

Kristen, Cornelia; Mühlau, Peter; Schacht, Diana

**Article — Published Version**

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Ethnicities

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*Suggested Citation:* Kristen, Cornelia; Mühlau, Peter; Schacht, Diana (2016) : Language acquisition of recently arrived immigrants in England, Germany, Ireland, and the Netherlands, Ethnicities, ISSN 17412706, Sage Publications, Thousand Oaks, CA, Vol. 16, Iss. 2, pp. 180-212, <https://doi.org/10.1177/1468796815616157>, <http://journals.sagepub.com/doi/10.1177/1468796815616157>

This Version is available at:

<https://hdl.handle.net/10419/168320>

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# Language acquisition of recently arrived immigrants in England, Germany, Ireland, and the Netherlands\*

**Cornelia Kristen**

University of Bamberg, Bamberg, Germany

**Peter Mühlau**

Trinity College Dublin, College Green, Dublin, Ireland

**Diana Schacht**

University of Bamberg, Bamberg, Germany

## Abstract

This study examines processes of language acquisition among new immigrants from Poland and Turkey in different European destinations focusing on the first few months after arrival. Starting from a human capital framework, a variety of pre- and post-migration conditions of language learning are addressed, including economic and non-economic incentives, the amount of exposure to the destination language as well as learning efficiency. The empirical analyses are based on SCIP data, a two-wave panel on new immigrants in Europe. The longitudinal setup allows following the development of language skills over time, taking into account initial skill levels shortly after arrival as well as language acquisition thereafter. The analyses reveal that immigrants from both groups in all destination countries improve their language skills over time. There is also clear evidence that the conditions associated with efficiency, exposure, and incentives matter for language learning. Especially pre-migration exposure in school or other structured learning environments and post-migration exposure in terms of destination language use in various contexts are crucial to acquiring language proficiency. The empirical results apply to Poles and Turks in the different destinations likewise indicating that the processes fostering language acquisition follow a general logic.

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\*This work uses data from the international project "Socio-Cultural Integration Processes of New Immigrants in Europe" (SCIP) that was generously funded by the NORFACE Research Programme on Migration.

## Corresponding author:

Cornelia Kristen, University of Bamberg, Feldkirchenstraße 21, 96045 Bamberg, Germany.

Email: [Cornelia.Kristen@uni-bamberg.de](mailto:Cornelia.Kristen@uni-bamberg.de)

**Keywords**

Language proficiency, new immigrants, comparative research, England, Germany, Ireland, The Netherlands, panel study

**Introduction**

Language skills<sup>1</sup> are a crucial resource fostering immigrants' incorporation into society (Portes and Rumbaut, 2006), and many studies have focused on the conditions for acquiring the language of the destination country. Most research has addressed migrants in classic immigration countries like the United States or Canada (e.g. Alba et al., 2002; Carliner, 2000; Chiswick and Miller, 2001; Tran, 2010). Only recently, processes of language acquisition have been studied in European destinations such as Belgium (Van Tubergen and Wierenga, 2011), the Netherlands (Van Tubergen, 2010), or Germany (Dustmann, 1997; Esser, 2006). Immigration to Europe has become diverse and covers a variety of groups of different origins both from within and outside Europe.

Most of the evidence on immigrants' language acquisition is in line with standard models of language learning (e.g. Chiswick and Miller, 2001), and many empirical regularities seem to apply to immigrants of different origins in different destinations in rather similar ways (Esser, 2006). However, most studies address single countries and thus do not allow comparing migrants of the same origin across different contexts.

Moreover, as many studies on language acquisition are cross-sectional in nature, they fail to consider the development of language proficiency over time and thus to take into account the changing and time-dependent nature of relevant conditions of language learning. An initial advantage in the level of language proficiency, for example, could accumulate over time yielding different skill levels (DiPrete and Eirich, 2006). By using static indicators, it is impossible to study processes of this kind.

Moreover, existing research mostly refers to immigrants who have already been living in the country of destination for some time. This renders it difficult to disentangle the effects of pre-migration conditions from the dynamics taking place after arrival. For example, learning the language of the destination country often starts before migration and, accordingly, immigrants enter the host country with a certain skill level. Depending on the initial level of proficiency, the resources they bring with them and the conditions they encounter in the new environment, language learning may take different routes (Van Tubergen and Kalmijn, 2005). The first years after arrival seem to be crucial as the learning curve tends to be steep in this initial period and the foundations for further improvements are laid (cf. Stevens, 1999).

The aim of this study is to address immigrants' language acquisition in different European destinations in the early years. We start by examining the conditions leading to differences in initial levels of language proficiency at the time of arrival

and, accordingly, study how pre-migration characteristics translate into different skill levels. We then proceed by focusing on the early post-migration period and investigate processes of language learning during the first years after migration.

We employ data from an international project on “Socio-Cultural Integration Processes of New Immigrants in Europe” (SCIP; Diehl et al., 2015) which covers recent arrivals in four European destinations. Immigrants have been interviewed shortly after migration and a second time about fifteen months later. Unlike most research in this field, we are thus able to address the probably most crucial phase of language acquisition, that is, the initial period after immigration. The focus of our study is on two important groups, namely, new immigrants from Poland which we can follow in England, Germany, Ireland and the Netherlands, and new immigrants from Turkey which we can follow in Germany and the Netherlands.

The current study contributes to the existing body of research in various ways. First, in contrast to most studies, we examine initial levels of language proficiency of newly arrived immigrants and for this purpose can make use of rich information on language-related pre-migration characteristics. Second, the longitudinal nature of the SCIP data allows following the development of language skills over time, taking into account initial skill levels as well as various conditions fostering language learning after arrival. We can thus distinguish between processes related to language acquisition before entry and those taking place after migration. Third, comparative research in this field is scarce and the few available studies fail to consider different immigrant groups (e.g. Braun, 2010; Van Tubergen and Kalmijn, 2005; Van Tubergen and Mentjox, 2014). Our study fills this gap by including two groups of migrants in various European destinations. This enables us to draw conclusions about the relative performance of these groups in these contexts and to address the question of whether the processes fostering language acquisition follow a general logic.

## Accounting for differences in language learning

Language acquisition is assumed to be a form of investment in human capital which migrants can make before and after migration (Chiswick and Miller, 2001: 391). The attained level of destination-language proficiency can be conceived as the result of a sequence of learning investments made over time (Esser, 2006). These may include efforts which are aimed at improving language skills such as partaking in language courses as well as behaviors which individuals may not necessarily perceive as language-related such as selecting themselves into contexts which provide increasing exposure to the new language (e.g. by getting into contact with majority members).

Starting with Chiswick and Miller’s (1995, 2001) influential work, various contributions have elaborated on the processes of language acquisition associated with three bundles of factors affecting pre- and post-migration learning investments, namely, *efficiency*, *exposure*, and *incentives* (e.g. Esser, 2006; Van Tubergen, 2010; Van Tubergen and Mentjox, 2014).

Whereas Chiswick and Miller (1995, 2001) emphasize *economic incentives*, others in addition consider *non-economic incentives* associated with the command of the destination language (e.g. Esser, 2006; Van Tubergen and Mentjox, 2014). *Exposure* refers to the opportunities for language learning which individuals encounter in their environment. Two elements are important: the time units of exposure to a new language and the intensity of exposure per unit of time (Chiswick and Miller, 2001: 393). Finally, language learning also depends on the level of *efficiency*, that is, how much an individual learns per unit of exposure (Chiswick and Miller, 2001: 393).

While examining the level of language proficiency at the time of entry or shortly thereafter requires addressing language acquisition prior to migration, investigating the development of language skills after migration will, in addition, be concerned with the conditions under which immigrants improve their competences while living in the destination country. In the following, we consider various arguments on pre- and post-migration conditions of language learning and apply them to individuals who recently immigrated from Poland and from Turkey to Western European destinations.

### *Efficiency*

Learning efficiency refers to the extent of improvement in skills per unit of exposure (Chiswick and Miller, 2001: 393). Consequently, immigrants who are more efficient learners will become more proficient in the destination language (Van Tubergen and Mentjox, 2014: 246). In the literature, this learning mechanism is well established with regard to age (e.g. Chiswick and Miller, 2001; Dustmann and Fabbri, 2003; Jasso and Rosenzweig, 1990; Stevens, 1999) and education (e.g. Chiswick and Miller, 1995, 2001). The reasoning is that younger individuals as well as those who are better educated have a greater capacity for learning, and this capacity is expected to carry over to the ability of learning a new language (Chiswick and Miller, 2001; Van Tubergen and Mentjox, 2014).

In addition, women seem to be more successful second language learners due to sex-specific strategies of acquiring a new language. These include, for example, study and formal rule-related strategies, rehearsing and planning strategies or employing techniques involving at least one other person (Catálan, 2003; Oxford et al., 1988). As contributions from linguistics show, females also use a far wider range of language learning strategies than males (Catálan, 2003; Oxford et al., 1988). However, this efficiency component has hardly been addressed in the sociological and economic literature on second language acquisition and the effects of gender are not always in line with the assumption of a female advantage (e.g. Espenshade and Fu, 1997; Jasso and Rosenzweig, 1990).

A more widely recognized condition related to efficiency is linguistic distance, that is, the dissimilarity between languages. Immigrants who come from a more distant linguistic origin are assumed to encounter greater language barriers than those who come from a closer linguistic origin (Chiswick and Miller, 2001;

Isphording and Otten, 2013). For the current study, suffice it to say that the distance between the origin language Turkish and the destination languages German or Dutch is slightly larger than is the distance between the origin language Polish and the destination languages German, Dutch, or English.<sup>2</sup> Therefore, all else being equal, Polish immigrants are expected to exhibit a higher level of proficiency in the host-country language than Turkish immigrants.

The processes associated with efficiency are assumed to affect language skills in rather similar ways before and after migration. Moreover, except for the linguistic distance argument which is specific to the origin/destination language combination, the reasoning on efficiency should apply in a similar manner to immigrants of different origins across different destinations.

### *Exposure*

Exposure to language learning environments has been identified as a major source of destination-language proficiency (e.g. Esser, 2006; Stevens 1999). It can occur before and after migration (Chiswick and Miller, 2001: 393) and may involve a variety of channels including active investments such as taking language classes, consuming host-country media, or, most importantly, the use of the destination language in interactions with others (Chiswick and Miller, 1995; Stevens, 1992; Van Tubergen and Mentjox, 2014).

Pre-migration exposure may substantially shape initial levels of language proficiency at the time of migration. Typical opportunities include active forms of learning such as partaking in courses or teaching oneself using foreign-language materials. Language lessons at school are the most important venue of learning foreign languages (European Commission, 2006, 2012). For example, many Poles have learned English and/or German in school and should, therefore, exhibit better skills than Turks who for the most part have had less exposure to these languages in the Turkish educational system.<sup>3</sup> This reasoning also implies that Poles should do relatively better in English- and German-speaking destinations than in countries where other languages which have not been taught in school are spoken such as the Netherlands. Moreover, it is necessary to take into account whether individuals have already been to the destination country before migration. A previous stay will increase the duration and intensity of exposure and the opportunities of practicing the new language (Braun, 2010: 606).

Post-migration exposure, in particular exposure during the first months after arrival, is assumed to have a profound impact on language learning. Migration in many cases radically changes the opportunity structure with the destination language being much more frequently or even constantly present in the new environment. The improvements which result from practice are expected to be biggest in the initial period after migration (cf. Chiswick and Miller, 2001: 393).

In addition to post-migration active learning investments, exposure to the second language in everyday environments seems to be crucial (Bean and Stevens, 2003; Espenshade and Fu, 1997). The intensity of exposure is reflected

in interactions with family members, friends, neighbors, colleagues and customers in the workplace, or peers and teachers in the educational system (Bean and Stevens, 2003; Braun 2010; Chiswick and Miller, 2001). Depending on the linguistic composition of these contexts, there may be ample opportunities for listening to and using the host-country language.

### *Incentives*

Destination-language proficiency also depends on economic incentives. Acquiring a new language involves direct costs, for instance, for covering tuition fees or course materials, and indirect costs in terms of forgone earnings in the time spent on learning the host-country language (Van Tubergen, 2010: 516f.). In order to render these investments attractive, future returns have to outweigh the costs. With respect to expected benefits, economists emphasize the increment in wages due to becoming proficient and the expected duration of employment or of stay in the destination country (Chiswick and Miller, 2001: 294).

Incentives to learn a foreign language, moreover, are dependent on the communicative value of a language (De Swaan, 2001). English has, largely due to its centrality as additional language for multi-lingual speakers, clearly the highest communicative value in the world (De Swaan, 2001), spoken by 47% of the Europeans as first or further language; German is the second most important language in Europe with 30% of Europeans speaking German as native or foreign language while only 6% of Europeans speak Dutch, mainly as native language (European Commission, 2006). Consequently, for immigrants who come to Ireland and England it appears to be more attractive to acquire proficiency in the destination language than it is for immigrants who come to Germany, while immigrants to the Netherlands face the weakest learning incentives.

At the individual level, the intention to stay reflects immigrants' long-term commitment to the receiving context (Espenshade and Fu, 1997) and as such an orientation that may not only be perceived in terms of economic incentives. That is, depending on immigrants' orientations towards a certain group or context, investments in language learning become a more or less attractive undertaking. For example, additional non-economic benefits of destination-language proficiency may result from being able to competently communicate with majority friends and acquaintances. Similarly, feelings of belonging and an increasing identification with the receiving context may provide extra motivation to increase destination language acquisition (e.g. Phinney et al., 2001; Van Tubergen and Mentjox, 2014).

Economic and non-economic incentives are expected to affect language learning before and after migration. As with exposure, however, migration profoundly alters everyday life and post-migration orientations may gain in importance for language acquisition. Moreover, except for differences in the communicative value of different languages, the processes outlined above should apply in a similar manner to different migrant groups in different destinations.



## **Analytical strategy**

In the following, we analyze two aspects of destination language acquisition, the initial level of destination-language proficiency upon arrival and the further development of language skills in the first period of their stay in the new country of residence. The SCIP data are ideally suited for this purpose as immigrants have been interviewed a short while after immigration (and variation in the duration of stay at the time of the first interview allows validating that language proficiency at the first interview is a good proxy for initial language proficiency) and have been re-interviewed about 15 months after the first interview.

The theoretical considerations on efficiency, exposure and incentives assume a causal effect of various independent variables associated with these constructs on the dependent variable, that is, language proficiency. Clearly, there are also correlations between language competences and the independent variables which are of a different nature. For example, destination-language proficiency may play a role in the self-selection into exposure contexts suggesting that exposure may not be endogenous; or language skills may have less weight in the decision to migrate for people with a strong affective connection to the destination country resulting in a negative association between language proficiency and measures of affective bonding with the destination country.

The strategy underlying our analyses, therefore, aims at ensuring that the theoretical considerations are tested in models that are – given the nature of the data – least likely to confound the causal relations between the independent and dependent variables with other associations between the variables. To do so, the analysis of language proficiency is conducted in two separate steps with the level of language proficiency at the first interview (Model 1) and the change of language proficiency between the first and the second interview (Model 2) as dependent variables.

Model 1 is best suited to test hypotheses referring to finite periods of exposure that are completed before the first interview ( $t_1$ ). The most relevant conditions in this model, therefore, pertain to variables which capture pre-migration exposure. However, since at the time of the first interview migrants already have spent a short while in the destination country, it is necessary to include also post-migration improvement activities undertaken between entry and  $t_1$  as well as the time already spent in the residence country at the time of the first interview. We, therefore, control for a number of variables relevant to the short period after arrival. However, apart from using these measures for obtaining adequate estimates for the variables on pre-migration exposure which are of primary interest to Model 1, these relationships should be interpreted with caution. The estimates provide only weak evidence for causal effects on language proficiency. This is the case for all variables measured at  $t_1$  which refer to on-going processes of exposure and which reflect incentives or orientations at  $t_1$ . For these variables, the direction of causality is not clear.

An additional problem applies to variables which are potentially correlated with systematic measurement error in the dependent variable. Language proficiency is



measured by a composite measure of self-assessed language proficiency, and self-rated language-proficiency is known to be prone to systematic measurement error (Dustmann and Van Soest, 2001). Since there are indications that these errors are correlated with cognitive ability (Edele et al., 2015), the estimates for variables related to efficiency may be biased in Model 1.

The situation is different for Model 2 which is implemented as a regression of change scores adjusted for language proficiency at wave 1 (which is equivalent to a lagged variable model; Werts and Linn, 1970). We opted for this model because further improvements of language proficiency are more difficult to achieve the better the initial level of proficiency. Empirically this is reflected in a strongly linear dependency of change in language proficiency on the lagged language proficiency. Moreover, the relationship between wave 1 measures and language proficiency at wave 1 is likely shaped by self- and context-selection effects. Also improvements are more difficult to achieve the better the initial level of proficiency. This requires adjustment for initial language proficiency in Model 2.<sup>4</sup>

In causal analysis, the emphasis in change models is typically on changes in the independent variable which are interpreted as events triggering the change in the dependent variable (Johnson, 2005). In contrast to this typical route, we aim at estimating the effects of stable levels of exposure (or of incentives) between  $t_1$  and  $t_2$  on change in language proficiency.

This is important for two reasons. On the one hand, for estimates on change the direction of causality may not be clear. For example, does an immigrant who speaks regularly with her partner in the destination language (say English) between  $t_1$  and  $t_2$  improve her language proficiency more than an immigrant who never uses English with her partner during this period? This stable level is measured by the initial level of exposure when controlled for change in the exposure levels. The effect of change in the exposure level is secondary, as we do not know whether a couple switches to English as conversation language between  $t_1$  and  $t_2$  because the language proficiency has improved in the meantime or the other way around.

On the other hand, the effect of change is not necessarily symmetrical: A couple who “switches” to English as the main conversation language between  $t_1$  and  $t_2$  may not experience the same “amount” of language improvement as another couple who spoke mainly English in  $t_1$  but returns to Polish between  $t_1$  and  $t_2$  and thereafter experiences a deterioration in host-country language skills. The effect of practice on skill formation may not be the same as the effect of non-practice on skill decline. Moreover, a couple returning to Polish may do so, because English did not work that well for them. Constraining the effect of change to be identical in both directions biases the estimation of the effect of the level of exposure if the effect of change is not symmetrical.

For all time-varying variables, we, therefore, introduce three variables, that is, the initial level of the variable, and the absolute values of positive deviations and negative deviations. The estimate for the first gives the effect of the continuous or stable “treatment” between  $t_1$  and  $t_2$ , for example, the difference in language

proficiency between immigrants who speak between  $t_1$  and  $t_2$  mainly English with their partner and immigrants who mainly speak Polish with their partner. This is by far the most important estimate for testing hypotheses about exposure and incentives as this variable cannot be influenced by the language improvement between  $t_1$  and  $t_2$  and can thus be fairly unambiguously understood as an estimate of the causal effect of this variable on language improvement. In the example on language use with the partner, a positive value for the initial level variable indicates that speaking between the two points of measurement mainly English with the partner yields better language skills than speaking mainly Polish.

The estimate for the second variable gives the difference between immigrants who switch from Polish to English and immigrants who stick to their origin country language. More generally, this measure captures a positive change in the independent variable between  $t_1$  and  $t_2$ . A positive coefficient in the case of language use with the partner would mean that changing to the destination language between the two measurement points results in an improvement of language skills compared with individuals who continue to speak the language of origin.

The estimate for the third variable gives the difference between immigrants who return to their origin country language and immigrants who consistently speak mainly English between  $t_1$  and  $t_2$ . This coefficient refers to a negative change in the independent variable. A positive effect in the example on language use indicates that those who return from English back to Polish achieve better destination skills compared to those who speak English at both points in time. Obviously, the expectation is the other way around: Returning to the destination language should produce a negative estimate since in these instances there is less exposure to the destination language.

In the theoretical section, we argued that destination-language acquisition is a universal process that, for the most part, does not systematically differ between countries of origin and countries of destination. Consequently, we test the various considerations for the pooled sample that includes all Poles and all migrants from Turkey. This pooled model allows also addressing hypotheses pertaining to differences between the origin languages (regarding their linguistic distance to the West Germanic languages Dutch, English and German) and between the destination languages (regarding their communicative value) as they control for different levels of exposure, incentives and demographical composition (assuming constant effects across samples).

## Data and variables

We draw on data from a unique dataset produced in the international survey project on *Socio-cultural Integration Processes among New Immigrants in Europe* (SCIP) that was funded by the NORFACE Research Programme on Migration (Diehl et al., 2015). The SCIP project is a two-wave-panel study of selected migrant groups in which about 7000 recent migrants aged between 18 and 60 were surveyed in four European destination countries – England, Germany, the Netherlands, and

Ireland. Migrants with a maximum stay of 1.5 years were interviewed soon after their arrival and as many as possible were re-interviewed again another 1.5 years later. To analyze group differences, Poles as a rather recent immigrant group to these destinations, and Turks/Pakistanis/Moroccans as groups representing the classical labor/colonial migration to Western Europe, were included in the SCIP survey. These groups contribute greatly to the share of migrant population in the four countries (for a detailed description of the methodological setup of the project see Gresser and Schacht, 2015).

In the following, we make use of the Polish sample which is available for England, Germany, Ireland, and the Netherlands, and the Turkish sample which is available for Germany and the Netherlands. We include individuals who have participated in both waves, stayed for less than 18 months in the residence country at the first interview and were still in the destination country at the time of the second interview.<sup>5</sup> Migrants from Turkey who were neither Turkish nor Kurdish are excluded. Missing values due to item non-response are multiply imputed by chained equations using the Stata package *mi* (Stata, 2013). Imputation models are specified separately for Poles and Turks employing all source variables in the models. Five imputed datasets are used in the analyses. Cases with imputed language proficiency scores are excluded from the analyses.

*Language proficiency* is the mean score of the self-assessments for understanding, speaking, writing, and reading in the destination language, each ranging from 1 “not at all” to 4 “very well” ( $\alpha = 0.90$ ).<sup>6</sup>

As measures of efficiency, we consider age at migration, education, and gender. *Gender* is coded 1 for females and 0 for males. *Education before migration* refers to the highest level of completed education in the country of origin coded into three categories: lower secondary education or less, upper secondary education (reference), and tertiary education. *Age at migration* is the difference between the year of migration and the year of birth.

Pre-migration exposure on the one hand refers to active investments in language acquisition. It is captured in the analyses by the years of *schooling in the destination language before migration* which is the number of years individuals have spent learning the host-country language at school in the country of origin. Those who did not receive school-based destination-language training are assigned a value of 0. The second measure considers whether individuals *improved* their *language skills before migration*. It is measured as a dummy equaling 1 if the respondent undertook any activity to improve her or his competences in the destination language prior to migration. On the other hand, pre-migration trips may also expose individuals to the language of the residence country. They are included with a dummy variable equaling 1 if the respondent was *never in the destination country before migration* and with a continuous variable of the *duration of pre-migrations stays in the destination country* measured in years.

Post-migration exposure depends on the *duration of stay* which is specified as the number of months between immigration and the first interview. We also take into account whether individuals *improved* their *language skills between entry and  $t_1$*  with

a dummy equaling 1 if the respondent undertook any activity to improve her or his skills in the destination language between migration and the first interview and a second dummy equaling 1 if the respondents *improved* their *language skills between interviews*. Moreover, language practice in daily interactions is covered by instruments on *language use with friends* and the *partner*. The answer categories of these two variables indicate how often the respondent speaks the destination language with friends or the partner and range from 0 “never” to 4 “always”. *In education* refers to migrants who are at the time of the interview enrolled in education in an educational institution in the host-country other than language or integration classes. A *language intensive job* is likely to involve substantial communication tasks in the destination language. It is derived from the CASMIN scheme with service class members and routine non-manuals coded as language-intensive occupations. Finally, *media consumption in the destination language* is measured as the mean score of the frequency of the consumption of newspapers, music and television programs (from 1 “never” to 5 “every day”) in the language of the host country.

Economic incentives are captured by the *intention to stay* which equals 1 if the respondent plans to stay forever in the host country; otherwise, it obtains the value 0. Non-economic incentives in terms of orientations towards the destination society refer to a set of variables including interactions with majority members as well as identifications. The partner variable refers to the *origin* of the respondent’s *partner*. The partner is coded as being from the country of origin (reference) if the partner was born in the country of origin or has the citizenship of this country; the partner is coded as being from the destination country if the partner was born in the destination country and has the citizenship of this country. A third category (single/other) contains respondents who have no partner residing in the destination country or are partnered with a person from a third country. *Majority friend/s* equals 1 if the respondent enumerates at least one close friend born in the country of destination who has native parents. *Identification with destination country* is measured by the sum score of two items: (a) “How important is {your current country of residence} to your sense of who you are?” and (b) “How proud are you of {your current country of residence}?” Answer categories range from 1 “not at all” to 4 “very important/very proud”.

## Results

As the descriptives in Table 1 indicate, there is little difference in initial language proficiency between Poles and Turks across the four destination countries. Initial competences are highest for Poles in Ireland, but differ not much between Poles in England and Germany. At the same time, the initial skill level is lower among immigrants in the Netherlands than among immigrants in the other destinations, reflecting most likely a very limited pre-migration exposure to Dutch. All groups have improved their language proficiency between the two measurement points, with Turks in Germany and Poles in the Netherlands exhibiting the highest levels of language improvement.

Table 1. Descriptive statistics.

		Mean (M)/ Percentage (p)	The Netherlands											
			Germany											
			Poles (N = 594)						Turks (N = 486)					
			Wave 1	Wave 2	M/P	SD	Range		Wave 1	Wave 2	M/P	SD	Wave 1	Wave 2
			Poles (N = 133)						Turks (N = 427)					
			Wave 1	Wave 2	M/P	SD			Wave 1	Wave 2	M/P	SD	Wave 1	Wave 2
Language proficiency	M		2.45	0.77	2.69	0.72	1/4		1.82	0.60	2.23	0.62	1.95	0.91
Efficiency														
Gender (females)	P		0.56	0.50	0.56	0.50			0.68	0.47	0.68	0.47	0.44	0.50
Age at migration	M		32.7	10.6	32.7	10.6	18/65		32.1	8.80	32.1	8.80	29.4	7.84
Education before migration														
None/primary/lower secondary	P		2.86	–	2.86	–			1.50	–	1.50	–	56.4	–
Upper secondary	P		39.7	–	39.7	–			59.4	–	59.4	–	27.4	–
Tertiary	P		57.4	–	57.4	–			39.1	–	39.1	–	16.2	–
Pre-migration exposure														
Schooling in destination language before migration	P		0.55	0.50	0.55	0.50			0.39	–	–	–	–	–
Improved language skills before migration	P		0.36	0.48	0.36	0.48			0.11	0.32	0.11	0.32	0.14	0.35
Never in destination country before migration	P		0.50	0.50	0.50	0.50			0.68	0.47	0.68	0.47	0.82	0.38
Duration of pre-migration stays in destination country	M		1.09	2.47	1.09	2.47			0.24	0.82	0.24	0.82	1.54	0.23

(continued)

Table 1. Continued

	Mean (M)/ Percentage (p)	Germany						The Netherlands								
		Poles (N = 594)			Turks (N = 486)			Poles (N = 133)			Turks (N = 427)					
		Wave 1		Wave 2	Wave 1		Wave 2	Wave 1		Wave 2	Wave 1		Wave 2			
		M/P	SD	M/P	SD	M/P	SD	M/P	SD	M/P	SD	M/P	SD			
Post-migration exposure																
Duration of stay	M	0/18	26.9	8.50	26.9	8.50	26.4	9.46	26.1	3.72	26.1	3.72	27.4	4.48	27.4	4.48
Improved language skills between entry and $\tau_1$	P		0.56	0.50	0.56	0.50	0.75	0.44	0.54	0.50	0.54	0.50	0.26	0.44	0.26	0.44
Improved language skills between interviews	P		0.66	0.47	0.66	0.47	0.74	0.44	0.74	0.44	0.77	0.42	0.77	0.42	0.49	0.49
Language use: partner	M	1/5	1.48	1.02	1.51	1.02	2.25	1.22	2.14	1.24	1.41	0.88	1.61	1.01	1.72	1.08
Language use: friends	M	1/5	2.15	1.43	2.62	1.49	2.38	1.39	2.45	1.36	2.08	1.19	2.48	1.32	2.19	1.32
In education after migration (ref. not)	P		0.20	0.40	0.20	0.40	0.18	0.38	0.18	0.39	0.14	0.34	0.23	0.42	0.20	0.40
Employed in language intensive job	P		0.16	0.37	0.12	0.32	0.11	0.32	0.02	0.15	0.14	0.35	0.24	0.43	0.09	0.29
Media consumption in destination language	M	1/5	2.94	0.95	3.12	0.98	2.98	0.92	2.83	0.97	2.78	0.97	2.87	0.96	2.03	0.94
Incentives																
Wants to stay forever in destination country	P		0.23	0.42	0.24	0.43	0.37	0.48	0.27	0.44	0.46	0.50	0.31	0.46	0.51	0.50
Identification with destination country	M		5.85	1.24	6.03	1.27	5.96	1.56	5.92	1.59	6.51	1.15	5.82	1.15	5.44	1.11
Origin partner																

(continued)

Table 1. Continued

	Germany						The Netherlands										
	Poles (N = 594)						Turks (N = 486)										
	Wave 1			Wave 2			Wave 1			Wave 2							
	M/P	SD	Range	M/P	SD	Range	M/P	SD	Range	M/P	SD	Range					
Mean (M)/ Percentage (p)																	
Single/partner from other country	P	29.0	-	29.0	-	16.9	-	16.9	-	23.3	-	23.3	-	23.4	-		
Majority partner	P	5.90	-	5.90	-	22.8	-	22.8	-	5.26	-	5.26	-	23.0	-		
Partner from country of origin	P	65.2	-	65.2	-	60.3	-	60.3	-	71.4	-	71.4	-	53.6	-		
Majority friend/s	P	0.23	0.42	0.29	0.46	0.37	0.48	0.40	0.49	0.10	0.30	0.09	0.29	0.05	0.21	0.07	0.25
	Ireland						England										
	Poles (N=397)						Poles (N=224)										
	Wave 1			Wave 2			Wave 1			Wave 2							
	M/P	SD	Range	M/P	SD	Range	M/P	SD	Range	M/P	SD	Range					
Language proficiency	M	1/4	2.75	0.80	2.94	0.78	2.41	0.83	2.60	0.71							
Efficiency																	
Gender (females)	P		0.56	0.50	0.56	0.50	0.54	0.50	0.54	0.50							
Age at migration	M	18/65	31.2	9.90	31.2	9.90	31.9	10.8	31.9	10.8							
Education before migration																	
None/primary / lower secondary	P		13.4	-	13.4	-	3.57	-	3.57	-							
Upper secondary	P		34.0	-	34.0	-	40.6	-	40.6	-							

(continued)



Table 1. Continued

	Mean (M)/ Percentage (P)	Range	Ireland				England			
			Poles (N=397)				Poles (N=224)			
			Wave 1		Wave 2		Wave 1		Wave 2	
			M/P	SD	M/P	SD	M/P	SD	M/P	SD
Tertiary	P		52.7	–	52.7	–	55.8	–	55.8	–
<b>Pre-migration exposure</b>										
Schooling in destination language before migration	P		0.69	0.46	0.69	0.46	0.57	0.50	0.57	0.50
Improved language skills before migration	P		0.55	0.50	0.55	0.50	0.22	0.41	0.22	0.41
Never in destination country before migration	P		0.75	0.43	0.75	0.43	0.67	0.47	0.67	0.47
Duration of pre-migration stays in destination country	M		0.32	1.18	0.32	1.18	0.58	1.22	0.58	1.22
<b>Post-migration exposure</b>										
Duration of stay	M	0/18	23.2	6.02	23.2	6.02	25.6	6.17	25.6	6.17
Improved language skills between entry and t1	P		0.65	0.48	0.65	0.48	0.79	0.41	0.79	0.41
Improved language skills between interviews	P		0.75	0.43	0.75	0.43	0.64	0.48	0.64	0.48
Language use: partner	M	1/5	1.36	0.75	1.56	1.06	1.21	0.51	1.36	0.83
Language use: friends	M	1/5	2.33	1.30	3.02	1.20	2.53	1.17	3.00	1.27
In education after migration (ref. not)	P		0.10	0.29	0.14	0.35	0.06	0.23	0.10	0.30
Employed in language intensive job	P		0.16	0.37	0.26	0.44	0.18	0.38	0.17	0.37

(continued)

Table 1. Continued

	Mean (M)/ Percentage (P)  Range	Ireland				England			
		Poles (N=397)				Poles (N=224)			
		Wave 1		Wave 2		Wave 1		Wave 2	
		M/P	SD	M/P	SD	M/P	SD	M/P	SD
Media consumption in destination language	M	2.44	1.02	2.60	1.00	3.13	0.91	3.42	0.99
<b>Incentives</b>									
Wants to stay forever in destination country	P	0.31	0.47	0.33	0.47	0.50	0.50	0.25	0.44
Identification with destination country	M	5.61	1.28	5.95	1.27	5.72	1.12	5.94	1.26
Origin partner									
Single/partner from other country	P	41.6	–	41.6	–	38.8	–	49.9	–
Majority partner	P	0.50	–	0.50	–	–	–	–	–
Partner from country of origin	P	57.9	–	57.9	–	61.2	–	61.2	–
Majority friend/s	P	0.08	0.27	0.12	0.33	0.03	0.16	0.14	0.35

Data: SCIP; balanced panel. Notes: The descriptives refer to the first of the five imputed datasets; the Turkish group includes Kurds (17% of the Turkish sample in Germany and 10% of the Turkish sample in the Netherlands).

Table 2 reports the results for linear regressions of initial destination-language proficiency for the pooled sample (Model 1) and the findings for linear regressions on the change in language skills between the first and the second interview (Model 2). Besides the results for the pooled sample presented in Table 2, the Appendix (Table A1 referring to Model 1 and Table A2 referring to Model 2) contains the findings for each origin/destination combination. The following description is oriented towards the pooled sample (Table 2) and refers only to the separate samples (in the Appendix) if there are salient deviations from the overall pattern for particular destination countries or salient differences between the origin countries. Since the origin/destination samples are of much smaller size compared with the overall sample and given that the available number of cases considerably varies across samples, significance levels for the separate analyses should be interpreted with caution. The discussion is organized according to the “meta-variables” efficiency, exposure, and incentives and proceeds from the stronger tests for each variable to tests with a higher risk of confounding causal effects between independent and dependent variables with selection and reversed causal effects.

### *Efficiency*

Women appear to be – as expected – better language learners than men. They improve their language proficiency significantly more than men between wave 1 and wave 2 (Model 2). Moreover, the initial level of language proficiency is also significantly higher for women (Model 1). Curiously, the female advantage in language improvement appears to be absent in English-speaking destinations (Table A2). The data also provide unambiguous support for the hypothesis that younger immigrants have an advantage in destination-language acquisition. Age at migration exhibits a significantly negative relationship with the change score (Model 2) and younger immigrants also have significantly higher initial language proficiency (Model 1). The results are very supportive for the idea that women and young immigrants are more efficient learners of new languages as the regressions are controlled for various measures of formal and informal language training and practicing, which should take into account that women and the younger generation may also have a stronger “taste” for the acquisition of new languages.

We also expected that language acquisition would be associated with educational credentials as a proxy measure for cognitive skills. In line with this expectation, we find that immigrants with at least upper secondary education have improved their language proficiency between  $t_1$  and  $t_2$  significantly more than immigrants with lower secondary education or less qualifications (Model 2). However, we find no substantial differences with regard to language improvements between immigrants with upper secondary and with tertiary education. Model 1, however, reveals that respondents with low education report higher levels of language proficiency than better educated ones. This counter-intuitive finding might be due to correlations between education and systematic measurement error in self-assessed language proficiency with less qualified individuals more likely to

**Table 2.** Linear regressions of destination-language proficiency shortly after migration (Model 1) and of change in destination-language proficiency (Model 2).

	Model 1		Model 2			
	Coef.	S.E.	Measures from		Initial	
			Coef.	S.E.	Coef.	S.E.
Language proficiency $t_1$	–					
Gender (ref. males)	0.12***	(0.02)	$t_1$	–0.59***	(0.02)	
Age at migration/10	–0.09***	(0.01)	$t_1$	0.06***	(0.02)	
Education before migration (ref. upper secondary)			$t_1$	–0.07***	(0.01)	
None/primary/lower secondary	0.18***	(0.04)	$t_1$	–0.07*	(0.03)	
Tertiary	0.03	(0.03)				
Schooling in destination language before migration	0.48***	(0.03)	$t_1$	0.02	(0.02)	
Improved language skills before migration (ref. did not)	0.23***	(0.03)	$t_1$	0.13***	(0.03)	
Never in destination country before migration (ref. has been)	–0.19***	(0.03)	$t_1$	0.05*	(0.02)	
Duration of pre-migration stays in destination country	0.04***	(0.01)	$t_1$	0.04	(0.02)	
Duration of stay/10	0.03	(0.02)	$t_1$	0.01	(0.01)	
Improved language skills between entry and $t_1$ (ref. did not)	0.03	(0.03)	$t_1$	0.00	(0.01)	
			$t_1$	–0.03	(0.02)	

(continued)

Table 2. Continued.

	Model 1		Model 2			
			Initial		Positive change	
	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.
Measures from						
Improved language skills between interviews (ref. did not)	–		0.08***	(0.02)		
Language use: partner	0.08***	(0.01)	0.03*	(0.01)	0.08***	(0.01)
Language use: friends	0.19***	(0.01)	0.09***	(0.01)	0.10***	(0.01)
In education (ref. not)	0.16***	(0.04)	0.23***	(0.04)	0.15***	(0.03)
Employed in language intensive job (ref. not)	0.15***	(0.04)	0.14**	(0.04)	0.13*	(0.05)
Media consumption in destination language	0.16***	(0.01)	0.07***	(0.01)	0.08***	(0.02)
Wants to stay forever in destination country (ref. does not)	0.03	(0.03)	0.03	(0.03)	0.05	(0.03)
Identification with destination country	–0.04***	(0.01)	–0.02	(0.01)	–0.00	(0.01)
Origin partner (ref. partner from country of origin)						
Single/partner from other country	0.11***	(0.03)	0.02	(0.02)		
Majority partner	–0.04	(0.04)	0.05	(0.03)		
Majority friend/s (ref. no majority friend/s)	–0.05	(0.04)	0.10**	(0.04)	0.10**	(0.03)
					–0.06	(0.04)

(continued)

Table 2. Continued

	Model 1		Model 2						
	Coef.	S.E.	Measures from	Initial		Positive change		Negative change	
				Coef.	S.E.	Coef.	S.E.	Coef.	S.E.
Poles (ref. Turks)	−0.01	(0.04)	t <sub>1</sub>	−0.09**	(0.03)				
Country (ref. Germany)			t <sub>1</sub>						
The Netherlands	−0.05	(0.04)		−0.10**	(0.03)				
England	0.30***	(0.04)		0.07*	(0.03)				
Ireland	−0.09*	(0.03)		−0.17***	(0.03)				
INTERCEPT	1.41***	(0.09)		1.29***	(0.09)				
Number of persons	2261			2261					
Number of person years	–			4522					
R <sup>2</sup>	0.58			0.50					

Data: SCIP, balanced panel. Notes: Imputed dataset; unstandardized coefficients; robust standard errors in parentheses; the coefficients are statistically significant at \*p < 0.05, \*\*p < 0.01, \*\*\*p < 0.001; the models include an additional control for Kurds.

overestimating their skills (Edele et al., 2015). The positive estimates for the relationship between education and change scores suggest such an interpretation as the change scores eliminate the errors from consistent over- or underrating of language proficiency.<sup>7</sup>

Finally, we argued that Poles would have an advantage in language acquisition compared to immigrants from Turkey because the Polish language is more similar to the destination languages than is Turkish. Neither the regressions of the initial language proficiency nor of the change score support this hypothesis. Controlled for differences in exposure and incentives, immigrants from Turkey have improved their language skills more and tend to have higher initial language scores than Polish immigrants.

### *Pre-migration exposure*

The regression results of initial language proficiency are indicative for the hypotheses that exposure to the destination country language before migration improves the destination-language proficiency of migrants (Model 1). Consistent with this expectation, we find that the initial language proficiency is significantly better the longer the respondent learned this language at school. Similarly, visiting the destination country before migration is more beneficial for proficiency and language skills the longer these visits were. Moreover, immigrants who actively improved their destination language skills before they migrated also exhibit significantly higher initial levels of language skills. With regard to the estimates for these variables, there is little variation across the different samples.

Another question is whether pre-migration exposure also affects the further development of language proficiency (Model 2). We find a significantly positive relationship between further language improvements and pre-migration exposure for years of schooling in the destination language and for active attempts to improve one's skills, while there are no significant effects for visits to the destination country before migration. This suggests that pre-migration exposure primarily has an effect on long-term language development if it consists of longer spells of structured learning.

### *Post-migration exposure*

With regard to the post-migration exposure variables, we find that immigrants who actively have improved their language skills between arrival and the first interview report higher levels of language proficiency at the first interview (albeit not significant for the pooled sample, Model 1) and that immigrants who actively improved their destination-country language skills between  $t_1$  and  $t_2$  experience significantly stronger improvements of their language proficiency in the same period (Model 2). This effect is particularly strong in the Netherlands (Table A2), probably because of the lack of exposure to the Dutch language in the country of origin, and it is particularly weak for the two English-speaking destinations, possibly indicating an



underlying negative selection effect, for both, initial language proficiency and further improvements.

For the other post-migration exposure variables (with the exception of duration of stay), the estimates for the initial exposure levels in the regression of change scores (Model 2) are the most relevant ones as they capture the effect of continuous exposure at that level between  $t_1$  and  $t_2$  on language development. Immigrants who read newspapers or see television mainly in the destination country language exhibit a significant improvement of proficiency between the two waves. Also, immigrants who talk with their friends primarily in the language of the residence country improve their language proficiency more than migrants who use primarily their origin language in conversations with friends. The effects of both variables are about the same size. The relationship between use of the destination language with the partner and language improvement is also positive, but smaller. It appears as if the dynamics of intimate relationships limit the effectiveness of partners as language coaches.

Respondents who were enrolled in education between  $t_1$  and  $t_2$  show also substantial and statistically significant gains in language proficiency (Model 2). Similarly, it can be noticed that the language proficiency of respondents on a language-intensive job between  $t_1$  and  $t_2$  advances in the same period although the effect is only half the size of the in-education effect; workplaces may facilitate the further language improvement far less than educational settings.

For all post-migration exposure variables the findings suggest that respondents who show an increased level of exposure between  $t_1$  and  $t_2$  exhibit also a stronger growth of language proficiency than respondents staying at a lower level of exposure; similarly, we find that respondents with a decreasing level of exposure between the first and second interview experience less advancement of their language skills than respondents with continuing high exposure. Both relationships hold for all post-migration exposure variables (Model 2).

Finally, the last exposure variable is the time respondents have spent in the destination country. In line with the exposure argument, we find that immigrants attain a higher level of initial language proficiency the longer they are in the destination country (Model 1), while the additional time spent in the destination country between interviews does not have an additional positive effect. Moreover, as the positive intercept in the regression of the change score shows, language proficiency also increases between the two waves net of all measured exposure aspects (Model 2).

### *Incentives*

As for most exposure variables, we regard the estimates for the incentive measures at  $t_1$  in the regression of change scores as most relevant for a causal interpretation of the results (Model 2). We find – in line with the expectations – that respondents who have the stable intention to stay for good in the residence country show stronger, albeit not significant, improvements of their language proficiency. The same holds for respondents who have affective relations with members of

mainstream society of the residence country: Respondents with close friends from the residence country show significantly stronger improvements in language proficiency. In contrast, we do not find significant differences between respondents with a partner from the majority population and those with a partner from the origin country. Identification does not yield significant effects either.

Taken together, changes in orientations between  $t_1$  and  $t_2$  appear to be largely unrelated to the advancement of language skills. The only exception is that respondents who have found friends among the majority population between  $t_1$  and  $t_2$  experience a stronger growth of their language proficiency than respondents who did not develop friendships with members of mainstream society.

Interestingly, all orientation variables are more negatively related to the initial language proficiency (Model 1) than to language improvements (Model 2), although only identification with the destination country is significantly smaller than zero, while the coefficients for the intention to stay for good and having destination country friends are insignificant. Respondents with a partner from the destination country have the lowest initial language proficiency, but the difference is only significant relative to singles (or third country partners) but not for respondents with a partner from the country of origin. It appears as if these orientations toward the destination country are already operative in the migration decision inducing people to migrate who would otherwise stay in the origin country or to choose another destination, because, for example, they hardly speak the destination language.

## Conclusions

This study on immigrants' language acquisition in different European destinations examined the first few months after immigration. During this initial period, substantial progress is made and important foundations for further destination-language improvements are laid. Starting from a human capital framework, we focused on a variety of pre- and post-migration conditions of language learning, including economic and non-economic incentives, the amount of exposure to the destination language as well as learning efficiency. We discussed and thereafter empirically analyzed these conditions, at first with regard to initial levels of language proficiency at the time of arrival. In this respect, we were interested in the question of how pre-migration characteristics translate into initial skill levels. Thereafter, we proceeded looking at the early post-migration period and investigated processes of language learning during the crucial stage shortly after migration. Based on the rich information on language-related pre- and post-migration characteristics available in the SCIP data, we were able to study language acquisition for two groups of immigrants, Poles and Turks, in different European destinations (i.e. England, Germany, Ireland, and the Netherlands).

The analyses reveal that immigrants from both groups in all destination countries improve their language proficiency over time. There is also clear evidence that a variety of conditions associated with efficiency, incentives, and above all exposure matter for language learning. Most of the findings are in line with previous

research, for example, that younger individuals have a learning advantage over older immigrants or women over men. Also exposure to the language of the destination country before migration improves initial skill levels, as does post-migration exposure during the short period until the first interview. Most importantly, pre-migration exposure seems to have an enduring effect on language learning after migration if it consists of longer spells of structured learning in an educational setting. For all post-migration exposure variables, the findings strongly support the assumption that those who show increased levels of exposure between the two waves exhibit a more pronounced growth in destination-language skills compared with those who display lower levels of exposure.

A more heterogeneous picture emerges from the results on economic and non-economic incentives. In line with the expectations, respondents with close friends from the residence country show stronger improvements of language proficiency. At the same time, all other incentive and orientation variables seem to be largely unrelated to language advancement between the two measurement points. For example, having a majority partner does not prove beneficial, and the intention to stay for good in the residence country does not yield a significant effect either; the same holds true for identification with the destination country. Rather than suggesting that orientations do not matter for language learning, it seems to be the case that orientations affect language proficiency in an indirect manner by influencing the preceding migration decision.

The expected differences across groups and countries were not confirmed in the empirical account. First, there was no evidence in support of the linguistic distance argument. This result is probably less surprising given that the differences in distances between the languages under study are rather small. To test the linguistic distance assumption, a different selection of countries with more pronounced distances might be better suited. The second consideration on group-country differences referred to the communicative value of the destination language. Also in this case, the findings did not support the expectation that immigrants in English-speaking destinations such as Ireland and England exhibit higher levels of proficiency than in Germany or the Netherlands.

More importantly, the empirical results on the processes fostering language acquisition in terms of incentives, exposure, and efficiency seem to apply rather generally to Poles and Turks in the different destinations. The country-specific analyses thus are supportive of the assumption that language learning follows a general logic.

It is important to note that the measures used were not always one-to-one related to the three core constructs. For example, destination-language use with friends may not only be considered as exposure, but might as well work as an incentive for improving language skills. In addition, most of the variables serve as proxies of the core constructs rather than as direct measures of them. The variables used for efficiency in terms of age or education, for instance, do not directly capture the capacity for learning.

Moreover, the core variable on language proficiency was based on self-assessments, and research shows that these self-estimates only to some extent reflect

actual skills as measured by standardized tests (Edele et al., 2015). The problem is that self-assessments are systematically biased, for example regarding cognitive skills or education with those exhibiting higher levels of skills and education providing more accurate assessments (Edele et al., 2015). The counterintuitive finding on education is consistent with this reasoning as it only appears in the first model on the level of proficiency upon arrival but then disappears in the change model.

In line with previous research, pre-migration and post-migration exposure turned out to be of crucial relevance to destination-language acquisition. Given the rich measures available in the SCIP data and the strong empirical support for the various exposure variables, it seems advisable to address the related processes in more detail and, accordingly, to further exploit the data. For example, based on a rather crude measure of the job's language-intensity, the analyses revealed that exposure to the destination language in the labor market proved important. By making use of the more detailed information available on occupations, it would be possible to arrive at more fine-grained measures on labor market-related exposure to the destination language. This may provide additional insights on the processes fostering language acquisition among recently arrived immigrants.

### **Declaration of conflicting interests**

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

### **Funding**

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This work uses data from the international project "Socio-Cultural Integration Processes of New Immigrants in Europe" (SCIP) that was generously funded by the NORFACE Research Programme on Migration.

### **Notes**

1. In the following, we use the terms "language skills" and "language proficiency" interchangeable describing a broad range of language-related competences without referring to a particular domain.
2. The linguistic distances between the language combinations of interest are all rather pronounced (i.e. Polish/German 96.5; Polish/Dutch 94.7; Polish/English 95.0; Turkish/German 99.8; Turkish/Dutch 102.0; calculations based on the method of Wichmann et al. (2010); for comparison purposes: a very close linguistic distance can be found between German and Dutch with 51.5 and a very large distance between German and Korean with 104.3; Isphording and Otten, 2013).
3. In 2005, 83% of Polish respondents had foreign language lessons at school compared with 41% of the respondents in Turkey (European Commission, 2006: 47). About 49% of the Poles learned their first foreign language, typically English for the younger generation, at primary school while only 9% of the respondents from Turkey did so (European Commission, 2006: 22).
4. Generally, simple change score models are preferred to lagged variable models in two-wave panels as estimates of the effects of events occurring between the waves are less sensitive to

systematic measurement errors and to the confounding effects of stable traits affecting the dependent variable directly at both measurement points (Allison, 1990; Johnson, 2005). A comparison of the presented results with a simple change score model indicates that this is not a serious problem here. The estimates for wave 2 measures differ hardly between the models. Significance levels and magnitude of the effects are robust.

5. Model 1 has also been estimated for all participants in wave 1 with very similar results to the ones reported in this paper.
6. The models were also separately estimated for written and oral skills with very similar findings to the ones reported on the composite language measure.
7. Simulations (available on request) show that this would have as a consequence that the “true” relationship between education and language improvement is underestimated in Model 2, as the regression of the change scores is controlled for the initial self-assessment of language proficiency; the tests for the relationship between education and language improvement are thus conservative.

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Appendix

Table A1. Linear regressions of destination-language proficiency shortly after migration (Model 1).

	Germany		The Netherlands		Ireland		England	
	Poles	Turks	Poles	Turks	Poles	Turks	Poles	Poles
Gender (ref. males)	0.21*** (0.04)	0.09* (0.05)	0.09 (0.07)	0.04 (0.06)	0.05 (0.05)		0.23** (0.07)	
Age at migration/10	-0.05* (0.02)	-0.07* (0.03)	-0.01 (0.04)	-0.02 (0.04)	-0.18*** (0.03)		-0.08 (0.05)	
Education before migration (ref. upper secondary)								
None/primary/lower secondary	-0.11 (0.12)	-0.05 (0.06)	0.34 (0.32)	0.22*** (0.06)	0.19* (0.08)		0.01 (0.16)	
Tertiary	0.04 (0.05)	-0.10* (0.05)	-0.02 (0.08)	-0.02 (0.09)	0.16** (0.06)		0.11 (0.08)	
Schooling in destination language before migration	0.45*** (0.05)	0.42*** (0.07)	- (0.05)	- (0.07)	0.53*** (0.07)		0.50*** (0.10)	
Improved Language skills before migration (ref. did not)	0.12* (0.05)	0.29*** (0.05)	0.32* (0.16)	0.26** (0.09)	0.29*** (0.05)		0.25* (0.10)	
Never in destination country before migration (ref. has been)	-0.06 (0.05)	-0.05 (0.07)	-0.07 (0.09)	-0.90*** (0.13)	-0.10 (0.07)		0.09 (0.11)	
Duration of pre-migration stays in destination country	0.03*** (0.01)	0.06*** (0.01)	0.07 (0.07)	0.05 (0.03)	0.04 (0.02)		0.13** (0.04)	
Duration of stay/10	0.02 (0.02)	0.04 (0.02)	0.23* (0.11)	0.09 (0.07)	-0.00 (0.04)		0.03 (0.06)	
Improved language skills between entry and t1 (ref. did not)	0.04 (0.05)	0.07 (0.05)	0.43*** (0.10)	0.20* (0.08)	-0.11 (0.06)		-0.06 (0.12)	

(continued)



Table A1. Continued

	Germany		The Netherlands		Ireland		England	
	Poles	Turks	Poles	Turks	Poles	Turks	Poles	Turks
Language use: partner	0.11** (0.03)	0.07** (0.02)	0.07 (0.06)	0.09** (0.03)	0.01 (0.04)		0.08 (0.07)	
Language use: friends	0.16*** (0.02)	0.13*** (0.02)	0.11* (0.05)	0.22*** (0.04)	0.10*** (0.03)		0.20*** (0.05)	
In education after migration (ref. not)	0.40*** (0.07)	0.03 (0.07)	0.14 (0.11)	0.07 (0.07)	0.12 (0.10)		0.47* (0.18)	
Employed in language intensive job (ref. not)	-0.01 (0.07)	0.07 (0.06)	0.26 (0.14)	0.30* (0.13)	0.32* (0.11)		0.15 (0.15)	
Media consumption in destination language	0.14*** (0.02)	0.08** (0.03)	0.06 (0.05)	0.18*** (0.04)	0.17*** (0.03)		0.19*** (0.05)	
Wants to stay forever in destination country (ref. does not)	0.03 (0.06)	0.04 (0.05)	0.02 (0.09)	0.11* (0.05)	0.02 (0.06)		0.07 (0.08)	
Identification with destination country	-0.02 (0.02)	-0.01 (0.02)	-0.01 (0.04)	-0.06 (0.03)	-0.04* (0.02)		-0.05 (0.04)	
Origin partner (ref. partner from country of origin)	0.12* (0.05)	0.29** (0.09)	0.08 (0.10)	0.25** (0.08)	-0.01 (0.06)		0.01 (0.09)	
Single/partner from other country	-0.13 (0.15)	0.07 (0.06)	0.12 (0.30)	0.03 (0.06)	0.39* (0.18)		-	
Majority partner	0.06 (0.07)	-0.10* (0.05)	0.10 (0.14)	0.12 (0.17)	-0.03 (0.10)		0.28 (0.29)	
Majority friend/s (ref. no majority friend/s)	1.17*** (0.16)	1.47*** (0.20)	0.42 (0.46)	1.41*** (0.30)	2.29*** (0.20)		0.96* (0.38)	
INTERCEPT								
Number of persons	594	486	133	427	397		224	
R <sup>2</sup>	0.61	0.48	0.60	0.66	0.63		0.62	

Data: SCIP, balanced panel. Notes: Imputed dataset; unstandardized coefficients; robust standard errors in parentheses; the coefficients are statistically significant at \*p < 0.05, \*\*p < 0.01, \*\*\*p < 0.001; the models include an additional control for Kurds.

Table A2. Linear regressions of change in destination-language proficiency (Model 2).

		Germany				The Netherlands				Ireland		England	
		Poles		Turks		Poles		Turks		Poles		Poles	
Measures from		Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.
Language proficiency	$t_1$	-0.41***	(0.04)	-0.59***	(0.05)	-0.51***	(0.11)	-0.57***	(0.04)	-0.36***	(0.04)	-0.44***	(0.06)
Gender (ref. males)	$t_1$	0.09**	(0.03)	0.05	(0.05)	0.15	(0.08)	0.06	(0.05)	0.00	(0.04)	0.02	(0.05)
Age at migration/10	$t_1$	-0.05*	(0.02)	-0.09*	(0.04)	-0.08*	(0.04)	-0.09*	(0.04)	-0.04	(0.02)	-0.02	(0.04)
Education before migration (ref. Upper secondary)	$t_1$												
None/primary/lower secondary		-0.11	(0.12)	-0.17*	(0.07)	-0.22	(0.31)	-0.18**	(0.07)	0.03	(0.06)	-0.26***	(0.07)
Tertiary		0.06	(0.03)	-0.10	(0.05)	0.01	(0.10)	-0.09	(0.05)	0.04	(0.05)	0.06	(0.06)
Schooling in destination language before migration	$t_1$	-0.02	(0.04)	0.09	(0.06)	-		-	(0.06)	0.07	(0.06)	0.16*	(0.07)
Improved Language skills before migration (ref. did not)	$t_1$	0.01	(0.04)	0.03	(0.05)	-0.27	(0.15)	0.02	(0.05)	0.05	(0.04)	0.03	(0.06)
Never in destination country before migration (ref. has been)	$t_1$	-0.01	(0.04)	0.07	(0.06)	0.03	(0.12)	0.07	(0.06)	-0.09	(0.05)	-0.03	(0.08)
Duration of pre-migration stays in destination country	$t_1$	-0.00	(0.01)	0.02	(0.01)	-0.02	(0.08)	0.01	(0.01)	-0.01	(0.01)	-0.01	(0.03)

(continued)

Table A2. Continued

	Measures from	Germany		The Netherlands		Ireland		England	
		Poles		Turks		Poles		Poles	
		Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.
Duration of stay/10 ( $t_1$ )	$t_1$	0.01	(0.02)	0.01	(0.02)	-0.10	(0.02)	-0.02	(0.03)
Improved language skills between entry and $t_1$ (ref. did not)	$t_1$	-0.03	(0.03)	-0.03	(0.06)	-0.04	(0.06)	-0.01	(0.04)
Improved language skills between interviews (ref. did not)	$t_2$	0.09**	(0.03)	0.11*	(0.05)	0.35**	(0.05)	0.06	(0.05)
Language use: partner	$t_1, t_2$	initial -0.05 pos. 0.06 neg. 0.02	(0.03) (0.04) (0.03)	0.03 0.06 -0.06	(0.03) (0.04) (0.04)	-0.07 0.06 0.00	(0.03) (0.04) (0.04)	0.02 0.03 -0.03	(0.04) (0.02) (0.05)
Language use: friends	$t_1, t_2$	initial 0.06** pos. 0.03* neg. -0.04	(0.02) (0.02) (0.03)	0.06* 0.09*** -0.02	(0.03) (0.03) (0.06)	0.18** 0.09 -0.15	(0.03) (0.03) (0.03)	0.11*** 0.08** -0.08	(0.03) (0.03) (0.04)
In education (ref. not)	$t_1, t_2$	initial 0.20*** pos. 0.06 neg. -0.15*	(0.06) (0.05) (0.07)	0.09 0.18* -0.01	(0.10) (0.09) (0.11)	0.11 0.13 -0.30	(0.09) (0.09) (0.11)	0.20 0.19** -0.10	(0.11) (0.07) (0.13)
Employed in language intensive job (ref. not)	$t_1, t_2$	initial 0.00 pos. 0.11 neg. 0.01	(0.08) (0.10) (0.10)	0.27 0.26 -0.27	(0.19) (0.30) (0.22)	0.15 -0.07 -0.07	(0.19) (0.30) (0.22)	-0.02 0.05 -0.09	(0.08) (0.11) (0.14)

(continued)

Table A2. Continued

	Measures from	Germany				The Netherlands				Ireland		England		
		Poles		Turks		Poles		Turks		Poles		Poles		
		Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	
Media consumption in destination language	$t_1, t_2$	initial	0.05*	(0.02)	0.12***	(0.03)	0.04	(0.05)	0.12***	(0.03)	0.03	(0.03)	0.07	(0.04)
		pos.	0.07*	(0.03)	0.12***	(0.05)	0.10	(0.07)	0.12*	(0.05)	0.04	(0.04)	0.20***	(0.05)
		neg.	-0.07	(0.04)	-0.10*	(0.05)	-0.01	(0.09)	-0.11*	(0.05)	-0.10*	(0.05)	-0.02	(0.06)
Wants to stay forever in destination country (ref. does not)	$t_1, t_2$	initial	0.14**	(0.05)	-0.03	(0.07)	-0.38**	(0.13)	-0.03	(0.07)	-0.05	(0.06)	-0.00	(0.08)
		pos.	0.10	(0.06)	0.08	(0.08)	0.04	(0.10)	0.08	(0.08)	0.00	(0.05)	-0.20*	(0.09)
Identification with destination country		neg.	-0.14*	(0.06)	0.00	(0.07)	0.29*	(0.14)	-0.00	(0.07)	0.03	(0.07)	0.09	(0.07)
	$t_1, t_2$	initial	-0.04*	(0.02)	-0.00	(0.02)	-0.01	(0.04)	-0.00	(0.02)	-0.05**	(0.02)	0.01	(0.03)
Origin partner (ref. partner from country of origin)	$t_1$	pos.	-0.02	(0.03)	0.03	(0.03)	0.12	(0.07)	0.03	(0.03)	-0.02	(0.03)	-0.02	(0.03)
		neg.	0.02	(0.02)	-0.03	(0.03)	0.02	(0.04)	-0.03	(0.03)	-0.02	(0.03)	0.05	(0.03)
Single/partner from other country			0.04	(0.04)	0.11	(0.08)	0.12	(0.10)	0.11	(0.08)	-0.06	(0.05)	0.06	(0.06)
Majority partner			0.28**	(0.10)	-0.00	(0.05)	0.29	(0.25)	-0.00	(0.05)	0.02	(0.23)	-	
Majority friend/s (ref. no majority friend/s)	$t_1, t_2$	initial	0.11	(0.06)	0.04	(0.07)	0.06	(0.19)	0.04	(0.07)	0.07	(0.09)	-0.16	(0.12)

(continued)

Table A2. Continued

Measures from	Germany			The Netherlands			Ireland			England			
	Poles			Turks			Poles			Poles			
	Coef.	S.E.		Coef.	S.E.		Coef.	S.E.		Coef.	S.E.		
INTERCEPT	pos.	0.16**	(0.05)	0.04	(0.07)	−0.07	(0.16)	0.04	(0.07)	0.06	(0.07)	0.13	(0.09)
	neg.	−0.06	(0.07)	−0.02	(0.08)	−0.17	(0.26)	−0.02	(0.08)	−0.05	(0.12)	−0.43	(0.27)
		1.11***	(0.14)	1.26***	(0.24)	1.07*	(0.44)	1.25***	(0.24)	1.16***	(0.20)	0.50	(0.31)
Number of persons	594			486		133		486		397		224	
Number of person years	1188			972		266		972		794		448	
R <sup>2</sup>	0.36			0.41		0.60		0.40		0.32		0.52	

Data: SCIP, balanced panel. Notes: Imputed dataset; unstandardized coefficients; robust standard errors in parentheses; the coefficients are statistically significant at \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ ; the models include an additional control for Kurds.