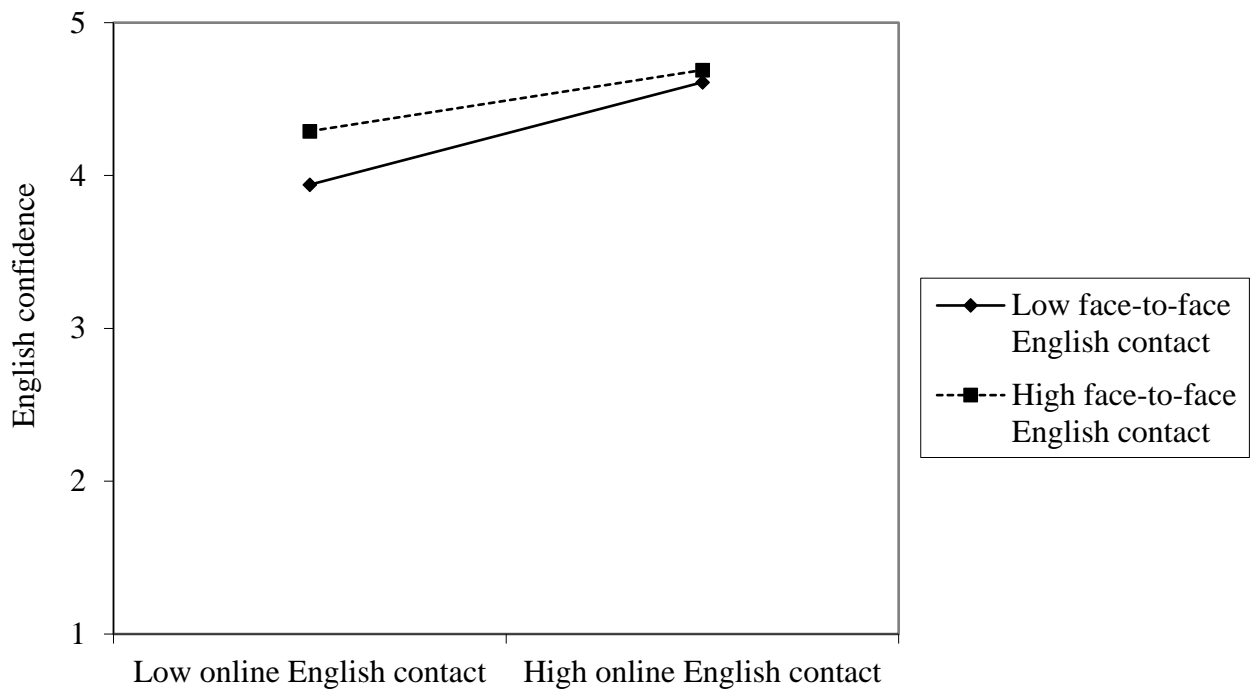


Figure 4. The figure depicts the combined effect of online English contact and face-to-face English contact on English confidence. Low and high values of the moderator are defined as mean  $\pm$ 1 SD from the mean.

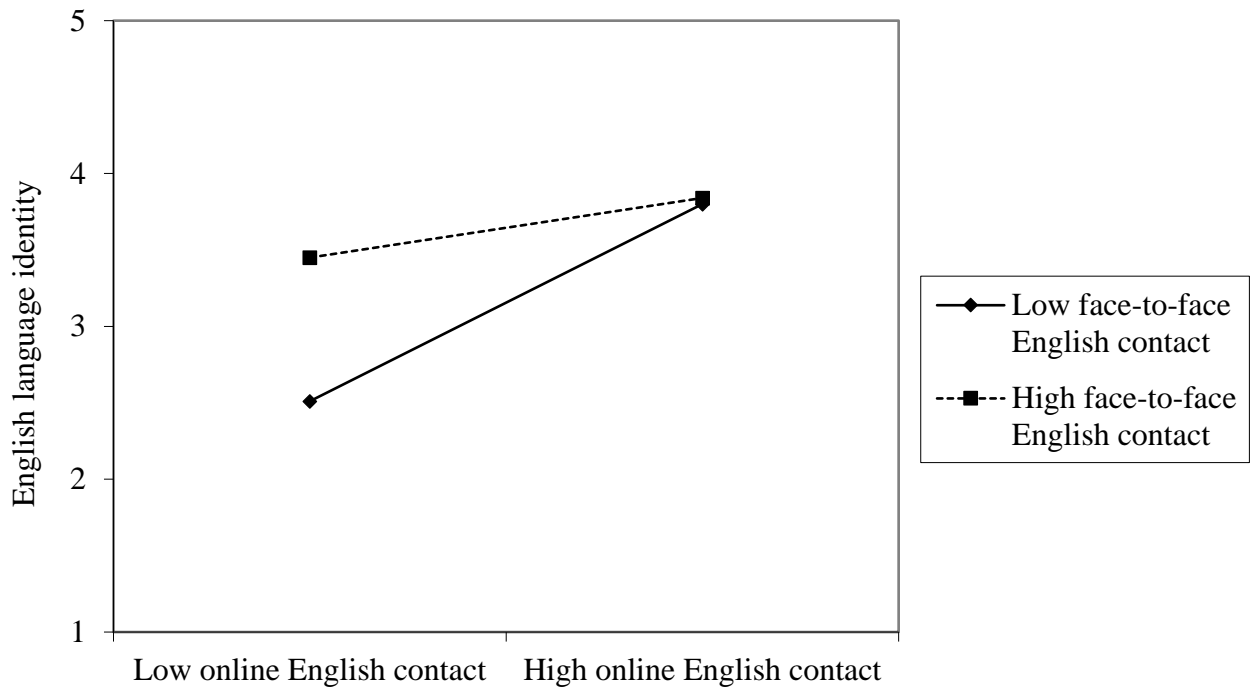


Figure 5. The figure depicts the combined effect of online English contact and face-to-face English contact on English language identity. Low and high values of the moderator are defined as mean  $\pm$ 1 SD from the mean.

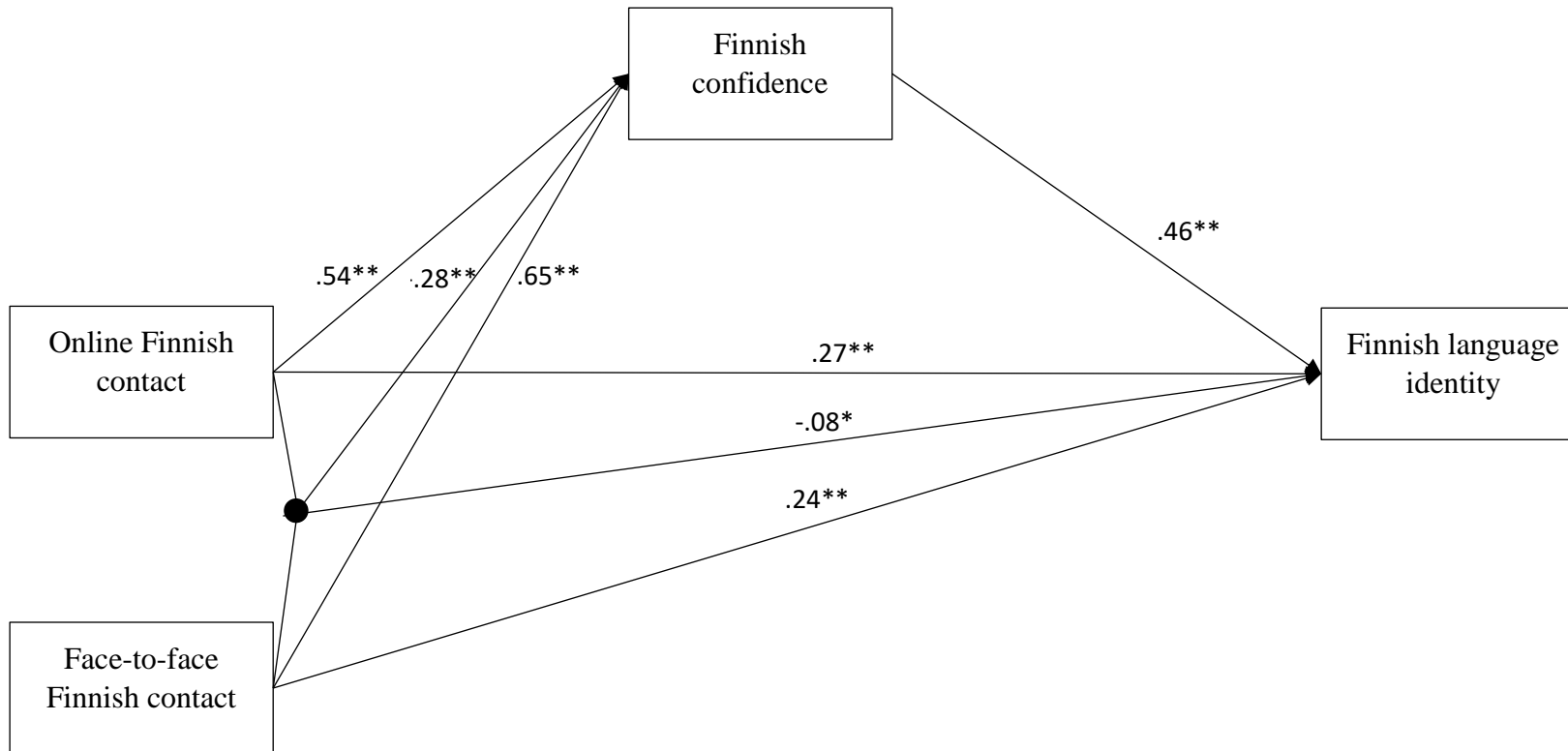


Figure 6. Results of the model on Finnish. The figure shows unstandardized coefficients. The interaction between online contact and face-to-face contact is depicted as a node.

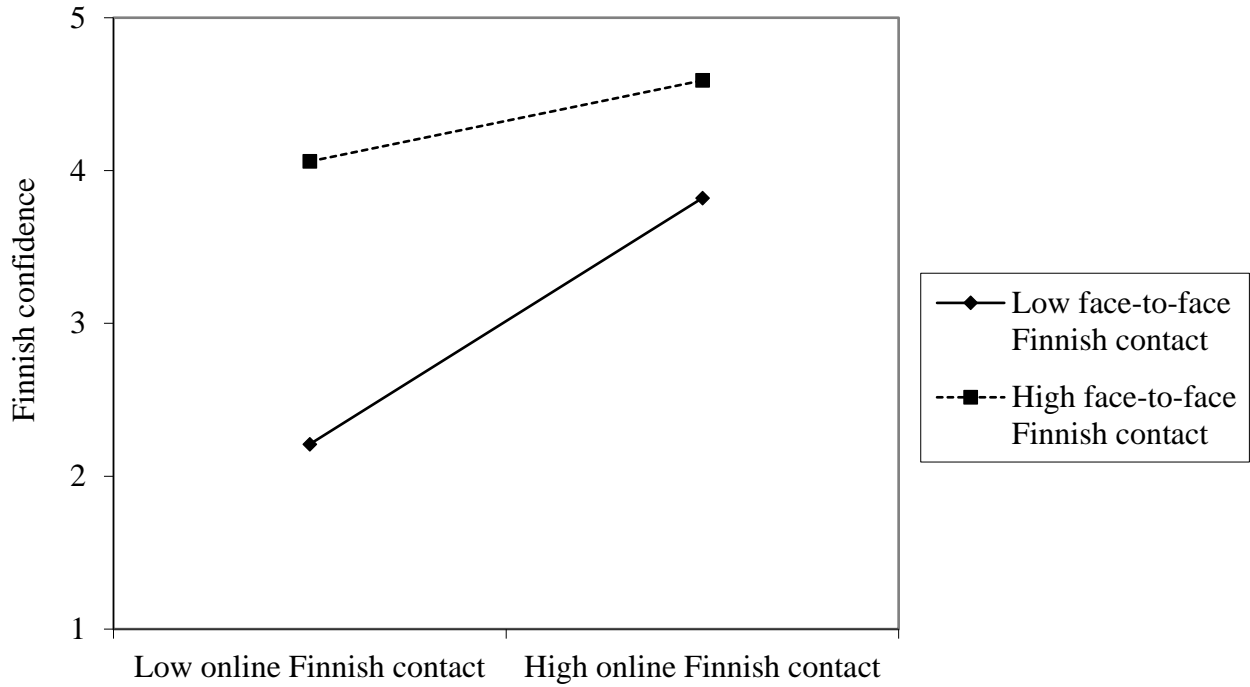


Figure 7. The figure depicts the combined effect of online Finnish contact and face-to-face Finnish contact on Finnish confidence. Low and high values of the moderator are defined as mean  $\pm$ 1 SD from the mean.



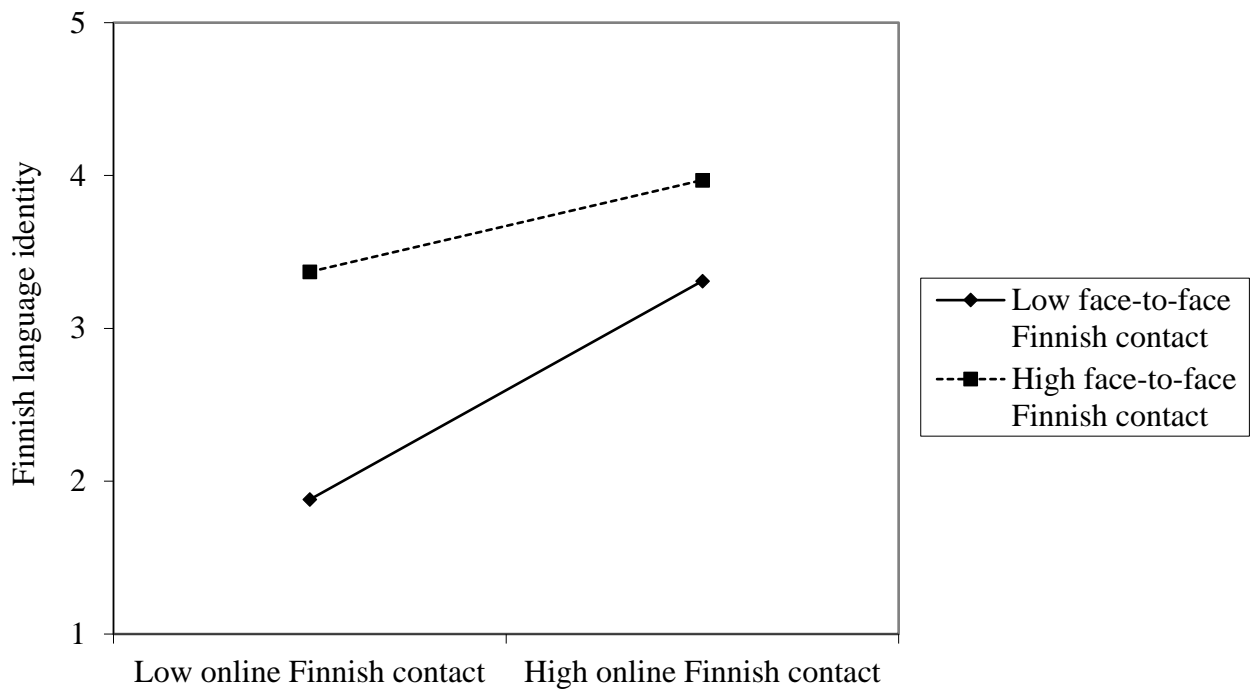


Figure 8. The figure depicts the combined effect of online Finnish contact and face-to-face Finnish contact on Finnish language identity. Low and high values of the moderator are defined as mean  $\pm$  1 SD from the mean.