

The literal cost of language assimilation for the children of immigration:

The effects of bilingualism on labor market outcomes

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Abstract

The effects of being fluent in a minority language on labor market outcomes are rarely examined. Using two different datasets, the National Education Longitudinal Study (NELS) and the Children of Immigrants Longitudinal Study (CILS), this paper investigates the long-term effects of being bilingual for the children of immigration in the United States. Our central research question is whether students' bilingual proficiencies have an impact on their future employment status and earnings. Analyses with both CILS and NELS indicate that the balanced bilingual group is more likely to be full-time employed and less likely to be unemployed than respondents who are proficient in English only. Among those who are full-time employed, balanced bilinguals earn significantly more than the English dominant group. Even after controlling for cognitive ability, educational attainment, and parental socioeconomic status, the additional cost of complete linguistic assimilation is estimated between 2000 to 3000 dollars annually. The NELS-data also suggest that balanced

bilingualism has an additional indirect effect through academic attainment. Policy implications of these results are discussed.

Introduction

Starting from the early 1980s, scholars have extensively examined the effects of immigrants' host-country language skills on their economic integration. These studies univocally conclude that immigrants who are more proficient in the dominant language of the host country earn higher wages (see Grin, 2003). However, this literature is dominated by a *deficit* perspective, as the emphasis is placed on what immigrants may *not* have, i.e. host-country language skills. What is generally missing in this literature is a *strengths* perspective, that is, an investigation of the effects of what immigrants might have, that is, being proficient in an immigrant language. Hence, in this chapter, we will focus on the effects of bilingualism on the economic adaptation of immigrants.

The lack of research on the effects of bilingualism on earnings is surprising because for half a century sociologists and sociolinguists have shown the benefits of bilingualism with respect to various cognitive, educational and socio-emotional outcomes (Peal & Lambert, 1962; Cummins, 1978; Bialystok, 1988; Rumbaut & Cornelius, 1995; Bankston & Zhou, 1995; Portes & Hao, 2002; Agirdag, Jordens, Van Houtte, 2013). However, research on economic consequences of bilingualism is virtually non-existent as labor market outcomes are mostly studied by economists who typically use standardized 'human capital theory' models in which skills in a minority language are rarely considered as a form of human capital (i.e. a

source of economic advantage).¹ In various countries with high numbers of immigrants, fluency in another language is generally treated as a problem, rather than as an asset (see Agirdag, 2010; Rios-Aguilar & Gándara, 2012; Agirdag, Van Avermaet, Van Houtte, 2013). Adopting an interdisciplinary approach, we will bring sociological/sociolinguistic perspectives regarding the benefits of student bilingualism to an economic analysis of immigrants' integration in the labor market. More specifically, we will examine whether student bilingualism is at the long term related to early-career employment status and earnings. It should be noted that most of the economics studies cited above limit their analyses strictly to the foreign-born population; however, regarding the impact of immigrant languages, the assessment of the *children* of immigrants might be even more relevant because language assimilation plays an important role in their lives (see Portes & Rumbaut, 2001). Therefore we will not limit our analysis to foreign-born individuals, but we will use data on both first and second generation young adults who have lived in the US since at least middle-school age and who have grown up with a language other than English.

Literature and theory

Immigrants in the economy

Regarding the literature on the economic situation of the immigrants in the US, we may distinguish between an 'optimistic' perspective, which focuses on the successful adaptation of immigrants, and a 'pessimistic' perspective, which emphasizes their failures (for reviews see Alba & Nee, 1997; Portes & Rumbaut, 2001). Works by Barry Chiswick (1977, 1978) are widely cited as pioneering studies which yielded very optimistic results. Chiswick (1978) showed that after 10 to 15 years immigrants achieved the same levels – and eventually exceeded – the earnings of the native-born. He attributed this quick and successful adaptation

¹ Economists have only recently argued for including aspects of 'ethnic human capital' in their models (see Chiswick, 2009), while empirical economic studies that do so are still rare.

process to the positive self-selection of immigrant workers in terms of motivation and abilities (Chiswick 1977, 1978). A second ‘optimistic’ research tradition points to the success stories of immigrant workers in ethnic sub-economies (enclaves) and the achievements of those engaged in self-employment (Light, 1984; Waldinger, 1986; Portes & Jensen, 1989; Portes & Zhou, 1996; Zhou & Bankston, 1998). These researchers found that ethnic sub-economies provide stable working conditions and higher earnings for immigrant workers, and that self-employment plays an important positive role regarding the economic adaptation of immigrant families.

The optimistic perspective is challenged by a more pessimistic one. For instance – contradicting Chiswick’s findings – Borjas (1985) argued that the earnings of more recent cohorts of immigrants did not gain parity with those of the native-born, which he attributed to the decline in ‘immigrant quality’ because of the third-world origin of immigrants (Borjas, 1985). Other studies have also questioned the advantageous effects of ethnic sub-economies. This view holds that immigrants are instead ‘trapped’ in an ethnic enclave economy where earnings are lower than the broader competitive sector (Mar, 1991; Nee, Saunders & Sernau, 1996) and that there is no evidence that immigrant entrepreneurs are particularly successful (Borjas, 1990). Apart from the optimistic or the pessimistic perspectives, a constant finding is that there is an enormous diversity among immigrant groups with respect to their adaptation to the US economy (see Portes & Rumbaut, 2001).

Language as a determinant of earnings

The significance of language for the economic adaptation of immigrants derives from the fact that language is assumed to be more easily *alterable* than other aspects of human capital such as educational attainment, even though it takes 5-7 years to become fluent in English (Hakuta, Butler, & Witt, 2000). According to Grin (2003), there are four types of empirical studies that

examine the relationship between language and earnings. The first focuses on labour market *discrimination against language groups*. These studies investigate whether *membership* in a language group results in earning differences. Because of the strong intersections between ethnic and language groups, there are few studies that focus explicitly on the latter. However studies that do so have found differences among language groups even after controlling for their skills in the dominant language of the host country (see Grin & Sfreddo, 1998).

A second group of studies has focused on *the value of skills in the dominant language of a country*, for instance, the impact of English fluency on earnings of immigrants in the US. This type of research has emerged from various parts of the world (for the US: McManus, Gould, & Welch, 1983; Kossoudji, 1988; Chiswick, 1991; Chiswick & Miller, 2002; for Germany: Dustmann, 1994; Dustmann & Van Soest, 2002; for Belgium: H'madoun & Nonneman, 2012; for Canada: Chiswick & Miller, 2003; for the UK: Leslie & Lindley, 2001; Dustmann & Fabbri, 2003; for international comparisons: Chiswick & Miller, 1995). Unsurprisingly, these studies conclude that proficiency in the dominant host-country language is related to higher wages.

Grin (2003) argues that a third type of study has investigated *the value of skills in a non-dominant language in a region*. Typical examples are native French-speaking Canadians who have learned English or native French-speaking Belgians who have learned Dutch. Although there are variations across regions and gender, this type of research generally points to wage benefits for bilinguals (see Vaillancourt, 1996; Grin, 1999).

Fourth, there is a category of investigations that focuses on the *value of skills in an immigrant language*. However, Grin (2003) states that these 'exceedingly rare' studies have found that the economic value of being proficient in an immigrant language is very low. Nevertheless, he argues that immigrant language skills might be an asset instead of a

hindrance, ‘contrary to what seems assumed *a priori* by much of the research in group B [the second research type]’ (Grin, 2003, p.20). We are aware of *only one* study of this type of research conducted in the US: Fry and Lowell (2003) have found that being bilingual has a positive impact on the earnings of foreign-born men, with this positive impact mostly explained by the educational background of these immigrants. For reasons of ‘convention’, the effects on women are not examined in this study.

While Grin’s typology is very useful, it is still possible to distinguish a *fifth type* of research, where scholars might investigate the long-term effects of bilingualism and/or language assimilation on incomes for children of immigrants. While this type of research might be considered a specific form of the fourth type described above, it is distinct as the focus shifts from immigrants and immigration policy towards linguistic diversity and educational policy. The core question here is whether students’ bilingualism should be valued in the educational system for the sake of economic benefits for individuals and the society. Indeed, previous studies on immigrant students have found that there are several *metaphorical costs* associated with linguistic assimilation such as a more problematic family and personality adjustment (e.g. Portes & Hao, 2002) and decreasing educational success (e.g. Feliciano, 2001). However, these outcomes are only at the short-term, while language assimilation might also have *literal* at the long term. That is, student bilingualism might also have an impact on future earnings. Needless to say, the main goal of this study is to provide the first example of this type of research.

The value of linguistic skills: a Bourdieusian framework

Why do we expect skills in a minority language to be positively associated with the earnings of immigrants and their children? To answer this question, we will draw on the writings of Pierre Bourdieu, briefly sketching his theories about linguistic domination (Bourdieu, 1977b),

using the concepts of field, doxa, heterodoxy and orthodoxy (Bourdieu, 1977a), and applying his notions of capital (Bourdieu, 1986).

In *The economics of linguistic exchanges*, Bourdieu (1977b) states that the value of being competent in a certain language – which he calls *linguistic capital* – is highly dependent on the social contexts in which these linguistic competences are used. Bourdieu called these social contexts ‘linguistic markets’ or ‘fields’: ‘Linguistic competence functions as linguistic capital in relationship to a certain market’ (Bourdieu, 1977b, p. 651). Any field or market primarily involves power relations between the dominant and the dominated groups, and therefore between the dominant and dominated languages. Bourdieu asserts that in a situation of bilingualism, a dominant and dominated language will emerge along social class lines:

A language is worth what those who speak it are worth, i.e. the powers and authority in the economic and cultural power relations ... the dominant language is the language of the dominant class’ (Bourdieu 1977b, p. 652).

As the dominant class has control over the educational system, it has the power to impose the rules that are followed within the field of economics, including those regarding the legitimacy and/or the value of a language. Even if the rules imposed on languages overtly favour the dominant group, linguistic dominance will persist as long as the linguistically dominated group does not recognize it as a form of domination. Rather, the dominant *and* dominated groups are inclined to perceive this linguistic domination as something natural and obvious. Such collectively shared, taken-for-granted beliefs/opinions are called *doxa* (Bourdieu, 1977a). However, Bourdieu argues that each doxa might be challenged by competing actions. The dominated linguistic groups are more likely to behave in a *heterodox* way, meaning they will resist the doxa. This resistance involves, among other things, to move their (linguistic) competences to sub-fields in which they might function as (linguistic) capital. The dominant

group, on the other hand, is more likely to behave in an *orthodox* manner, meaning they are more likely to re-establish the doxic tradition (Bourdieu 1977a).

The application of this theory to the linguistic situation in the US is straightforward. It is clear that English monolingualism is a dominant ideology that favors the dominant monolingual class. As English monolingualism constitutes a quasi-doxa within the field of education, it is also a rule that is tacitly imposed in other fields such as the economy. Because this monolingual doxa is threatened by growing linguistic diversity, an orthodox position is taken by the English-only movement (e.g. ProEnglish or English First). The Bourdieusian framework also makes clear why the English-only movement opposes above all bilingualism in the field of education. On the other hand, the heterodox position is taken by the English Plus movement, which supports the preservation of bilingual education. Moreover, the linguistically dominated groups move to take up positions within sub-fields of the economy (sub-markets) where their minority linguistic skills might function as linguistic capital. Some well-known examples of such sub-fields or sub-markets are ethnic enclaves such as the many Chinatowns or the Cuban enclave in Miami.

How then is immigrants' linguistic capital converted to higher earnings? Let us conceptualize earnings as a form of economic capital, and consider the theoretical conversion process between the notions of cultural, social and economic capital (see Bourdieu, 1986). Bourdieu states that cultural capital exists in three different states. First, it can exist in *embodied* form, i.e. knowledge and skill that are incorporated by a social actor. Bourdieu (1986) states that linguistic capital is an example of embodied cultural capital. Second, it exists in *objectified* form, i.e. cultural objects which can be owned, such as books. Third, it can be *institutionalized* when it is officially recognized, mostly in the form of academic credentials. Finally, Bourdieu (1986) also distinguishes *social capital*, defined as 'resources

which are linked to possession of a durable network'. All three forms of cultural and social capital can be converted to economic capital.

Minority linguistic capital (as embodied cultural capital) can be converted to higher earnings (economic capital) both *directly* and *indirectly*. Direct effects should be understood as bilinguals' ability to carry out duties that monolinguals cannot such as interacting with customers who only speak the minority language. Bilingual persons might therefore be qualified for jobs with higher wages. Minority linguistic capital can also have an indirect effect, that is through conversion to other forms of capital. First, if bilingualism is positively related to educational outcomes (see Feliciano, 2001), minority linguistic capital might first be converted to *institutionalized cultural capital* (academic qualifications), which in turn, results in higher earnings. Secondly, minority linguistic capital might also give a person access to specific *objectified cultural capital* such as books or advertisements published in a minority language. To have access to such objects might give a boost to an entrepreneur's business. Thirdly, minority linguistic capital can be converted to social capital: that is, it might give an entrance to a social network in which the minority language prevails, access to which might result in higher earnings.

Nevertheless, it might be the case that the value of cultural and social capital that is specific to linguistic minorities is lower than the value of cultural and social capital within the English monolingual market because of linguistic racism. However, net of linguistic racism, bilinguals have access to *both* the English monolingual market *and* specific minority language sub-fields. In other words, all else being equal, we expect that the earnings of bilinguals will be higher because they can take positions in specific linguistic minority sub-fields *in addition to* the regular market.

Methodology

Sample and design

Data for this study came from two different datasets: the National Education Longitudinal Study of 1988/2000 (NELS), which is administered by the National Center for Educational Statistics, and the Children of Immigrants Longitudinal Study of 1991/2003 (CILS) administered under supervision of Alejandro Portes and Rubén Rumbaut (see Portes & Rumbaut, 2005). For both datasets, the selection of participants was based on a two-stage stratified sample with schools as the first-stage unit and a sample of students within each selected school as the second-stage unit. The NELS survey was initiated in 1988 and included over 24,000 8th-grade students across the US. The final follow-up with information about the employment status and income of the respondents was conducted in 2000, when most respondents turned 26. In contrast to NELS, the CILS is not a nationally representative study, but it is specifically intended to investigate the adaptation process of the immigrant second generation. The second generation is broadly defined as children with at least one foreign-born parent or children born abroad but brought to the US at an early age. The original CILS survey was conducted in 1992 with 5,000 children attending the 8th and 9th grades in schools in Miami/Ft. Lauderdale and San Diego. In 2002, when most respondents turned 24, a final follow-up was conducted which included information about their employment status and income. To exclude a potential interfering effect of discrimination of linguistic minorities, we only selected respondents who initially stated that another language than English is spoken at home (*hereafter* the native language) and for the sake of comparability between both datasets, the NELS data was additionally limited to respondents with immigrant roots.

Before doing the analysis on earnings, we will first examine whether bilingualism is related to respondents' employment status. More specifically, we will compare the *balanced bilingual* and the *English dominant* group with respect to the full-time employment versus part-time employment versus unemployment. For this purpose, we will conduct a multinomial

logistic regression. Then we will limit the CILS and the NELS data to those who are full-time employed to investigate the effects of bilingualism on earnings. For this purpose, we will use OLS regression analysis. The regression analyses are conducted with SPSS version 20. For the OLS regression, missing data are handled with the multiple imputation procedure: five imputations are requested, and the pooled results are shown (Allison, 2002). Additionally, using only the CILS data, we will examine whether non-cognitive factors (self-esteem and family cohesion) account for the impact of bilingualism on earnings.

Outcomes

There are two outcomes examined in this study, i.e. employment status and earnings.

Information about the *employment status* from last follow-up of both NELS and CILS is used. We distinguish between three categories: full-time employment, part-time employment and unemployment. For the CILS data 1,897 respondents were employed full-time (70.8%), 582 worked part-time (21.7%) and 199 respondents were unemployed (7.4%). Students, homeworkers and disabled respondents of the final CILS follow-up are not included in the analysis. For the NELS data 1,371 respondents were employed full-time (80.8%), 109 worked part-time (6.4%) and 216 respondents were unemployed (12.7%). Respondents who were students during the final NELS follow-up are not included in the analysis.

Annual income. The annual earnings of the respondents were collected during the last follow-up of both NELS and CILS. For CILS, respondents were asked to state their monthly earnings from all sources. NELS respondents were asked to state how much they earn before taxes and other deductions. They could report their earnings hourly, weekly, bimonthly, monthly or annually. We converted all earnings responses for both NELS and CILS to annual earnings by multiplying by common full-time factors: hourly earnings by 2,100, weekly by 52, bi-monthly by 24, and monthly by 12 (see Table 1 for descriptive statistics on NELS and

CILS, after restriction of the sample to full-time workers). Most economists prefer to take the natural logarithm of earnings, i.e. loglinear form, for theoretical reasons regarding the statistical distribution of earnings. However there are theoretical, practical and methodological reasons to avoid this practice and staying with the linear form (for an elaborated discussion, see Portes & Zhou, 1996). Practically seen, the linear form yields coefficients that are directly interpretable as dollar gains per unit change in the independent variable, while the log-linear form is harder to interpret (i.e. as average percentage change in earnings). Theoretically, the log-linear form yields the *relative* impact of the independent variables, whereas the linear form gives us information about *absolute* earnings. Therefore the log-linear form can obscure real differences between groups and as such is less preferable when the focus is on *actual* differences in earnings (see Portes & Zhou, 1996). Finally, methodologically, a statistical analysis on this issue have demonstrated that converting wages to the natural logarithm produces more bias than it reduces (Blackburn, 2007). Blackburn (2007) concludes: ‘While there is little to gain statistically from log-wage regression analysis, there is much to lose’ (p.95). We find these arguments convincing and therefore stay with the absolute (linear) levels of earnings.

Table 1: Descriptive statistics for the CILS and the NELS after limiting the sample to full-time employed respondents: number of observations (N), minimum, maximum, mean with standard deviations in parenthesis (for continuous variables) and proportion (for categorical variables)

	NELS				CILS			
	N	Min	Max	Mean (SD)	N	Min	Max	Mean (SD)
Bilingualism	1556				1897			
Limited		0	1	21.72%		0	1	20.72%
Balanced bilingual		0	1	17.22%		0	1	25.62%
English dominant		0	1	61.05%		0	1	53.66%
Earning (year)	1575	1000	500000	32873 (23502)	1699	960	204000	26223 (16658)
Gender	1656				1897			
Male		0	1	51.09%		0	1	48.34%
Female		0	1	48.91%		0	1	51.66%
Education attainment	1639	-2	3	0.51 (1.32)	1867	-2	2	-0.49(0.93)
Ability	1434	-19.07	22.98	0 (8.66)	1672	-69.70	16.00	0 (5.53)
Parental SES	1544	-2.23	2.87	0 (0.87)	1897	-1.60	2.15	0 (0.73)
National origin	1656				1878			
Mexico		0	1	34.72%		0	1	14.00%
Cuba	---	---	---	---		0	1	28.49%
Other Hispanic		0	1	16.67%		0	1	28.43%
Filipino	---	---	---	---		0	1	13.58%
China		0	1	6.10%		---	---	---
Other Asian		0	1	18.30%		0	1	13.90%
Other		0	1	24.21%		0	1	1.60%
Region	1594				---	---	---	---
North-East		0	1	17.13%	---	---	---	---
North-Central		0	1	12.17%	---	---	---	---
South		0	1	29.80%	---	---	---	---
West		0	1	40.90%	---	---	---	---
City	---	---	---	---	1987			
Miami	---	---	---	---		0	1	59.67%
San Diego	---	---	---	---		0	1	40.33%
Self-esteem	---	---	---	---	1684	-2.36	.54	0 (0.50)
Family cohesion	---	---	---	---	1685	-2.63	1.37	0 (1.01)

Explanatory Variable: Multilingual Proficiencies

CILS and NELS respondents were asked to self-assess their proficiencies in their native language and English with respect to speaking, understanding, reading and writing. There were four response categories for all items: ‘very well’, ‘well’, ‘not well’, ‘not at all’. It should be noted that for CILS, this information was collected during the base-line, whereas for NELS the most recent data on language proficiency was collected in 1990 during the first follow-up. Latent Class Analysis (LCA) is conducted to cluster the respondents in various linguistic groups. For this purpose, the eight categorical items of language proficiency are entered as indicators of potential clusters, *in casu* distinct linguistic groups. For both datasets, the results of the LCA show that there are three clusters that make theoretical and empirical sense². More specifically, we were able to distinguish between three groups (1) *limited bilingual*, (2) *balanced bilingual* and (3) an *English dominant* group. For the NELS 17.22% of the sample is categorized as *balanced bilingual*; for the CILS 25.62% is categorized as *balanced bilingual* (see Table 1 for descriptive statistics). Table 2 provides the probability scales of the LCA. Here, it is shown that respondents that clustered as *English dominant* or *balanced bilingual* have both a high level of English proficiency: more than 90% of respondents in both groups understand, speak, read and write very well. However, in contrast with the *English dominant* group, balanced bilinguals have high scores on their native language proficiency as well. Hence, the only difference between *balanced bilingual* and *English dominant* group is that the former has higher native language skills. Table 2 also demonstrates that individuals belonging to the cluster of *limited bilingual* have lower overall proficiency than the other two groups. For instance, only 6% of limited bilinguals write very well in English and only 21% writes very well in the native language (see Table 2).

² The entropy value was 0.904 for CILS and 0.745 for NELS; entropy values approaching 1 indicate clear delineation of latent classes (Celeux & Soromenho, 1996)

Table 2. Results of the latent class analysis (LCA): probability scales for three class solution: limited bilingual (top-, balanced bilingual (middle) and English dominant (bottom).

		Native				English			
		Understand	Speak	Read	Write	Understand	Speak	Read	Write
Limited Bilingual	Not at all	2%	4%	18%	22%	1%	1%	0%	0%
	Not well	4%	7%	20%	23%	5%	7%	12%	15%
	Well	45%	45%	37%	34%	73%	77%	82%	80%
	Very well	49%	43%	25%	21%	22%	15%	6%	6%
Balanced Bilingual	Not at all	0%	0%	0%	0%	0%	0%	0%	0%
	Not well	0%	1%	0%	6%	1%	0%	0%	0%
	Well	3%	13%	32%	39%	1%	1%	1%	2%
	Very well	97%	86%	68%	54%	98%	99%	99%	98%
English Dominant	Not at all	1%	3%	26%	37%	0%	0%	0%	0%
	Not well	12%	34%	47%	50%	0%	0%	0%	0%
	Well	56%	48%	26%	13%	1%	2%	2%	6%
	Very well	32%	16%	1%	0%	99%	98%	98%	94%

Note: Results are shown for the CILS-data. The results for the NELS data are almost identical.

Control Variables

We will attempt to rule out selection effects by including various control variables that might have an effect on the dependent variable. With respect to effects on employment status, we control for respondents' gender and educational attainment. With respect to effects on earnings, we control for gender, educational attainment cognitive ability, parental socioeconomic status (SES), national origin, and their regional location (see Table 1 for descriptive statistics for NELS and CILS, after restricting the sample to full-time employed respondents).

In both datasets the *educational attainment* of the respondents is measured by their highest educational degree. To make the analysis more straightforward, we will use this ordinal variable as if it was a metric variable in the analyses.

As an indicator of respondents' *cognitive ability*, we used their scores on a standardized math achievement test. For the NELS, this test was conducted in the spring of 1988; for the CILS data, the scores on the Stanford math achievement test were administered by the schools and provided to the researchers in 1991.

As a measure of *parental SES*, we use the composite SES scores calculated by both the NELS and the CILS administrators: the SES composite for NELS is composed of five variables including family income, parents' education levels, and parents' occupations; the SES composite for CILS is computed using father's and mother's education, and occupations and family home ownership.

We were able to distinguish between seven categories of *national origin* with frequencies larger than 100: (1) Mexico, (2) Cuba (*only in CILS*), (3) other Latin America, (4) Philippines (*only in CILS*), (5) China (*only in NELS*), (6) Other Asian, (7) Others.

Finally, we controlled for the location of the respondents using a proxy variable taken from information about the location of the schools in the baseline data. For NELS, four census regions were distinguished and for the CILS, we distinguish between Miami/Ft. Lauderdale in Florida and San Diego in California.

Non-cognitive variables

To assess whether the impact of bilingualism on earnings can be explained by non-cognitive characteristics, we will examine the mediating role of self-esteem and family cohesion. Both variables come from the first follow-up of the CILS-data. Self-esteem is assessed with ten items of the Rosenberg's Self-Esteem scale (Rosenberg, 1979). Family Cohesion is measured with three items from the Family Cohesion scale (Portes & Rumbaut, 2001). See Table 1 for descriptive statistics.

Results

Bilingualism and Employment Status

The relationship between bilingualism and employment status is first considered with bivariate analysis, then with multinomial logistic regression analysis. For both, the CILS and NELS, we found that full-time employment is more common among the *balanced bilingual* group than among the *English dominant* group, while unemployment was higher among the *English dominant* group: for the CILS data, 74.47% of the *balanced bilingual* respondents were employed full-time and 5.58% of them were unemployed, while 68.59% of the *English dominant* group was employed full-time and 7.65% were unemployed. Similar figures are found for the NELS data.

In Table 3, the results of the multinomial logistic regression are shown in which the effects of bilingualism on the employment status are demonstrated while controlling for

gender and educational attainment. The results indicate that the *balanced bilingual* group is significantly more likely to be full-time employed than to be unemployed, when compared with the *English dominant* group; this holds true for both the CILS ($b = 0.413$, $p = 0.03$) and the NELS data ($b = 0.415$, $p = 0.06$). The CILS data also indicates that the *balanced bilingual* group is significantly more likely to be full-time employed than to be part-time employed, when compared with the *English dominant* group ($b = 0.336$; $p = 0.004$), while we could not repeat this finding with the NELS data ($b = -0.108$; $p = 0.693$).

Table 3. Multinomial logistic regression: effects on employment status for CILS and NELS data. Unstandardized regression coefficients (b), standard errors (se) in parentheses, and significance levels (p).

CILS									
	Full-time vs. unemployed			Part-time vs. unemployed			Full-time vs. part-time		
	b	(se)	p	b	(se)	p	b	(se)	p
Intercept	2.270	(0.133)	***	0.974	(0.149)	***	1.296	(0.088)	***
Bilingualism									
Limited bilingual	-0.146	(0.185)		-0.539	(0.211)	**	0.393	(0.134)	**
Balanced bilingual	0.413	(0.198)	*	0.079	(0.217)		0.336	(0.118)	**
English dominant	ref			ref			ref		
Gender (1=Female)	-0.119	(0.151)		0.166	(0.167)		-0.166	(0.098)	**
Education attainment	0.038	(0.083)		-0.158	(0.094)		2516	(0.056)	***
NELS									
	Full-time vs. unemployed			Part-time vs. unemployed			Full-time vs. part-time		
	b	(se)	p	b	(se)	p	b	(se)	p
Intercept	2.789	(0.181)	***	-0.037	(0.257)		2.826	(0.197)	***
Bilingualism									
Limited bilingual	-0.269	(0.182)		-0.509	(0.309)		0.241	(0.276)	
Balanced bilingual	0.450	(0.244)	°	0.558	(0.345)		-0.108	(0.273)	
English dominant	ref			ref			Ref		
Gender (1=Female)	-1.544	(0.189)	***	-0.906	(0.277)	***	-0.638	(0.221)	**
Education attainment	0.394	(0.060)	***	0.058	(0.095)		0.337	(0.081)	***

° = 0.06, * p ≤ 0.05, ** p ≤ 0.01, *** p ≤ 0.001

Bilingualism and Earnings

The relationship between bilingualism and employment status is first considered with bivariate analysis, then with OLS regression. For the CILS data, we found that the *balanced bilingual* group earns 24,126 dollar annually, while the *English dominant* group earns 22.188 dollar, i.e. a difference of 1,938 dollar. Regarding the NELS data, we found only a small difference: the *balanced bilingual* group earns 34,154 dollar annually, while the *English dominant* group earns 34.109 dollar. It should be noted that the mean income level is higher for the NELS-data because NELS asked for income *before* tax reduction while the CILS asked for net income.

In Table 4, the net effects of bilingualism are shown. It is clear that, for the NELS data, respondents who were categorized as balanced bilinguals have 3,292 dollars more income at the beginning of their career than their English-dominant counterparts ($p = 0.03$). Similarly, the results for the CILS data shows that balanced bilinguals earn 2,096 dollars more than the English-dominant group ($p = 0.04$). Remarkably, there are no significant differences between the earnings of limited bilinguals and the English-dominant group, while the English proficiency level of the English-dominant group is much higher than those of limited bilinguals.

In the second CILS model, we include self-esteem and family cohesion as covariates. While self-esteem is significantly related to earnings, the significant positive impact of balanced bilingualism does not change after including these non-cognitive factors. Hence, we cannot argue that the effect of bilingualism is mediated by these non-cognitive factors.

While the control variables in the models that are shown in Table 2 are not the primary concern of this study, we note that women earn significantly less than men, and that higher

parental SES, higher cognitive ability and, higher educational attainment are all related to higher annual earnings. The only category of national origin that is significantly different from the ‘others’ category is ‘China’: Chinese-American young adults earn significantly more than other children of immigrants.

In fact these positive effects found for balanced bilingualism are conservative estimates. We might be underestimating the actual impact of bilingualism as we control for educational attainment, which might suppress the effects on earnings. As we have described in the theoretical section, bilingualism might have an effect on earnings through educational attainment. That is, bilingualism might have a positive impact on educational attainment, which in turn, has a positive impact on earnings. Indeed, for the NELS data, we find evidence that balanced bilingualism results in higher educational attainment ($b = 0.158$; $p = 0.03$; not shown in tables), and that educational attainment has a positive effect on earnings ($b = 3073$; $p < 0.001$). In other words, above and beyond the direct effect of balanced bilingualism on earnings, there is a significant indirect effect of balanced bilingualism via educational attainment ($b = 485$; $p = 0.03$, not shown in tables). However, we could not repeat this finding with the CILS data, where bilingualism had no significant effect on educational attainment, and no indirect effect via educational attainment on earnings.

Non-cognitive effects

Having established that balanced bilingualism is generally related to higher earnings, we might wonder whether this holds true for different groups. For this purpose, we calculated interaction terms between balanced bilingualism and gender, and between balanced bilingualism and national origin. While in general our results point out that the positive impact of balanced bilingualism is even higher for females and Mexican-Americans, these differences were not statistically significant, potentially due to small sample sizes.

Table 4. OLS regression: effects on annual earnings for NELS and CILS. Unstandardized regression coefficients (b), standard errors (se) in parentheses and significance levels (p).

	NELS			CILS			CILS + non-cognitive		
	b	(se)	p	b	(se)	p	b	(se)	p
Intercept	33913	(1583)	***	28163	(3613)	***	27877	(3624)	***
Bilingualism									
Limited	536	(1412)		-451	(1086)		-203	(1103)	
Bilingual	3292	(1536)	*	2096	(1014)	*	1959	(1021)	*
English dominant	ref			ref			ref		
Gender (1=Female)	-6498	(1059)	***	-3444	(817)	***	-3308	(813)	***
Education attainment	3073	(489)	***	2590	(488)	***	2516	(484)	***
Ability	387	(80)	***	186	(84)	*	165	(86)	*
Parental SES	3053	(817)	***	1108	(634)		1106	(636)	
National origin									
Mexico	-429	(1504)		916	(3687)		1097	(3691)	
Cuba	---			-2353	(3126)		-2424	(3146)	
Other Hispanic	-1838	(1701)		-4000	(3122)		-4075	(3138)	
Filipino	---			-1128	(3704)		-641	(3710)	
China	10421	(2551)	***	---			---		
Other Asian	102	(1744)		3389	(3632)		3793	(3636)	
Other	ref			ref			ref		
Region									
North-East	3476	(1657)	*	---			---		
North-Central	133	(1885)		---			---		
South	-2070	(1309)		---			---		
West	ref			---			---		
City									
Miami	---			3643	(2216)		3776	(2213)	
San Diego	---			ref			ref		
Self-esteem	---			---			2215	(883)	***
Family cohesion	---			---			-200	(436)	

* p ≤ 0.05, ** p ≤ 0.01, *** p ≤ 0.001

Conclusion and discussion

Regarding the economic adaptation of immigrants in the United States, there are few topics that are more studied than the effects of immigrants' linguistic competencies on their earnings. However, this topic is primarily studied from a *deficit* perspective, that is, the emphasis of economists has almost exclusively been on what language skills immigrants do *not have* (i.e. proficiency in English). In strong with this contrast, only rarely have scholars investigated the potential positive effects of what immigrants *do have* (their native language skills). In spite of the strong societal pursuit of *English only*, an important component of sociological and/or sociolinguistic research has been the study of the beneficial outcomes of bilingualism and the related study of the *metaphorical* costs of complete language assimilation. Inspired by this research tradition, in this paper we argued for a study of the *literal* costs of complete language assimilation for non-native-language speaking children of immigrants.

Analyses on two completely independently collected datasets (NELS and CILS) show that there are significant financial *costs* associated with complete language assimilation. First, the results of the multinomial logistic regression analysis have demonstrated that balanced bilinguals are more likely to be full-time employed than the English dominant group, while the latter is more likely to be unemployed than the balanced bilingual group. Secondly, the results of the OLS regression have indicated that *balanced bilinguals* earn significantly more than the *English dominant* group. This finding holds true even after controlling for cognitive ability, parental SES, region and educational attainment. More specifically, when compared with the English-dominant group, we found that balanced bilingual students earn between 2,000 and 3,200 dollars annually more. It should be noted that this is only a conservative estimate as the total impact of balanced bilingualism might be higher as the NELS-data suggest that there is an additional indirect effect via educational achievement. Additional

analyses with the CILS-data suggest that non-cognitive factors (self-esteem and family cohesion of students) do *not* account for the positive impact of balanced bilingualism.

Before we discuss the implication of our results, it is important to mention a limitation of this study. Given the nature of our data, we could only study the earnings of young adults in their mid-twenties. It might therefore be the case that the positive effects of bilingualism only apply to people at the beginning of their careers. We suggest that future research should study the impacts of bilingualism for the whole population.

There are several important political implications of our findings. First, student bilingualism is not only important with respect to socio-emotional and educational outcomes (as previous studies have shown, e.g. Feliciano, 2001; Portes & Hao, 2002), but imposing complete language assimilation is also detrimental for the *economy*. This is even more important given the labor market situation of some immigrant groups such as Mexican Americans. To put it differently, linguistic assimilation policies not just *steal* from people, they steal from those who already have *less*. The results of this study pose fundamental questions about the long term consequences of the *English only* policies imposed in the field of education. Research has already shown that English learners do not benefit from the restriction of bilingual education in terms of educational outcomes (Gándara & Hopkins, 2010). This study adds that these learners are put at even more of a disadvantage, given the long-term harm of monolingualism to their earnings. As such, our results provide support for English language programs that develop native language proficiency, which not only helps students learn English because of transfer, but also has tangible labor market benefits.

To sum up, our findings clearly indicate that competencies in a minority language function as cultural capital; we might call this *multicultural capital*, a distinct type of cultural capital that results from the retention of ethnic and linguistic cultural forms. Like cultural

capital, multicultural capital has the potential to be converted into economic capital. Given the increasing importance of transnational economies, pursuing monolingualism (in the field of education and elsewhere) is therefore the same as pursuing the destruction of multicultural capital, and thus the wasting of economic capital for purely ideological reasons.

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